An evaluation of Advanced Access in general practice

Final Report

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Executive Summary

Introduction

Improving access to services is a central aim of the NHS Plan. In order to achieve this, the government has implemented a number of initiatives. The NHS Plan introduced a target that patients should be offered an appointment within two working days, each Primary Care Trust (PCT) was given funds to employ a primary care access facilitator supported by the National Primary Care Development Team (NPDT) and financial incentives were introduced for practices to improve access through their contracts and through a Directed Enhanced Service (DES) on Access.

The organisational model strongly promoted by the NPDT is that of 'Advanced Access'. This is based on the principle of 'doing today's work today' by ensuring that there is sufficient capacity to meet peoples' demands so that they can be seen on the day of their choice. There are several underlying steps in this approach including understanding demand, shaping the handling of demand by providing alternatives to face-to-face consultations, matching capacity to demand and developing contingency plans (Murray & Tantau, 2000). Practices use rapid 'Plan-Do-Study-Act' cycles to implement these changes (Murray & Berwick, 2003b). By working with a Primary Care Collaborative, the aim is that practices will learn generic quality improvement skills which will enable them to achieve sustainable improvement within any area of patient care.

Many of the first wave of practices working with the Primary Care Collaborative reported marked improvements in the wait for an appointment and patient satisfaction. (However, other commentators have expressed concerns that increasing access in this way may lead to a reduction in personal continuity of care, may increase total demand on general practice, and may not meet the needs of particular groups of patients (Murray, 2000).

Considering the size of the investment in Advanced Access, the radical claims made for its benefits, and the strength with which it is being promoted by PCTs, it is remarkable that very little rigorous evaluation of this model has been undertaken. Advanced Access is arguably one of the most important organisational changes in general practice in recent years, and there is a pressing need for comprehensive evaluation of this initiative.

Aims

To evaluate 'Advanced Access' in general practice, and assess its impact on patients, practice organisation, activity, and staff.

Objectives

To describe the range of strategies that general practices have employed to improve access to care

To determine the impact of Advanced Access on the wait for an appointment, continuity of care, practice workload, and demand on other NHS services.

To explore the perceptions of different groups of patients, including both users and non-users of services, about the accessibility of care and their satisfaction with access to care in relation to different models of organisation.

To explore the trade-offs that patients make between speed of access, continuity of care and other factors when making an appointment in general practice.

To explore the perceptions of general practitioners and receptionists about working with the NPDT and implementing changes to practice arrangements to improve access.

To assess the impact of the above changes in practice organisation on staff job satisfaction and team climate.

Method and results

This research was based on a comparison of 48 general practices, half of which operated Advanced Access appointment systems and half of which did not (designated 'control' practices). These practices were recruited from 12 representative Primary Care Trusts (PCTs). From within these 48 practices, eight (four Advanced Access and four control) were selected for in-depth case study using an ethnographic approach.

The research was comprised of several component studies. These included:

- A survey of all practices in 12 PCTs. Based on this we recruited the 24 Advanced Access and 24 control practices and the 8 case study practices.
- An assessment of appointments available and patients seen, based on appointments records
- An assessment of continuity of care based on patients' records
- Random phone calls to practices to assess ability to make an appointment by telephone
- A questionnaire survey of patients attending the practices
- A postal survey of patients who had not attended the surgery in the previous 12 months
- A discrete choice experiment to explore trade-offs patients make between access and other factors
- A survey of practice staff
- Qualitative case studies in 8 practices
- Interviews with PCT access facilitators

The methods and results for each of these studies are described below, in relation to each of the research objectives.

The range of strategies that general practices have employed to improve access to care

Survey of practices and selection of study sites:

A postal questionnaire survey was conducted amongst all 391 practices in 12 PCTs which were representative of the English population. A response rate of 63% was achieved. The majority of practices had adopted at least some elements of the Advanced Access approach. A wide range of innovative measures was being implemented by practices, whether or not they operated Advanced Access.

Although 67% of practices claimed to operate Advanced Access, fewer than half of these appeared to be following the central principles of this approach. Conversely, many of the practices which did not describe themselves as operating Advanced Access used some of the same ideas. Advanced Access practices embargoed a higher proportion of doctors' appointments until the same day than non-Advanced Access practices, but offered a similar number of appointments in total.

The findings from the practice survey were used to identify and recruit the 24 'Advanced Access' and 24 control practices for the main evaluation, and also to select eight case study practices for more in-depth qualitative research.

Observation of case study practices:

Eight practices (four Advanced Access and four control) were purposefully selected as case studies. Patients and staff in these practices were interviewed and access to care was studied using direct observation.

The defining characteristic of Advanced Access for most practices (both for those which introduced it and the control practices that did not) was that appointments were made on the same day, rather than that patients should be seen when they wished. The staff in both Advanced Access and control practices appeared to assume that demand would exceed supply and so had to be capped, in contrast to the assumption of the Advanced Access model that access was predictable and manageable.

The systems in both types of practice appeared to be designed to control access. In the case of control practices this was achieved by a disincentive - the wait for an appointment. In Advanced Access practices demand was limited by the pressure to telephone the practice early in the day, and by the lack of flexibility in when appointments could be made.

There were important contextual factors which influenced whether and how practices organised their appointment systems. There was a sense that practices designed systems that they felt worked for them. These included factors to do with the local population, the building or the local geography and history.

Receptionists in both Advanced Access and control practices used a variety of strategies to overcome the problems they experienced when unable to offer patients suitable appointments, and it was evident that this was a process of negotiation with patients that allowed receptionists considerable discretion.

Some patients also appeared to use various strategies in order to 'game' systems which did not meet their perceived needs.

Patients expressed different sources of satisfaction and frustration with the appointment systems in Advanced Access and control practices. In Advanced Access practices, patients complained about the inflexibility and apparent illogicality of the system, but appreciated the speed of access. In control practices, patients expressed frustration with the wait for an appointment.

The impact of Advanced Access on the wait for an appointment, continuity of care, practice workload, and demand on other NHS services

Wait for an appointment:

Attempts were made to contact each practice by telephone, posing as a patient wishing to make an appointment, on 11 occasions at monthly intervals and at different times. If the practice was engaged or did not answer, up to five further calls were made at two minute intervals in an attempt to make telephone contact. It was possible to make telephone contact with practices within six phone calls on 97% of these monthly attempts, but the researcher was more likely to be able to contact Advanced Access practices within 6 calls (99% of occasions) than control practices (95% of occasions). There was no difference in the length of time spent telephoning to obtain an appointment (median 3 minutes at both types of practice). On 15% of occasions the researcher was not able to book an appointment, with no difference between Advanced Access and control practices. When appointments were made, Advanced Access practices offered an appointment with *any* doctor sooner than control practices (median wait 0 days and 1 day respectively). The median wait for the third available appointment was one day and two days respectively. Both types of practice failed to achieve the NHS Plan access target of offering patients a routine appointment with a GP within two working days; Advanced Access practices met this target on 73% of occasions and control practices on 65% of occasions. The median length of wait for a first appointment with a *particular* doctor was the same (two days) in Advanced Access and control practices.

We also addressed the issue of access through a patient survey. Consecutive patients consulting in 47 practices were invited to complete a questionnaire (response rate 84% (10821/12825)). Patients in Advanced Access practices were more likely than those in control practices to be seen on the same day as they contacted the surgery. In Advanced Access practices, 57% of patients reported being seen the same day, and 75% being seen within two days. In control practices 32% of patients were seen the same day and 57% within two days. Overall, patients in Advanced Access practices were seen sooner than those in control practices.

Continuity of care:

Data were collected about 114,675 consultations conducted with 5541 patients in 47 practices. There was no evidence of any difference between Advanced Access and control practices in continuity of care, either for surgery

consultations with GPs or if all type of consultations with doctors or nurses were considered.

Further information about continuity of care came from the qualitative case studies, where continuity of care was a common theme in interviews with both patients and staff. Many patients commentated on the importance to them of an enduring doctor-patient relationship, but for others this was not important at all. Staff highlighted concerns that an excessive emphasis on speed of access could have a detrimental effect on continuity of care. Both patients and staff treated speed of access and continuity of care as values which could be traded off against each other, and the outcome of this trade-off would depend on the nature and seriousness of the problem.

The discrepancy between the quantitative and qualitative research with regard to continuity of care is considered in the discussion section.

Workload:

Data was collected from practice appointment records about appointments available for booking and attendances with different types of health professional and in different types of consultation. The total number of appointments available and the total number of patients seen increased considerably in both Advanced Access and control practices over the period during which Advanced Access systems were introduced. There was no evidence of difference between the two groups, but wide variability between individual practices. There was no evidence of difference between Advanced Access practices and control practices in the proportion of appointments which were not attended by patients (DNA rates).

Demand on other NHS services:

There was no evidence from the survey of patient consulting of any difference between the two types of practice in patients' use of other NHS services. In a postal survey of people who had *not* consulted recently in general practice there was some evidence that people registered with Advanced Access practices were more likely to have consulted an NHS walk-in centre, an A&E department, a pharmacy or another general practice than those registered with control practices. However the numbers of respondents indicating these consultations were small and confidence intervals for these estimates were very wide so these findings should be interpreted with caution.

The perceptions of different groups of patients, including both users and non-users of services, about the accessibility of care and their satisfaction with access to care

Survey of patients consulting:

In this survey it was notable that most consultations were not for acute problems, with 70% of people having had their problem for at least a few weeks.

The most important factors for patients in making an appointment appeared to be being able to choose to book an appointment on a day of their choice, followed by being able to book as soon as possible, being able to see a doctor rather than a nurse and being able to see a particular doctor. However these preferences varied considerably for different patient groups, such as the elderly, those with chronic illnesses, men and women and those in or out of employment.

Patients in Advanced Access practices were no more likely than those in control practices to say that they had obtained their *current* appointment on the day of their choice or to say they were seen as soon as they wished, and they were less likely to say they had been able to book the appointment in advance. However, when asked about their *usual* experience of making appointments, patients in Advanced Access practices had more positive experiences of how long they had to wait to see any doctor, see a particular doctor and see a doctor urgently than those in control practices. There were no differences between the experiences of patients in Advanced Access or control practices in satisfaction with the receptionists, waiting times in the surgery, getting through on the telephone, speaking to a doctor on the telephone, continuity of care, or satisfaction with the appointment system.

Non-user survey:

A postal survey was conducted to seek the views and experiences of patients in the case study practices who had not had a consultation with a member of their general practice team in the previous 12 months. The response rate was 47% (735/1564). A minority of patients had wanted to make an appointment in general practice but had not been able to, or had not tried to make an appointment because they thought this would be difficult. Patients in Advanced Access practices were more likely than those in control practices to have experienced or anticipated difficulties in contacting the surgery or in getting an appointment at a convenient time. Patients in control practices were more likely to have experienced or anticipated difficulties in getting an appointment within a reasonable length of time.

Trade-offs that patients make between speed of access, continuity of care and other factors when making an appointment in general practice

We conducted a discrete choice experiment (DCE) amongst 1200 patients consulting in the eight case study practices (response rate 94%). The DCE was designed to elicit preferences for key, generic, components (attributes) of general practice appointment systems, quantify trade-offs and predict respondent's choices from a range of alternatives specified. Respondents were presented with making trade-offs between different levels of attributes for two, hypothetical yet realistic health conditions; an acute, low worry and an ongoing, high worry condition. For both conditions the four key components of appointment systems that were of value were, in order of importance, being offered: choice of doctor; a convenient time of day; a doctor rather than a nurse; and an appointment sooner rather than later. In addition, respondents valued duration of the appointment (preferring 20 minute appointments) if the appointment was for an ongoing, high worry condition. It followed that

respondents' were willing to wait an extra 3.5 days (acute, low worry problem) or an extra 5 days (ongoing, high worry problem) for an appointment to see a doctor of their choice; an extra 2.2/2.6 days, respectively, for a convenient time of day for the appointment and an 1.6/1.8 extra days, respectively, for an appointment to see any doctor rather than a nurse.

The perceptions of general practitioners and receptionists about the experience of working with the NPDT and implementing changes to practice arrangements designed to improve access

Qualitative case studies:

Based on interviews and observation conducted within the qualitative case study practices, it appeared that the Primary Care Collaborative and the PCT access facilitators had some influence during the introduction of Advanced Access but their involvement in shaping practice policy was significantly reduced once the new appointment system was up and running. There was only limited evidence of quality improvement approaches such as regular monitoring of supply and demand or the use of PDSA cycles, and little to suggest that the introduction of Advanced Access was associated with learning an approach to quality improvement which would benefit other aspects of practice organisation in the way envisaged by the NPDT.

Interviews with access facilitators:

Six PCT access facilitators were interviewed about their perceptions of helping practices implement Advanced Access. Their reflections tended to reinforce our observations at the case study practices about the confusion between the Advanced Access model, the access targets, and the appropriateness of embargoing appointments. They also experienced difficulties in getting doctors to fully engage with the collaborative process, and felt that practices tended to take some ideas from Advanced Access but failed to embrace the complete model. On the other hand, although these issues were all challenges, the facilitators remained generally enthusiastic about Advanced Access and positive about their experience of working with practices to introduce change.

The impact of Advanced Access on staff job satisfaction and team climate

A survey was conducted amongst the doctors, nurses, receptionists and administrative staff in 46 practices (85% (817/960) response rate). There were few differences between Advanced Access and control practices in the perceptions of stress experienced by any of the groups of staff. Doctors and receptionists expressed more positive team climate scores in Advanced Access practices compared with control practices, whereas nurses reported lower scores. Doctors in Advanced Access practices had slightly greater job

satisfaction than those in control practices, with no evidence of difference for nurses or reception/administrative staff.

Strengths, limitations and methodological issues

***Strengths**:* This appears to be the largest study and most comprehensive evaluation of appointment systems in general, and of Advanced Access in particular, to have been conducted in the world. Unlike earlier case study research, it is based on the widespread implementation of Advanced Access in representative general practices, rather than 'early-adopters' of this approach. The use of integrated quantitative and qualitative research studies enabled us to explore the research questions from a range of perspectives and to interpret and explain findings with greater confidence than would have been possible from smaller isolated studies.

***Selection of sites for the main evaluation**:* Although the study was designed to compare practices which operated Advanced Access and control practices, it was clear from the practice survey that practices did not fall neatly into these two groups. Some of the 'Advanced Access' practices may not have been operating Advanced Access in line with the model advocated by the National Primary Care Development Team (NPDT). It is important to recognise that any policy or model of organisation, including Advanced Access, does not exist in the abstract, but has to be implemented in real life, and the way in which the policy is implemented will vary in different contexts. There is a reciprocal relationship between the programme of innovation and the wider setting in which it takes place, and this was an important aspect of this evaluation addressed in the qualitative case studies. In order to maximise the chance of detecting any differences between practices operating or not operating Advanced Access, if such differences existed, practices were selected for this study which were as far as possible at the extremes of implementation (those most clearly seeking to implement Advanced Access and those which clearly were not).

***The observational design of the study**:* Some components of the study (the audits of continuity of care and of practice activity) included data both before and after practices introduced Advanced Access. However other research components were based only on data after practices introduced Advanced Access, so one cannot exclude the possibility that the two groups of practices had different performance at baseline. For this reason, in all analyses we took account of potentially important confounding variables.

Implications of this research for policy

In this study, practices operating Advanced Access were able to offer patients appointments slightly more quickly than control practices, with no evidence of any decrease in continuity of care or difference in the increase in practice workload. Both groups of patients failed to offer access within the NHS Plan targets. Apart from speed of access, other differences between the experience of patients and staff were minor, and Advanced Access was not associated with the dramatic benefits claimed in previous reports or case studies of individual practices. In particular there was little evidence that Advanced

Access was associated with practices learning quality improvement techniques that would have beneficial impacts on other aspects of practice activity.

It was notable that almost all practices characterised Advanced Access in terms of same day care, and all the 'Advanced Access' practices restricted booking of future appointments to a greater or lesser extent. This approach is in stark contrast to the model of Advanced Access promoted by the NPDT, and illustrates the way in which centrally directed policies become modified and diluted when widely implemented. However there was also evidence of diffusion, with many of the control practices having introduced many of the same strategies as the Advanced Access practices (although not necessarily as a result of the Advanced Access initiative).

Comparison of the results of this study with the earlier national surveys of NHS patients suggests that access to care worsened between 1998 and 2002 and has now returned to 1998 levels amongst control practices studied, and is slightly better than this in the Advanced Access practices studied. Interestingly, the component of this study which involved phoning practices to make an appointment suggested that it is easier to contact practices by phone, even early in the day, and to make an appointment than is reported by patients in surveys, although still not meeting the NHS Plan access targets.

Improving access to health care is a top priority for current policy, but the priorities of patients, health professionals and government may not be the same. This study supports earlier research findings that being able to choose to see a particular doctor or to be seen at a convenient time are more important than speed of access for most patients, and also that different groups of patients (for example those who have chronic illness vs. those who are usually healthy, or those in different age groups) have distinctly different priorities. This is not surprising in the light of the finding from the patient survey that 70% of consultations in general practice involved problems that patients had had for several weeks.

This study suggested several possible reasons why the Advanced Access model may not have been implemented by practices in the way envisaged. These include:

- Confusion between the NHS access targets and the Advanced Access model.
- The lack of fit between the assumption of the Advanced Access model that demand is predictable and manageable and the widespread belief amongst health care professionals that demand greatly exceeds supply and is also related to supply.
- The strong influence of local contextual factors, including features of the local population, the values of the practice and limitations of buildings, which determine how appointment systems develop which are felt to work in that particular setting.

Implications for future research

This project raises several priority areas for future research:

- The relationship between the supply and demand for primary health care.

- Whether practices which operate systems more closely aligned with the Advanced Access model as promoted by the NPDT do achieve the scale of benefits described in earlier case study reports when subject to rigorous, independent and controlled evaluation.
- The costs as well as the effects of the Collaborative approach to promoting quality improvement in health care.
- Existing literature about both the means and consequences of promoting innovations in the NHS is extensive but largely conceptual or descriptive. Empirical studies are needed about the benefits of different strategies to encourage general practices to implement change.

Conclusion

All of the aims and objectives set for this project were achieved. The following conclusion summarises the main findings in relation to these objectives.

Most of the practices in 12 representative PCTs in this study claim to have introduced Advanced Access, but the extent to which these practices have actually implemented the principles of this model is limited. Many practices appear to interpret an Advanced Access system as one based on same day access, while paying less attention to the fundamental principles of matching capacity to demand and seeing patients when they wish. Practices of all types have introduced a wide range of strategies in an attempt to improve access to care. Those practices which have implemented Advanced Access offer slightly faster access to care than those which have not, with no evidence of any disadvantages in terms of workload, contacting the practice, continuity of care or demand on other NHS services. Overall, there was no evidence of difference in patient or staff satisfaction with the systems operated by Advanced Access or control practices. The priorities and demands of different groups of patients are very different, and different appointment systems suit some groups better than others.

The Report

Section 1 Background

1.1 The importance of access to primary health care

Ensuring fast access to care when it is needed is one of the hallmarks of a high quality system of health care, but achieving this in an equitable fashion has long been a problem for the NHS, both in primary care and secondary care. Within its modernisation programme for the NHS, the government has identified improving access as one of the top priorities. This is in response to the perception that problems with access are among the main concerns expressed by the public. Consultation exercises with patients and professionals for the NHS Plan showed that 20% identified cutting waiting lists as one of the top three priorities (Department of Health, 2002). More specifically within general practice, a national survey of NHS patients conducted in 1998 (Airey & Errens, 1999) has been used to justify the claim that 20% of patients in paid employment put off going to see their general practitioner (GP) because of inconvenient surgery times and about a quarter of patients had to wait four days or more for an appointment (Department of Health, 2002). In fact the latter figure refers to people wishing to make an appointment with a doctor *of their choice***,** and this survey is frequently misquoted – see page 27 for further details. A MORI poll commissioned for the Audit Commission showed that waiting times accounted for 55% of the dissatisfaction with general practice (Audit Commission, 2002) and the 2000 British Social Attitudes Survey found that 51% of respondents reported that the GP appointment system was in need of improvement (Exley & Jarvis, 2001).

The NHS Plan set out a target that by 2004 all patients should be able to see a primary care professional within 24 hours and a GP within 48 hours (Department of Health, 2000). A series of contractual measures (described in more detail below) have been introduced to provide incentives to practices to achieve these targets. Practices have been supported in introducing changes to the ways in which they work by Primary Care Trusts (PCTs), and by a Primary Care Collaborative managed by the National Primary Care Development Team (NPDT). The NPDT strongly promotes an approach known as 'Advanced Access' which involves a systematic and radical re-organisation of appointment systems in general practice. Rather than promoting simple changes to existing systems, Advanced Access directly challenges widely held assumptions about the relationship between demand and supply for primary health care, and uses a quality improvement approach to seek to change the culture within the practice in a way which will be sustainable and lead to wider improvements in care.

This drive to reorganise primary care services in order to improve access represents a major change in the organisation and delivery of general

practice. However, there has been very little evidence about the impact of the changes that general practices have been encouraged to adopt and no programme of evaluation planned alongside the introduction of Advanced Access.

1.2 What do we mean by 'access'?

The concept of access to health care is complex and has been reviewed by Gulliford *et al (2001).* Access can be conceptualised in at least four ways. If an adequate supply of services is available, people 'have access' to health care. The extent to which a population actually 'gains access' depends on financial, organisational, social and cultural barriers that limit utilisation. Services must also be relevant and effective if the population is to 'gain access to satisfactory health outcomes'. Finally, Gulliford *et al* highlight the issue of differing assumptions and expectations in relation to access and suggest that the availability of services and barriers to utilisation need to be evaluated in the light of the differing perspectives, health needs and settings of diverse groups in society.

Goddard and Smith (2001) point out that access is not necessarily related to need, and both 'access' and 'need' are very hard to define and to measure (Giannone, 2003). In the past, access to care has often been equated with utilisation of services such as GP consultation rates. These are known to vary according to patient age, sex and socio-economic status. This variation may be related to different social perceptions of need, different availability of services, or barriers to gaining access to care, which operate differentially for different patient groups.

Maxwell (1984) defined access as one of the key criteria against which the quality of health care could be assessed. However, his framework of quality highlights that access cannot be considered in isolation, as improvements in access for some groups more than others may reduce equity or efficiency or appropriateness (three of the other five key criteria of health service quality).

This discussion is relevant to the topic of access to GP services for a number of reasons. Primary Care is the gatekeeper to almost all NHS services, so it is particularly important that people can both 'have', and 'gain' access to primary care in a way that is equitable so that they may obtain improved health outcomes. There may be limitations in the availability of GPs or the number of GP appointments in particular areas which mean that people do not 'have access' to their doctor. Alternatively, services may be configured in ways that create barriers for people so that they have difficulty in 'gaining access'. These barriers may affect some groups of people more than others, leading to inequities of access. This problem is compounded if the people who have most problems with access are also those with the greatest health needs.

A joint report from the RCGP and NHS Alliance highlights the complexity of the concept of access to primary health care (nhsalliance & RCGP, 2004). The quality and effectiveness of care once the patient has made an appointment is important (described by Rosen as 'in-system access'), as well as simply gaining an appointment (Rosen *et al*, 2001). This is consistent with the third

point in Gulliford's framework, which emphasises that the purpose of improving access is to improve health outcomes. The authors of the RCGP/NHS Alliance report also highlight the importance of continuity of care as offering important advantages for both patients and doctors and express a concern that an emphasis on rapid access to care should not compromise continuity.

1.3 What problems do people have with accessing care?

As described above, the aim of improving access to health care is not increasing utilisation (perhaps by those who will not gain from services) but encouraging utilisation by relevant groups who will benefit. It has long been recognised that people in deprived areas tend to have greater health needs but less good access to health care (Baker & Klein, 1991; Hart, 1971). There is evidence that incentives in the 1990 GP contract tended to promote this trend (Gillam, 1992; Leese & Bosanquet, 1995; Reading *et al,* 1994; Waller *et al,* 1990).

1.3.1 Barriers to accessing primary health care

Barriers to gaining use of primary health care include problems with physical accessibility and transport, affordability, socio-cultural barriers, and organisational barriers, particularly waiting times (Gulliford et al, 2001).

Distance

The distance people live from a health service is inversely related to its utilisation(Asthana *et al,* 2004; Nemet & Bailey, 2000; Rice & Smith, 2005) But travel time and costs, and the availability of transport, are probably more important than distance per se. Centralisation of services may reduce accessibility, supporting the need for services, where possible, to be made more local and accessible (Gulliford *et al*, 2001). The proximity of services may also affect the treatment people receive. For example, people contacting out- of-hours primary care services are less likely to see a doctor in person and more likely to receive telephone advice the further they live from a primary care centre (Munro, et al, 2003).

Registration

In principle, everyone in the UK has access to healthcare through the system of registration with a general practice, although there is evidence that (despite long-term policy efforts to avoid this problem) areas with the lowest health needs tend to have more GPs than areas with the highest needs (Gravelle & Sutton, 2001). Although 99% of the population is registered with a GP (Airey & Errens, 1999), and people do not find it difficult to register with a GP in most parts of the country, this is a problem in some areas of London (Greater London Authority, 2003).

Access to appointments

The ability to make an appointment in general practice appears to be improving, but there are still difficulties. In a 2005 Healthcare Commission (2005b) survey almost a third (30%) of patients reported that they were not able to book appointments three or more working days in advance, 22% were sometimes put off going to the surgery because opening times were inconvenient and more than half the respondents sometimes or always experienced problems in consulting their practice by telephone.

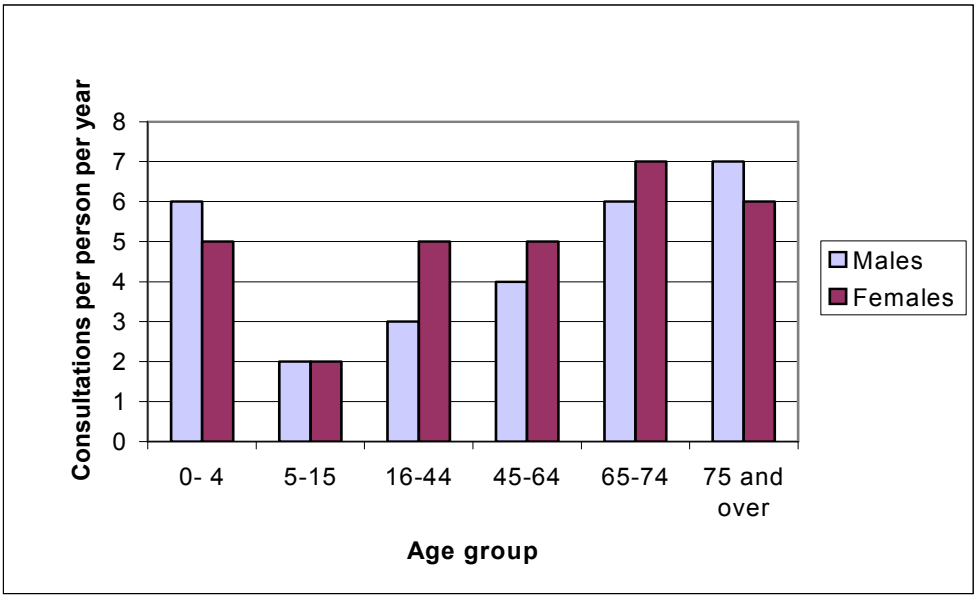
1.3.2 Which groups face particular difficulties with access?

There are inequities of access in relation to place, socio-economic status, ethnicity, age, and gender (Goddard & Smith, 2001). However, several factors help to reduce inequalities in access to primary care in the UK. These include the provision of care free at the point of use and the universal availability of care through registration with general practice, allied with attempts to ensure equitable distribution of GPs (Gravelle & Sutton, 2001) and to resources in relation to needs (Asthan et al, 2004; Baker & Hann 2001).

Age and gender

It is well-recognised that there is considerable variation in the extent to which different age and sex groups make use of general practice (Office for National Statistics, 2005). Whether this represents differences in need, or structural or cultural barriers to accessing services is less clear.

Figure 1 GP consultations by age and gender



E

Ethnic minority groups

There are different rates of utilisation in some ethnic groups relating to different cultural health beliefs, communication difficulties between patients and doctors, lack of familiarity with services, and perceptions of stigma (Gardner & Chapple, 1999). Although many local health providers have developed initiatives to improve access for health care for people from ethnic minority groups, these have been poorly evaluated making it difficult to draw useful lessons from this work (Gulliford *et al*, 2001).

Socially disadvantaged groups

Reassuringly, socially disadvantaged groups do not appear to have any more difficulty accessing primary care than other groups (Baker & Hann, 2001; Baker et al, 2002) and increased use of GP services is to some extent related to greater need. An important exception to this is in relation to preventative care, with low uptake of preventative services by some of the groups with most to benefit from them (e.g. breast and cervical screening) (Drever & Whitehow, 1997; Goddard & Smith, 2001; Majeed *et al,* 1994; Majeed *et al,* 1995; McCormick *et al*, 1995). However, recent studies in relation to childhood immunisation and cervical screening indicate that there has been a reduction in this inequality, possibly related to the introduction of financial targets for general practitioners (Baker & Middleton 2003; Middleton & Baker, 2003).

Carers

A recent report considered the problems that carers have in accessing care, both for themselves and those they care for. It identified a number of problems related to service provision, including surgeries not having systems to identify people as carers, inflexible appointment systems, lack of training on carers' issues, waiting times, transport and car parking. In addition there were a range of professional, cultural and knowledge barriers to accessing care (Arksey *et al,* 2004).

1.4 Policy initiatives to improve access

1.4.1 Primary Care Access Fund

In order to achieve the NHS Plan access targets, the government created a Primary Care Access Fund of £168m in 2002-3, of which at least £48m was dedicated to improving access in primary care (Department of Health, 2002). The remainder could be used to boost primary care capacity, for example through developing NHS walk-in centres, GP with Special Interest roles, or enhanced nursing teams. In addition, each PCT received funding of £25,000 per annum for two years to employ a primary care access facilitator, supported by the National Primary Care Development Team (NPDT). The access facilitator would provide local support, advice and assistance to practices on access improvements, based on the Advanced Access approach (Department of Health, 2002; Oldham, 2001).

Access incentive scheme

PCTs were expected to use the access fund to meet the cost of a local primary care incentive scheme to help practices implement strategies to improve access. Practices were eligible for a one-off implementation payment if they agreed a plan for implementation with the PCT. This plan should include profiling the demand for appointments, matching capacity to demand, regularly collecting data on availability of appointments, providing alternatives to face-to-face appointments, working down any backlog in appointments and supporting staff in attending meetings of the Primary Care Collaborative. PCTs were able to exercise discretion in how strictly they expected practices' implementation plans to conform to this model. The implementation payments varied according to the size of the practice but were worth about £5000 to an average sized practice. Practices which already met NHS Plan Access targets were eligible to receive an equivalent incentive payment (Department of Health, 2002).

Directed Enhanced Service

In April 2003 a Directed Enhanced Service (DES) scheme was introduced which made similar requirements on practices and provided similar incentives to the Access Incentive Scheme introduced in 2002/3 (British Medical Association, 2003). This national DES on Access continued until it was replaced by a new DES in April 2006, as part of the revisions to the GP Contract (NHS Employers & General Practitioners Committee, 2006). The new DES incorporated the previous DES payments and also the access payments payable under the Quality and Outcomes Framework (see below).

The Primary Care Access Survey

PCTs monitor the performance of practices against the NHS Plan targets through the Primary Care Access Survey (PCAS). This survey is organised nationally but data is collected locally by PCTs and reported centrally. PCTs are notified of the survey date in advance and should contact practices on the survey day, between 11.00 and 13.00, and ask certain prescribed questions.

Several factors need to be considered in interpreting the results of the PCAS. The survey is not anonymous, and there are clear financial incentives both for practices (through the implementation/incentive payments) and for PCTs (since the results of the PCAS affect their 'star ratings') to report that the targets are being reached. The survey can be conducted by telephone, fax or email, so no attempt is made to replicate the real experience of patients seeking to obtain an appointment. The PCTs, and in some cases the practices, know when the survey is going to take place, so could potentially manipulate their appointment systems to ensure that appointments are available.(Hansard, 2004) Appointment availability is measured at the same time so may not reflect availability at other times of day. Finally, if practices have agreements with other local providers such as NHS walk-in centres which offer GP services, then availability of care at these other services may be counted as the practice meeting the NHS Plan target, even if this does not reflect any preference of patients to be seen at their own practice (Department of Health, 2004b).

Because of the above concerns, and local surveys which revealed problems with access while national figures from PCAS suggested targets were being met, (Moore, 2002) the Department of Health (2004b) commissioned a validation exercise from MORI, a consumer research organisation. MORI telephoned 966 practices and obtained information about the availability of an appointment with any GP within 2 working days, in line with the NHS Plan target. Few details of the methods used in this study have been published, but practices were informed that they were taking part in the survey before any questions were answered. Of all practices, 93.3% met the target. Although there were some inconsistencies in individual areas between the validation survey and the PCAS, overall the findings from the validation study were similar to those obtained from the PCAS.

1.4.2 GP Contract

Practices were given incentives to make and implement plans to improve access under the Access Incentive Scheme and subsequently the DES on Access (see 0). In addition, further financial incentives to achieve the NHS Plan access targets were introduced in the GP Contract in April 2004. An important component of this new contract is the Quality and Outcomes Framework, through which practices receive points (which translate to payments) for achieving specified levels of performance in a range of clinical and service domains. The 2004 QOF included up to 50 points for meeting the access targets, which were worth £6000 for the average practice in 2005/6. The evidence to support claims of achievement comes from the monthly PCAS. The QOF access points were replaced in April 2006 by the new DES on Access (see 1.4.1).

1.5 The National Primary Care Collaborative and the National Primary Care Development Team

The National Primary Care Development Team (NPDT) was launched in February 2000 with a remit to establish a National Primary Care Collaborative. The aim of the programme was to provide primary care with the organisational and individual skills needed to create lasting improvement in the delivery of services (National Primary Care Development Team 2003; The Improvement Foundation, 2006). The NPDT used well recognised quality improvement techniques based on a collaborative approach to spread knowledge quickly through multiple sites (Smith, 2001). Starting with a small number of PCTs, the programme rapidly expanded in a series of waves to involve all PCTs in England, working through a network of 11 NPDT regional centres. Over four waves, 80 PCTs were selected to focus on delivering improvements in primary care access (using the Advanced Access model), the management of people with established coronary heart disease, and the interface between primary and secondary care. Within each of the 80 PCTs a core group of five or six practices worked initially with the support of a PCT-based project manager to make improvements in each of the three topic areas. The aim was that the learning and experience gained by these core practices would then spread proactively to other practices across each PCT. By March 2003, the Collaborative claimed to have involved over 2000

practices serving almost 11 million patients (about a quarter of all the practices in England) making it the largest health improvement programme in the world (NPDT, 2005).

The collaborative approach involves a process of gathering existing best practice through an expert panel and disseminating and developing this learning at a series of workshops and 'action periods'. Participants use an improvement method based on three fundamental questions for change:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?

This approach reflects ideas such as 'just-in-time engineering' and 'lean thinking' which are common in manufacturing industry (Murray & Berwick, 2003b; Smith, 2001). Individuals who are close to the problem work together in small teams within practices to identify changes, implement ideas for change and monitor carefully the impact on performance in a series of small, rapid cycles of change known as Plan-Do-Study-Act (PDSA) cycles (Berwick 1998). It is important to use locally derived data in a pragmatic fashion and to build data collection into routine work in order to make small measurable and sustainable improvements.

The aim is that participants in the Primary Care Collaborative learn generic quality improvement skills which will not only improve the quality of service they offer in regard to the specific topic, such as access, but that these same skills will enable them to apply their learning and achieve sustainable improvement within any area of patient care (NPDT 2005).

1.5.1 Applying the improvement model to access to primary care

During the early 1990s, Dr Mark Murray and Catherine Tantou at the Kaiser Permanente health group in the USA developed an approach to improving access to health care which they termed ‘same-day scheduling’, ‘open access scheduling’ or ‘advanced access’ (Murray, 2005). This approach was influenced by insights from queuing theory about the causes of delays in systems (Murray & Tantau, 1999; Murray & Berwick, 2003b; Murray & Tantau, 2000). They subsequently developed their ideas in partnership with the Institute for Healthcare Improvement in Boston, as part of that Institute’s 'Idealized Design of Clinical Office Practices' project (Smith, 2001).

These ideas were introduced to the UK by John Oldham, initially in his own general practice in Glossop and then through the NPDT as the ‘Advanced Access’ framework. Although ‘Advanced Access’ has been promoted almost as a brand name (for example it is always referred to using the capitalised term Advanced Access), its provenance in the quality improvement movement highlights that it is based on an approach which needs to be locally ‘owned’, adapted and implemented rather than a simple solution which can be applied rigidly in the same way in all settings.

1.5.2 Problems with GP appointment systems

Traditional, 'carve-out' and Advanced Access approaches

Murray and Berwick (2003b) describe three approaches to addressing the demand for appointments in general practice[1]. In the 'traditional model', demand is streamed into a need for urgent or non-urgent care, often by a receptionist. When demand for appointments exceeds supply, clinicians' time is diverted to assessing the urgency of cases, which reduces capacity. Patients with non-urgent problems often experience long waits for an appointment. Since they have to book a long way ahead patients may go elsewhere or they may forget their appointment and then fail to attend, which further wastes capacity in the system. The lack of appointments creates stress for staff, particularly receptionists, as well as for doctors. Because peoples' needs are not met they may be more likely to contact other less appropriate providers such as out-of-hours services or A&E departments.

The second approach is described as the 'carve out model'. In this type of system, a proportion of appointments are reserved for people wanting to be seen on the same day. The need to create urgent slots reduces the availability of future routine slots, so people classed as routine wait longer. This has a number of effects. Patients learn that they have to insist problems are urgent in order to get seen quickly, so the proportion of appointment slots kept for same day care needs to increase and the availability of routine slots decreases. Therefore the wait for a routine appointment increases further and non-attendance rises. Patients are only able to obtain continuity of care from the same doctor if they are willing and able to wait for a long time. Urgent slots get fully booked early in the day, so patients all telephone early in the day (blocking the telephone system) and sometimes are told they are too late and have to phone again the following day. In response to these problems appointments which are meant to be held for same day care, get 'stolen' by doctors or others who try to get around the constraints on the system in order to help their patients. Conflict and tension arises between doctors and patients, as doctors are frustrated by finding their 'urgent' appointments filled by patients with routine problems.

In a series of articles, Murray and colleagues describe a third approach known as Advanced Access which is claimed to overcome these problems (Murray & Tantau, 1999; Murray, 2000; Murray, 2003; Murray *et al,* 2003; Murray, 2005; Murray & Berwick, 2003b; Murray & Tantau, 2000). This is described in more detail in Section 1.6, below.

Strategies previously developed in the UK

In the UK, there is a considerable literature on the different strategies practices have used in an attempt to manage the problem of people wanting to be seen more quickly than appointments are available. This includes studies involving nurse practitioners in managing patients requesting same day care (Horrocks *et al*, 2002) and the use of telephone triage to reduce

[1] Known as 'family practice' in the USA literature

demand for face-to-face appointments. Systematic reviews of evidence about telephone triage in daytime primary care (Bunn *et al*, 2004; Connock & Taylor, 2003; Stacey *et al,* 2003; Stacey *et al,* 2004) have shown that about 50% of calls can be managed on the telephone and telephone triage of requests for routine GP consultations can reduce the immediate demand for a consultation considerably. However, most studies showed an increase in consultations in the subsequent fortnight. When this is considered along with the time spent in offering telephone advice it is unclear whether telephone triage is cost- effective. Patients appear to be satisfied with this model of care, but the evidence is limited. Studies show similar results whether telephone triage is carried out by nurses or doctors.

A study conducted in 1998 examined how practices in Devon sought to manage requests for same day appointments. Practices used a wide range of systems including keeping emergency slots which could not be booked until the day, seeing people as 'extras' after surgery, telling people to come and wait and fitting them into fully booked surgeries, or having some 'open' surgeries that were not booked appointments (Luthra & Marshall, 2001.) In this regard it is important to remember that some practices do not operate appointment systems at all, but ask all patients to turn up and wait.

It is important to note that in a study conducted in 15 representative practices in 2001, before the widespread introduction of Advanced Access, a third of all patients being seen in general practice were already being seen on the same day they contacted the practice (Stoddart *et al,* 2003). In addition, although the national survey of NHS patients is often used to argue that access to GPs is a problem, an alternative interpretation is that it demonstrates the accessibility of general practice in England. Of those respondents who wanted to be seen on a particular day, 66% had been given an appointment on the day of their choice. Fewer than one in five (19%) of respondents thought they should have been seen sooner, and although 17% of people waited 1-2 days longer than they wanted, only 13% of all respondents had to wait longer than two days. People usually had to wait longer to see a GP of their choice, with 24% of people having to wait more than four days to see a preferred doctor (Airey & Errens, 1999).

Finally it is also important that these delays to get an appointment are considerably shorter than those reported in USA clinics which formed the setting for Murray's original work on changing appointment systems. In Murray's seminal paper about primary care access in Kaiser Permanante, the average wait for an appointment was 55 days, (Murray & Tantau, 2000) whereas in the UK about two thirds of all patients are seen on the day of their choice, and three quarters of patients can see their preferred doctor within four days (Airey & Errens, 1999).

1.6 Advanced Access

1.6.1 What is Advanced Access?

Advanced Access is described by Murray as 'Doing today's work today by offering a same day appointment to all patients who call' (Murray, 2005).

Advanced Access seeks to overcome the problems of traditional and 'carve out' appointment systems by ensuring that there is sufficient capacity to meet peoples' demands so they can be seen on the day of their choice. This may be a demand to be seen today, but may also be a demand to be seen at some future date if they prefer to book at a convenient time or to wait to see a particular doctor. Advanced Access challenges the assumption (widely held by health care professionals) that demand for appointments will always exceed supply. Murray argues that in fact demand is predictable and can be managed (Murray, 2000; Murray & Tantau, 2000). Both Murray in the USA and Oldham in the UK argue that when practices use the Advanced Access approach, almost all patients are seen on the day they make the request (Murray & Berwick, 2003b; Murray & Tantau, 2000; Oldham, 2001).

Advanced Access is based on four principles (Oldham, 2001):

Understanding demand

It is essential to have a detailed understanding of the profile of demand for appointments in order to provide sufficient appointments when people want them. Practices are required to collect data about the demand for appointments on different days of the week and different times of day. The NPDT provides detailed guidance and data collection tools to help practices to do this. It is important to understand not only the totality of demand but also the profile of that demand, in terms of the proportion of demand for care, which is on the same day or is requested in advance for particular days or times. Rather than attempting to 'protect today' by deferring demand into the future, practices should seek to 'protect future capacity' by pulling current demand forward to today. This depends on an accurate prediction of how demand varies at different times.

Shaping the handling of demand

Practices are encouraged to explore and test a wide range of strategies to reduce demand for face-to-face consultations in order to release 'hidden capacity' in the system. These strategies include telephone triage of requests for home visits and/or same day appointments, booked telephone consultations for follow-up rather than asking patients to come back, email consultations and advice about self-care for minor illness in leaflets or on practice websites.

Matching capacity to demand

The aim is to reach a steady state where the capacity of the system meets the demand with no delays. In order to achieve this, practices have to invest extra resources for a limited period of time (which may involve working longer hours or employing locums) to work off the backlog of appointments.

As far as possible, health professionals should aim to me*et al*l of the patients needs at a single consultation, which should reduce the need for future consultations, and to avoid booking follow-up appointments, as it is recognised that much of the variation in workload of individual doctors is generated by the doctors themselves rather than the demands of their patients (Murray & Berwick, 2003b; Murray & Tantau, 2000).

Practices are also encouraged to maximise the potential for patients to see their usual doctor, as this has benefits for both patients and doctors (Murray & Berwick, 2003b; Murray & Tantau, 2000). This issue is discussed in more detail below.

Appointment systems should be kept as simple as possible, with a minimum of different types of appointment slots. Separate clinics for different types of care should be avoided as they reduce flexibility and capacity in the system. Keeping the system simple avoids a shortage of some types of appointments while other types are available, and also reduces both work for receptionists and confusion for patients.

The number of appointments available should be based on the exercise to measure demand, rather than simply a pro-rata allocation of surgery times based on past practice. This will often mean that a higher proportion of appointments are created for Mondays, and that no pre-booked appointments are made on Mondays to protect capacity on the day that is usually busiest.

Practices should build capacity by optimising and maximising the work of all members of staff. Where appropriate, work can be delegated from doctors to suitably trained nurses and from nurses to health care assistants. This may require changes in the skill-mix within a practice.

Contingency plans

Although the Advanced Access model proposes that it is possible to have sufficient capacity to match demand, it recognises that there are times when demand will fluctuate. This may be due to external factors such as a 'flu epidemic, but more commonly relates to a reduced availability of appointments due to staff sickness or holidays or shorter working weeks due to Bank Holidays. Practices are encouraged to have clear documented plans to deal with these contingencies, so that these plans can be rapidly implemented with a minimum of discussion when necessary.

Involve patients in planning changes

The adaptation of Advanced Access by the NPDT includes a fifth principle which is less evident in the earlier descriptions of the model published from the USA. Practices in the NHS are encouraged to involve patients in planning and implementing changes, and to continuously communicate with patients about changes to the appointment system (Oldham, 2001).

1.6.2 Advanced Access and continuity of care

A key principle in the Advanced Access model as developed in the USA is seeking to ensure that patients see their personal doctor to enhance continuity (Murray, 2000; Murray & Tantau, 2000; O'Hare & Corlett, 2004). Continuity along with accessibility are described as two of the 'cardinal goals' of primary care (Murray & Berwick, 2003b; Murray & Tantau, 2000.) This is in recognition of the evidence that continuity of care leads to better quality of care and enhanced patient satisfaction (Freeman *et al*,2003; Haggerty *et al,* 2003; Saultz & Lochner, 2005) and also appears to be partly motivated by the

competitive market in which primary care operates in the USA (Murray & Tantau, 1999).

The description of the Advanced Access model in the USA proposes that doctors are accountable for a defined panel of patients, not a specified number of appointments, both to enhance continuity and to avoid the disincentive created if a doctor increases capacity by working differently and then has to pick up overflow from another doctor in the practice (Murray & Tantau, 1999). It is noteworthy that case studies of Advanced Access from the USA report much higher levels of continuity than are common in the UK, (Bundy *et al,* 2005; Murray & Tantau, 1999; O'Hare & Corlett, 2004; Solberg *et al,* 2006) and interesting that the issue of continuity has been given much less prominence in the implementation of Advanced Access in the NHS.

1.6.3 Seeing patients on the same day and embargoing of appointments

Although not advocated by proponents of the Advanced Access approach, (National Primary Care Development Team, 2005b) some practices in the UK have attempted to meet the NHS Plan access targets to see patients within two working days by restricting the booking of advance appointments (2005d; Van Baelen *et al,* 2005; Windridge *et al,* 2004). This change appears to have been widespread and has generated considerable controversy (Healthcare Commission, 2005a; Department of Health, 2005). It appears that some GPs have interpreted the Advanced Access principle of 'doing today's work today' as meaning that all patients must be seen today. However, this interpretation is in many ways the antithesis of the Advanced Access approach, which advocates keeping appointments systems simple, reducing the number of different types of appointment slots, not having some appointments which are 'carved out' for urgent care and letting people be seen when they wish.

There are several possible reasons for this confusion. Some sources of advice to practices from PCTs about Advanced Access suggested preventing people booking very far ahead (for example beyond 2 weeks) in order to avoid problems with patients forgetting appointments made a long time beforehand, or having to rebook large numbers of appointments when staff book leave. Some advice suggests that advanced booking should be actively discouraged, with patients instead ringing when they want to be seen (Velleman, 2001).

Many of the original articles about Advanced Access placed a great deal of emphasis on seeing people on the day they call, reinforced by the terms 'open access scheduling' and 'same-day scheduling' (Lehner & Lehner, 2003; Murray & Tantau, 1999; Murray 2005; Murray & Tantau, 2000). Murray describes this as being based on '..one very simple yet challenging rule: do today's work today. Doing so enables patients to see their own personal physician on the day they call for any problem whether urgent, routine or preventative' (Murray & Tantau, 2000). In another article, Murray and Berwick (2003b) state that the 'core principle' of Advanced Access is that patients are offered an appointment the same day. However, they also state that if a patient does not want to accept a same day appointment because they need to arrange an

appointment at a particular time, then patients should be accommodated and not asked to phone back later.

A further source of confusion is likely to be the linkage between the introduction of the NHS Plan targets, with associated financial incentives to practices for achieving them, and the promotion of Advanced Access as the means to achieve these targets. The financial incentives associated with the access targets may have encouraged practices to focus on achieving the targets rather than engaging in the deeper reconsideration of assumptions about demand and supply required by accepting the principles of Advanced Access.

1.6.4 What benefits are claimed from Advanced Access?

The proponents of Advanced Access claim that use of this framework leads to a number of benefits, as described below:

- Substantial reductions in the waiting time for a routine appointment have been reported in the UK (National Primary Care Development Team, 2003; Oldham, 2001) and by practices operating Advanced Access in the USA (Pulse, 2004d; Anderson & Sotolongo, 2005; Murray & Tantau, 1999).
- Increased patient satisfaction, because patients no longer need to wait for an appointment or argue with receptionists (Demand Management Group, 2002; Murray & Tantau, 1999; Oldham, 2001).
- Increased staff satisfaction, due to a reduction in stress over making appointments (Demand Management Group, 2002; Murray & Tantau, 1999; Oldham, 2001).
- Reduced non-attendance rates, associated with the shorter delay between making an appointment and being seen (Demand Management Group, 2002; Murray & Tantau, 1999; Murray & Berwick, 2003b; Oldham, 2001)
- A slight reduction in demand, perhaps because people have less anxiety that they will not be able to get an appointment if and when they need one (Murray & Berwick, 2003b; Murray & Tantau, 2000).
- Improvements in continuity of care because appointments are usually available with the doctor of the patients choice (Murray & Berwick, 2003b; Murray & Tantau, 2000).
- Improvements in team-working, as a consequence of staff working together to implement change in a proactive way (National Primary Care Development Team, 2003).

There has been a range of reports from individual practices, sometimes given as case studies within official reports and sometimes as descriptions of personal experience in the medical press, which describe Advanced Access in glowing terms. These practitioners report that patients are satisfied because they can see a doctor when wish and staff experience less stress and have increased job satisfaction.(Pulse, 2004d; Audit Commission, 2002; Giannone, 2003; National Primary Care Development Team, 2003).

1.6.5 What concerns have been expressed about Advanced Access?

Although some reports from practices introducing Advanced Access have been positive, a range of concerns and criticisms have been expressed about this model and the way in which practices have been encouraged to introduce it.

Continuity

Although the importance of promoting continuity of care is strongly emphasised in the American literature, this has been less evident in the UK (see Section 1.6.2). Several commentators have expressed concern that placing such a strong priority on seeing patients the same day may lead to a reduction in personal continuity of care, particularly with the increasing number of GPs who work part-time and who are therefore not available every day (Lamb, 2002; Mead *et al*, 2002).

Practices may be working harder rather than differently

Some commentators claim that the experience of practices operating Advanced Access is that once they measure demand they find it exceeds supply. They then have to increase the number of appointments to match demand, and that any improvements are due to working harder rather than working differently (Craighead, 2001; Lamb, 2002).

The needs of particular groups of patients

Several critics have argued that Advanced Access may not meet the needs of particular groups of patients, particularly those with chronic health needs or the elderly. Emphasising rapid access may mean less priority is given to regular follow- ups (Bodenheimer, 2003; Fitzpatrick, 2004; Lamb, 2002; Siegel, 2003; White & Jones, 2004).

The way in which Advanced Access has been promoted

There has been criticism that Advanced Access has been 'sold' uncritically to general practices, with data about the effects of the change being manipulated to put across a positive message, and debate being stifled (Craighead, 2004; Lamb, 2002).

Whether demand is predictable or is related to supply

Advanced Access is based on the concept of matching supply to demand, and the assumption that having eliminated any backlog the system will be in equilibrium with a minimum of delays. This is based on the idea that demand is very predictable (Forjuoh *et al,* 2001; Kendrick & Kerry, 1999). Although the pattern of demand may vary over the week and over the year, much of this variation is predictable based on detailed measurement of past demand (Murray & Berwick, 2003a; Murray & Tantau, 2000). This assumption is highly counterintuitive for many health professionals, who tend to assume that demand both exceeds supply already, and is also related to supply (Cave, 2001). If this is the case, if GPs see people more quickly more people will want to be seen, leading to increased workload and eventually negating the

effect of shorter delays. It is noteworthy that part of the justification for seeking to improve access to primary care is the argument that people put off seeing a GP because of difficulties in making an appointment, implying that there is unmet demand (Department of Health, 2002). If so, improving accessibility may to some extent be dependant on increased capacity.

The impact of the NHS Plan access targets

Some of the criticisms relate mainly to the introduction of access targets rather than Advanced Access. There are concerns that access targets distort the provision of primary care in ways which reduce quality and patient choice (NHS Alliance & RCGP 2004). Simply recording speed of access, rather than allowing people to choose when or who they wish to see, incentivises practices to devise systems that meet the target but are not meeting peoples' wishes for being able to see a particular doctor or be seen at a convenient time.[2]

1.7 What evidence is available about Advanced Access?

The enthusiasm to implement Advanced Access is based on the experience of practices participating in the Primary Care Collaborative, managed by the NPDT. Practices participating in the Collaborative collect data about the wait for an appointment and report these results centrally for them to be collated. These practices have reported marked improvements in the wait for an appointment and also in patient satisfaction (Murray, 2000). According to the NPDT, the average waiting time to see a GP in Collaborative practices reduced by 62%, with a wave on wave improvement as learning accrued during the course of the Collaborative. The average waiting time for a routine appointment for Wave 3 practices at July 2002 was 1.1 days: a reduction of 68% (National Primary Care Development Team, 2003).

However, the NPDT has not seen independent evaluation of the impact of the Primary Care Collaborative or Advanced Access as a priority. This is perhaps not surprising, as the whole philosophy of the quality improvement movement is based on services (in this case practices) collecting locally useful data and using it in rapid change and improvement cycles. Although practices involved in the Collaborative make great use of data, this is collected for practical rather than research purposes. The emphasis is on an approach or framework which can be adapted to suit local circumstances, and which is constantly changing as improvements are made. The research paradigm, which is often based on the need for a stable and standardised intervention, rigorous collection of data, exhaustive analysis and lengthy delays before publication is not likely to lead to benefits for practices or patients in the short term. In addition, proponents of quality improvement argue that change is most powerfully achieved by practitioners observing and learning from the

[2] It is important to note that the interpretation and application of the access target has recently been modified in the light of these concerns to include the target that patients should be able to book in advance and to see a particular doctor if they wish.(NHS Employers & General Practitioners Committee 2006)

experience of their peers rather than through research (Sir John Oldham, personal communication).

Although independent research may not meet the immediate needs of individual practices, at a national level it is important to study the benefits and disbenefits of Advanced Access. Considering the size of the investment in this approach, the radical claims made for its benefits, and the strength with which it is being promoted by PCTs, it is remarkable that very little rigorous evaluation has been undertaken either in the UK or in the USA. The articles most commonly cited about the benefits of Advanced Access in the USA (Murray & Tantau, 2000) and the UK (Murray, 2000) contain very little independently scrutinised data to substantiate the claims made. One commentator has suggested that Advanced Access 'does not justify the evangelical zeal of some of its proponents, for whom it seems to have an almost religious status' (Lamb, 2002).

A limited three month evaluation of Advanced Access was commissioned by the Department of Health and conducted by some of the applicants (MP, FS) (Dixon *et al,* 2006; Pickin *et al,* 2002; Pickin *et al,* 2004). This included examination of retrospective data supplied by the NPDT about the time to the third available appointment (the measure of access chosen by the NPDT) at practices implementing Advanced Access, interviews with 17 members of staff at five practices and a postal survey of GPs. Although the findings were generally positive, this work had a number of important limitations. No control practices were examined and few baseline data were available. The practices involved were probably 'early adopters' of this initiative, and were not representative of all general practices, being more likely to be training practices and ex-fundholding practices, and less likely to be in urban or deprived areas. The data about appointment availability were collected by the practices themselves and is therefore of uncertain reliability. Most importantly, the evaluation did not include any information from patients about their experience of the changes to access arrangements.

A subsequent report from this evaluation described the findings from the qualitative interviews with staff. These highlighted that doctors and receptionists perceived benefits from the new model for some groups of patients, such as young mothers, but disadvantages for others such as the elderly or those who wanted to see a particular doctor (Dixon *et al*, 2006).

One report from Murray *et al* in the USA describes case studies of 7 practices seeking to implement Advanced Access with variable degrees of success. The sample of practices was drawn from a list of 85 which had implemented, or attempted to implement, Advanced Access. The authors describe the experience of four practices which had successfully implemented Advanced Access and three which had not been able to do so despite considerable efforts. The case studies suggest that two factors were essential to the successful implementation of Advanced Access: the willingness of the majority of physicians to make a major change in their working practices and ongoing administrative support and leadership. These case studies provide no empirical data or patient perspective. The authors point out that they raise important research questions about the impact of Advanced Access on different groups of patients, the effect on the doctors' workload, and whether

changes in access have an impact on health outcomes. They suggest that since Advanced Access models are spreading rapidly in primary care, rigorously designed evaluations should be a priority (Murray, 2003).

1.8 The need for research

Both Murray *et al* (2003) in the USA and Pickin *et al* (2004) in the UK highlight the need for research about the experience and priorities of patients in gaining access to primary care, including all patients, not just those successful in gaining access. Research should also focus on the needs of particular groups of patients who may lose out under the new arrangements, and should explore the trade-offs that patients make between speed of access, choice of clinician and ability to book in advance. Other issues for research include the impact on other health services (particularly out of hours services) and the concern that increased speed of access may increase demand and/or reduce continuity of care (Pickin *et al*, 2004).

Advanced Access is arguably one of the most important organisational changes in general practice in recent years, and there is a pressing need for comprehensive evaluation of this initiative. If the anecdotal experience of the first practices adopting this strategy is supported, the potential benefits for both patients and staff are very considerable.

Section 2 Aims and objectives

2.1 Aims

To evaluate 'Advanced Access' in general practice, and assess its impact on patients, practice organisation, activity, and staff.

2.2 Objectives

- To describe the range of strategies that general practices have employed to improve access to care.
- To determine the impact of Advanced Access on the wait for an appointment, continuity of care, practice workload, and demand on other NHS services.
- To explore the perceptions of different groups of patients, including both users and non-users of services, about the accessibility of care and their satisfaction with access to care in relation to different models of organisation.
- To explore the trade-offs that patients make between speed of access, continuity of care and other factors when making an appointment in general practice.
- To explore the perceptions of general practitioners and receptionists about the experience of working with the NPDT and implementing changes to practice arrangements designed to improve access.
- To assess the impact of the above changes in practice organisation on staff job satisfaction and team climate.

Section 3 Methods

3.1 Plan of investigation

The original plan for this study was to use a controlled before-and-after design, combining both qualitative and quantitative methods. Since it was not possible to randomly assign practices to implement Advanced Access, this was the strongest observational design feasible. Follow-up was planned to be from one month before until 12 months after each of the intervention practices implemented Advanced Access.

Twelve PCTs were purposively selected to be representative of different types of area. Within each PCT, we planned to purposively select two practices that intended to implement Advanced Access by working with the NPDT within the next 6 months and two practices that did not (i.e. a total of 24 'Advanced Access' and 24 'control' practices). These 48 practices would participate in the quantitative aspects of the evaluation. In addition, from within these practices we planned to select eight 'case study practices' (four Advanced Access practices and four control practices) for detailed qualitative study using a policy ethnographic approach. These case study practices would be purposefully selected to include a wide range of practice settings and patient populations.

The study had three main areas of interest – the effects on practice organisation and activity, patients, and practice staff. Although several *a priori* research questions were identified, it was important in this type of evaluation to be alert to identifying unanticipated effects of the intervention, and to be sufficiently flexible to incorporate new questions as the research developed.

3.2 Modification to the original plan

The original plan for the evaluation described above had to be revised in the light of events. First, there were delays in confirming funding for the study, so that it did not commence until April 2004, some 14 months after the original proposal was submitted. Then there were considerable delays in obtaining research governance approvals as PCTs struggled to implement this new system, often for the first time. Consequently the initial survey of practices did not begin until July 2004.

The results of this initial survey are described in Section 4. More than of half of all the practices which responded indicated that they already operated Advanced Access, and of the remainder which did not operate Advanced Access only two indicated that they intended to do so in the near future. Therefore the original plan for a controlled before-and-after study, which may have been feasible when the study was planned in early 2003, was no longer possible.

A revised protocol was designed in consultation with the project advisory group. The design was changed from a 'before-and-after' design to a cross-

sectional comparison of 24 practices which operated Advanced Access compared with 24 which did not. All of the other methods of the study remained as described in the original protocol.

Although some components of the research required prospective data collection, other components were based on routinely collected data. For these components we sought to obtain data both before and after the practices changed to Advanced Access (and the same periods in matched control practices), therefore maintaining some elements of the before-and-after design.

With a cross-sectional design there is a greater risk of confounding due to differences between the two types of practices unconnected with their use of Advanced Access. We sought to minimise this risk as far as possible in the analysis by controlling for potentially important confounding variables that displayed an imbalance between Advanced Access and control practices in appropriate multi-variable regression models. These confounding variables may affect both practice characteristics and differences between their patient populations.

The proposed changes to the design were discussed with and approved by the SDO Programme, as funders of the research, and also the Multicentre Research Ethics Committee, and all NHS Trusts approving the study were also informed.

3.3 Research components

The evaluation was comprised of a number of sub-studies or components, the results of which are integrated in the overall evaluation. Most of these components were undertaken in all 48 practices participating in the study, but some were only undertaken in the eight case study practices, as described below.

Survey of practices

An initial questionnaire survey of access arrangements in all practices in the relevant PCTs explored the range of strategies used by practices to improve access. The 'Advanced Access' and 'control' practices were selected based on the responses to this survey. Section 4.

*The impact at **practice** level was studied using:*

- Routinely collected data to analyse practice workload, non-attendance rates and the ways in which care is delivered (use of skill-mix; use of alternatives to face to face consultations). Section 5.
- Continuity of care was assessed from audit of patient records. Section 6.
- Appointment availability was assessed using repeated telephone requests for an appointment at randomly selected times. Section 7.

*The impact on **patients** was studied using:*

- A waiting room survey to assess the views and experiences of patients consulting in each practice. Section 8.

- A postal survey of patients who had not contacted the practice in the previous 12 months to identify issues which may act as barriers to consulting, and use of other health services (case study practices only). Section 9.
- A discrete choice experiment to explore the trade-offs that patients make between issues such as seeing a preferred doctor or seeing any doctor as soon as possible (case study practices only). Section 10.
- Qualitative interviews to explore the views of particular groups for whom access may be problematic, such as carers of young children, the elderly, commuters, and those without telephones (case study practices only). Section 12.

The impact on ***practice staff*** was studied using:

- A questionnaire survey to assess job satisfaction, work stress and team climate. Section 11.
- Qualitative interviews with staff about their experience of access arrangements and introducing Advanced Access (where applicable) in their practice (case study practices only). Section 12.

Case study practices

- The eight case study practices took part in specific additional components of the evaluation (the non-user survey and the discrete choice experiment) and provided an opportunity to interview patients and staff, as above. However the main purpose of the case studies was to study in depth the arrangements they used for access using direct observation within a policy ethnographic framework. Section 12.
- The table below illustrates how the various sub-studies contribute to addressing the research objectives.

Table 1 How research components link to research objectives

Research objective	Research components
• To describe the range of strategies that general practices have employed to improve access to care.	• Practice survey. Section 4. • Qualitative case studies and interviews. Section 12.
• To determine the impact of Advanced Access on the wait for an appointment, continuity of care, practice workload, and demand on other NHS services.	• Telephone survey of appointment availability. Section 7. • Patient survey. Section 8. • Analysis of continuity of care based on anonymised patient records. Section 6. • Practice workload study. Section 5. • Demand on other NHS services – in patient and non-user surveys. Sections 8 and 9.
• To explore the perceptions of different groups of patients, including both users and non-users of services, about the accessibility of care and their satisfaction with access to care in relation to different models of organisation.	• Patient survey. Section 8. • Survey of non-users. Section 9.
• To explore the trade-offs that patients make between speed of access, continuity of care and other factors when making an appointment in general practice.	• Discrete choice experiment. Section 10.
• To explore the perceptions of general practitioners and receptionists about the experience of working with the NPDT and implementing changes to practice arrangements designed to improve access.	• Qualitative interviews with staff. Section 12.
• To assess the impact of the above changes in practice organisation on staff job satisfaction and team climate.	• Staff survey. Section 11.

3.4 The use of mixed methods

The approach used in the evaluation is based on examining the hypothesis that Advanced Access, if operated appropriately and tailored to local circumstances, will lead to specified improved outcomes such as faster access to appointments. The study was based on combining quantitative and qualitative methods, an approach which is increasingly popular in health services research as it offers several advantages (O' Cathain & Thomas, 2006).

Qualitative research can identify underlying concepts and research questions which can then be explored in quantitative research, as for example in the discrete choice experiment conducted within this evaluation. Quantitative research can also be used to identify an appropriate sample for more in-depth study and this approach was used when the initial survey of practices was used to identify the case study practices.

A further strength of mixed methods is in using qualitative approaches to investigate in more detail areas of interest arising from quantitative research. In this study, the case studies were used to explore in depth some of the findings from the surveys of patients and staff. Finally, and perhaps most pertinently for this evaluation, qualitative research can be used to provide greater understanding of possible explanations for the findings from the quantitative research. For example, in this study the qualitative case studies were used to examine how Advanced Access was actually implemented in different practices, and how and why this may (or may not) lead to differences in outcomes.

One potential problem for this evaluation, and any observational study, is in establishing a causal link between the implementation of Advanced Access and any observed differences between the Advanced Access and control practices. It is likely that practices which introduced Advanced Access would have different characteristics from those which did not, for example they may be 'early adopters' of new ideas, and this might account for differences in their performance. This problem was addressed in a number of ways in this evaluation. Information was collected about a wide range of characteristics of practices and potentially confounding differences were adjusted for in quantitative analyses. Where possible, historical baseline data was collected from the period before Advanced Access was introduced to compare change over time between Advanced Access and control practices. But the use of mixed methods is another important approach. The integration of the qualitative work with the quantitative in this evaluation should help to give confidence to any findings about whether any changes in outcomes in Advanced Access practices are related to the use of Advanced Access.

3.5 Service user involvement

We sought to involve service users in the following way. Markella Boudioni was included in the research team as a service user facilitator. Her role was to recruit a 'virtual advisory group' of service users, who would be consulted when appropriate in order to advise about various aspects of research design, research instruments and dissemination.

We proposed that the user group would be 'virtual' in the sense that consultation would be mainly by teleconference, email or post, with face-to-face meetings only if the group wanted them. We also agreed to pay expenses.

We contacted patient groups, inviting them to nominate representatives for the user advisory group. A letter was sent to an umbrella organization of charities that represent patients, 'The Patients Forum', on October 2004, inviting users' participation to the project. The letter was subsequently distributed to its 58 members (see Appendix 1). We received three responses from representatives from MIND, a mental health charity, Sign, an organization promoting deaf wellness and independent lives, and Contact a Family, an organization supporting families with disabled children.

We also put up notices in the waiting rooms of practices participating in the study, asked receptionists to hand out leaflets to patients, and asked practices to identify and approach directly people they thought may be interested. We also invited patients to join the user group while visiting practices for the case study visits. A dedicated answerphone was set up to receive messages from patients.

In total seven service users were recruited, including the three from patients' organisations.

3.6 Ethical approval

The study was approved by Thames Valley Multi-centre Research Ethics Committee (ref 04/12/024).

Section 4 Recruitment of PCTs and practices: the practice survey

4.1 Introduction and aims

Little information is available about the number of practices operating Advanced Access, or the ways in which practices have operationalised Advanced Access principles. By March 2003 the Collaborative was working with about 2000 practices serving almost 11 million patients in England. A rapid evaluation of the first wave of practices involved in the collaborative indicated that they had introduced a wide range of strategies to improve access and reported several benefits, but this finding was limited by the absence of a control group (Pickin *et al*, 2004). This evaluation also suggested that these 'first-wave' practices were not representative of all practices, as they were more likely to be involved in vocational training, less likely to serve urban or deprived populations and more likely to have been fundholders.

The first phase of our research project had two main purposes – to describe the extent to which Advanced Access has been implemented in general practice in England, and to identify practices to participate in the subsequent evaluation of Advanced Access.

This involved recruiting 12 PCTs which were representative of different types of geographical areas and patient populations, while also being within reasonable travelling distance of the Universities collaborating on the project. Having identified PCTs willing to participate, it was necessary to obtain research management and governance approvals in each site as well as honorary contracts for all researchers. Following this, a survey was conducted amongst all practices within the participating PCTs.

4.1.1 Objectives

The practice survey was designed to:

- Describe the extent to which Advanced Access has been implemented by a representative sample of general practices in England
- To compare the characteristics of practices which have or have not implemented Advanced Access.
- To describe the strategies recommended by Advanced Access that practices have adopted in order to improve access to care
- To identify practices which did or did not implement Advanced Access, in order to approach matched 'Advanced Access' and 'control' sites to participate in the subsequent evaluation of Advanced Access.

4.2 Methods

4.2.1 Recruitment of PCTs

Descriptive information about the characteristics of PCTs was obtained from census data, the National Database for Primary Care Groups & Trusts and NHS performance ratings provided by the then Commission for Health Improvement.(2004a; 2004b; 2006a) These data were examined to purposefully select 12 sites which were representative of England in terms of age structure, ethnicity, unemployment, morbidity, practice size, and achievement of NHS access targets. The characteristics of these PCTs are shown below, in comparison with the population of England.

Table 2 demographic characteristic of the PCTs participating in this study versus the English population.

Characteristic	Population of 12 PCTs in study	England
	%	%
Age:		
Proportion aged 0-4 years*	5.9	6.0
Proportion aged 75 years or over*	8.6	7.5
Ethnicity:		
Proportion White British*	88.2	87.0
Unemployment:		
Percentage of people aged 16 – 74 unemployed*	3.29	3.35
Morbidity:		
Percentage of people with limiting long-term illness*	18.8	17.9
Practice size:		
Average number of GPs per practice**	3.6	3.1
NHS access target:		
Percentage of patients who are able to be offered an appointment to see a GP within two working days.***	87.9	88.2

* 2001 census. http://neighbourhood.statistics.gov.uk/ Downloaded: 16/02/2004

** National Database for Primary Care Groups & Trusts. Data for 2001. http://www.primary-care-db.org.uk/ Downloaded: 10/02/2004

*** 2002/2003 NHS performance ratings www.chi.nhs.uk/ratings. Downloaded: 10/02/2004

These 12 selected PCTs included 391 practices serving approximately 2.3 million patients. Their populations were broadly representative of the English population, although patients aged over 75 years were over-represented. All

12 PCTs approached to participate in the evaluation agreed to do so after discussion. The PCTs provided the names and addresses of practices in their areas, and in most cases this included the names of senior partners and practice managers.

A postal survey of these practices was conducted between July and November 2004. A questionnaire was sent to each practice manager and where necessary followed by two reminders (the first by post and the second by telephone) at two weekly intervals. The questionnaires consisted of 23 questions divided into five sections to collect data about practice characteristics, demand and supply of appointments, interventions used to improve access, dealing with a backlog of appointments, and implementation of Advanced Access. The final page was left blank for additional comments.

The design of the questionnaire incorporated several questions used in the earlier survey of first wave practices (Pickin, 2004). The questions about implementation of Advanced Access were based on the description provided in the booklet about Advanced Access written by Sir John Oldham and available from the NPDT website. The draft questionnaire was sent to Sir John Oldham for comment and was revised accordingly.

The intention was that practices would be potentially appropriate for inclusion in the subsequent evaluation as 'Advanced Access practices' if they responded positively to questions about all the key features of Advanced Access and also stated that they operated Advanced Access.

One important question concerned whether or not the practice considered that it was operating Advanced Access. However in developing the questionnaire it became clear that practices did not always see this as a simple dichotomy. Several practices said that they mainly followed Advanced Access principles but did not follow all of the guidance provided by Advanced Access. Therefore the question was designed to allow practices to state that they operated Advanced Access on a four point ordinal scale ranging from 'completely' to 'not at all'. The final questionnaire was piloted amongst practices in a PCT not involved in the main study. The questionnaire is shown in Appendix 8.

4.2.2 Analysis

Practices which responded to the questionnaire were compared with those not responding using routinely collected General Medical Services statistics and Quality and Outcomes Framework data.

Practices were categorised into groups according to whether they replied positively or negatively to the question 'Does the practice consider that it is operating Advanced Access?'. The responses from these two groups to the other questions were compared using differences in means or odds ratios as appropriate, with 95% confidence intervals and p values.

4.3 Results

The overall response rate was 63% (245/391). Practices responding to the questionnaire were less likely to be single-handed and more likely to be training practices than those not responding. There was no evidence of

difference in their scores under the Quality and Outcomes framework, and in particular no difference in their scores for patient access. These results are summarised below.

Table 3 Comparison of practices responding or not to the practice survey

	Response to survey				Comparison between responding and non-responding practices		
	Yes (n= 245)*		**No (n=146)***				
	Mean		Mean		Mean difference	95% CI	P value
Practice list size	6710		5971		739	-107 to 1585	0.087
Number of GPs (FTE)	3.4		2.9		0.50	0.05 to 0.96	0.029
Access points under QOF	49		49		-0.1	-1.5 to 1.2	0.735
Total QOF points	966		953		13.3	-11.8 to 38.3	0.443
	Number of practices	**%**	**Number of practices**	**%**	**Odds ratio**	**95% CI**	**P**
Proportion single-handed practices	46	20%	43	33%	0.51	0.31 to 0.83	0.006
Personal Medical Services contract	84	37%	54	41%	0.81	0.52 to 1.27	0.363
Training Practice**	81	36%	32	25%	1.66	1.03 to 2.70	0.038
Any dispensing patients	33	14%	19	15%	0.98	0.53 to 1.81	0.958

*Data from GMS statistics (2004) and QOF data (2004/5) available for 229 and 232 responder practices respectively and 132 and 135 non-responder practices respectively. GMS statistics provided by Andrew Wagner, National Primary Care and Development Centre. QOF data available from Health and Social Care Information Centre[15]

** Data about training practice status relates to GMS statistics from 2003

4.3.1 Advanced Access

Practices were asked the extent to which they were operating Advanced Access, using a 4-point ordinal scale. Almost a third of practices (31%; 75/241) claimed to operate Advanced Access 'completely', 36% (87/241) claimed to operate it 'mostly', 23% (56/241) claimed not to operate Advanced Access but had 'used some Advanced Access ideas' and 10% (23/241) claimed they did not use Advanced Access 'at all' (4 practices did not answer this question). The remaining analyses compare practices in the first two categories combined (Advanced Access) with those in the last two categories combined (non-Advanced Access). Approximately two thirds of practices claimed to be using Advanced Access 'completely' or 'mostly' (67%;162/241).

4.3.2 Practice characteristics

Practice characteristics are summarised in Table 4. No differences were found between Advanced Access and non-Advanced Access practices in terms of practice size, location, approach to doctor continuity, contractual status, deprivation, training practice or previous fundholding status. Advanced Access practices were more likely to receive extra payments to improve access under the Directed Enhanced Service scheme.

Table 4 Comparison of practices which do or do not operate Advanced Access

Figures are number (%) of practices	Advanced Access?				Comparison between Advanced Access and non-Advanced Access practices		
	Yes (n= 162)*		No (n=79)*				
	No. of practices	*%*	*No. of practices*	*%*	*Odds ratio*	*95% CI*	*P value*
Doctor Continuity							
See any doctor	58	39.2	32	42.7			
Same doctor encouraged	39	26.4	17	22.7	1.27	0.62 to 2.59	
Always same doctor	51	34.5	26	34.7	1.08	0.57 to 2.05	0.811
General Medical Services contract	96	59.6	43	55.1	1.20	0.91 to 2.08	0.509
Training Practice	66	41.3	24	30.4	1.61	0.91 to 2.86	0.104
Participate in Directed Enhanced Service on Access	134	93.7	45	69.2	6.62	2.81 to 15.58	<0.001
Receive deprivation payments	85	55.9	36	49.3	1.30	0.75 to 2.28	0.353
Previously a Fundholding practice	69	44.2	27	35.5	1.44	0.82 to 2.54	0.207
Location Rural	42	27.3	24	31.6			
Urban	90	58.4	35	46.1	1.47	0.78 to 2.77	
Inner city	22	14.3	17	22.4	0.74	0.33 to 1.66	0.159
Offer 'open' Surgeries	33	21.3	12	15.6	1.47	0.71 to 3.03	0.302
	Mean	*SD*	*Mean*	*SD*	*Difference*	*95% CI*	*P value*
List Size	6891	3629	5827	3598	1064	80 to 2048	0.034
Doctors WTE ***	3.70	2.57	3.44	2.06	0.27	-0.31 to 0.85	0.366
Nurse Practitioners WTE ***	0.49	0.92	0.32	0.65	0.17	-0.06 to 0.41	0.143
Nurses WTE ***	1.36	1.09	1.47	1.29	-0.11	-0.44 to 0.22	0.509
Health Care Assistance WTE ***	0.47	0.53	0.39	0.49	-0.07	-0.07 to 0.22	0.321

The number of observations differs for each question depending upon the number of missing answers. The percent given relates to the observations excluding missing data. * 4 practices did not indicate whether or not they used Advanced Access. ** WTE = Whole time equivalence

4.3.3 Matching capacity with demand

Practices were asked whether they had measured demand for appointments in the last year and if so whether the number of available appointments matched demand. A higher proportion of Advanced Access practices (136/160; 85%) than non-Advanced Access practices (55/77; 71%) had measured demand (odds ratio 2.27, 95% confidence interval 1.17 to 4.38). Of those who had measured demand, a similar proportion of Advanced Access practices (57/120; 47%) and non-Advanced Access practices (21/44; 48%) indicated demand for face-to-face consultations matched the number of available appointments each week (odds ratio 0.99, 0.50 to 1.98). However, Advanced Access practices were slightly more likely to have altered the total number of appointments offered to match demand (66/116; 57% versus 17/43; 39%, odds ratio 2.02, 0.99 to 4.12) and to have introduced measures to handle demand differently (91/115; 79% versus 27/43; 63%, odds ratio 2.25, 1.05 to 4.83).

4.3.4 Interventions to improve access

Both Advanced Access and non-Advanced Access practices used many different strategies to improve access, summarised in the table below.

Table 5 Strategies used by practices to improve access to care or as alternatives to face-to-face consultations

	Advanced Access?				*Comparison between Advanced Access and non-Advanced Access practices*		
	*Yes (n=162)**		*No (n=79)**				
	n	*%*	*n*	*%*	*Odds ratio*	*95% CI*	*P value*
Interventions used to Improve Access							
Telephone advice for some new consultations	104	66.2	38	48.1	2.12	1.22 to 3.68	0.008
Planned telephone consultations for some follow-up consultations	97	92.9	35	44.3	2.07	1.19 to 3.58	0.010
Specific measures to reduce follow-up	76	52.8	24	32.0	2.38	1.32 to 4.26	0.004
Telephone triage by general practitioners	84	52.5	36	45.6	1.32	0.77 to 2.67	0.314
Telephone triage by nurses	58	36.3	26	33.3	1.14	0.64 to 2.01	0.659
Telephone triage for home visits	128	80.5	54	68.4	1.91	1.03 to 3.54	0.039
Nurse Practitioners provide initial consultations for minor illness	45	28.8	20	26.3	1.14	0.61 to 2.10	0.687
Redirect workload from GPs to nurses	120	75.0	59	74.7	1.02	0.55 to 1.89	0.958
Redirect workload from GPs to Health Care Assistants	85	54.5	26	33.8	2.35	1.33 to 4.14	0.003
Email Consultations	2	1.3	2	2.5	0.49	0.07 to 3.57	0.484
Advice about self-care on practice website	25	16.1	9	11.5	1.47	0.65 to 3.33	0.351

*The number of observations differs for each question depending upon the number of missing answers. The percent given relates to the observations excluding missing data.

Advanced Access practices were more likely than non-Advanced Access practices to offer telephone advice for new consultations, plan telephone consultations for some follow-up consultations, use specific measures to reduce follow-up, triage requests for home visits and to re-direct workload from GPs to health care assistants. Other interventions that have been recommended to improve access to care such as email consultations or providing information about self-care on practice websites were not widely used by either group of practices. Overall, the Advanced Access practices implemented more of the strategies listed in Table 4 than non-Advanced Access practices (mean number of strategies 5.1 and 4.2 respectively, mean difference 0.92, 0.33 to 1.51).

Other recommended aspects of Advanced Access

Table 6 provides data about other strategies which are related to the Advanced Access approach. Advanced Access practices were more likely to offer the highest number of 'same day' appointments on a Monday, to involve patients in planning changes to the appointment system and to have provided extra consultations for a period to clear a backlog. They are also more likely to participate in the primary care collaborative and use 'plan-do-study-act' cycles to assess and implement changes.

Table 6 Use of other strategies recommended within Advanced Access

	Advanced Access				Comparison between Advanced Access and non-Advanced Access practices		
	Yes (n=162)*		No (n=79)*				
	n	%	n	%	Odds ratio	95% CI	P value
Documented contingency plans	79	51.0	34	43.0	1.39	0.89 to 2.40	0.232
Most appointments available on Monday	91	59.1	29	37.7	2.39	1.36 to 4.19	0.002
Collect appointment data monthly	126	78.3	50	64.1	2.02	1.11 to 3.66	0.021
Involve patients in planning changes	40	25.6	10	12.8	2.34	1.10 to 4.99	0.027
Use Plan-Do-Study-Act cycles	93	59.6	21	26.9	4.01	2.21 to 7.26	<0.001
Provide extra appointments to clear backlog	95	62.5	29	36.7	2.70	1.53 to 4.79	0.001
Participate in primary care collaborative	109	72.7	29	39.7	4.03	2.23 to 7.28	<0.001

*The number of observations differs for each question depending upon the number of missing answers. The percent given relates to the observations excluding missing data.

4.3.5 Appointment availability

Practices were asked to calculate the total number of appointments available each week with GPs, nurse practitioners or nurses (assuming no-one was on holiday) and to provide data about the number which could be booked in advance of the same day. They were also asked about unscheduled workload ('open' surgeries and 'extra' patients), where patients arrived and waited without a specific appointment.

The mean proportion of doctors' appointments which could only be booked on the same day was much higher in the Advanced Access group than the non-Advanced Access group (41% versus 16%, difference 24%, 16% to 32%) and 7% (10/144) of the Advanced Access practices did not offer any appointments with doctors which could be booked in advance of the same day, compared with none (0/77) of the non-Advanced Access practices (p=0.033, Fisher's exact test). Figure 2 shows the proportion of appointments with a doctor which could only be booked on the same day for the two types of practices. The total number of appointments available with doctors and with nurse practitioners was similar in the two groups of practices but non-Advanced Access practices offered a higher number of appointments with other types of nurses (Table 7).

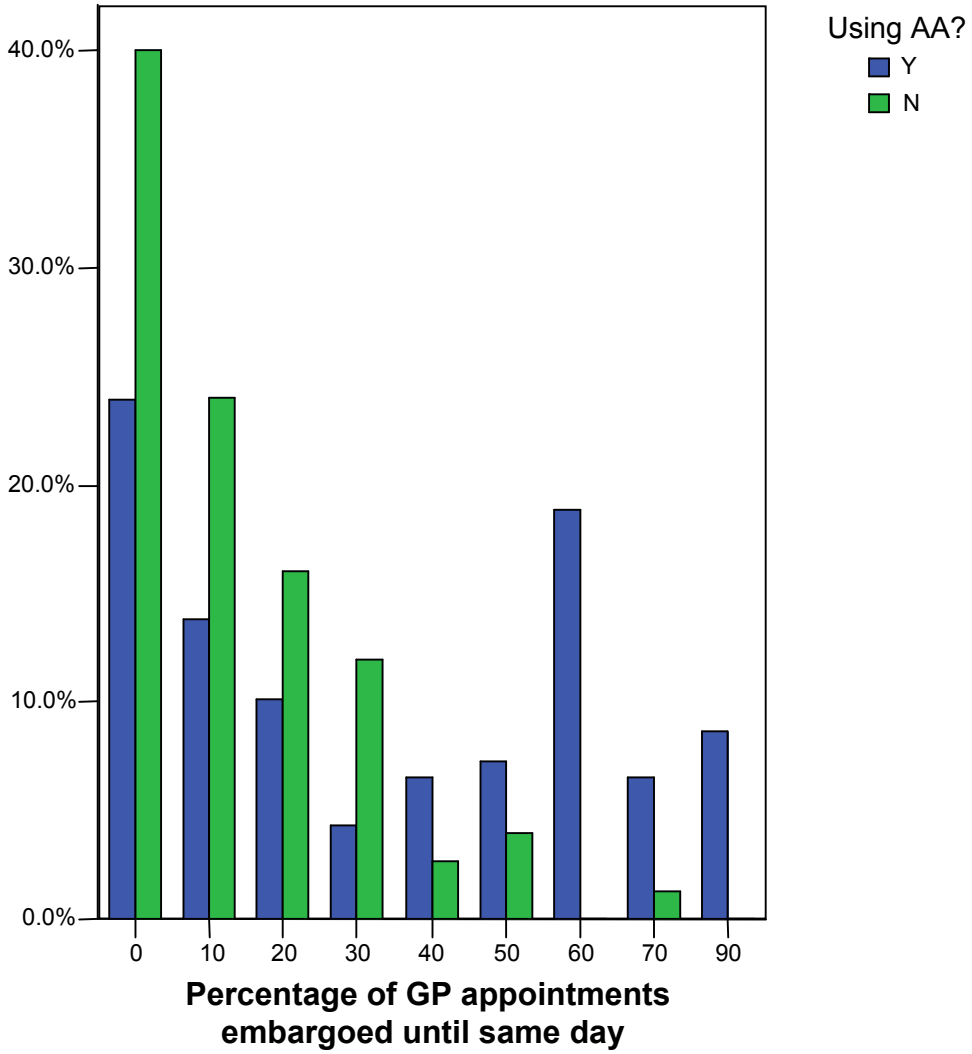
Table 7 Number of appointments per week available on the same day or in advance, with different types of health professional

Staff Member	Advanced Access?					
	Types of Appointments	**Yes (n=162) ****	**No (n=79)* ***			
		Mean number of appoint's	Mean number of appointments	Difference	95% CI	P value
GP Appointments	Pre-bookable	34.4	51.7	-17.32	-25.13 to -9.51	<0.001
	Same day	24.3	10.2	14.12	8.61 to 19.64	<0.001
	Total	**59.1**	**61.8**	**-2.72**	**-10.31 to 4.87**	**0.481**
Nurse Practitioners	Pre-bookable	5.7	5.7	-0.03	-4.14 to 4.07	0.907
	Same day	0.7	0.6	0.04	-0.66 to 0.75	0.867
	Total	**6.4**	**6.4**	**-0.03**	**-4.49 to 4.42**	**0.988**
Other Nurse	Pre-bookable	25.5	36.3	-10.83	-17.55 to – 4.12	0.002
	Same day	3.4	1.2	2.16	0.33 to 4.00	0.021
	Total	**29.3**	**37.5**	**-8.19**	**-15.38 to – 1.01**	**0.026**
Same day appointments		28.3	12.0	16.32	10.05 to 22.58	<0.001
Total appointments offered		97.6	106.3	-8.76	-21.28 to 3.75	0.169
Unscheduled consultations		7.6	5.7	1.84	-2.00 to 5.68	0.345

*Denominators vary because of missing data. In calculating same day appointments and total appointments practices were only included if they provided data for all relevant variables.

** Four practices did not respond to the question about use of Advanced Access.

Figure 2 The percentage of doctors' appointments available for booking in



4.3.6 Implementation of Advanced Access principles

The extent to which practices had implemented the key principles of Advanced Access varied for both groups of practices. As previously described, practices describing themselves as operating Advanced Access were more likely to measure demand for appointments (odds ratio 2.27, 1.17 to 4.38). They were also more likely to have attempted to match capacity with demand either by making changes to the number of appointments or the ways in which care was delivered (odds ratio 2.77, 1.44 to 5.32). Only half (79/154; 51%) of Advanced Access practices had explicit contingency plans, compared with 43% (34/79) of control practices (odds ratio 1.39, 0.89 to 2.40), and almost all practices in both groups had used at least one of the Advanced Access suggestions to reduce demand on face to face consultations. Based on the findings shown in Table 5, 156/161 (97%) of Advanced Access practices and 76/79 (96%) of non-Advanced Access practices used at least one of the interventions listed (odds ratio 1.23, 0.29 to 5.29).

Fewer than half (63/140; 45%) the practices claiming to operate Advanced Access practices used all four of the key principles above which are central to this approach, and a quarter (18/66; 27%) of the non-Advanced Access used all four principles (odds ratio 2.18, 1.15 to 4.12).

4.4 Selection and recruitment of practices for the main evaluation

Based on the data obtained from the survey of practices, we sought to identify and recruit 24 Advanced Access and 24 non-Advanced Access practices for the main evaluation.

Practices were defined as operating Advanced Access if they fulfilled both of the following criteria:

- In response to the question 'Does the practice consider that it is operating Advanced Access?' practices answered 'yes completely' or 'yes, mostly'.
- Practices were then excluded if they did not implement any one of the following four key principles of Advanced Access:
    - Measuring demand: They had measured demand by counting the number of people contacting them each day to make an appointment, on at least one occasion
    - Matching capacity to demand: Having measured demand, either the number of face to face consultations matched the number of available appointments each week, or the practice had altered the number of appointments to match demand or they had introduced measures to handle demand differently
    - Contingency planning: The practice had documented contingency plans to deal with staff holidays or sickness or fluctuations in demand
    - Shaping demand by providing alternatives to face to face consultations: The practice currently used at least one of a number of listed strategies to improve access (see Table 5)

Advanced Access actually involves the use of five principles, the fifth of which is involving patients in changes to the appointment system. However it proved difficult to operationalise a question about this issue in the questionnaire so it was not considered in the final selection of Advanced Access practices.

Practices were defined as non-Advanced Access practices if they fulfilled both of the following criteria:

- In response to the question 'Does the practice consider that it is operating Advanced Access?' the practice answered 'no, although used some Advanced Access ideas' or 'no, not at all'.
- Practices were excluded as controls if they stated they did use all of the four principles of Advanced Access listed above.

Using the survey results, 126 practices (65 Advanced Access and 61 non-Advanced Access) were initially considered potentially eligible as participants in this study. The remaining 119 practices did not fall clearly into either

group. The eligible practices were sent information about the study, and then telephoned to discuss participation. Practices were telephoned in random order from within each PCT until we had recruited sufficient practices, seeking as far as possible to recruit 2 Advanced Access and 2 non-Advanced Access practices in each of the participating PCTs. If practices refused, the next randomly selected practice in that PCT of the appropriate type (Advanced Access or non-Advanced Access) was approached until all practices of that type in that PCT had been approached. In some cases our initial contact led to further discussion with the practice, and meanwhile other practices were contacted, therefore in some PCTs we eventually obtained agreement from slightly more practices than we needed.

Of the 65 potential Advanced Access practices, 29 of 48 (60%) contacted agreed, 19 refused, and the remainder were not approached. Of the 29 practices which agreed, we selected 24 to participate, balanced as far as possible across PCTs.

Of the 61 non-Advanced Access practices, 26 of 49 (53%) approached agreed to participate, 23 refused, and 12 were not approached (because we already had 2 non-Advanced Access practices within their PCT).

The table below shows the number of practices recruited in each PCT, and illustrates that we were not successful in recruiting a balanced sample of 2 Advanced Access and 2 non-Advanced Access practices in each PCT. This was a reflection of the fact that the proportion of Advanced Access and non-Advanced Access practices, and also the response rates, varied between different PCTs. Several months into the study, and after many attempts to set up a date for data collection, one of the two practices in Birmingham withdrew from participation from the study, leaving 47 practices in the main analyses.

Table 8 Practices recruited in each of the 12 PCTs

		Using Advanced Access?		Total
		Y	**N**	
PCT	Adur Arun & Worthing	3	1	4
	Barnsley	4	2	6
	Bristol South & West	4	5	9
	Cotswold & Vale	4	5	9
	Eastbourne Downs	2	1	3
	Heart of Birmingham	0	2*	2
	New Forest	2	1	3
	North Hampshire	3	1	4
	Rotherham	1	0	1
	Sheffield South West	1	2	3
	Sheffield West	0	1	1
	West Gloucestershire	0	3	3
Total		**24**	**24**	**48**

* One practice subsequently withdrew

4.4.1 Characteristics of practices recruited for main study

As described, 48 practices were recruited to take part in the quantitative aspects of the evaluation. Table 9 shows the characteristics of these practices, comparing those which were selected as Advanced Access or non-Advanced Access practices.

The number of practices included in this table is small, and there is considerable variability within the two groups of Advanced Access and non-Advanced Access practices. The purpose of this comparison is not to generalise about all practices surveyed (this is done above in the analyses of 245 practices responding to the practice survey) but to identify differences between the Advanced Access and non-Advanced Access practices in the main evaluation, as these differences may represent confounding variables which have an influence on the results.

The 24 Advanced Access practices in the evaluation are more likely to be working under a PMS contract, more likely to be training practices and more likely to have been fundholding practices than the 24 non-Advanced Access practices. There is no difference in the likelihood of them receiving deprivation payments. All the Advanced Access practices (who responded to the question) participated in the Directed Enhanced Service on Access. The Advanced Access practices tend to be larger, with larger list sizes and more partners. The mean QOF score was also higher in Advanced Access practices.

From within these 48 practices, 8 were purposively selected for the qualitative case study – the characteristics of these practices are described in Section 0.

4.4.2 Terminology

Although the term 'non-Advanced Access' has been used so far to describe practices not operating Advanced Access, it is cumbersome. Throughout the remainder of this report, practices not operating Advanced Access will therefore be described as 'control' practices.

Table 9 Characteristics of 24 Advanced Access and 24 non-Advanced Access practices recruited for the main quantitative evaluation

	Advanced Access?			
	Yes (n= 24)		**No (n=24)**	
Figures are no. (%) of practices	***Number of practices***	***%***	***Number of practices***	***%***
Personal Medical Services contract	9	37.5	7	29.2
Training Practice	12	50.0	9	37.5
Receive deprivation payments	13	54.2	14	58.3
Any dispensing patients	4	16.7	3	12.5
Previously a Fundholding practice	11	45.8	8	33.3
	Mean	***SD***	***Mean***	***SD***
List Size	8240	3605	6782	3404
Doctors WTE	4.19	2.05	3.80	1.94
Total QOF points	1010	39.4	978	65.1

* WTE = Whole time equivalence

Section 5 Activity

5.1 Introduction and aim

Sections 1.6.2 to 1.6.5 described the various claims and counter-claims for the impact of Advanced Access on practices workload and activity, and provided references to these. In summary, concerns have been expressed that providing increasingly rapid access would lead to an increase in demand, and that Advanced Access practices have only been able to improve accessibility by working harder and providing considerably more appointments. There have also been concerns that Advanced Access would lead to a reduction in continuity of care.

By contrast, advocates of Advanced Access have claimed that it leads to a reduction in workload, an increase in continuity of care, and in particular a marked reduction in patients who did not attend (DNA).

In addition, one strategy advocated by Advanced Access to increase capacity is to shape demand by providing alternatives to face-to-face consultations, such as telephone consultations, and to increase the use of skill-mix.

This Section explores the evidence in relation to these issues.

5.2 Research questions

What is the impact of Advanced Access on:

- the number of appointments offered by the practice?
- the number of patients seen, both as planned and unplanned workload?
- the DNA rate?
- the proportion of work handled through face-to-face consultations, telephone consultations or home visits?
- the proportion of work handled by doctors or nurses?

5.3 Method

5.3.1 Overview of method

Data was extracted from practice appointments records in 47 practices (24 Advanced Access, 23 control) about the number of appointments of various types and with various professionals, both before and after practices introduced Advanced Access.

5.3.2 Data Collection

Dates

Data were collected in each Advanced Access practice in relation to all patient appointments and contacts recorded in appointments systems for 5 days in

January 2005 (post-period) and 5 days in the last January before the practice introduced Advanced Access (pre-period). Each five day period consisted of one day a week for five weeks, including one each of the days Monday, Tuesday, Wednesday, Thursday, Friday, but with the days of the week allocated in random order. Each Advanced Access practice was paired with a control practice, and data were collected on the same dates in the control practices as in its pair. The purpose of collecting data from random days over five weeks rather than over a single week was to reduce the effect of possibly selecting a particularly quiet or busy week.

Source of data

Appointments data were collected from computerised appointments systems, paper-based appointments books, visits diaries or any other records that were available in practices.

Inclusion and exclusion criteria

Inclusion criteria were all appointments and contacts with GPs (including partners, assistants, registrars, locums etc.) and practice based nurses, including treatment room nurses, practice nurses, nurse practitioners, nursing assistants etc.. Exclusion criteria were appointments with health visitors, midwives, community psychiatric nurses, counsellors, give up smoking advisors, physiotherapists, drugs counsellors etc.. Sessions provided by doctors which were not available for attendance by 'normal' NHS patients of the practice (e.g. private appointments, company medical officer work, 'GP with Special Interest' appointments for patients from other practices, etc.) were also excluded.

Extraction of data

Research associates visited each practice and extracted anonymous data about all appointments and contacts recorded in the practices' appointments systems and books. Most appointments systems stored details in 'sessions'. A session would typically represent one GP surgery, one clinic, or one triage session of phone calls. One line of data was extracted for each session on the relevant data collection dates. This line of data included:

- date of the session
- type of session (e.g. surgery, clinic, treatment room, triage)
- type of health professional
- number of appointment slots available
- number of appointments attended and number unfilled
- number of patients attended and number who DNAd
- number of patients seen as 'extras' or in open surgery
- number of patients added as extras or in open surgery who DNAd
- number of phone calls listed which were made
- number of home visits
- comments about the reliability of the data

'Extra' patients are those who are fitted into or added onto the end of routine appointments sessions. These slots are not offered to people wanting a routine appointment but are usually only used when there are no suitable appointments available. Some practices run 'open' surgeries, which are not pre-booked appointments but to which people are allowed to turn up and wait, sometimes following telephone triage.

Home visits only included those recorded in visits diaries or appointments books. It did not include visits outside normal working hours.

In some cases it was easier to obtain details of home visits and or telephone calls from a search on the practice computer. We did explore the possibility of collecting all consultation data in this way but we concluded that the variety of ways in which practices used their computer systems, and the way in which recording had changed over time, made this unreliable.

Data considerations

Collecting these data was far from straightforward. Practices collected data in a variety of different ways and had changed their systems over time. Some practices could not provide details of their appointments from the 'pre-period' which in some cases was up to four years earlier. Where they were available, records of appointments, face-to-face consultations and DNAs were complete and appeared to be reliable. However we were only able to record details of phone calls which appeared in appointments books or screens, which would usually include calls which the staff made to patients but may omit some calls where the patient phoned and was put straight through to a doctor or nurse. Similarly, it is likely that some home visits were made which were not recorded in visit books or sessions, so these may also be under-estimated. These limitations are discussed further in section 14.2.3. Researchers made comments about the apparent completeness and reliability of the data as they collected it. Where we had concerns about particular items of data from a practice (e.g. in some cases details of phone calls were missing for the pre-period) these were set to 'missing' in the analysis.

5.3.3 Definitions and concepts used in the analysis

The overall aim of this Section was to explore the relationship between implementation of Advanced Access and the demand and supply of appointments. The following definitions and concepts guided the analysis. All of these definitions related to the number of appointments or contacts per 1000 patients per week, and each can be considered in relation to appointments with GPs in surgery or with both doctors and nurses and including home visits and telephone calls.

- 'Capacity' was defined as the number of appointment slots which were available to be booked.
- 'Unplanned work' was the number of patients seen as extras or in open surgery. (One underlying hypothesis of interest was that Advanced Access practices might offer more routine appointments, hence having more capacity which was related to their measured demand, but would then do

less unplanned work, so would have a similar total workload overall but provided in a more planned way).

- 'Workload' was the number of people seen.
- The 'DNA rate' was the number of people who DNAd either in a routine appointment or as an open/extra patient, divided by the number of people who booked or DNAd in a routine surgery, open surgery or as an extra patient.

5.3.4 Analysis

Appropriate descriptive statistics were used to describe the sample and measures of activity for Advanced Access and control groups. Data for main indicators of activity were standardised to number per 1000 registered patients per week. The main analyses investigated differences in activity between Advanced Access and control practices in the post-period. Not all practices were able to provide data for the pre-period. Therefore we made crude comparisons between Advanced Access and control practices using all n=47 practices, crude comparisons using the subset of n=38 practices (n=20 Advanced Access and n=18 control) that had pre-period data, and finally comparisons using n=38 practices that adjusted for activity in the pre-period period and other important potentially confounding variables. Separate comparative analyses were conducted for activity relating to: (1) appointments with GPs in surgery; and (2) appointments with both doctors and nurses in all settings. All comparative analyses were at the cluster (practice) level and were therefore conducted using standard multivariable regression models. Data were analysed using Stata version 9.

5.3.5 Sample size and power of the study

Formal sample size calculations were not performed because this component of the study was limited by including all of the practices included in the main study. However it was clear that with a total of only 47 practices, there would not be sufficient power to detect with confidence any differences between Advanced Access and control practices unless these differences were very large and there was little variability between practices within each group. Because some practices could not provide reliable data for the pre-period, the number of practices contributing to the before-and-after analyses is even smaller (20 Advanced Access and 18 control practices). As well as true variability between individual practices there is also measurement variability within each practice, since the data were based on only 5 days activity in each of the pre and post-periods, and a different sample of days would produce different results. In the light of these considerations, these analyses should be considered as exploratory only.

5.4 Results

5.4.1 Description of data

Activity data were collected from 4476 'sessions' representing a total of 56390 bookable appointments, 5442 extra appointments, 4851 telephone consultations and 2043 home visits.

For all practices the post-period related to five weeks between 21/01/05 and 14/02/05. The pre-period was conducted over five weeks between late January and mid February in 2001 for 2 pairs of practices, 2002 for 8 pairs of practices and 2003 for 14 pairs of practices.

5.4.2 Skill mix

The proportion of all activity by GPs, practice nurses and nurse practitioners is shown in Table 10. There is no suggestion that Advanced Access practices have increased their use of skill-mix and provide a higher proportion of their consultations via nurses or nurse practitioners. In both types of practice, doctors provided about two thirds of the consultations.

Table 10 Activity by group, type of health professional and pre- or post-period

	Advanced Access		**Control**	
Type of Health Professional	***Pre-period***	***Post-period***	***Pre-period***	***Post-period***
GP	12204 (68.1%)	16485 (66.4%)	8173 (73.8%)	10533 (69.8%)
Practice nurses	5216 (29.1%)	7694 (31.0%)	2656 (24.0%)	4310 (28.6%)
Nurse practitioners	493 (2.7%)	639 (2.6%)	246 (2.2%)	250 (1.7%)
Total	17913	24818	11075	15093

1.All Ns = total number of bookable appointments available + extra appointments attended + extra appointments DNA + telephone consultations + home visits

2.Difference in Ns between groups and between pre- and post-Advanced Access periods may be due to number of practices providing data and number of days of data collection.

5.4.3 Capacity

For almost all of the trends discussed in the rest of this section, there is no evidence to reject the null hypothesis that any apparent differences may be due to chance. As previously discussed, this is not surprising in view of the small sample and the high level of variability between individual practices with each group, evidenced by the size of the standard deviations shown. Although the data suggest some interesting trends, these should be interpreted with considerable caution.

Table 11 shows the results of the analyses of the activity of GPs in surgery and Table 12 shows the corresponding results for GPs and nurses combined, in all types of setting.

It is notable that both Advanced Access and control practices provided considerably more appointments in the 'post-period' than in the 'pre-period. Considering the 38 practices that provided pre- and post-period data as a single group, there was evidence of an overall increase in the number of bookable appointments with doctors (in appointments per 1000 patients per week: from mean of 47.1 in pre-period to 53.6 in post-period; mean difference = 6.6 (1.4 to 11.7), p=0.014) and also with doctors and nurses combined (from 72.2 in pre-period to 87.0 in post period; mean change = 14.8 (7.3 to 22.2), p<0.001).

Advanced Access practices appeared to provide more appointments (capacity) both before and after the introduction of Advanced Access than control practices. This applied to appointments with doctors and also with doctors and nurses combined. There is no evidence that there was a greater increase in capacity at Advanced Access practices than control practices.

5.4.4 Unplanned work

There was no evidence of in any change in the volume of unplanned work (patients seen as extras or in open surgeries) at either Advanced Access or control practices, so nothing to support the suggestion that Advanced Access practices increase capacity and consequently reduce unplanned work.

5.4.5 Workload

There was clear evidence that both Advanced Access and control practices had experienced a considerable increase in the number of patients they dealt with between the pre and post periods. Considering the 38 practices that provided pre- and post-period data as a single group, the number of patients seen by doctors in surgery increased (per 1000 patients per week: from 49.0 to 56.6; mean change = 7.6 (3.1 to 12..0), p=0.001) as did the number seen by doctors and nurses in all settings (from 77.4 to 95.8; mean change = 18.4 (10.4 to 26.3), p<0.001).

Although both Advanced Access practices and control practices experienced an increase in workload, there was no evidence that there was a greater increase in the workload at Advanced Access practices.

5.4.6 Did not attend (DNA) rate

The crude estimate of the DNA rate for surgery appointments with GPs was slightly lower at Advanced Access practices (4.3%) than at control practices (4.8%) in the pre-implementation period. Following the introduction of Advanced Access, the DNA rate fell at Advanced Access practices to 3.4%, and remained almost the same in control practices over the same period (4.7%). However the small sample and high level of variability between individual practices means that this apparent difference is probably due to chance (p=0.85).

5.4.6 Alternatives to face to face consultations

The number of telephone consultations increased in Advanced Access practices but remained the same in control practices, supporting the notion that the former are seeking to use more alternatives to face-to-face consultations (Table 12). As noted previously, it is likely that telephone consultations are under-recorded in this analysis, and also possible that the reliability with which practices record telephone consultations has improved over recent years.

Home visits appear to have increased in both Advanced Access and control practices, but the overall numbers are very small (Table 12). We suspect this finding is related to improved systems of recording in recent years.

Table 11 Appointments with GPs in surgery.

Activity per 1000 registered patients per week	*Advanced Access*		*Control*		*All practices (n = 47)*	*Practices providing before and after data (n = 38)*		
					Crude Difference[1] (95% CI)	*Crude Difference[2] (95% CI)*	*Adjusted Difference[3] (95% CI)*	*Adjust p-value[3]*
Mean (SD)	*Before (n=20)*	*After (n=24)*	*Before (n=18)*	*After (n=23)*				
A. Total appointments available to be booked	48.5 (15.6)	54.8 (18.5)	45.6 (17.6)	52.4 (16.7)	2.4 (-7.9 to 12.8)	3.8 (-8.0 to 15.7)	0.5 (-10.4 to 9.5)	0.92
B. Booked appointments attended	42.2 (11.9)	49.4 (16.1)	39.5 (15.2)	45.7 (14.1)	3.7 (-5.3 to 12.6)	5.3 (-5.0 to 15.6)	0.9 (-7.8 to 9.5)	0.84
C. Booked appointments DNA	2.1 (1.6)	1.9 (1.7)	2.5 (2.8)	2.7 (2.4)	-0.8 (-2.0 to 0.4)	-0.6 (-2.1 to 0.8)	-0.2 (-0.9 to 0.6)	0.63
D. Extras attended	6.8 (9.0)	7.6 (8.7)	9.5 (12.1)	8.7 (11.7)	-1.0 (-7.1 to 5.0)	-2.6 (-9.6 to 4.4)	0.3 (-3.0 to 3.6)	0.85
E. Extras DNA	0.2 (0.5)	0.1 (0.4)	0.3 (0.7)	0.1 (0.1)	0.1 (-0.1 to 0.4)	0.2 (-0.1 to 0.4)	0.2 (-0.04 to 0.5)	0.09
F. DNA rate[4]	4.3 (2.8)	3.4 (2.6)	4.8 (4.5)	4.7 (3.5)	-1.3 (-3.1 to 0.5)	-0.8 (-3.0 to 1.3)	-0.1 (-1.5 to 1.2)	0.85
G. Total patients seen (B+D)	49.0 (8.4)	57.0 (12.7)	49.0 (12.3)	54.4 (9.6)	2.6 (-4.0 to 9.2)	2.7 (-5.2 to 10.7)	1.2 (-7.1 to 9.4)	0.77

1 Crude difference in activity in post-Advanced Access period between n=24 Advanced Access and n=23 control practices

2 Crude and adjusted differences in activity in post-Advanced Access period for n=20 Advanced Access and n=18 control practices that provided data for both pre- and post-Advanced Access periods

3 Difference adjusted for pre-Advanced Access activity, list size, previous fundholding status, contract type, training status.

4 DNA rate = (booked appt DNAs + extra appt DNAs)/(booked attendances + extra attendances + booked appt DNAs + extra appt DNAs)*100

Table 12 Appointments with all health professionals in all settings.

Activity per 1000 registered patients per week	*Advanced Access*		*Control*		*All practices (n = 47)*	*Practices providing before and after data (n = 38)*		
					Crude Difference1 (95% CI)	*Crude Difference2 (95% CI)*	*Adjusted Difference3 (95% CI)*	*Adjusted p-value3*
Mean (SD)	*Before (n=20)*	*After (n=24)*	*Before (n=18)*	*After (n=23)*				
A. Total appointments available to be booked	75.3 (25.2)	89.3 (31.1)	68.9 (22.5)	82..5 (23.6)	7.0 (-9.2 to 23.2)	9.9 (-8.4 to 28.1)	3.5 (-11.9 to 18.8)	0.65
B. Booked appointments attended	62.1 (19.5)	77.1 (24.9)	56.9 (19.1)	67.3 (18.6)	9.8 (-3.1 to 22..8)	11.9 (-3.1 to 27.0)	5.8 (-7.0 to 18.6)	0.37
C. Booked appointments DNA	3.7 (2.6)	3.9 (2.9)	4.1 (4.2)	4.4 (3.1)	-0.5 (-2.2 to 1.3)	-0.2 (-2.3 to 1.9)	0.3 (-0.9 to 1.5)	0.60
D. Extras attended	7.8 (8.9)	8.9 (9.2)	10.6 (12.6)	10.0 (12.1)	-1.1 (-7.4 to 5.2)	-2.6 (-9.9 to 4.7)	0.3 (-3.1 to 3.7)	0.86
E. Extras DNA	0.14 (0.37)	0.35 (0.57)	0.34 (0.70)	0.18 (0.25)	0.17 (-0.09 to 0.43)	0.21 (-0.10 to 0.52)	0.21 (-0.08 to 0.50)	0.16
F. DNA rate[4]	5.0 (2.6)	4.6 (2.4)	5.6 (4.5)	5.6 (3.6)	-1.0 (-2.7 to 0.8)	-0.6 (-2.7 to 1.4)	-0.07 (-1.1 to 1.2)	0.90
G. Telephone consultations	5.8 (6.7)	9.7 (12.2)	6.3 (12.4)	5.7 (10.6)	4.0 (-2.8 to 10.7)	4.1 (-4.1 to 12.3)	5.0 (-0.1 to 10.1)	0.06
H. Home visits	2.1 (2.3)	2.9 (2.2)	3.4 (3.6)	3.0 (1.9)	-0.1 (-1.3 to 1.1)	0.02 (-1.4 to 1.4)	-0.04 (-1.5 to 1.5)	0.96
I. Total patients seen (B+D+G+H)	77.7 (18.7)	98.7 (30.7)	77.1 (26.7)	86.1 (19.8)	12.6 (-2.6 to 27.8)	13.5 (-4.2 to 31.2)	11.1 (-4.9 to 27.1)	0.17

1 Crude difference in activity in post-Advanced Access period between n=24 Advanced Access and n=23 control practices

2 Crude and adjusted differences in activity in post-Advanced Access period for n=20 Advanced Access and n=18 control practices that provided data for both pre- and post-Advanced Access periods

3 Difference adjusted for pre-Advanced Access activity, list size, previous fundholding status, contract type, training status.

4 DNA rate = (booked appt DNAs + extra appt DNAs)/(booked attendances + extra attendances + booked appt DNAs + extra appt DNAs)*100

Section 6 Continuity of care

6.1 Introduction and aim

Advanced Access is an approach to improving the accessibility of care, but concern has been expressed that practices may create appointment systems which prioritise rapid access at the expense of continuity of care from the same doctor. There is evidence that continuity of care is of benefit both to patients and to doctors, so appointments systems should seek to maximise continuity of care where possible.

However, proponents of Advanced Access claim that this concern is unfounded. Providing a responsive appointments system which seeks to match capacity to demand may make it easier for people to see the practitioner of their choice. This component of the evaluation seeks to address this issue.

6.2 Research questions

What is the impact of Advanced Access on longitudinal continuity of care with the same health professional?

6.3 Method

6.3.1 Overview of method

The assessment of continuity of care raises important conceptual and methodological issues. The term 'continuity' has often been used in a variety of ways. Freeman *et al* (2003) distinguish between seeing the same professional over time (longitudinal continuity) from the strength of the interpersonal relationship with a professional (relational continuity), the level of continuity within a team (team continuity), excellent transfer of information which follows the patient (information continuity), and a flexible response to patients needs (flexible continuity).

It is beyond the scope of this report to discuss the concept of continuity of care in depth – interested readers are referred to relevant reviews on this subject (Freeman *et al,* 2000; Haggerty *et al*, 2003; Mainous *et al,* 2001; Nutting *et al,* 2003; Pereira Gray *et al,* 2003; Saultz, 2003; Saultz & Lochner, 2005). For the purposes of this evaluation, any impact of Advanced Access is most likely to be observed on longitudinal continuity of care from the same practitioner. This in turn raises a number of issues. It is well recognised that seeing the same practitioner is more important for some problems than for others and for some groups of people (Schers *et al,* 2002). One key issue is therefore whether Advanced Access has an impact on continuity of care when this is important. It is not tenable to propose that a patient should always see the same person for every health problem that they have, especially when some problems are more appropriately dealt with by someone other than a doctor. The question of whether patients can see the professional of their

choice, particularly when this is important to them, is explored in the patient survey in Section 8.

However continuity of care may be important for reasons that are not evident to patients. A recent qualitative study highlighted some of the reasons that doctors find it important to see the same patient over time. Therefore this section of the evaluation addresses the question of whether Advanced Access has an impact on longitudinal continuity of care as assessed from consultation records.

In seeking to measure longitudinal continuity of care it is necessary to consider the type of professionals to be included, what constitutes a consultation, which patients should be included and how continuity should be calculated.

Which professionals?

One of the strategies advocated by Advanced Access is to increase the use of skill-mix, and to involve a wider range of health professionals in providing care in order to increase the availability of face to face appointments with a doctor when these are needed. If this strategy is successful, patients are inherently more likely to see more different people, but continuity may (or may not) be less important for the kind of conditions for which care is delegated to nurses or health care assistants. It is arguable that it is most important that patients are able to obtain continuity of care for the more complex problems for which they see a doctor, rather than that they have continuous care for all problems from one person. For this study, we decided to assess continuity in GP consultations as the primary analysis, but to assess continuity over consultations with both doctors and nurses in a secondary analysis.

Which consultations?

Another strategy used in Advanced Access is to offer alternatives to face-to-face consultations, for example through greater use of telephone consultations. Other consultations occur as home visits, or outside working hours, or in designated chronic disease management clinics. Is it important or desirable that all consultations are with the same doctor who provides most care in routine face-to-face surgeries?

Which patients?

Although the average consultation rate is about 4 consultations per person per year (varying considerably for different age and sex groups), a high proportion of consultations are accounted for by relatively few people and about half the population have no more that one consultation in one year. These people cannot contribute to any calculation of continuity of care over data collection periods of up to one year. Different types of area also have different levels of patient turnover, so practices with a high turnover of patients are less likely to achieve high levels of continuity since patients will have insufficient consultations in which to develop loyalty to a particular doctor.

Which measure of continuity of care?

There are a number of competing approaches to calculating an index of continuity of care.(Jee & Cabana, 2006) The easiest measure of continuity of care to understand is usual provider continuity (UPC). This is the proportion of consultations in a defined period which were with the doctor (or other health professional) seen most often. For example, for a patient who consulted nine times in one year, five of which consultations were with Dr A, UPC = 5/9 = 0.56.

However the UPC has a number of limitations. First, it takes no account of the number of consultations, so a patient who sees two different doctors on one occasion each (which could represent complete discontinuity of care) achieves the same UPC score as someone in a practice of 6 GPs who sees one doctor on 10 occasions and another doctor on 10 occasions, which intuitively suggests a high level of continuity of care. Secondly, the UPC does not distinguish between the above patient who saw Dr A 10 times and Dr B 10 times, and another patient who saw Dr A 10 times and a variety of other doctors on 10 other occasions.

Various measures have been developed to overcome these problems. The Herfindahl index (HH) is a measure of concentration used in economics, and has also been applied to the concentration of consultations. It relies on calculating the proportion of a patient's care that is with each doctor. Say a patient has six consultations with three doctors in the year. Dr A saw them 3 times out of 6 (proportion of care with Dr A = 0.5), Dr B 2 times out of 6 (0.33) and Dr C once (0.17).

$HH = (0.5)^2 + (0.33)^2 + (0.17)^2$

$= 0.25 + 0.11 + 0.03$

$= 0.39$

Continuity of Care (COC) is a measure derived from HH and is designed to standardise it for the number of consultations. It is defined as:

$$COC = \frac{HH - 1/w}{1 - 1/w}$$

where w = the no. of consultations in the defined period

The COC is the most widely used measure of longitudinal continuity of care in the literature, as it overcomes the main limitations described previously. However, there are a number of competing approaches to measuring continuity, with some based on the continuity achieved by patients over a period of time ('individual measures'), and some determining the continuity of care achieved prior to a specified index consultation ('visit measures').

The approach for this study

Decisions about the above issues should reflect the purpose of the study, and should also reflect the underlying claims about why it is important to consider continuity of care. For the purposes of this study, we decided that the main proposition of interest was that Advanced Access might reduce continuity of

care in face-to-face consultations with doctors in routine surgeries. This was therefore used as the primary analysis in this study. However we recognise that this is essentially a value judgement, and others may argue that strategies that encourage delegation to other professionals or segment care into different clinics may detract from continuity of care in a way that is also important. Therefore we also assessed the level of continuity of care including all appointment types and nurses as well as doctors as a secondary analysis, as described in more detail below.

For each of these two categories of consultations, we calculated both UPC and COC. The COC achieved in surgery consultations with GPs was the primary analysis.

6.3.2 Data Collection

The study was based on a 'before and after' design, comparing the continuity of care obtained in practices before and after they introduced Advanced Access compared with matched control practices over the same period.

In determining the data collection period it was necessary to balance several considerations. The data collection period should be as long as possible, in order to include as high a proportion of eligible patients as possible, since patients would have to have more than one consultation in both the 'before' and 'after' periods in order to contribute to the analysis. Data were collected about all consultations from 1st Jan 2002, or from a year before the practice introduced Advanced Access if this was earlier. The date at which each practice introduced Advanced Access varied, therefore the periods covered in both periods 'before' and 'after' introducing Advanced Access varied. However, each Advanced Access practice was paired with a specified control practice as described in Section 4, and data collection for these two practices was made over the same period so the periods covered 'before' and 'after' was balanced across the two groups. In addition the period of data collection was also accounted for in the analyses.

6.3.3 Sampling

It was necessary to use different approaches to collecting data in different practices because of the different ways in which they recorded consultations and in particular the different computerised record systems that they used. Protocols were developed to ensure comparable data were collected from each practice, and in general we attempted to collect data on the largest number of patients that was practical.

The aim was to identify a random sample of patients who:

- had been registered since the 'start date' (1st January 2002 or a year before the practice went Advanced Access, whichever is earlier)
- were still registered at the time of data collection
- had had at least 2 consultations between the start date and the date of introducing Advanced Access, and at least 2 consultations between that date and the date of data collection.

The way in which this sample was obtained varied according to the practice record system. Where possible (e.g. in practices which used EMIS or Vision software, and had recorded all consultations on computer since at least the start date for the audit), we used the search facilities in the computer to identify patients who were registered at the start date, still registered and who had had at least 4 consultations in the data collection period, and then to select a random sample of 100 patients. We then used the software to extract details of all consultations since the start date, removed all patient identifiers from the records, and imported the resulting file into an Access database.

Some practices did not have software which made the above process possible or had not recorded all consultations on computer for the requisite period.[3] In such cases it was necessary to extract details of consultations manually. Researchers identified patients randomly using random number tables, and identified those who met the eligibility criteria above. For these eligible patients, anonymised details were recorded of every consultation since the start date, including the date of consultation, type of consultation (e.g. surgery, home visit, telephone call, clinic) and an identifying code for each health professional consulted.

Researchers also obtained from the practice manager a list which enabled us to identify each of the health professionals who had conducted consultations, and whether they were a doctor, nurse, nurse practitioner or other type of staff[4].

Although the data about consultations were collected in different ways, an Access database was developed which enabled us to identify patients who had at least two consultations both before and after the date the practice introduced Advanced Access, and to store data about all consultations for these patients in a common format.

6.3.4 Inclusion and exclusion criteria

The criteria for including patients in the sample are described above. For these patients, we collected and analysed data about all face-to-face consultations, telephone consultations or home visits with doctors and practice based nurses. Doctors included GP partners, assistants, registrars, locums etc. Nurses included treatment room nurses, practice nurses, and nurse practitioners. Consultations with health visitors, district nurses, midwives, community psychiatric nurses, counsellors, give up smoking advisors, physiotherapists, drugs counsellors etc. were excluded from the

[3] It was not necessary that practices recorded clinical details of all consultations on the computer, just that there was a record that a consultation took place. Some practices used computerised appointments systems which recorded consultations, but doctors continued to make their clinical records on paper notes.

[4] Some practices used a generic identifier for locums, so that all consultations by locums were identified as having been conducted by 'Dr Locum'. These consultations were given an identifier of 'Z', and each such consultation was treated in the analysis as having been conducted by a different person. Some practices used generic identifiers for staff members for some types of consultation (e.g. coding all treatment room consultations as having been conducted by 'Nurse'). These consultations were treated as missing a staff identifier.

analysis. Out-of-hours consultations with GP co-operatives etc were excluded, as were consultations outside the practice (e.g. A&E, outpatients departments). In some practices other transactions such as messages, scanned letters, notes between doctors, or laboratory results appear on consultation screens, but these were also excluded from analysis.

6.3.5 Analysis

Appropriate descriptive statistics were used to describe the sample and measures of continuity of care for Advanced Access and control groups. The main analyses investigated differences in continuity of care between Advanced Access and control practices in the post-Advanced Access period, after adjusting for important variables and taking appropriate account of the clustered nature of the data by calculating robust standard errors. These were conducted using multivariable regression models. Continuity of care for different age groups and any interaction between Advanced Access and age group were examined in secondary analyses, the latter using appropriate interaction terms in the regression models. Data were analysed using Stata version 9.

6.4 Results

6.4.1 Description of sample

A total of 114,675 consultations from 47 practices (n=24 Advanced Access and n=23 control) were extracted from medical records. Of these, there were 162 (0.14%) consultations for which the health professional conducting the consultation was not known. These consultations were excluded from all analyses. Of the remaining 114,513 consultations, 2943 (2.6%) were recorded as having been provided by a locum, and for calculation of continuity measures, each was assumed to have been provided by a different locum. The patients are described in Table 13.

Table 13 Patient characteristics

	Advanced Access (n=3067)	Control (n=2474)
Mean age (SD), years	46.5 (24.4), range 1-102	45.9 (23.0), range 3-100
N male (%)	1197 (39)	1023 (41)

Number of consultations in the analysis

The table below shows the mean number of consultations per patient with GPs in surgery and with doctors and nurses in all types of consultations in the periods before and after Advanced Access for both Advanced Access and control practices (Table 14). Note that the pre- and post-Advanced Access data collection periods were not identical in duration, therefore this table illustrates the amount of data contributing to the analysis but does not provide any information about consultation rates.

Table 14 Mean number of consultations per patient included in continuity calculations

	Advanced Access		Control	
Mean (SD), range	Before	After	Before	After
Consultations with GPs in surgery	8.4 (5.5), 1-86	10.2 (6.9), 1-102	9.6 (6.3), 1-56	10.4 (8.0), 1-103
Doctors and nurses, all types consultations	11.5 (8.4), 2-129	14.7 (10.5), 2-107	13.3 (9.8), 2-101	15.3 (11.8), 2-163

6.4.3 Continuity of care

All of the following analyses are made after adjusting for pre-Advanced Access continuity of care, patient characteristics of age and sex and practice characteristics of list size, PMS, training and ex-fundholding status, and also take account of clustering by practice.

The COC scores are lower than the UPC scores, as anticipated. The COC is treated as the primary analysis, for the reasons previously discussed.

There was no evidence of any difference between Advanced Access and control practices in post-Advanced Access continuity of care either with GPs or overall (Table 15).

Table 15 Continuity of care

	Advanced Access		Control		Crude Diff	Adj Diff* (95% CI)
Mean (SD)	Before	After	Before	After		
COC (GPs in surgery)	0.43 (0.36)	0.40 (0.35)	0.43 (0.35)	0.46 (0.34)	-0.06	0.003 (-0.07 to 0.07)
COC (doctors and nurses, all types consultations)	0.32 (0.31)	0.28 (0.27)	0.32 (0.30)	0.34 (0.30)	-0.06	0.006 (-0.07 to 0.08)
UPC (GPs in surgery)	0.68 (0.25)	0.64 (0.26)	0.67 (0.25)	0.68 (0.24)	-0.04	0.003 (-0.05 to 0.06)
UPC (doctors and nurses, all types consultations)	0.56 (0.23)	0.50 (0.22)	0.55 (0.23)	0.54 (0.23)	-0.04	0.009 (-0.05 to 0.07)

* Adjusted for pre-Advanced Access continuity scores, patient age and sex and practice list size, training, PMS and ex-fundholding status. All analyses take appropriate account of clustered nature of data.

6.4.3 Continuity of care for different age groups

The table below shows that continuity of care with GPs and overall increased with age.

Table 16 Continuity of care by patient age

	COC		UPC	
Age group (years)	GPs in surgery Mean (SD)	Drs and nurses, all types consultations Mean (SD)	GPs in surgery Mean (SD)	Drs and nurses, all types consultations Mean (SD)
1-17	0.28 (0.33) (n=770)	0.24 (0.30) (n=858)	0.57 (0.26) (n=818)	0.48 (0.23) (n=849)
18-35	0.33 (0.32) (n=911)	0.26 (0.28) (n=982)	0.59 (0.25) (n=939)	0.48 (0.22) (n=970)
36-55	0.42 (0.34) (n=1463)	0.31 (0.29) (n=1610)	0.66 (0.25) (n=1539)	0.53 (0.22) (n=1594)
56-75	0.51 (0.33) (n=1372)	0.34 (0.27) (n=1469)	0.70 (0.24) (n=1397)	0.54 (0.22) (n=1454)
76+	0.57 (0.34) (n=647)	0.36 (0.27) (n=719)	0.74 (0.24) (n=658)	0.55 (0.23) (n=715)
p-value*	<0.001	<0.001	<0.001	0.002

* p-values generated from post-regression Wald tests, adjusted for Advanced Access/control status, pre-Advanced Access COC, patient age and sex and practice list size, training, PMS and ex-fundholding status and taking appropriate account of clustered nature of data.

We also investigated whether there was any interaction between Advanced Access and age – that is, whether any effect of Advanced Access on COC differed according to patient age.

Table 17 and Table 18 present crude mean COC by group, time and age. There was no evidence of any interaction effect on COC for GPs in surgery ($F(4, 46) = 1.34$, $p=0.27$) or for consultations with doctors and nurses in all settings ($F(4, 46) = 1.34$, $p=0.27$). Similar analyses using the UPC measure produced similar results (data not shown).

Table 17 Mean COC (GPs in surgery) by group, time and age

	Advanced Access		**Control**		
	Mean COC				
Age group (years)	Before	After	Before	After	Advanced Access vs. non-Advanced Access Post minus Pre
1-17	0.41	0.22	0.43	0.36	-0.12
18-35	0.44	0.30	0.41	0.37	-0.10
36-55	0.43	0.40	0.40	0.45	-0.08
56-75	0.43	0.49	0.47	0.54	-0.01
76+	0.47	0.55	0.46	0.60	-0.06

p = 0.27 for interaction terms (Wald test)

Table 18 Mean COC (doctors and nurses, all types consultations) by group, time and age

	Advanced Access		**Control**		
	Mean COC				
Age group (years)	Before	After	Before	After	Advanced Access vs. non-Advanced Access Post minus Pre
1-17	0.27	0.19	0.32	0.31	-0.07
18-35	0.31	0.23	0.30	0.29	-0.07
36-55	0.34	0.29	0.32	0.33	-0.06
56-75	0.34	0.32	0.35	0.36	-0.03
76+	0.36	0.35	0.31	0.38	-0.08

p = 0.27 for interaction terms (Wald test)

6.4.5 Clustering by practice

Finally we examined the issue of the extent to which COC was clustered by practice. The table below shows the ICCs obtained for COC both for GPs in surgery and overall.

Table 19 Intraclass cluster coefficients

	ICC	95% CI
COC GPs in surgery		
Pre-Advanced Access	0.149	0.082 to 0.216
Post-Advanced Access	0.374	0.252 to 0.496
COC Drs and nurses, all types consultations		
Pre-Advanced Access	0.098	0.051 to 0.146
Post-Advanced Access	0.248	0.150 to 0.346

Section 7 Making an appointment

7.1 Introduction and aims

The key aim of Advanced Access is to make it easier for patients to gain access to primary health care when they feel they need it. The concept of access can be operationalised in several ways in a general practice context. Since most practices run appointments systems, and most appointments are made by telephone, patients need to be able to make telephone contact with their practice in order to make an appointment. Having contacted the practice, patients need to be able to obtain an appointment within a reasonable length of time.

The NHS Plan set a target that by 2004 all patients would be able to see a GP within 48 hours. This was subsequently defined as meaning that patients should be seen by the end of the second working day after they contacted the practice, if they wished to do so. For example, if a patient telephones at any time on a Friday, they should be seen no later than the end of Tuesday of the following week.

The NPDT uses the length of time until the third available appointment as a key outcome measure for the success of Advanced Access. They argue that this is a more robust measure than the first available appointment, as the latter is more likely to be subject to random fluctuations due to short-notice cancellations.

The aim of this component of the evaluation is to assess the ease with which patients can make telephone contact with each practice, and how long they have to wait for a routine appointment when they wish to be seen as soon as possible.

7.2 Objectives:

- To determine the ease of making telephone contact with Advanced Access and control practice in order to make an appointment.
- To compare the wait for a routine appointment in Advanced Access and control practices.
- To assess the performance of Advanced Access and control practices in this study against the NHS Plan access target.

7.3 Method

7.3.1 Overview of method

This study was based on a telephone audit of the 48 practices originally recruited to the study.

All 48 practices were telephoned by one of the research team once every month on a randomly selected day and time. These are referred to as

'attempts to contact the practice' and within each attempt up to 6 'calls' were made. When contact was made with the practice an appointment was requested with either any doctor or a specific doctor. The time taken to make telephone contact and the wait for the first and the third available appointment were recorded.

7.3.2 Anonymity

Practices were aware of the study, raising the potential for bias if practices provided different information about appointment availability than the information they would give to genuine patients. Several measures were taken to reduce this risk. First, practices were guaranteed confidentiality, that data would be recorded only in relation to a practice code number and no information about the performance of any identifiable practice would be reported. Second, practice managers were asked to explain to receptionists that there was no gain to the practice in providing misleading information. Practices did not know when the researchers would call, and where possible the researcher avoided disclosing that they were not a real patient. However if the receptionist requested the callers name, the researcher did disclose their identity, and such disclosures were recorded.

7.3.3 Randomisation

We made attempts to contact each practice once a month for ten consecutive months. Each attempt to contact the practice was randomly assigned to three possible time slots, 09:00–10:00 (representing morning), 10:00–12:00 (late morning) and 12:00–17:00 (afternoon). Over the course of the study, of ten contact attempts per practice, four were made in the morning slot, three in the late morning and three in the afternoon slots. This weighting towards attempts in the morning was chosen to reflect the pattern in which most calls to make appointments are received in general practice. The first attempted phone call was made at the beginning of the time slot were practically possible, thus allowing any subsequent calls to fit within the given time slot. The day of the week that each practice was called was also randomly assigned. Half the attempts to contact practices involved a request for an appointment with 'any' doctor and half with a specific doctor. The names of partners in the practice were obtained in advance from practice managers, and appointments where requested with specific named doctors or 'any' doctor in random order.

Advanced Access and control practices were paired, and each practice within a pair was called during the same week within the month. Calls were not made in weeks which included a Bank Holiday.

During the course of this research, there were widespread criticisms in the lay media that, in order to meet access targets, practices were requiring patients to phone on the day they wished to be seen. This was apparently leading to great difficulties in making telephone contact with practices at the beginning of the day. Therefore we introduced an extra attempt to contact each practice between 08:30 and 09:00 on randomly selected days, with Advanced Access and control practices paired so that one of each type was phoned each day.

These extra attempts were made towards the end of the research and at each call we requested the first appointment with any doctor.

The main data collection period was between April 2005 and January 2006. The extra calls between 08:30 and 09:00 were made in January and February 2006.

7.3.4 Contacting the practice

The researcher recorded whether the telephone was answered directly or some other event occurred (engaged, anwerphone, transferred to answering service, not answered or cut off), and the number of rings before the phone was answered. If the phone was engaged, not answered or cut off, the researcher waited for 2 minutes before trying to call the practice again. If the call was directed to an answer phone or an on call service, the researcher followed the instructions given. For example, if a message stated that the practice was closed until 12:30, the researcher called back then. If the practice was closed for the rest of the day, no further attempt was made to call the practice. Similarly, if no appointments were available and the researcher was advised to phone again the following day, then this was recorded as no appointment being available. Up to 6 calls were made to contact the practice on the randomly selected day i.e. 6 calls per attempt to contact the practice. If no response was obtained after 6 calls this was recorded.

7.3.5 Script used by researchers to request an appointment

The researcher acted as if they were a genuine patient and only introduced themselves if asked. They asked the receptionist for the first available appointment, either with any doctor or a specific doctor, according to the randomisation schedule. They said that the problem was not medically urgent but they wanted to be seen as soon as possible.

After being offered the first available appointment the researcher said that they could not make that appointment, and when the next appointment would be. They then said that they could not make that appointment either, and asked when the next one would be, in order to obtain details of the third available appointment.[5]

After obtaining details of the appointments, the researcher thanked the receptionist for her time, said that these appointments were not suitable and they would call back later.

[5] We recognise there are limitations in this approach. For example if the patient states that an appointment at 10.10 on a Tuesday is inconvenient, the receptionist may not offer the patient the next available appointment if it is at 10.20 on the same day. During some conversations it was not feasible to ask about the third available appointment without disclosing the researcher's identity. For these reasons we use the first available appointment as the primary outcome in this study, and this is also more consistent with the NHS Plan access target.

7.3.6 Disclosure of identity

If asked for their name, the researcher explained that they were working for the University of Bristol on this study, that the practice had agreed to participate, and that appointment availability details were recorded anonymously, so the receptionist should provide the same information as they would to a real patient. The researcher suggested the receptionist should speak to their practice manager if they had any concerns.

If the researcher had to disclose his or her identity before they had obtained appointment details, this was recorded on the data entry sheet.

7.3.7 Details of appointment offered

Once the researcher had made contact with the practice and asked for the first and third available appointment, the date and time of these appointments was recorded. If the receptionist was not able to offer any appointments, any alternatives offered where recorded.

The time at which the researcher actually obtained an appointment (not the time of the appointment itself, but the time the appointment was booked) was also recorded so that we could calculate the length of time in minutes between when the researcher first tried to contact the practice and the time an appointment was successfully booked (or an alternative was offered). The number of working days between the date of requesting an appointment and the date of the appointment was calculated, where an appointment on the same day was coded as 0, the next day as 1 and so on, ignoring weekends and Bank Holidays.

If an appointment with a specific doctor was requested but that doctor was on leave, the researcher still asked for an appointment with that doctor when they returned. In some cases it was not possible to book an appointment in these circumstances. It was recognised that this process could lead to some very long delays for an appointment, but this issue was addressed by considering median as well as mean waits for an appointment. Requests for an appointment with a specific doctor were excluded from calculations about whether or not the practice met NHS 48 hour access targets.

7.3.8 Analysis

A flow diagram was produced to illustrate the number of attempts to contact the practice and the outcomes.

The analyses involved a comparison of Advanced Access and control practices with regard to:

- The proportion of times in which it was possible to make contact with a receptionist at the first call.
- The mean number of times it was necessary to call the practice in order to speak to a receptionist, and the proportion of times in which it was not possible to contact the practice after 6 calls.
- The mean length of time that it took to obtain an appointment, where this was possible.

- The proportion of times in which it was possible to make an appointment with any doctor or a specific doctor, and if not, the alternatives offered.
- The median and mean length of wait for the first and third available appointments with any doctor or a specific doctor.
- The proportion of times that it was necessary to disclose the researchers identity.

All statistical comparisons took account of the fact that the data were clustered by practice, and were adjusted for practice list size, PMS, training and ex-fundholding status, time slot and whether or not the researchers identity was disclosed.

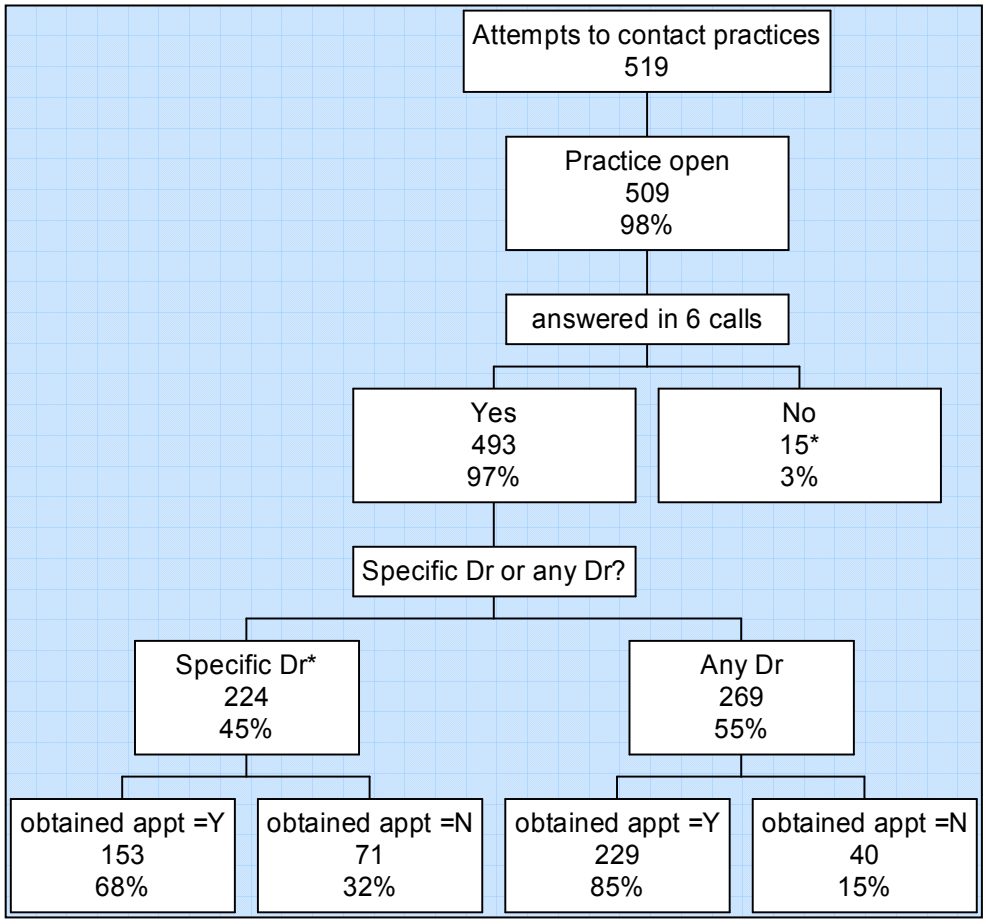
7.4 Results

7.4.1 Flow of calls

The following figure shows the number of 'attempts' and 'calls' through the study and provides an overview of the outcome of those attempts.

Two practices withdrew towards the end of the data collection period for this study, therefore data is available about 519 attempts to contact the practice rather than 528 (11 attempts * 48 practices).

Figure 3 Accessibility study: flow of calls



*During one attempt, the researcher could not complete 6 calls within the designated time slot.

**There are more 'specific doctor' calls than 'any doctor' calls because all of the extra 08:30 to 9:00 calls added later during the research were for 'any doctor'

On 10 occasions, attempts to contact the practice failed during the allocated time slot because the practice was closed for the remainder of the day. Of

the remaining 509 attempts, it was possible to contact a receptionist within 6 calls on 493 occasions (97%).

If occasions when the practice was closed for the day are treated as failed attempts to contact the practice within 6 calls, the odds of successfully making contact within six calls were higher in Advanced Access practices than control practices (256/260 (98.5%) vs. 237/258 (91.9%)), adjusted[6] OR 5.44 (1.86 to 15.86); p=0.002

7.4.2 Making contact with a receptionist

As described, the researcher made up to 6 calls to each practice on each day in which we attempted to contact them. Of attempts to contact practices, and excluding occasions when the surgery was closed, 74% (190/258) were successful at the first call in Advanced Access practices and 66% (166/250) in control practices. It was more difficult to make contact with practices between 8.30 and 9.00, particularly in Advanced Access practices (Table 20). Overall, however, it was necessary to make fewer calls to speak to a receptionist in Advanced Access than in control practices (mean number of calls made in order to speak to a receptionist 1.41 and 1.74 respectively (adjusted difference in means –0.31 (-0.56 to -0.05) p=0.022)).

Table 20 Contacting the practice at different times of day

% of attempts when it was possible to contact the practice at the first call	Advanced Access N=24 practices		Control N=24 practices	
	n/N	%	n/N	%
08:30 – 9:00	11/23	48	16/22	73
9:00 – 10:00	70/94	75	62/93	67
10:00 – 12:00	56/72	78	45/70	64
12:00 – 17:00	53/69	77	43/65	66

It was possible to make contact within 6 calls on 99% (256/258) of attempts to contact Advanced Access practices and 95% (237/250) of attempts to contact control practices (adjusted OR 5.44 (1.86 to 15.86); p= 0.002). These figures varied with time of day and dropped to 92% (22/24) and 87% (20/23) respectively of attempts to contact Advanced Access and control practices between 8:30 and 9:00.

[6] adjusted for practice list size, PMS, training and ex-fundholding status, disclosure and time slot and taking account of clustering by practice. The same adjustments apply whenever adjusted odds ratios are described in this section.

7.4.2 Mean length of time that it took to obtain an appointment

Taking account of all calls made to the practice, we calculated the length of time from the first call to the practice, to the time an appointment or an alternative to an appointment was offered. There was no evidence of difference in the mean or median time between Advanced Access and control practices. Although the median time was short (3 minutes in both types of practice) the inter-quartile ratio demonstrates that 25% of attempts to contact the practice took at least 5 minutes in both Advanced Access and control practices.

Table 21 Length of time (minutes) taken to obtain an appointment

	Advanced Access	Control	Adjusted difference in means
Mean	4.67	5.98	-1.64 (-4.23 to 0.97) p =0.213
Standard Deviation	12.22	14.51	
Median	3	3	
Interquartile ratio	2 to 5	2 to 5	

7.4.4 Making an appointment with any doctor or a specific doctor

When requesting to see any doctor, it was possible to make a booked appointment on 83% (116/139) of occasions at Advanced Access practices and 87% (113/130) of occasions at control practices (adjusted OR 0.70 (0.29 to 1.66) p=0.412). Table 22 shows the alternatives offered on the 40 occasions when it was not possible to make an appointment. Although the numbers are small, there is a suggestion that the Advanced Access practices were more likely to tell patients to phone back later (usually on the following day) while the control practices were more likely to tell the patient to turn up and wait at an open surgery or to be seen at the end of surgery.

Table 22 Alternatives offered when no appointments available with any doctor

	Advanced Access N= 23		Control N=17	
	N	%	n	%
Turn up and wait	2	8.7	8	47.1
Offered appt with a nurse	2	8.7	0	0
Offered appointment with another doctor	0	0	0	0
Offered telephone advice	3	13.0	0	0
Told to call back later	20	87.0	9	52.9

* more than one alternative may have been offered, so totals exceed 100%

When requesting to see a particular named doctor, it was possible to make a booked appointment on 61% (71/117) of occasions at Advanced Access practices and 77% (82/107) of occasions at control practices (adjusted OR 0.49 (0.22 to 1.06) p=0.069). Table 23 shows the alternatives offered on the 71 occasions when it was not possible to make an appointment with a specific doctor. Although the numbers are again small, there is a suggestion that the Advanced Access practices were more likely to offer an appointment with a different doctor or telephone advice, while the control practices were more likely to tell the patient to turn up and wait at an open surgery or to be seen at the end of surgery.

Table 23 Alternatives offered when no appointments available with a specific doctor

	Advanced Access N= 46		Control N=25	
	n	%	N	%
Turn up and wait	1	2.2	6	24.0
Offered appt with a nurse	0	0	0	0
Offered appointment with another doctor	22	47.8	4	16.0
Offered telephone advice	5	10.9	1	4.0
Told to call back later	29	63.0	15	60.0

* more than one alternative may have been offered, so totals exceed 100%

7.4.6 Length of wait for first available appointment with any doctor or a specific doctor

When asking to see any doctor, it was possible to make an appointment on the same day on 53% of occasions at Advanced Access practices and 34% of occasions at control practices (adjusted OR 2.23 (0.96 to 5.19); p= 0.062). The Advanced Access practices met the 48 hour NHS Plan access targets of offering an appointment with two working days on 88% (102/116) of occasions compared with 74% (84/113) of occasions for control practices (adjusted OR 2.35 (0.89 to 6.23); p=0.086) when it was possible to make an appointment. But in a fifth (19%; 55/284) of cases the researcher was not able to make an appointment at all with any doctor, because the practice was closed (5(2%)), the receptionist could make not contact within 6 calls (10(4%)), or the practice could not offer an appointment at all, but asked the researcher to phone back (29(10%)), to turn up and wait (10(4%)) to accept telephone advice (3(1%)) or to see a nurse (2(1%)). If these calls are included as not fulfilling the access targets, then Advanced Access practices met the target on 71% (102/143) of occasions and control practices on 60% (84/141) of occasions (adjusted OR 1.61 (0.78 to 3.31) p=0.200) Finally, and in line with the detailed guidance about the interpretation of the access targets used within the Primary Care Access Survey,(Department of Health 2004b) if one excludes calls where the researcher could not make contact with a receptionist, but includes calls whether or not the practice could offer a booked appointment, then Advanced Access practices met the target on 73% of occasions and control practices on 65% of occasions (adjusted OR 1.44 (0.67 to 3.06) p= 0.347).

Table 24 shows the number of days to wait for a first appointment with any doctor. The median length of wait was the same day (Interquartile ratio (IQR) 0 – 1 days) in Advanced Access practices and 1 day (IQR 0 – 3 days) in control practices. The mean wait was 1.00 and 1.87 days respectively (adjusted difference in means –0.75 (-1.51 to 0.004); p=0.051).

The median length of wait for a first appointment with a *particular* doctor was two days in both Advanced Access and control practices (IQR 0-4 days in Advanced Access and 1-4 days in control practices). The mean wait was 3.18 and 3.44 days respectively (adjusted difference in means -0.23 (-1.81 to 1.34) p=0.768).

Table 24 No of working days to obtain an appointment with any doctor

		Using Advanced Access?			
		Y		N	
		Count	Col %	Count	Col %
No of working days to first appointment	0	61	52.6%	37	32.7%
	1	28	24.1%	22	19.5%
	2	13	11.2%	25	22.1%
	3	5	4.3%	12	10.6%
	4	3	2.6%	6	5.3%
	5	2	1.7%	3	2.7%
	>5	4	3.4%	8	7.1%

When requesting an appointment with a particular doctor, waiting times for the first available appointment were (not surprisingly) longer (Table 25)

Table 25 No of working days to obtain an appointment with a particular doctor

		Using Advanced Access?			
		Y		N	
		Count	Col %	Count	Col %
No of working days to first appointment	0	19	26.8%	12	14.6%
	1	11	15.5%	16	19.5%
	2	10	14.1%	22	26.8%
	3	11	15.5%	8	9.8%
	4	6	8.5%	4	4.9%
	5	1	1.4%	6	7.3%
	>5	13	18.3%	14	17.1%

7.4.6 Length of wait for third available appointment with any doctor or a specific doctor

The median length of wait for the third available appointment with any doctor was 1 day (IQR 0-2) in Advanced Access practices and 2 (IQR 1-3) days in control practices (mean wait = 1.61 and 2.87 days respectively; adjusted difference in means –1.14 (-2.23 to –0.05); p=0.040).

The median length of wait for the third available appointment with a particular doctor was three days in both Advanced Access (IQR 1-4) and control practices (IQR 2-5). The mean waits were also similar at 3.50 and 4.36 days respectively; adjusted difference in means –0.51 (-2.00 to 0.97); p=0.487).

7.4.7 Disclosure of the researchers identity

The researcher disclosed their identity during only 15% (77/507) of calls, therefore it is unlikely that the responses obtained in this research are unrepresentative of the appointments which would be obtained by real patients in these practices. There was no difference between Advanced Access (16% (41/258)) and control practices (15% (36/249)) with regard to disclosure rates.

Section 8 Survey of patients attending the practice

8.1 Introduction and aim

The experience of patients when they need care in general practice is the most important measure of the success of the Advanced Access initiative. The aim of this section is to describe the experience of patients at practices which have or have not implemented Advanced Access.

This section is based on a survey of people who have consulted in one of the participating practices. It is important to note that if access is difficult, some people may have wished to consult but not been able to do so. This issue is addressed in the following section.

As well as exploring the experience of patients in general, it is also important to consider different sub-groups of patients. A change in an appointment system might offer benefits for some groups of patients but make access more difficult for other groups. It is also important to consider the priorities of different groups of patients in relation to issues such as being seen quickly, at a convenient time of day, or seeing a particular health professional. This issue is partly addressed within this section, but is also addressed in Section 10 using a different method.

This survey is based on an observational design. There may be differences in the type of practice which chooses to implement Advanced Access (see Section 5) and these may be reflected in differences in the characteristics of their patients. It is well recognised that the socio-economic characteristics of patients can have a significant effect on their reporting of their experience of primary health care (Hall & Dornan 1990). This may or may not reflect differences in the care that they are given. For example, older patients generally report higher satisfaction than younger patients, which may relate to differences in expectation rather than care provided. Therefore, it is important to consider the confounding effects of different patient characteristics in the local population when comparing Advanced Access and control practices.

8.2 Research questions

This section addresses the following questions:

- What is the impact of Advanced Access on patients' perceptions of the accessibility of care from general practice?
- Do different groups of patients have different priorities in terms of trade-offs between speed of access, being able to attend at a specific time of day, on a particular date, or choosing to see a specific doctor or nurse?
- How well does the appointment system cope with different people having different priorities?

- What is the impact of Advanced Access on the use of other health services, particularly out-of-hours services?
- How satisfied are people with aspects of practice organisation, particularly how easy it is to contact the practice by telephone and how receptionists deal them with?

8.3 Method

8.3.1 Overview of method

All practices in the study were supported in running a survey of all patients who consulted the practice to see a GP or nurse practitioner over a period of several days. Patients completed the questionnaire in the waiting room or were posted a reminder if they did not do so.

All practices are incentivised to run a survey of patient experience each year, using one of two validated questionnaires, in order to obtain points under the Quality and Outcomes Framework (QOF). The fact that the research team helped practices to run this survey for the year 2005/6 was a major factor in encouraging them to participate in the whole research project.

8.3.2 Questionnaire design

The questionnaire was based on the General Practice Assessment Questionnaire (GPAQ), consultation version 1.0, which was devised by the National Primary Care Research and Development Centre, and adapted from the Primary Care Assessment Survey originally developed in the USA. The GPAQ is one of the questionnaires approved for use under the QOF.

The GPAQ questionnaire obtains information about patient characteristics, surgery opening hours, the receptionists, waiting times to obtain an appointment with any doctor or a particular doctor, waiting times before consultations begin, ease of getting through on the telephone, ability to see a 'usual doctor', communication in the consultation,[78] enablement and overall satisfaction with the practice.

The GPAQ questions were incorporated within a longer questionnaire which asked about a number of other topics. These included:

- The length of time that the patient had had their problem before consulting.
- The delay between contacting the surgery and obtaining an appointment.

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8 The section of questions in the GPAQ questionnaire about communication has the stem: 'Thinking about your consultation with the doctor today, how do you rate the following:'. For the reasons discussed later about the need to include nurse practitioner consultations in this research project, the stem was altered to say: 'Thinking about your consultation with the doctor or nurse today, how do you rate the following:' However, following concern that this wording did not exactly accord with the validated GPAQ version, the wording was changed to the GPAQ version for practices later in the study.

- The perceived seriousness of the problem.
- Previous consultations about the same problem.
- The importance of various factors in obtaining an appointment, for example if it was important to see a particular doctor or nurse, or to be seen on a particular day.
- Whether or not patients obtained care in accordance with their priorities, in relation to the factors above. Of particular relevance was whether patients were seen on the day of their choice.
- Overall satisfaction with the appointment system.
- The reason for the consultation.
- Treatment and/or advice provided.
- Contacts with other health service providers in the previous 12 months.

The above questions were taken from previously used questionnaires where possible, or devised for this research to address topics of interest and piloted with patients. The final version of the complete questionnaire was piloted in one practice, and this did not lead to any changes.

The final version of the questionnaire is shown in Appendix 9.

8.3.3 Survey administration

The survey was conducted in all 47 practices between March 2005 and February 2006. Practices conducted the survey over consecutive days until they had received sufficient responses, against a target number set by the research design and QOF requirements (see section 8.3.5).

All consecutive patients consulting the practice to see a doctor or nurse practitioner for a routine or 'open' surgery were recorded on a survey record sheet, which had a questionnaire ID number and the local practice computer number for each patient. The receptionist completed the questionnaire ID number on a questionnaire and gave it to the patient with a covering letter and information leaflet, asking them to complete and return it before leaving the surgery. Receptionists also entered the date of birth and gender of the patient on the survey record sheet to enable a later comparison of responders and non-responders.

No patient identifiers were included on the questionnaire so the responses were effectively anonymous, although the practice (but no-one outside the practice) could in theory trace who completed the questionnaire if they matched the questionnaire ID to the local patient computer number using the survey record sheet.

Patients were included if they were attending a normal consultation with a GP. A few practices used nurse practitioners to provide routine surgeries for unselected patients in the same way as GPs, where they were effectively substituting and working alongside GPs. These consultations were included. It was felt to be important not to exclude these consultations, since a strategy advocated by Advanced Access is to promote the involvement of a wider range of professionals in providing consultations. Patient consultations with other types of nurses e.g. practice nurses, treatment room nurses, health

visitors, community nurses etc. were excluded. Consultation sessions other than routine or open surgeries (e.g. antenatal clinics and minor surgery sessions) were also excluded.

Patients were excluded if they were aged less than 16 years old, if they or their companion could not complete a questionnaire in English, if they were a temporary resident, or if they were medically unable to complete a questionnaire. Receptionists recorded the reasons for exclusion.

Patients were asked to return the completed questionnaires into a box on the front desk. At the end of the day, receptionists sent a reminder letter, another questionnaire and a reply paid envelope addressed to the University of Bristol to any included patient who had not returned a completed questionnaire.

A member of the research team attended the practice on the first day that the survey was running in each practice to train receptionists and ensure that the survey was administered according to the protocol. The survey record sheets were returned to the research team at the end of each day by fax. If record sheets were not returned promptly each day, or were incorrectly completed, the research team telephoned the surgery to address any problems at an early stage and ensure the protocol was adhered to.

The practices were given extra payment to cover the cost of employing an additional receptionist while the survey was running who would be free to hand out questionnaires, complete survey sheets, encourage patients to finish completing and return questionnaires after they had seen the doctor but before leaving the surgery, post reminders and answer queries from patients. Practices were encouraged to run the questionnaire over consecutive days, but did not have to do so as long as all patients attending at a specific surgery session were recorded on the record sheet.

8.3.4 Sample size

When the research study was planned, a sample size calculation was based on running the survey over two to three days in order to invite at least 125 patients in each practice to participate. Since the responses from patients will not be independent but would be clustered by practice we estimated intra-cluster correlation coefficients (ICCs) from our previous work in general practice as likely to be in the range 0.05 to 0.1. With 48 practices, an 80% response rate (100 respondents per practice), 5% two-sided alpha, 80% power, and ICCs in the range 0.05 to 0.1, the detectable difference in the primary outcome between Advanced Access and control practices would range from 10% to 14% (for example, 45% vs. 55%, or 43% vs. 57% of patients seen on day of choice). The power to detect differences is greater for proportions further from 50%.

During the planning of the study the regulations about the number of patients to be surveyed to fulfil QOF regulations changed, to specify that practices should obtain responses from 25 patients per 1000 registered patients. We therefore asked practices to collect this number of questionnaires, with a minimum target response of 100 questionnaires, so that we could provide them with reports to fulfil QOF regulations. In most cases this meant practices

obtaining a higher number of completed questionnaires than originally anticipated.

8.3.5 QOF reports

Practices were provided with reports based on the GPAQ questions to enable them to fulfil their QOF requirements. Although consultations with nurse practitioners were included in the dataset for the research, these consultations were excluded from the QOF reports to practices since only consultations with doctors can be included in the QOF.

Some practices did not provide enough completed questionnaires by the end of the data collection period for the research study to fulfil QOF requirements. These practices were given additional questionnaires which they asked patients to complete, but these were not necessarily administered in the rigorous way used in the research and no record sheets or details of response rates are available for these patients, so although these extra questionnaires were included in the QOF reports for practices they are excluded from the results in this report.

8.3.6 Analysis

All data were independently double-entered by the data entry company Wyman Dillon. Data were analysed in SPSS version 12 and Stata v.9.

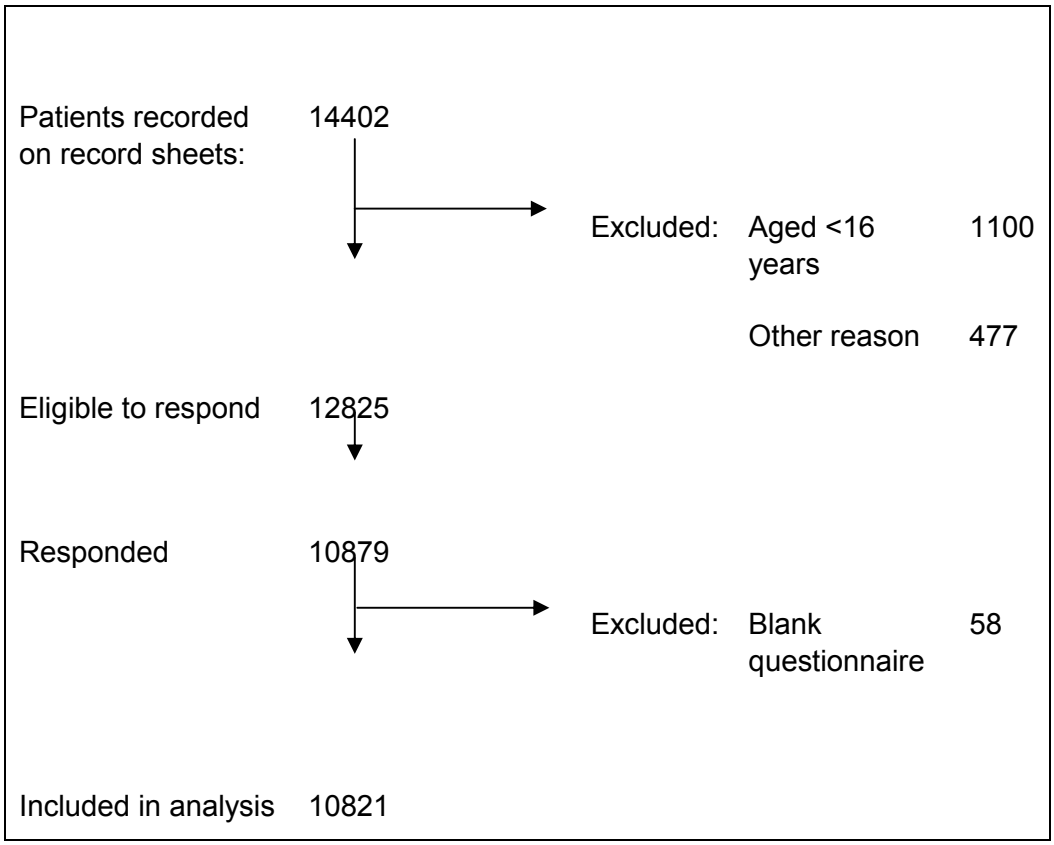
Tables and graphs are used to describe the data and to compare patients in Advanced Access and control practices. Because of the relatively large size of the sample, small differences may generate small low p values and apparently be 'statistically significant', even though such small differences may not be meaningful or important. Conversely, the clustered nature of the data, and the need to account of confounding due to the characteristics of patients in different practices, may mean that apparently large differences have relatively large confidence intervals, thus not excluding the null hypothesis of no difference. For this reason, statistical analyses have been conducted selectively, where they address key hypotheses for the study. These statistical tests take account of the clustered data and confounding variables. Statistical comparisons were made in Stata version 9 and were adjusted for age, sex, ethnicity and housing status at patient level and for list size, PMS, training and ex-fundholding status at practice level. Analyses took account of clustering by practice.

8.4 Results

8.4.1 Response rates

The overall response rate was 84% (10821/12825). This is shown in more detail in the table below.

Figure 26 Response rate to patient survey



The number of responses and response rate for each practice are shown in Appendix 2.

8.4.2 Comparison between responders and non-responders

Details of the age and sex of responders and non-responders are available from the survey sheet and the questionnaires.

Table 27 Response rate by sex

	Valid response?				Total	
	Yes		No		Count	%
	Count	%	Count	%		
Male	3993	83.7%	780	16.3%	4773	100.0%
Female	6810	85.2%	1180	14.8%	7990	100.0%
Total	10803	84.6%	1960	15.4%	12763	100.0%

The response rate from men was slightly lower than that from women (odds ratio 0.89 (0.80 to 0.98).

The response rate was fairly consistent across different age-groups, although slightly lower for the oldest patients.

Table 28 Response rate by age

		Valid response?				Total
		Yes		No		Count
		Count	%	Count	%	
Age group	16-24	1200	85.0%	211	15.0%	1411
	25-34	1668	85.4%	285	14.6%	1953
	35-44	1708	83.5%	337	16.5%	2045
	45-54	1511	84.3%	282	15.7%	1793
	55-64	1722	85.8%	284	14.2%	2006
	65-74	1514	87.7%	212	12.3%	1726
	75-84	1224	85.2%	212	14.8%	1436
	85+	241	76.8%	73	23.2%	314
Total		10788	85.1%	1896	14.9%	12684

8.4.3 Characteristics of respondents

There were small differences between the characteristics of respondents in Advanced Access and control practices. Patients in Advanced Access practices were slightly older, more likely to be white and more likely to be in owner-occupied housing.

Table 29 Characteristics of respondents, comparing Advanced Access and control practices

	Advanced Access	Control
Male	36.3%	37.8%
Mean age (years)	51.3	48.6
Longstanding illness, disability or infirmity	52.4%	52.4%
White ethnicity	97.6%	92.6%
Owner-occupied housing	69.8%	64.4%
Employed	48.0%	48.3%

8.4.4 How long has the patient had the problem

The first two questions in the questionnaire were designed to explore the possibility that if Advanced Access practices placed greater emphasis on seeing patients quickly, this may lead to changes in patient expectations so

that they consulted at an earlier stage of their illness. There is no evidence that this phenomenon has occurred, although it is possible that if such changes in expectation were to occur they may do so over a longer time-period. Most of the practices in this study had only be operating Advanced Access for less than 2 years.

Perhaps the most notable finding from this table is that 70% of patients consulting reported having the problem for which they were consulting for at least 'a few weeks'. The fact that most problems presented in general practice are not of recent onset may be relevant to subsequent findings about the importance of being seen as soon as possible compared with the importance of seeing a particular doctor or being seen at a convenient time (see Section 8.4.7 and Section 10).

Table 30 How long has the patient had the problem?

		Using Advanced Access?					
		Advanced Access		Control		Total	
		Count	%	Count	%	Count	%
How long have you had the problem or issue you wish to discuss today?	Just today	234	4.2%	188	3.9%	422	4.0%
	Since yesterday	249	4.5%	198	4.1%	447	4.3%
	A few days	678	12.2%	550	11.3%	1228	11.8%
	About a week	550	9.9%	508	10.4%	1058	10.2%
	A few weeks	1185	21.4%	962	19.7%	2147	20.6%
	A few months	1014	18.3%	921	18.9%	1935	18.6%
	More than a year	1639	29.5%	1547	31.7%	3186	30.6%
	Total	5549	100.0%	4874	100.0%	10423	100.0%

Older patients are likely to have had their problem for a longer period of time. See

Table 31 Relationship between duration of problem and age

			Age group								Total
			16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
How long have you had the problem or issue you wish to discuss today?	Just today	Count	78	91	55	53	50	50	34	8	419
		%	6.8%	5.7%	3.3%	3.6%	3.0%	3.5%	2.9%	3.5%	4.0%
	Since yesterday	Count	88	101	75	47	61	35	33	6	446
		%	7.7%	6.3%	4.6%	3.2%	3.6%	2.4%	2.8%	2.6%	4.3%
	A few days	Count	199	240	204	172	161	135	90	21	1222
		%	17.4%	15.1%	12.4%	11.6%	9.6%	9.3%	7.7%	9.1%	11.8%
	About a week	Count	166	186	188	147	154	119	84	11	1055
		%	14.5%	11.7%	11.4%	9.9%	9.2%	8.2%	7.2%	4.8%	10.2%
	A few weeks	Count	212	328	354	315	361	293	237	44	2144
		%	18.5%	20.6%	21.5%	21.2%	21.6%	20.2%	20.2%	19.1%	20.6%
	A few months	Count	209	300	324	267	313	279	186	49	1927
		%	18.3%	18.8%	19.7%	18.0%	18.7%	19.3%	15.9%	21.3%	18.5%
	More than a year	Count	193	346	448	484	573	538	507	91	3180
		%	16.9%	21.7%	27.2%	32.6%	34.2%	37.1%	43.3%	39.6%	30.6%
Total		Count	1145	1592	1648	1485	1673	1449	1171	230	10393
		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

8.4.5 How long did it take to get an appointment?

This question was included to assess the length of time between patients first contacting the surgery and obtaining an appointment.

Table 32 When did you first try to contact the surgery to make this appointment?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
When did you first try to contact the surgery to make this appointment?	Today	3037	56.7%	1471	31.6%	4508	45.1%
	Yesterday	638	11.9%	709	15.3%	1347	13.5%
	2 days ago	329	6.1%	485	10.4%	814	8.1%
	3-4 days ago	469	8.8%	600	12.9%	1069	10.7%
	5-7 days ago	423	7.9%	548	11.8%	971	9.7%
	More than a week ago	457	8.5%	836	18.0%	1293	12.9%
Total		5353	100.0%	4649	100.0 %	10002	100.0%

Patients in Advanced Access practices were more likely to be seen on the same day as they contacted the surgery, and 74.7% were seen within two days. In control practices 57.3% of patients were seen within two days. The odds ratio for being seen sooner in an Advanced Access practice was 2.32 (95% confidence interval 1.51 to 3.57); $p<0.001$.[9] Note that this question is not exactly equivalent with the NHS target that people should be able to see a doctor within two *working* days.

In addition, it is also important to note that this question is not a good measure of ease of access to an appointment, since many patients may not have wanted an appointment as soon as possible, and being seen at a convenient time or seeing a particular doctor may have been more important. Some patients may have chosen to book in advance, even if appointments were available earlier. Whether patients were able to get the type of appointment they wanted, including being seen on the day of their choice (see section 8.4.8), is a better measure of access.

[9] Adjusting for age, sex, ethnicity, and housing status at patient level and list size, PMS, training and ex-fundholding status at practice leveland taking account of clustering by practice. Future analyses in this section take account of the same confounding variables and clustering, unless otherwise specified.

8.4.6 Previous consultations about the same problem and frequency of consultations with health service providers in the last 12 months

The following two questions explored the possibility that if patients experienced access problems with a particular type of appointment system, they may be more likely to consult other providers, such as GP out-of-hours services or A&E departments.

Conversely, some health professionals have expressed concern that a system which facilitates very quick and easy access to general practice care may lead to an increase in demand.

There is no evidence from this survey data of any difference in consultation rates at different health providers over the previous 12 months, nor any evidence that patients are more likely to reconsult about the same problem, in practices which do or not implement Advanced Access. Note that further information about the issue of the volume of consultations in relation to Advanced Access is reported based on practices' appointment records in section 5.4.5.

Table 33 Have you already seen a doctor or nurse about this problem?

		Using Advanced Access?				Total	
		Advanced Access		Control		Responses	%
		Responses	%	Responses	%		
Have you already seen doctor or nurse about this problem?	No	3645	68.5%	3086	66.2%	6731	67.4%
	Yes - at this practice	1419	26.7%	1316	28.2%	2735	27.4%
	Yes - somewhere else	327	6.1%	319	6.8%	646	6.5%

Table 34 Frequency of consultations with health service providers in previous 12 months.

		Using Advanced Access?		Total	Adjusted difference in means
		Advanced Access	Control		
Seen a doctor or a nurse from this practice?	Mean	5.29	5.37	5.33	-0.06 (-0.45 to 0.33)
	Std Deviation	5.77	5.61	5.70	
Telephoned NHS Direct:	Mean	.51	.53	.52	0.03 (-0.06 to 0.12)
	Std Deviation	2.11	1.37	1.80	
Attended an NHS walk-in centre	Mean	.24	.36	.30	-0.03 (-0.22 to 0.16)
	Std Deviation	1.51	1.11	1.33	
Contacted a doctor when your surgery was closed	Mean	.35	.36	.35	0.01 (-0.08 to 0.11)
	Std Deviation	1.37	1.12	1.25	
Attended Accident and Emergency (Casualty)	Mean	.50	.48	.49	0.04 (-0.06 to 0.13)
	Std Deviation	2.02	.93	1.59	
Visited a pharmacy for advice	Mean	.71	.75	.73	0.00 (-0.10 to 0.10)
	Std Deviation	1.58	2.05	1.82	

8.4.7 Importance to people of various factors when making appointments

The following group of questions explored the factors that are most important to people when they make an appointment and the different priorities of different groups of patients. This issue is also addressed in a different way in the discrete choice experiment study (Section 10). The findings about the importance of different factors can be combined with whether or not patients got the type of appointment that met their priorities. It also makes it possible to explore the priorities of different groups of patients.

Table 35 Importance of various factors to patients when making appointments

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
Being seen on the day of your choice	Very important	2923	54.0%	2183	46.4%	5106	50.4%
	Fairly important	1609	29.7%	1457	30.9%	3066	30.3%
	Not very important	631	11.7%	735	15.6%	1366	13.5%
	Not at all important	250	4.6%	334	7.1%	584	5.8%
Being seen at a particular time of day	Very important	1338	25.5%	1277	27.8%	2615	26.6%
	Fairly important	1749	33.3%	1530	33.3%	3279	33.3%
	Not very important	1512	28.8%	1244	27.1%	2756	28.0%
	Not at all important	655	12.5%	544	11.8%	1199	12.2%
Being see as soon as possible	Very important	2205	41.5%	1935	41.5%	4140	41.5%
	Fairly important	1922	36.1%	1667	35.8%	3589	36.0%
	Not very important	847	15.9%	759	16.3%	1606	16.1%
	Not at all important	343	6.5%	301	6.5%	644	6.5%
Seeing a particular doctor or nurse	Very important	1971	37.0%	1547	33.4%	3518	35.4%
	Fairly important	1420	26.7%	1129	24.4%	2549	25.6%
	Not very important	1172	22.0%	1098	23.7%	2270	22.8%
	Not at all important	759	14.3%	852	18.4%	1611	16.2%
Being able to book the appointment well in advance	Very important	1247	24.5%	1078	24.1%	2325	24.3%
	Fairly important	1590	31.3%	1445	32.3%	3035	31.8%
	Not very important	1371	26.9%	1151	25.8%	2522	26.4%
	Not at all important	880	17.3%	795	17.8%	1675	17.5%
Seeing a doctor rather than a nurse	Very important	2450	46.4%	2004	43.6%	4454	45.1%
	Fairly important	1552	29.4%	1302	28.3%	2854	28.9%
	Not very important	773	14.6%	770	16.7%	1543	15.6%
	Not at all important	510	9.6%	523	11.4%	1033	10.5%
Seeing a nurse rather than a doctor	Very important	129	2.8%	169	4.1%	298	3.4%
	Fairly important	494	10.8%	456	11.2%	950	11.0%
	Not very important	1798	39.2%	1564	38.3%	3362	38.8%
	Not at all important	2160	47.2%	1891	46.3%	4051	46.8%
Seeing a female doctor or nurse rather than a male	Very important	503	9.9%	543	12.2%	1046	11.0%
	Fairly important	477	9.4%	439	9.8%	916	9.6%
	Not very important	1541	30.4%	1314	29.4%	2855	29.9%
	Not at all important	2551	50.3%	2171	48.6%	4722	49.5%
Seeing a male doctor or nurse rather than a female	Very important	278	5.5%	271	6.2%	549	5.8%
	Fairly important	294	5.9%	299	6.8%	593	6.3%
	Not very important	1681	33.5%	1453	33.1%	3134	33.3%
	Not at all important	2766	55.1%	2366	53.9%	5132	54.5%

An alternative way of expressing this is to convert the ordinal scale to a score, where 1 = not at all important and 4 = very important. The table below shows the mean score for different aspects of appointments for Advanced Access and control practices, ranked in order of the issue which were most important to patients overall. Strictly speaking, one should be cautious of converting ordinal scales to scores and comparing means, as one cannot assume that the intervals between the categories in the scale are equal, but it does allow a much more convenient summary of the relative importance of different factors.

Table 36 Aspects of appointments of most importance to patients

	Using Advanced Access?		Total
	Advanced Access	Control	Mean
Being seen on the day of your choice	3.33	3.17	3.25
Being see as soon as possible	3.13	3.12	3.12
Seeing a doctor rather than a nurse	3.12	3.04	3.09
Seeing a particular doctor or nurse	2.86	2.73	2.80
Being seen at a particular time of day	2.72	2.77	2.74
Being able to book the appointment well in advance	2.63	2.63	2.63
Seeing a female doctor or nurse rather than a male	1.79	1.86	1.82
Seeing a nurse rather than a doctor	1.69	1.73	1.71
Seeing a male doctor or nurse rather than a female	1.62	1.65	1.63

The table above suggests that the most important factor to patients overall was being seen on their preferred day, rather than necessarily as soon as possible. It also suggests that being able to see a doctor rather than a nurse was strongly preferred by many people, and being able to see a particular doctor or nurse was also important.

It is noteworthy that the rank order of preferences above is very similar to the order in which the list of factors was presented in the questionnaire, raising the possibility of some bias in overall responses. It may be more instructive to focus on differences in the priorities for different groups of patients. First the priorities of different age groups are considered. For ease of interpretation the tables present the mean score, as above.

This analysis shows that for younger and middle aged patients, being seen on the day of choice is the most important consideration and more important than being seen as soon as possible. However there is a clear relationship to suggest that the importance of seeing a particular doctor increases in relation to age, and the same pattern is observed for the importance of seeing a doctor rather than a nurse and for being able to book an appointment well in

advance. In this table, the top three priorities for each group of patients are highlighted, and the top priority is shown in bold.

Table 37 Importance of different appointment factors to patients in different age-groups

	Age group					
	16-34	**35-54**	**55-74**	**75+**	**Total**	**P****
	N=2868	N=3219	N=3236	N=1465	N=10788*	
Being seen on the day of your choice	**3.28**	**3.29**	3.20	3.21	**3.25**	0.957
Being see as soon as possible	3.09	3.13	3.16	3.09	3.12	0.223
Seeing a doctor rather than a nurse	2.77	3.09	**3.29**	**3.34**	3.09	<0.001
Seeing a particular doctor or nurse	2.43	2.75	3.03	3.23	2.80	<0.001
Being seen at a particular time of day	2.87	2.88	2.56	2.48	2.74	0.002
Being able to book the appointment well in advance	2.37	2.61	2.81	2.87	2.63	<0.001
Seeing a female doctor or nurse rather than a male	1.90	1.83	1.71	1.83	1.82	0.144
Seeing a nurse rather than a doctor	1.70	1.68	1.73	1.77	1.71	0.019
Seeing a male doctor or nurse rather than a female	1.57	1.58	1.67	1.86	1.63	<0.001

* Age missing for 33 respondents

** Relationship between importance of topic and age- group. Ordinal logistic regression adjusted for sex, ethnicity, chronic illness, housing and employment status at patient level, list size, training, PMS and ex-fundholding status at practice level and taking account of clustering by practice.

The same analysis was used to explore the relationship between other patient characteristics and the importance of different attributes of appointments (see Table 38 and Table 39).

The relationships identified were:

- Women place relatively more importance than men on seeing a female doctor or nurse.
- Patients with long-standing illness place more importance on seeing a particular doctor or nurse, seeing a doctor rather than a nurse and on being able to book an appointment well in advance.
- Patients of ethnic groups other than white expressed greater strength of preference generally in relation to all factors.
- There were no major differences in relation to accommodation status, which was used as a proxy for socio-economic status.
- Patients who were in employment placed more importance on being seen on a day of their choice and being seen at a convenient time compared with patients of other employment status.
- Patients who were retired or who were unable to work due to illness placed more priority on seeing a particular health professional and on seeing a doctor rather than a nurse than other groups of patients.

Despite these relative differences between patients with different characteristics, it is notable that for almost all of the groups studied the most important consideration was being seen on the day of choice, and this was more important than being seen as soon as possible or seeing a particular doctor or nurse.

Table 38 Importance of appointment factors in relation to patient sex, long-standing illness, ethnicity and accommodation status

	Sex			Do you have any long-standing illness, disability of infirmity?			Employment		
	Male N= 3993*	Female N=6810*	p	Yes N=5145*	No N=4759*	p	Employ"d N=4906*	Other employ'nt status N=5067*	P**
Being seen on the day of your choice	3.16	3.31	<0.001	3.26	3.25	0.013	3.31	3.19	<0.001
Being seen as soon as possible	3.08	3.15	0.001	3.15	3.09	0.001	3.10	3.14	0.772
Seeing a doctor rather than a nurse	3.00	3.14	<0.001	3.26	2.90	<0.001	2.98	3.19	0.739
Seeing a particular doctor or nurse	2.70	2.86	<0.001	3.06	2.51	<0.001	2.58	3.01	<0.001
Being seen at a particular time of day	2.67	2.78	<0.001	2.68	2.80	0.162	2.95	2.51	<0.001
Being able to book the appointment well in advance	2.59	2.65	<0.001	2.77	2.47	<0.001	2.53	2.72	0.464
Seeing a female doctor or nurse rather than a male	1.45	2.03	<0.001	1.77	1.84	0.070	1.75	1.87	0.001
Seeing a nurse rather than a doctor	1.65	1.75	<0.001	1.71	1.69	0.280	1.65	1.76	0.014
Seeing a male doctor or nurse rather than female	1.68	1.61	0.085	1.67	1.57	0.992	1.53	1.73	<0.001

* Sex missing for 18 respondents; chronic illness status missing for 917 respondents; employment status missing for 848 respondents

* *Ordinal logistic regression. Relationship between importance of topic and patient characteristic in column, adjusted for the other characteristics in the table and age-group, housing status and ethnicity at patient level, list size, training, PMS and ex-fundholding status at practice level and taking account of clustering by practice.

Table 39 Importance of appointment factors in relation to patient employment status

	Which of the following best describes you?						
	Employed	Unemployed and looking for work	At school or in full time education	Unable to work due to long term sickness	Looking after your home/family	Retired from paid work	Other
Being seen on the day of your choice	3.31	3.07	3.27	3.26	3.26	3.15	3.26
Being seen at a particular time of day	2.95	2.54	2.74	2.55	2.70	2.42	2.58
Being see as soon as possible	3.10	3.15	3.07	3.28	3.14	3.11	3.17
Seeing a particular doctor or nurse	2.58	2.54	2.23	3.23	2.84	3.16	3.09
Being able to book the appointment well in advance	2.53	2.56	2.12	2.83	2.64	2.82	2.73
Seeing a doctor rather than a nurse	2.98	2.73	2.51	3.31	3.09	3.32	3.27
Seeing a nurse rather than a doctor	1.65	1.72	1.67	1.78	1.84	1.74	1.79
Seeing a female doctor or nurse rather than a male	1.75	1.88	1.90	1.90	2.23	1.74	2.05
Seeing a male doctor or nurse rather than a female	1.53	1.65	1.52	1.80	1.71	1.75	1.73

8.4.8 The type of appointment obtained

A series of questions addressed the type of appointment the patient obtained. The table below shows these results, comparing Advanced Access and control practices.

Table 40 Type of appointment obtained

Figures are numbers (%)*		Using Advanced Access? Advanced Access N=5753	Control N=5068	Difference Unadjusted OR	Adjusted OR ((95) CI)**	P**
Is this appointment on the day of your choice?	Yes	4264 (90)	3362 (86)	1.49	1.27 (0.88 to 1.83)	0.20
	No	457 (10)	538 (14)			
	Didn't mind when I was seen	836	978			
Is this appointment at a convenient time?	Yes	4864 (95)	4177 (95)	1.1	0.92 (0.64 to 1.31)	0.64
	No	230 (5)	217 (5)			
	Didn't mind what time I was seen	447	462			
Did you get this appointment as quickly as you wanted?	Yes	4757 (90)	3885 (85)	1.51	1.31 (0.86 to 2.00)	0.22
	No	550 (10)	679 (15)			
	Didn't mind how quickly I got seen	214	253			
Is this appointment with the particular doctor or nurse that you ideally wanted to see?	Yes	3486 (84)	2724 (83)	1.11	1.16 (0.83 to 1.62)	0.40
	No	642 (16)	557 (17)			
	Didn't mind who I saw	1385	1549			
Were you able to book this appointment well in advance?	Yes	1756 (52)	2238 (75)	0.4	0.36 (0.20 to 0.64)	<0.001
	No	1634 (48)	728 (25)			
	Didn't matter about booking in advance	1939	1708			
Is this appointment with a doctor or nurse?	Doctor	5350 (98)	4518 (95)	2.24	2.50 (0.91 to 6.84)	0.07
	Nurse	136 (2)	257 (5)			
	Don't Know	49	71			
Is this appointment with a male or a female?	Male	3306 (65)	2689 (64)	1.05	1.23 (0.77 to 1.95)	0.38
	Female	1789 (35)	1533 (36)			
	Don't know	388	559			

* Percentages are shown of those responding yes or no, excluding those who did not know or did not mind and also excluding missing values.

** Logistic regression, adjusted for age, sex, ethnicity and accommodation status at patient level and list size, training, PMS and ex-fundholding status at practice level, and accounting for clustering by practice.

The comparison of Advanced Access and control practices on these factors is the primary analysis from this component of this evaluation. For several variables the descriptive data suggests differences between the two types of practices, but after adjustment for patient characteristics and clustering of data, the confidence intervals are wide and overlap parity.

In summary, patients in Advanced Access practices were:

- No more likely to obtain an appointment on the day of their choice or to say they were seen as soon as they wished
- Less likely to be able to book the appointment in advance
- Slightly more likely to see a doctor rather than a nurse

8.4.9 The type of appointment received in relation to issues which were important to particular patients

In the following tables, analysis is restricted to patients who expressed that each aspect of a consultation was 'very important' to them. Whether or not these patients obtained an appointment which fulfils this priority is compared in Advanced Access and control practices. For example the first table demonstrates whether patients for whom it was very important to have an appointment on the day of their choice were able to obtain an appointment on the day of their choice in Advanced Access and control practices.

The appropriate statistical approach for this type of comparison is a test of interaction, for example whether the ease with which patients in Advanced Access practices could be seen on the day of their choice, compared with patients in control practices, varied according to how important this issue was to them. This and similar analyses for the following tables showed that there were no significant interactions i.e. whether there were differences or no differences between the experience of patients in Advanced Access and control practices, these experiences did not vary in relation to how important that issue was to patients (p values not shown).

Table 41 Obtaining an appointment by patients for whom particular issues were very important

Figures are % who said they got an appointment, of those for whom this was very important	Using Advanced Access?			
	Advanced Access		Control	
	Count	%	Count	%
Obtained an appointment on day of choice	2496	87.1%	1782	83.3%
Obtained an appointment at convenient time	1182	90.2%	1124	89.6%
Obtained an appointment as quickly as wanted	1857	86.6%	1471	79.1%
Obtained an appointment with doctor or nurse they ideally wished to see	1680	87.0%	1291	85.3%
Able to book appointment well in advance	568	47.9%	707	68.7%

8.4.10 Evaluation questions based on GPAQ

The following questions are all taken from the GPAQ questionnaire, except where noted. They evaluate the practices' performance in a number of areas, some of which are relevant to access to care.

8.4.11 Satisfaction with receptionists

There was no difference in the satisfaction with the receptionists, comparing Advanced Access and control practices.

Table 42 How do you rate the way you are treated by receptionists at your practice?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How do you rate the way you are treated by receptionists at your practice	Very poor	34	.6%	36	.7%	70	.7%
	Poor	85	1.5%	58	1.2%	143	1.3%
	Fair	455	8.1%	436	8.7%	891	8.4%
	Good	1296	23.0%	1031	20.7%	2327	21.9%
	Very good	2027	36.0%	1720	34.5%	3747	35.3%
	Excellent	1733	30.8%	1703	34.2%	3436	32.4%
Total		5630	100.0%	4984	100.0%	10614	100.0%

8.4.12 Opening hours

There were also no differences between patients in Advanced Access or control practices in their satisfaction with the opening times of the practices. More than two thirds of patients describe their practices opening hours as good or very good. There was little demand for practices to open earlier in the morning, but of the minority of patients who would like wider opening hours, the highest proportion would like surgeries to be open at weekends.

Table 43 How do you rate the hours that your practice is open for appointments?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How do you rate the hours that your practice is open for appointments?	Very poor	32	.6%	52	1.1%	84	.8%
	Poor	139	2.5%	101	2.0%	240	2.3%
	Fair	764	13.6%	725	14.7%	1489	14.1%
	Good	2027	36.1%	1731	35.0%	3758	35.6%
	Very good	1965	35.0%	1650	33.4%	3615	34.2%
	Excellent	689	12.3%	686	13.9%	1375	13.0%

Table 44 What additional hours would you like the practice to be open?

		Using Advanced Access?				Total	
		Advanced Access		Control		Responses	%
		Responses	%	Responses	%		
What additional hours would you like the practice to be open?	Early morning	355	6.6%	354	7.4%	709	7.0%
	Lunch-time	258	4.8%	262	5.5%	520	5.1%
	Evenings	1178	21.9%	1025	21.5%	2203	21.7%
	Week-ends	1563	29.0%	1439	30.2%	3002	29.6%
	None, I am satisfied	2757	51.2%	2389	50.2%	5146	50.7%

8.4.12 Seeing a particular doctor

Patients in Advanced Access practices who wanted to see a particular doctor were able to do so more quickly compared with those in control practices

(ordinal logistic regression, adjusted OR 2.65 (1.60 to 4.38) p<0.001), and rated this more highly (adjusted OR 1.68 (1.15 to 2.46) p=0.008).

Table 45 Thinking of times when you want to consult a particular doctor, how quickly do you usually see that doctor?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
When you want to see a particular doctor, how quickly do you usually get to see that doctor?	Same day	2126	44%	728	17%	2854	31%
	Next working day	668	14%	628	15%	1296	14%
	Within 2 working days	869	18%	1004	24%	1873	21%
	Within 3 working days	436	9%	611	14%	1047	12%
	Within 4 working days	247	5%	312	7%	559	6%
	5 or more working days	518	11%	956	23%	1474	16%
	Does not apply	665		680		1345	

Table 46 Rating of length to wait for appointment with a particular doctor

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How do you rate this?	Very poor	124	2.3%	155	3.2%	279	2.7%
	Poor	364	6.7%	512	10.6%	876	8.5%
	Fair	879	16.1%	1075	22.3%	1954	19.0%
	Good	1162	21.3%	1032	21.4%	2194	21.3%
	Very good	1193	21.8%	805	16.7%	1998	19.4%
	Excellent	1167	21.4%	638	13.2%	1805	17.5%
	Does not apply	571	10.5%	609	12.6%	1180	11.5%
Total		5460	100.0%	4826	100.0%	10286	100.0%

These results can be combined to explore how satisfied people are with how long they have to wait to see a particular doctor. This shows that more than half the respondents felt that access to a particular doctor was very good or

excellent if they were seen on the same day or next working day. Most people (67%) thought that care was at least 'good' if they were seen within 2 working days, but people who had to wait three or more working days were less satisfied:

Table 47 Satisfaction with different lengths of wait to see a particular doctor

		When you want to see a particular doctor, how quickly do you usually get to see that doctor?						
		Same day	Next working day	Within 2 working days	Within 3 working days	Within 4 working days	5 or more working days	Does not apply
		%	%	%	%	%	%	%
How do you rate this?	Very poor	1.0%	1.0%	.3%	1.0%	3.1%	11.7%	1.8%
	Poor	1.0%	2.4%	4.6%	9.4%	17.3%	35.6%	1.2%
	Fair	4.0%	13.3%	28.3%	38.0%	40.3%	35.3%	1.6%
	Good	17.5%	28.2%	35.3%	34.1%	27.4%	10.2%	3.3%
	Very good	29.5%	34.1%	23.5%	13.9%	9.8%	4.9%	2.4%
	Excellent	46.4%	20.6%	7.5%	3.5%	1.5%	1.7%	2.6%
	Does not apply	.7%	.3%	.4%	.1%	.6%	.6%	87.1%

8.4.13 Seeing any doctor

Similar tables can be produced in relation to the length of time people wait to see *any* doctor. Again, people in Advanced Access practices felt they could usually get seen more quickly (ordinal logistic regression, adjusted OR 2.50 (1.60 to 3.93) p<0.001), and people rated this more highly (adjusted OR 1.34 (1.03 to 1.75) p=0.027).

Table 48 When you want to see any doctor, how quickly do you usually get seen?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		N=5518	%	N=4894	%	N=10412	
When you want to see any doctor, how quickly do you usually get seen?	Same day	3407	67%	1738	39%	5145	54%
	Next working day	731	14%	1070	24%	1801	19%
	Within 2 working days	512	10%	816	18%	1328	14%
	Within 3 working days	197	4%	389	9%	586	6%
	Within 4 working days	96	2%	187	4%	283	3%
	5 or more working days	114	2%	270	6%	384	4%
	Does not apply	461		424		885	

Table 49 Rating of length to wait for appointment with any doctor

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How do you rate this?	Very poor	54	1.0%	97	2.0%	151	1.5%
	Poor	146	2.7%	257	5.4%	403	4.0%
	Fair	571	10.6%	751	15.8%	1322	13.0%
	Good	1163	21.5%	1129	23.7%	2292	22.5%
	Very good	1424	26.4%	1075	22.6%	2499	24.6%
	Excellent	1621	30.0%	1070	22.4%	2691	26.5%
	Does not apply	421	7.8%	388	8.1%	809	8.0%

When wishing to see any doctor, most people only considered access to be very good or excellent if they were seen on the same day. Less than half the respondents considered care to be very good or excellent if they had to wait to the next working day, although 61% considered access to be at least 'good' if they were seen within two working days. This is a slightly lower proportion than those who considered it 'good' if they could see a particular doctor within two working days.

Table 50 Satisfaction with different lengths of wait to see any doctor

		When you want to see any doctor, how quickly do you usually get seen?						
		Same day	Next working day	Within 2 working days	Within 3 working days	Within 4 working days	5 or more working days	Does not apply
		%	%	%	%	%	%	%
How do you rate this?	Very poor	.5%	.3%	.6%	2.8%	4.7%	18.2%	1.6%
	Poor	.4%	2.9%	6.7%	11.2%	20.7%	32.6%	.5%
	Fair	4.2%	16.9%	31.3%	33.7%	36.2%	24.3%	1.1%
	Good	18.5%	34.1%	34.0%	35.5%	21.0%	10.2%	1.6%
	Very good	30.9%	29.8%	19.4%	13.4%	15.2%	9.4%	1.3%
	Excellent	45.2%	15.8%	7.9%	3.2%	2.2%	4.5%	.8%
	Does not apply	.4%	.2%	.2%	.2%		.8%	93.1%

8.4.15 Urgent access to see a GP

The next question explored whether patients could see a GP urgently when they needed to do so.

Table 51 If you need to see a GP urgently, can you normally do so on the same day?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
If you need to see a GP urgently, can you normally get seen on the same day?	Yes	3876	69.0%	3039	61.3%	6915	65.4%
	No	407	7.2%	608	12.3%	1015	9.6%
	Don't know/ never needed to	1332	23.7%	1313	26.5%	2645	25.0%

Overall about two-thirds of respondents felt they could normally see a GP on the same day when their problem was urgent. People in Advanced Access practices were more likely to feel they could see a GP urgently than those in control practices (adjusted OR 1.55 (1.03 to 2.35) p=0.034).

8.4.16 Waiting times in the surgery

There was no evidence of difference in waiting times before consultations began in patients in Advanced Access or control practices.

Table 52 How long do you usually have to wait at the practice for your consultations to begin?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How long do you usually have to wait at the practice for your consultations to begin?	5 minutes or less	477	8.6%	395	8.1%	872	8.4%
	6-10 minutes	1986	35.9%	1626	33.3%	3612	34.7%
	11-20 minutes	2113	38.2%	1818	37.2%	3931	37.8%
	21-30 minutes	643	11.6%	669	13.7%	1312	12.6%
	More than 30 minutes	306	5.5%	375	7.7%	681	6.5%

Again this can be compared with patients' perceptions of the waiting time. Respondents appear to have high expectations of being seen within a few minutes of their appointment time, with fewer than half of all respondents reporting the waiting time as 'good' if they had to wait more than 10 minutes.

Table 53 Rating of waiting time in relation to how long respondents usually have to wait

		How long do you usually have to wait at the practice for your consultations to begin?				
		5 minutes or less	6-10 minutes	11-20 minutes	21-30 minutes	More than 30 minutes
		%	%	%	%	%
How do you rate this?	Very poor	.5%	.2%	.7%	3.3%	23.3%
	Poor	.1%	.8%	9.0%	25.7%	36.6%
	Fair	3.7%	22.7%	53.1%	49.9%	31.4%
	Good	20.8%	40.2%	28.3%	17.0%	5.9%
	Very good	38.7%	27.5%	7.6%	3.3%	2.0%
	Excellent	36.2%	8.5%	1.3%	.9%	.9%

8.4.17 Contacting the practice by telephone

The issue of contacting the practice by telephone is particularly pertinent to an evaluation of Advanced Access, because of concerns that people have to telephone the practice early in the day to get an appointment. There was no strong evidence that there was a difference between Advanced Access and control practices in the ability to get through to the practice (adjusted OR 0.71, 0.46 to 1.10). But patients reported difficulties in both types of practice, with 39% of patients in Advanced Access practices and 30% of patients in control practices describing the ability to get through on the phone as fair or worse.

Table 54 How do you rate your ability to get through to the practice on the telephone?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
Ability to get through to the practice on the phone?	Very poor	290	5.1%	160	3.2%	450	4.2%
	Poor	572	10.1%	335	6.7%	907	8.5%
	Fair	1352	24.0%	1018	20.4%	2370	22.3%
	Good	1598	28.4%	1480	29.7%	3078	29.0%
	Very good	1172	20.8%	1259	25.2%	2431	22.9%
	Excellent	547	9.7%	593	11.9%	1140	10.7%
	Don't know/ never tried	105	1.9%	143	2.9%	248	2.3%

A related issue is whether patients are able to speak to a doctor on the phone when they have a question or need advice. Improving access by phone, along with providing other alternatives to face-to-face consultations, is advocated by proponents of Advanced Access as a strategy to 'shape' demand.

There was no evidence of any difference between Advanced Access and control practices (adjusted OR 1.05 (0.70 to 1.56))

Table 55 How do you rate your ability to speak to a doctor on the phone when you have a question or need medical advice

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
Ability to speak to a doctor on the phone when you have a question or need medical advice?	Very poor	112	2.0%	134	2.8%	246	2.4%
	Poor	278	5.1%	267	5.5%	545	5.3%
	Fair	619	11.3%	548	11.3%	1167	11.3%
	Good	988	18.0%	753	15.6%	1741	16.9%
	Very good	692	12.6%	598	12.4%	1290	12.5%
	Excellent	470	8.6%	314	6.5%	784	7.6%
	Don't know/ never tried	2319	42.3%	2223	46.0%	4542	44.0%

8.4.18 Continuity of care

One of the main criticisms of Advanced Access has been that by placing a high priority on speed of access, fewer people may be able to see a particular doctor. There is no evidence from the respondents to this study to support this criticism.

Table 56 In general, how often do you see your usual doctor?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
In general, how often do you see your usual doctor?	Always	924	17.9%	694	16.0%	1618	17.0%
	Almost always	1884	36.4%	1436	33.1%	3320	34.9%
	A lot of the time	820	15.9%	787	18.1%	1607	16.9%
	Some of the time	1104	21.3%	1026	23.6%	2130	22.4%
	Almost never	380	7.3%	347	8.0%	727	7.6%
	Never	61	1.2%	54	1.2%	115	1.2%
Total		5173	100.0%	4344	100.0%	9517	100.0%

There was no evidence of any difference between Advanced Access and control practices in patients' perceptions of continuity of care (adjusted OR 1.20 (0.91 to 1.57)), or their rating of their ability to see their usual doctor (adjusted OR 1.25 (0.96 to 1.62)).

Table 57 Rating of ability to see usual doctor

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
How do you rate this?	Very poor	51	1.0%	47	1.1%	98	1.1%
	Poor	236	4.7%	196	4.6%	432	4.6%
	Fair	792	15.7%	783	18.4%	1575	16.9%
	Good	1460	29.0%	1374	32.3%	2834	30.5%
	Very good	1501	29.8%	1099	25.8%	2600	28.0%
	Excellent	1003	19.9%	755	17.7%	1758	18.9%

Once again, it is possible to compare the experience and the rating of patients in relation to continuity. This shows that more than half the respondents considered care to be good if they saw their usual doctor 'a lot of the time', and very good if they saw their usual doctor 'almost always'.

Table 58 Ratings of ability to see usual doctor, in relation to how often respondents saw their usual doctor

		In general, how often do you see your usual doctor?					
		Always	Almost always	A lot of the time	Some of the time	Almost never	Never
		%	%	%	%	%	%
How do you rate this?	Very poor	.4%	.4%	.2%	.7%	7.1%	14.0%
	Poor	.1%	.2%	1.0%	9.7%	27.5%	24.7%
	Fair	1.3%	5.3%	19.0%	40.1%	30.0%	45.2%
	Good	13.0%	30.0%	51.0%	34.8%	15.8%	6.5%
	Very good	28.1%	45.2%	23.1%	10.9%	11.9%	3.2%
	Excellent	57.1%	19.0%	5.8%	3.8%	7.8%	6.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

8.4.19 Communication

The following section of questions in the questionnaire was designed to be completed following the patient's consultation. It included eight items addressing various aspects of the quality of the consultation, mainly relating to issues of communication such as how well the doctor listened and explained. These questions were answered on a five-point scale from very poor to excellent. For ease of interpretation, the GPAQ developers recommend rescaling responses so that the mean score ranges from 0% (very poor) to 100% (excellent). This convention is used in the table below.

There is no evidence of difference between Advanced Access and control practices in communication during consultations.

Table 59 Satisfaction with communication, comparing Advanced Access and control practices

	Using Advanced Access?		Total
	Advanced Access	Control	
How thoroughly the doctor asked about your symptoms and how you are feeling?	81.30	80.24	80.81
How well the doctor listened to what you had to say?	83.66	82.75	83.24
How well the doctor put you at ease during your physical examination?	83.83	82.73	83.32
How much the doctor involved you in decisions about your care?	81.53	80.62	81.10
How well the doctor explained your problems or any treatment that you need?	83.07	82.14	82.63
The amount of time your doctor spent with you today?	79.61	78.59	79.13
The doctor's patience with your questions or worries?	83.31	82.26	82.82
The doctor's caring and concern for you?	83.54	82.56	83.08

8.4.20 Enablement

The GPAQ questionnaire also includes the 'Enablement' scale, originally devised by Prof John Howie and colleagues as a measure of outcome from

general practice consultations (Howie *et al,* 1998). This is based on three questions, the detailed results of which are shown in Appendix 3.

8.4.21 Overall satisfaction with the appointment system

The following question is not part of the GPAQ questionnaire, but was included to capture the overall satisfaction of respondents with the appointment system in their practice. There was no evidence of any difference between Advanced Access and control practices (adjusted OR 0.93 (0.67 to 1.28)). Slightly more than half of the respondents in both types of practice describe themselves as completely or very satisfied. However a sizeable minority of patients in both types of practice describe themselves as only 'fairly satisfied' or worse, suggesting that difficulties in making access via GP appointment systems remain a problem for almost half of the people who use them.

Table 60 Overall satisfaction with appointment system, comparing Advanced Access and control practices.

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
All things considered, how satisfied are you with the appointment system at your practice?	Completely satisfied	1117	20.0%	941	19.1%	2058	19.5%
	Very satisfied	1794	32.1%	1638	33.2%	3432	32.6%
	Fairly satisfied	1629	29.1%	1415	28.7%	3044	28.9%
	Neutral	474	8.5%	489	9.9%	963	9.1%
	Fairly dissatisfied	312	5.6%	203	4.1%	515	4.9%
	Very dissatisfied	145	2.6%	123	2.5%	268	2.5%
	Completely dissatisfied	123	2.2%	124	2.5%	247	2.3%

Since this question of satisfaction with the appointment system is central to this evaluation, the results were explored further for different groups of patients. The table below shows the mean scores on the question about satisfaction with the appointment system for different groups of patients. For ease of presentation the question has been converted into the mean score on a scale from 0-100, where 100 represents all patients being very satisfied and 0 equals all patients being very dissatisfied.

The relationship between patient characteristics and satisfaction with the appointment system was explored using interaction tests, adjusted for patients age, sex, ethnicity, accommodation status, practice list size and practice training, PMS and ex-fundholding status. These show no evidence of

difference in satisfaction with either system in relation to age and sex. However patients from non-white ethnic groups were much less likely to be satisfied with the systems in control practices than were those patients in Advanced Access practices. Conversely patients who lived in owner occupied accommodation were more likely to be satisfied with control practices than those in Advanced Access practices. This finding is not evident from the crude scores in the table but becomes apparent in the interaction test after taking account of confounding variables. Owner-occupation is often used as a proxy for higher socio-economic status.

Table 61 The satisfaction of different groups of patients with the appointment system

	Advanced Access		Control		
	N	Mean score	n	Mean score	Coefficient for interaction * (95% CI) p
Sex					0.023 (-2.10 to 2.15)
Male	2013	73	1855	73	P=0.983
Female	3576	72	3068	72	
Age group					Adjusted Wald test* F(7,44) = 1.63
16-24	542	70	631	72	P=0.152
25-34	795	72	839	71	
35-44	892	72	793	73	
45-54	797	72	692	71	
55-64	972	73	711	73	
65-74	797	73	663	74	
75-84	657	75	500	77	
85+	136	74	88	77	
Ethnicity					13.70 (3.89 to 23.52)
White	5303	73	4395	74	P= 0.007
Other ethnicity	129	73	344	60	
Accommodation					-3.04 (-5.94 to –0.14)
Owner occupied	3703	73	2965	73	P=0.04
Other	1601	72	1647	73	
Employment					-0.51(-2.39 to 1.37)
Employed	2573	72	2282	72	P = 0.588
Other	2637	74	2305	73	

* adjusted for patient age, sex, ethnicity, accommodation status, practice list size and practice training, PMS and ex-fundholding status, and taking account of clustering by practice.

8.4.22 Overall satisfaction with the practice

The final 'evaluation' question in the GPAQ questionnaire asked respondents about their overall satisfaction with the practice. This question has since been omitted from the revised version of the GPAQ, firstly, because it is argued that global perceptions are less practically useful as a means of improving service quality and, secondly, because the response options for this question were given in reverse order compared with other questions in the questionnaire and there was some evidence that patients misread them.

The overall satisfaction question was included in this study, but there is no evidence of any important difference between Advanced Access and control practices (adjusted OR 0.98 (0.76 to 1.28)).

Table 62 All things considered, how satisfied are you with your practice?

		Using Advanced Access?				Total	
		Advanced Access		Control		Count	%
		Count	%	Count	%		
All things considered, how satisfied are you with your practice?	Completely satisfied	1847	34.1%	1542	32.6%	3389	33.4%
	Very satisfied	2247	41.5%	1925	40.7%	4172	41.2%
	Fairly satisfied	950	17.6%	883	18.7%	1833	18.1%
	Neutral	181	3.3%	176	3.7%	357	3.5%
	Fairly dissatisfied	58	1.1%	60	1.3%	118	1.2%
	Very dissatisfied	53	1.0%	64	1.4%	117	1.2%
	Completely dissatisfied	73	1.3%	75	1.6%	148	1.5%

8.4.23 GPAQ scales

The GPAQ questionnaire generates a number of scales. Three of these scales (Receptionists, Continuity of Care, and Overall satisfaction) are based on single questions, the detailed results of which have been described in sections 8.4.11, 8.4.12 and 8.4.22 respectively. Three further scales (Access, Communication, and Enablement) are formed from a number of individual questions. The following figure shows the overall results on these scales, comparing Advanced Access and control practices. The non-GPAQ question about overall satisfaction with the appointment system is also included here.

Each scale represents the mean of the completed items for each patient and is scored from 0% to 100%, where 100% indicates a response of 'excellent' on all items and 0% represents a score of 'very poor' on all items.

The access scale, which is particularly important in the context of this study, is comprised of the questions relating to satisfaction with the hours that the practice is open, the rating of speed of access to any doctor and a particular doctor, the rating of the waiting time for consultations to begin and the rating of the ability to get through to the practice on the phone and to speak to a doctor on the phone.

There were no important differences between Advanced Access and control practices on any of the overall scales.

Figure 4 Summary of scales from survey of patients consulting, comparing Advanced Access and control practices

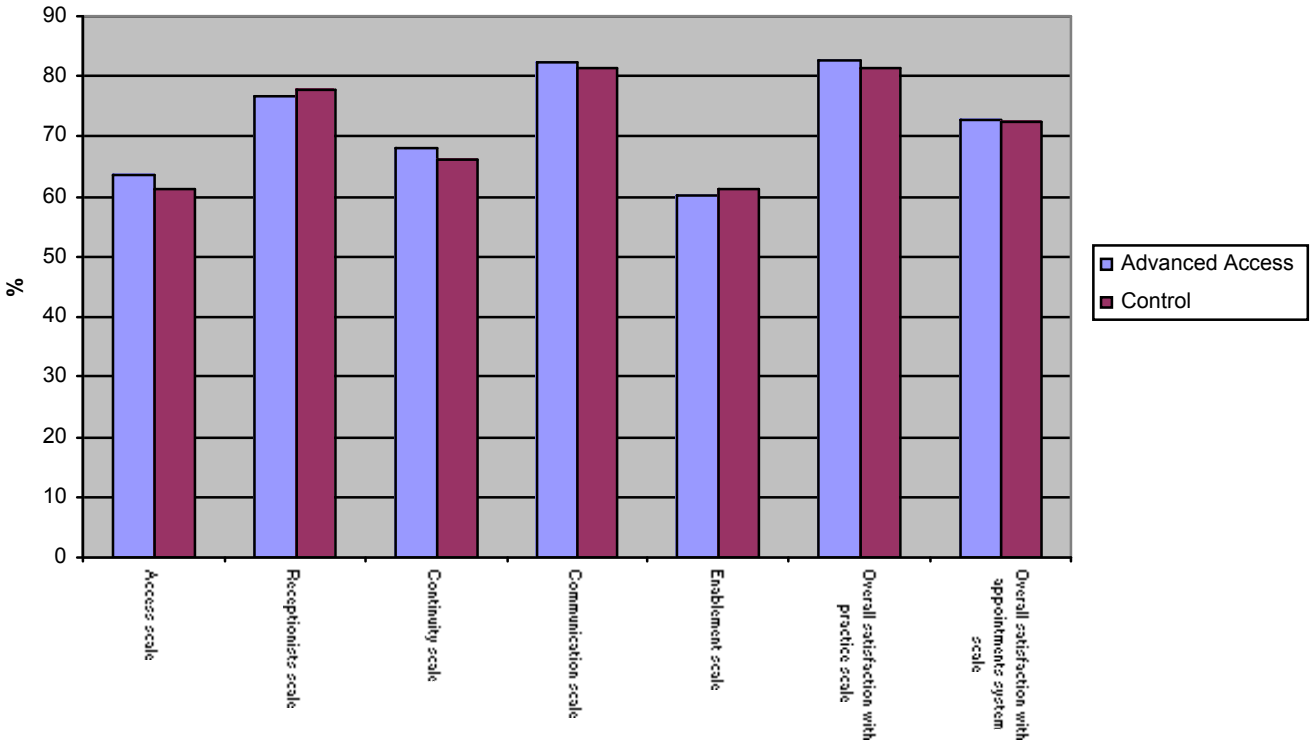


Table 63 Regression coefficients for differences between Advanced Access and control practices on summary scales from patient survey

	Coefficient*	95% CI
Scale:		
Access	1.04	-2.83 to 4.91
Receptionists	-2.08	-5.69 to 1.54
Continuity	2.34	-1.15 to 5.82
Communication	-0.30	-2.16 to 1.55
Enablement	-1.23	-3.50 to 1.05
Overall satisfaction with practice	0.31	-1.96 to 2.57
Overall satisfaction with appointments system	-0.85	-4.90 to 3.19

*Taking account of clustering by practice and adjusted for patient age, sex, ethnicity and housing status, and practice list size, PMS, training and ex-fundholding status. A one point difference in coefficient represents one percentage point on the relevant scale.

8.4.24 Clustering by practice

Finally we examined the issue of the extent to which patients' responses were clustered by practice. The sample size calculations had been based on intraclass correlation coefficients (ICCs) of 0.05 to 0.1. The table below shows the ICCs obtained for various key variables in this survey. The results indicate that our prior estimates were reasonable. It is recommended that researchers resent information about ICCs as this is very useful to those conducting similar research in future.

Table 64 Intraclass correlation coefficients

	ICC	95% CI
Variable:		
Is this appointment on the day of your choice?	0.020	0.009 to 0.030
Overall satisfaction with practice	0.035	0.018 to 0.051
Overall satisfaction with appointments system	0.078	0.045 to 0.112
Access scale	0.143	0.087 to 0.200

Section 9 Survey of non users

9.1 Introduction and aim

A concern within primary care is that some patients may not be attempting to or able to see their GP due to perceived barriers in making an appointment. This section is based on a survey of individuals who had not attended their surgery in the past year, to ascertain if these patients had been well during this time or whether difficulties with making appointments had led to them not accessing care. An additional issue is whether patients during this time had been accessing other health care services instead, such as another GP surgery, a local pharmacy or the out of hours service.

9.2 Research questions

- What factors in making an appointment are most important to patients who do not access general practice?
- Have these patients been deterred from attempting to make an appointment, or been unable to make an appointment due to difficulties with appointment systems, and what is the nature of those difficulties?
- Is there any difference in the barriers for making an appointment for patients in Advanced Access practices and control practices?

9.3 Method

9.3.1 Overview and questionnaire design

The eight case study practices took part in the Non-User Survey. Patients who had not had an appointment in the previous 12 months were sent a postal questionnaire by the practice, with a reply paid envelope addressed to the research team followed by two postal reminders if they did not respond to the initial contact.

The questionnaire was based on the design used for the User survey (see Section 8) but was less extensive. It included questions on: the factors that would be important to patients in making an appointment; whether they had consulted other health providers in the past year; whether they had tried unsuccessfully to make an appointment and if so the difficulties they experienced; or whether they had considered making an appointment but had not done so; the perceived barriers to making an appointment.

9.3.2 Survey administration

This survey was conducted at the eight case study practices between November 2005 and March 2006. On a visit to each practice a member of the research team helped the practice staff to use the practice computer to select patients who fulfilled the following criteria. Patients were aged 16 years or over, had not had any face-to-face consultations at the surgery or via home visit with any member of the practice team in the previous 12 months, and

had been registered with the practice for at least 12 months. Having identified suitable patients, a random sample of 200 patients per practice was selected using the randomisation function within the practice computer system.

Each patient was then given a unique identity number to preserve the anonymity of individuals. The patients' name, address and identity number were then mail merged with onto three proforma letters, an initial letter inviting them to take part in the study and two reminder letters. Each letter was put into a large envelope with a questionnaire, a leaflet about the study and a freepost envelope addressed to the research team.

The envelopes were put into three separate boxes marked as the initial letter, the first reminder and the second reminder; these were then left with the practice. The initial letter was posted within three days of the visit by the research team. In order to have some information about differences between respondents and non-respondents whilst preserving the anonymity of each individual, the identity number, gender and age of each patient were downloaded from the practice systems. After two weeks a member of the research team contacted the practice and read out a list of the identity numbers of the patients who had returned the questionnaire and asked a practice member to send out the reminder letters to all the patients remaining. This process was then repeated 2 weeks later.

9.4 Analysis

All data were independently double entered by the data entry company Wyman-Dillon. Data were analysed in SPSS version 12 and Stata version 9.

The most important questions in this section relate to difficulties that people experience in making appointments. However the numbers of patients who had wanted to or tried to make an appointment and had not been able to do so are small. Because these data are based on only the eight case study practices, and because the data are clustered by practice, confidence intervals for any estimates are likely to be wide.

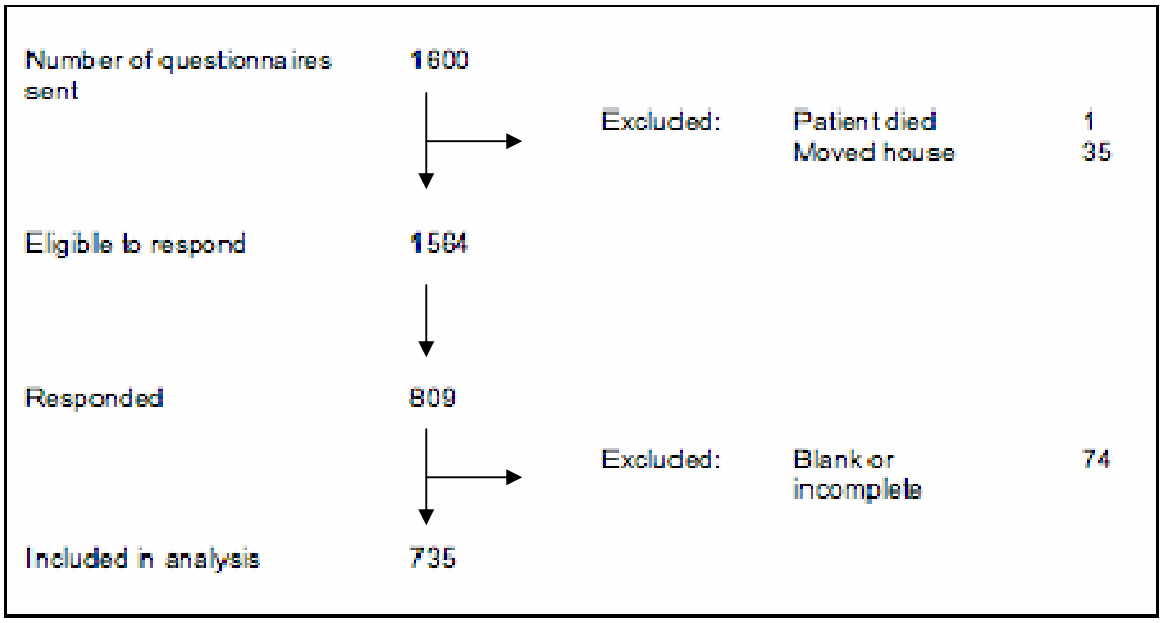
In addition, the case study practices were selected purposively to explore the impact of different access systems in different settings, and they are not necessarily a representative sample of practices, nor are practice characteristics necessarily balanced across the two groups. The analyses used regression equations to account for potentially important confounding characteristics of patients and practices, as in the other sections. However, unlike most of the other components of this research study which were based on 47 practices, these regression models are based on only 8 practices so will be less stable in the face of confounding differences at practice level. Therefore the findings in this section should be regarded as only tentative and exploratory.

9.5 Results

9.5.1 Response rates

The overall response rate was 47% (735/1564). This is shown in more detail in the figure below.

Figure 5 Response rate to non user Survey



9.5.2 Comparison between responders and non-responders

Details of the age and sex of responders were available from the data obtained from the practice computer systems.

Table 65 Response rate by practice

		Valid response?				Total	
		Not completed or not returned		Completed		Count	Row %
		Count	Row %	Count	Row %		
Practice	14	92	46.9	104	53.1	196	100.0
	22	110	55.3	89	44.7	199	100.0
	26	112	56.9	85	43.1	197	100.0
	34	97	49.2	100	50.8	197	100.0
	39	64	35.2	118	64.8	182	100.0
	41	134	67.3	65	32.7	199	100.0
	44	133	68.2	62	31.8	195	100.0
	52	87	43.7	112	56.3	199	100.0
Total		**829**	**53.0**	**735**	**47.0**	**1564**	**100.0**

The response rates between the different practices ranged from 31.8% - 64.8%, with half of the practices having a response rate of above 50% (Table 65). The response rate for the Advanced Access and control practices was similar at 47.9% and 46.1%, respectively.

Table 66 Response rate for Advanced Access and control practices

		Valid response?				Total	
		Not completed or not returned		Completed		Count	Row %
		Count	Row %	Count	Row %		
Advanced Access/ Control	Advanced Access	411	52.1	378	47.9	789	100.0
	Control	418	53.9	357	46.1	775	100.0
Total		**829**	**53.0**	**735**	**47.0**	**1564**	**100.0**

A similar proportion of men and women responded to the questionnaire (men 46.6% (523/1123); women 48.1% (212/441)). These figures demonstrate that there were far more men than women in the sample, which is a reflection of the lower consultation rate in general practice amongst men.

Across the different age-groups the response rate was highest for those aged 45-84 years, for these age groups the response rate was above 50% (Table 67).

Table 67 Response rate by age

		Valid response				Total	
		Not completed or not returned		Completed		Count	Row %
		Count	Row %	Count	Row %		
Age Groups	16-24	168	63.9	95	36.1	263	100.0
	25-34	193	65.9	100	34.1	293	100.0
	35-44	224	53.6	194	46.4	418	100.0
	45-54	118	41.5	166	58.5	284	100.0
	55-64	75	37.7	124	62.3	199	100.0
	65-74	28	45.9	33	54.1	61	100.0
	75-84	14	46.7	16	53.3	30	100.0
	85+	9	56.3	7	43.8	16	100.0
Total		**829**	**53.0**	**735**	**47.0**	**1564**	**100.0**

9.5.3 Characteristics of respondents

Generally, the characteristics of respondents and non-respondents were similar across the Advanced Access and control practices. In the Advanced Access practices respondents were more likely to be of white ethnicity and more likely to be in employment (

Table 68).

Table 68 Characteristics of respondents: Advanced Access vs. controls

	Advanced Access %	Control %
Male	72.5	68.7
Mean age (years)	44.53	43.54
Longstanding illness, disability or infirmity	15.3	16.8
White ethnicity	98.7	86.8
Owner-occupied housing	73.4	76.2
Employed	76.9	69.9
Registered at the practice > 12 months	99.5	99.4

9.5.4 Characteristics of case study practices

The regression analyses reported later in this section are adjusted for practice list size, training practice status, GMS or PMS status and ex-fundholding status. There were differences between the Advanced Access and control practices, in that the former had larger list sizes and were all training practices, whereas only two control practices were involved in training – see table below.

Table 69 Characteristics of case study practices

	Advanced Access N=4	Control N=4
Mean list size (SD)	8833 (2401)	5267 (1418)
Previous fundholding practice	3	2
PMS practice	2	1
Training practice	4	2

9.5.5 What factors are most important to patients intending to make an appointment at their primary care practice

This question was designed to ascertain which factors were most important for patients who have not made an appointment, when considering making an appointment at general practice, in order to make comparisons with patients in the main User Survey who *had* made an appointment (Section 8).

Unfortunately, although it was originally intended that the same questions would be included in the non-user survey and the user survey, differences in wording and question order arose between the two questionnaires which mean that the results are not entirely comparable. This occurred because of revisions to the design of the user survey questionnaire at a late stage in order to reflect the increasing importance of the 'patient choice' agenda. The non-user survey asked people about the importance of being seen 'on a particular day of the week', but in the user survey this was changed to the importance of being seen 'on a day of your choice'.

The table below shows the importance of various factors to patients who have not made an appointment. The only substantial difference between Advanced Access and control practices is in the importance accorded to being able to book in advance.

With the proviso above about the limitations in comparing the findings from the user survey and non-user survey, the rank order of importance has some

differences. Being seen on a particular day of the week is much less important in the non-user survey than is being on the day of choice in the user survey. This is likely to reflect differences in question wording. However, non-users placed more importance on being seen at a particular time of day and of being able to book in advance than did users of services. This may reflect the fact that patients in the non-user survey were less likely to have limiting long-term illness and more likely to be in employment than those responding to the user survey (see Section 8).

Table 70 If you needed to make an appointment with your general practice, how important would each of the following factors be to you?

		Advanced Access/ Non Advanced Access		
		N=374 **Advanced Access**	N=354 **Control**	N=728 **Total**
Being seen as soon as possible	Mean	3.75	3.76	3.76
	Std Deviation	.51	.48	.49
Being seen at a particular time of day	Mean	3.00	2.95	2.97
	Std Deviation	.84	.83	.83
Being seen on a particular day of the week	Mean	2.42	2.40	2.41
	Std Deviation	.93	.87	.91
Seeing a particular doctor or nurse	Mean	2.56	2.57	2.57
	Std Deviation	.98	.99	.98
Seeing a doctor rather than a nurse	Mean	2.65	2.71	2.68
	Std Deviation	.96	.98	.97
Seeing a nurse rather than a doctor	Mean	1.90	1.90	1.90
	Std Deviation	.71	.72	.71
Seeing a female doctor or nurse rather than a male	Mean	1.76	1.75	1.75
	Std Deviation	.79	.86	.83
Seeing a male doctor or nurse rather than a female	Mean	1.81	1.80	1.80
	Std Deviation	.85	.90	.87
Being able to book the appointment well in advance	Mean	2.78	2.59	2.69
	Std Deviation	.99	.97	.98

9.5.6 Difficulties in making an appointment

The following four questions were designed to find out whether patients have encountered any barriers to making an appointment and if so what the barriers might be. Patients in Advanced Access practices were more likely than those in control practices to state that they had tried and been unable to make an appointment with their GP (Advanced Access 9.0% (34/376) vs. control practices 10.3% (36/351); OR 4.60 (2.51 to 8.41), p<0.001).[10]

When the reasons why these individuals had not made an appointment were examined, the Advanced Access and control practices were noticeably different (although the numbers of patients are small).

The greatest difficulty stated for the patients in the Advanced Access practices was that 'the surgery wouldn't let me book in advance' and this was the response of 58.1% of patients who gave a reason for not being able to make an appointment (

[10] Although the crude estimates show a lower proportion of Advanced Access patients failing to make an appointment, the odds ratio suggests that there is a difference in the opposite direction, which is being masked by confounding differences between practices.

Table 71). However, for the patients from control practices this appeared to be much less of a problem. The second greatest difficulty for patients at the Advanced Access practices was 'the surgery could not offer me an appointment soon enough' with a response of 54.8%. However, for the control practices this was much higher at 71.9%.

Patients at Advanced access practices were also more likely to have had problems with the surgery not offering an appointment on a convenient day or time, and problems contacting the surgery, than patients at the control practices.

Table 71 Why were you not able to make an appointment?

		Advanced Access/ Non Advanced Access				Total	
		AA		Control			
		Count	Col %	Count	Col %	Count	Col %
Why were you not able to make an appointment	Unable to contact surgery to make an appointment	8	25.8%	3	8.8%	11	16.9%
	The surgery could not offer me an appointment enough	17	54.8%	23	67.6%	40	61.5%
	The surgery couldn't offer me an appointment on convenient day	13	41.9%	7	20.6%	20	30.8%
	The surgery couldn't offer me an appointment at convenient time	13	41.9%	10	29.4%	23	35.4%
	The surgery couldn't offer me an appointment the doctor or nurse I wanted to see	5	16.1%	5	14.7%	10	15.4%
	The surgery offered me an appointment with a nurse but I wanted to see a doctor	1	3.2%			1	1.5%
	The sugery offered me an appointment with a doctor but I wanted to see a nurse						
	Wanted to see a doctor of a particular sex and wan't able to						
	The surgery wouldn't let me book in advance	18	58.1%	6	17.6%	24	36.9%
	I wasn't registered with the practice I wanted to go to						
	Other reason	4	12.9%	7	20.6%	11	16.9%
Total		31	100.0%	34	100.0%	65	100.0%

9.5.7 Wanting to make appointment but not trying to make one

Patients in Advanced Access practices were more likely than those in control practices to state that they had wanted to make an appointment at their general practice but not tried to do so (Advanced Access 13.5% (51/377) vs. control practices 14.3% (50/349); OR 3.06 (2.30 to 4.08), p<0.001).[11]

[11] Although the crude estimates show a lower proportion of Advanced Access patients failing to make an appointment, the odds ratio suggests that there is a difference in the opposite direction, which is being masked by confounding differences between practices.

The reasons given by the patients for not trying to make an appointment were again different between the advanced access and control practices (Table 72).

In Advanced Access practices patients were more likely to say they did not contact the practice because of perceived difficulties in contacting the practice, being able to book an appointment or being able to book for a convenient day or time.

In control practices the main reason given by patients for not trying to contact the practice was because they did not think they would be seen soon enough.

Table 72 Why did you not try to make an appointment?

Why did you not try to make an appointment?	Advanced Access/ Non Advanced Access				Total	
	Advanced Access N=51		Control N=50		Count N=101	Col %
	Count	Col %	Count	Col %		
Unable to contact the surgery to make an appointment	8	15.7	2	4.0	10	9.9
Didn't think the surgery would see me soon enough	17	33.3	30	60.0	47	46.5
Didn't think the surgery would offer me an appointment on a convenient day	13	25.5	7	14.0	20	19.8
Didn't think the surgery would offer me an appointment at a convenient time	21	41.2	12	24.0	33	32.7
Couldn't see the doctor or nurse I wanted to see	2	3.9	8	16.3	10	9.9
The surgery would make me see a nurse, but I wanted to see a doctor	1	2.0	2	4.0	3	3.0
The surgery would make me see a doctor, but I wanted to see a nurse			1	2.0	1	1.0
Wanted to see a doctor of a particular sex, and didn't think I'd be able to			5	10.0	5	5.0
Didn't think the surgery would let me book in advance	13	25.5	3	6.0	16	15.8
I wasn't registered with the practice I wanted to go to			2	4.1	2	2.0
Problem went away before I tried to make an appointment	14	27.5	10	20.0	24	23.8
Decided to go somewhere else instead of the practice	8	15.7	5	10.0	13	12.9
Other	16	31.4	14	28.0	30	30.0
Total	**51**	**100.0**	**49**	**100.0**	**100**	**100.0**

The following two questions relate to the use of other services than the primary care practice. This question was asked because of the possibility that difficulties in accessing general practice may lead people to seek help from other providers of care.

Interpretation of the findings in Table 73 is complex and should be made with caution for the reasons discussed in section 9.4. The point estimate suggests that patients from Advanced Access practices are slightly less likely to have consulted in another general practice, but the regression analyses after adjusting for practices suggests that the opposite is true. This implies that there is a difference, with more Advanced Access patients consulting elsewhere, which is being masked by confounding variables. Further exploration of the data (not shown here) suggests that this is due to confounding at the practice level, not the patient level.

On the basis of the other regression analyses shown, it appears that patients who had not consulted their own practice from Advanced Access practices were more likely than patients from control practices to have consulted an NHS walk-in centre, an Accident and Emergency department or a pharmacy than patients from control practices. As discussed above, the regression analyses (taking account of confounding) in some cases indicated findings in the opposite direction from the crude estimates.

The reasons patients stated that they had used other services followed a similar pattern in the Advanced Access and control practices (Table 74). The statement that generated the most frequent response in both type of practice was 'Quicker than getting an appointment at the GP surgery'.

Table 73 In the last 12 months, how many times have you?

		Advanced Access/ Non Advanced Access		
		N=366 Advanced Access	N=343 Control	OR (95% CI)* P value
Consulted a GP or nurse at another general practice	No. of patients	14	17	8.51 (3.55 to 20.38) p<0.001
	% of patients	3.9	5.2	
	Mean no. consultations	.08	.16	
	Std Deviation	.54	.86	
Telephoned NHS Direct	No. of patients	21	23	0.58 (0.13 to 2.51) p=0.47
	% of patients	5.9	7.1	
	Mean no. consultations	.10	.16	
	Std Deviation	.49	.83	
Attended an NHS Walk-In Centre	No. of patients	13	32	6.52e+25 (5.45e+25 to 7.79e+25) p<0.001
	% of patients	3.7	9.8	
	Mean no. consultations	.06	.18	
	Std Deviation	.33	.80	
Contacted a GP 'out-of-hours' service when your surgery was closed	No. of patients	8	10	1.36 (0.52 to 3.55) p=0.53
	% of patients	2.3	3.1	
	Mean no. consultations	.03	.05	
	Std Deviation	.19	.36	
Attended an Accident & Emergency (Casualty) Department	No. of patients	18	49	1.35 (1.08 to 1.69) p=0.01
	% of patients	5.1	15.0	
	Mean no. consultations	.05	.21	
	Std Deviation	.23	.65	
Visited a pharmacy for medical advice	No. of patients	43	50	2.53 (1.73 to 3.70) p<0.001
	% of patients	12.0	15.3	
	Mean no. consultations	.18	.34	
	Std Deviation	.58	1.23	

* Logistic regression, comparing proportion of patients who had visited another provider, adjusted

for age, sex, ethnicity, accommodation status, practice list size, training, PMS and ex-fundholding status and taking account of clustering by practice

Table 74 Thinking of the place you went to most often, why did you go there instead of the GP surgery you are now registered with?

Thinking of the place you went to most often, why did you go?	Advanced Access/ Non Advanced Access				Total	
	Advanced Access		Control		Cases	Col Response %
	Cases	Col Response %	Cases	Col Response %		
More convenient location	10	15.6	20	25.3	30	21.0
More convenient opening hours	21	32.8	24	30.4	45	31.5
Quicker than getting an appointment at the GP surgery	33	51.6	44	55.7	77	53.8
Had more confidence in the advice/treatment I would get	6	9.4	10	12.7	16	11.2
Not registered with a GP	1	1.6	1	1.3	2	1.4
Wanted to see a nurse rather than a doctor			2	2.5	2	1.4
Better range of services	5	7.8	4	5.1	9	6.3
Didn't want to bother the doctor	28	43.8	30	38.0	58	40.6
Wanted telephone advice rather than go to surgery	11	17.2	6	7.6	17	11.9
Problem was too serious for GP to deal with	9	14.1	11	13.9	20	14.0
Didn't want to see anyone I know			2	2.5	2	1.4
More comfortable environment	2	3.1	5	6.3	7	4.9
I was registered at a different GP practice at the time			2	2.5	2	1.4
Total	**64**	**196.9**	**79**	**203.8**	**143**	**200.7**

* The percentage total is greater than 100%, as the respondents to this question were instructed to tick any statements that applied to them

Section 10 Discrete choice experiment

10.1 Introduction and aim

The aim of this section is to elicit quantitative evidence on the strength of patients' preferences for various key attributes (characteristics) of appointment systems in general practice. Such data are important as there are a number of generic attributes which patients may value and which can be configured in different ways to produce alternative appointment systems (e.g. convenience of the appointment, continuity of care, being seen at a convenient time of day and the time spent waiting for the consultation to begin).

To make an informed choice about the value of various options requires that the individual is able to weigh up the differences in such attributes. Then it is important that decision makers are informed by this information in order that proposals for change might reflect patients' preferences. Patient surveys which commonly ask respondents to rank or rate their satisfaction levels with various aspects of current practice (as used in Section 8) provide useful but limited information. For this reason we make use of an alternative methodology, the discrete choice experiment to complement our understanding of patient satisfaction. This method quantifies the strength of patients' preferences in a choice based context by analysing responses individuals provide in surveys about how they would behave in hypothetical (yet realistic) situations. This enables us to better understand the priority patients attach to different booking systems.

The discrete choice experiment (DCE) is an economic method of assessing stated preferences for non-marketed commodities like general practice appointment systems. It is an attribute-based measure of preference intensity that has been validity applied to health care(Ryan & Gerard 2003) and is based on the premise that all decisions involve choice and all choices involve sacrifice. Thus a DCE question asks individuals to choose their preferred option from a choice of options that are described in terms of unique combinations of attribute levels. This format forces them to value attributes against each other. These choices are used to estimate a utility function and the results used to: identify those attributes which are significant in the decision to choose; quantify the relative trade-offs between attributes; estimate overall utility scores of systems in current use or possible future options; and consider the impact of quality improvements to the system.

The ability to decompose preferences into component attributes in this way allows for a broader-based view of benefit which brings together a number of component characteristics and which may include combinations of attribute levels not yet available but, nonetheless, important for policy makers to explore (e.g. in our study we use double appointments as a booking option. This may not be routinely available across all general practices but nonetheless may be a valid option in future).

One key difference with the DCE compared with other utility measures is the ability to present results in terms of 'marginal rates of substitution' between

attributes. This marginal rate of substitution is the rate at which individuals are willing to give up levels of one attribute for improvements in other attributes, for example, being willing to wait for an appointment to have a preferred doctor see you. Such information can be extremely useful for decision makers who seek to understand how they can, say, compensate individuals for a change in levels of service.

This section is based on establishing the intensity of preferences of people who have booked an appointment to see the doctor or nurse at practices which have and have not implemented Advanced Access. For reasons explained later on the four component attributes of typical booking systems are taken to be about: access ('day of appointment' and 'length of appointment'); convenience ('time of day of appointment'); and continuity of care ('who the appointment is made with').

As well as exploring the preferences of patients as a whole in obtaining appointments from different practices, it is important to consider different sub-groups of patients, particularly from practices which have or have not implemented Advanced Access.

10.2 Research questions

This section addresses the following questions:

- How important are the attributes associated with access, convenience and continuity of care to patients when booking an appointment in general practice?
- What are the trade-offs between attributes and hence the nature of compensation required for changing levels of service?
- What is the impact of different health conditions on the importance of attributes when booking an appointment in general practice?
- Do different groups of patients have different priorities in particular are the preferences of patients belonging to Advanced Access systems different?

10.3 Method

10.3.1 Overview of method

In implementing a DCE, there are five key stages to follow:(Hensher, Rose, & Greene 2005;Ryan & Hughes 1997)i) identification of the relevant attributes (characteristics) and assigning levels to the attributes, ii) specifying the utility function to be estimated, iii) selection of an experimental design to estimate utility function, iv) development of a survey instrument and elicitation of preferences, and v) analysis.

All practices in the study were supported in running the DCE survey. Patients completed the questionnaire in the waiting room or were posted a reminder if they did not do so.

10.3.2 Identification of attributes and assignment of levels

Attributes

As each option in a choice set presented to respondents is uniquely described by a combination of attribute levels it follows that attributes and their levels must be identified. In this instance selection of attributes was informed by: Advanced Access policy, published and grey literature and preliminary information obtained from the qualitative study at the time.

In general terms the Advanced Access approach seeks to make it easier for people to get an appointment by adopting a variety of strategies tailored to meet local circumstances. Key ones being to increase the supply of appointments to offer them on the day the patient contacts the practice, by greater use of nurses and by greater use of telephone consultations. However such action may come at a price; reduced continuity of care, longer waiting times to see the nurse or doctor or shorter consultation slots. Thus it would seem that notions of access, continuity of care and convenience play important roles in developing appointment systems in general practice.

Previous DCEs which have been conducted around GP consultations have shown people value a number of attributes that seem pertinent to the issue of how best to arrange a satisfactory appointment in the first place. For example, Gerard and Lattimer (2005) showed that being seen in person by a doctor rather than nurse and providing a consultation slot that was uninterrupted with enough time to discuss the problem at hand were significant determinants of utility.(Gerard & Lattimer 2005). Scott *et al* (2003) showed that being seen by a familiar doctor was important.(Scott, Watson, & Ross 2003)

Two current studies of access to general practice were underway at the time and proved helpful in the selection of attributes. Turner *et al* (2005) reported four attributes for their DCE study into continuity of care: seeing someone who is known and trusted, number of days wait for a consultation, seen by a doctor or nurse and person consulted has the full medical history.(Turner *et al,* 2005) Rubin *et al* (2005) reported number of days wait for a consultation, whether the doctor is chosen or not and convenience of the time of the appointment (Rubin *et al,* 2005).

Continuity of care and the professional person being consulted emerged as early themes in the first five qualitative interviews from patients about their experiences (see Section 12). These findings were used to inform the selection of attributes and how they were to be conveyed to respondents to minimise ambiguity in meaning and connotation.

In short our four key attributes of general practice booking systems (two capturing different notions of access and one each for notions of continuity of care and convenience) were described in terms that respondents could easily relate to but at the same time were sufficiently generic to be applicable to all types of appointment systems currently available or which could be plausible future options (see

Table 75 below).

Levels

Each attribute must be assigned at least two levels to represent the range over which the analyst expects subjects to have preferences and must be plausible, feasible and, crucially, capable of being traded[12].

If two levels are used then a linear relationship between levels is assumed but if more than two are used linearity of the levels can be empirically tested for. Although more levels are desirable there is a trade-off between number of attribute levels and complexity of the experimental design of the study (see 0 below).

There were four levels assigned for number of days appointments were booked in advanced and these were informed at the lower end of the scale by government targets to access primary care professionals within 24 hours and the GP within 48 hours.(Department of Health 2000) Thus we used the level 'same day' to reflect an appointment time offered within 24 hours and the level 'next day' to reflect a time within the 48 hour period. Information from a recent NHS national survey on general practice informed the higher levels.(Boreham *et al,* 2002) In that survey a significant proportion of patients reported experience of waiting between 3 and 7 days for an appointment (the mid-point of 5 days was used for this study) and at the highest level, some waited 'longer than a week'. We interpreted this to mean an upper limit of 10 days.

In most of the study practices appointments can be made to see either a GP of the patient's choice, a GP not of the patient's choice or a nurse. It is not as usual for a particular nurse to be named when booking to see a nurse. Thus the attribute 'professional person' was constructed with three levels.

Both of the remaining attributes were set as two level attributes; a qualitative attribute represented an appointment time that was convenient or inconvenient and length of the appointment slot was assigned either a typical 10 minute appointment or a double appointment (i.e. 20 minutes).

Table 75 summarises the attribute levels used in the experiment. It can be seen that the full combination of appointment options is 48 (or 4x3x2x2).

Table 75 Attributes and levels

Attribute	Full description	Level 1	Level 2	Level 3	Level 4

[12] As choice modelling is driven by the difference between deterministic and stochastic components (see later), the only way the analyst can learn about behaviour is if there is sufficient variation between options. It is thus crucially important to set the levels with enough variability to allow trade-offs to be detected.

Day of appointment	Length of time in days booked in advance for an appointment	Same day (0)	Next day (1)	5 days later (2)	10 days later (3)
Professional person	Who booked to see	Nurse (0)	Doctor, not of choice (1)	Doctor of choice (2)	
Time of day of appointment	Convenience of time of day of the appointment	Convenient (0)	Inconvenient (1)		
Length of appointment	Length of appointment in minutes	10 mins (0)	20 mins (1)		

Note: Numbers in parenthesis represent the design codes of each level.

10.3.3 Specification of preference (utility) function

General

One of the key economic theories underlying the DCE model is random utility theory.(McFadden 1973) This asserts that an individual's utility from a particular choice option is an unobservable, latent quantity but that it can be modelled from a behavioural response that is composed of an explainable (or deterministic) component and an unobservable (or stochastic) component in the following way.

$$U_{in} = V_{in} + \varepsilon_i$$

where U_{in} is the latent utility that individual n acquaints with option i; V_{in} is the deterministic component of utility acquainted with individual n and option i; and ε_{in} is the random or unobservable component acquainted with individual n and option i.

Analysts can predict the probability that individuals will choose from a choice set containing a number of options, but not necessarily exactly.(Ben-Akiva & Lerman 1985) The probability of choosing is given by:

$$Pr\ (i|C_n) = Pr\ [(V_{1n} + \varepsilon_{1n}) > (V_{2n} + \varepsilon_{2n}) > (V_{3n} + \varepsilon_{3n}) \ldots\ldots\ ]$$

where all terms are defined as previously, except $Pr\ (i|C_n)$ which is the probability an individual n will choose option i (i = 1, ...I) from choice set C_n of J total choice sets. The above equation asserts that, from the analyst's perspective, utilities are probabilistic; behavioural responses made under conditions of uncertainty and maximisation of utility is based on probabilistic outcomes.

If an individual is asked to compare and choose between two alternatives, say, appointment 'A' and 'B', the probability that appointment 'A' is selected is

given by the difference in the deterministic parts of their utilities exceeding the difference in the stochastic parts. This can be written as:

$$\Pr [(V_{An} - V_{Bn}) > (\varepsilon_{Bn} - \varepsilon_{An})]$$

As a consequence of the above the general form of the utility model estimated from using a DCE approach in this study is:

$$V_{in} = \sum_i \beta_i X_{in} + \sum_p \psi_p W_{pn}$$

where V is the utility, X and W are explanatory variables, X being the matrix of attribute levels and W a vector of individual characteristics; β_i the coefficient estimates for each attribute in the matrix X (marginal utilities) and ψ_p the coefficient estimates for personal characteristics.

A utility function for general practice appointment systems

In this study the basic utility function asserts that utility is determined by all main effects, one interaction term and a constant, i.e.:

$$V_{in} = \beta_0 + \beta_1 * \text{Appointment day} + \beta_2 * \text{Who is seen} + \beta_3 * \text{Convenience} + \beta_4 * \text{Length of appointment} + \beta_5 * (\text{Appointment day} * \text{Who is seen})$$

where all terms are defined as previously and the labels given to main effects are described in Table 76, except 'Appointment day * Who is seen' which is the interaction term between these two attributes[13].

In general terms an interaction term is an estimable effect which accounts for combinations of two or more attributes varying simultaneously with choice. Should important interaction terms be missed out then the utility function estimated could be biased. The total number of possible interaction terms depends on the number of attributes but estimable effects depend upon the size and nature of the experimental design (see section 10.3.4 below). The large majority of DCE studies in health economics have concentrated on main effects models only.(Ryan & Gerard 2003) It is therefore important to add new knowledge that informs us about the role of key interactions.

In this case we anticipated the importance of an interaction between when an appointment can be booked and who the appointment is made with. We hypothesised that if the condition concerned a problem that was ongoing and high worry then it was likely that the patient would prefer to wait for an appointment to get to see their doctor of choice.

The inclusion of a constant term (β_0) allows for the presence of any unobserved attributes influencing subjects' choices that are not picked up by the independent variables in the model or omitted variables.

10.3.4 Experimental design

A pivotal part of constructing a DCE is deciding which options or combinations of attribute levels to present and how to combine them into choices for the

[13] Estimable effects are typically grouped into 'main effects', which are the individual effects of attributes on choice and 'interaction effects', which account for combinations of attributes varying simultaneously with choice.

questionnaire instrument. This can be undertaken by deploying the complete set of combinations or just a sample of them. In this case there are 96 unique combinations of paired choices (i.e. 48x2), clearly too large a number of choice sets for respondents to complete as a single survey. For this reason experimental design theory was used to select a purposeful sample of choices from the complete factorial solution.

The experimental design was selected by a leading expert in the field (Street, 2005, personal communication). The fraction comprised 24 pairs and was assessed to be 75% statistically efficient (Street & Burgess 2004) for estimation of the basic model described above (i.e. estimation of all main effects and a two-way interaction between the 4 and 3 level attributes, 'Appointment day * Who is seen'). (See Appendix 4 for the experimental design using design codes reported in Table 76).

10.3.5 Questionnaire instrument

The main survey tool was developed through small pre-piloting and piloting studies conducted in 2005. One key lesson learnt was the importance of the health context when choosing. Clearly there can be any number of reasons for why individuals make appointments to see a GP or nurse and both existing literature (Kearley *et al* 2001; Schers *et al* 2002; Turner *et al*, 2005) and preliminary findings from the qualitative study support the view that individuals value different things about appointments depending on the nature of the health problem. For example it may be preferable to make an appointment quickly with any doctor for a problem that is perceived to be urgent but for something that is more delicate it may be preferable to wait to see a doctor of choice. Thus in making the context for choosing plausible to respondents various health vignettes were tested out. It was decided that respondents could handle being asked to think about, and make, choices relating to two different health contexts provided the overall number of choices presented was kept to a minimum. We used the classification of consulting problems reported by Turner *et al* (2005) to select two problems which would highlight differences as well as similarities in preferred booking systems. We chose a consulting problem that was 'acute, low worry' (itchy rash) and another that was 'ongoing, high worry' (weight loss) and by conducting two DCE surveys within the same questionnaire instrument were able to compare results of different reasons for booking an appointment. We did this by repeating the experimental design and reducing the number of choices presented to individuals by blocking into different questionnaire versions (see Appendix 11 for a copy of the questionnaire instrument).

As a result a total of six versions of a common format questionnaire was settled on to accommodate two sets of 24 pairwise choices. The respondents were asked to answer eight choices, half of them thinking about the acute, low worry problem and the other half about the ongoing, high worry problem. A further two pseudo choices were constructed and added to the choices to check consistency (see section 10.3.5). This meant each respondent answered 10 choices each. The only distinction between the questionnaires was in the allocation of the choices.

Table 76 describes how blocks of one sixth fractions of the experimental design were allocated across questionnaire versions.

Table 76 Allocation of choices to questionnaire version

Version	1	2	3	4	5	6	Total
Vignette 1 – acute, low worry (itchy rash)							
Fraction of Exp. Design	1st sixth	2nd sixth	3rd sixth	4th sixth	5th sixth	6th sixth	
Choices	4	4	4	4	4	4	24
Vignette 2 – ongoing, high worry (weight loss)							
Fraction of Exp. Design	6th sixth	5th sixth	4th sixth	3rd sixth	2nd sixth	1st sixth	
Choices	4	4	4	4	4	4	24
Total choices	8	8	8	8	8	8	48

The questionnaire was structured into four sections. The first section asked about how today's appointment was booked and whether it was urgent and for a new or existing medical problem. These data were used as background information and to inform the estimation of utility values for current booking systems. The second section asked about the acceptability of the attribute levels used, by requesting subjects to report minimum and maximum levels he/she would find acceptable for each attribute. These data were used to check if respondents considered the attribute levels plausible. Section three presented the choices (see Table 79 for an example). This was preceded by an example of a choice question. The first vignette presented depicted a scenario for itchy rash and the second for weight loss. The final section asked for information on demographics, on current health of the subject using the EQ5D self-rating scale (see http://www.euroqol.org/index.htm), a scale rating of how easy the questionnaire was to complete and space to write any further comments about the questionnaire or the appointment system experienced.

Table 77 Example of a choice of appointment

	Which of these two appointments do you prefer? …. *(tick one box only)*		
Appointment A	☐	Or	Appointment B ☐
5 days later			10 days later
a doctor, not of my			a doctor of my choice
at a time convenient to me			at an inconvenient time to me
lasting for about 10 minutes			lasting for about 20 minutes

Format of choice questions and health contexts

As the example shows the format of the questions was as pairwise choices or 'forced' choices. That is to say there was no choice not to choose, i.e. to opt-out. It is important to imitate real life decisions as closely as possible in framing a DCE. In health care situations this can mean that individuals may prefer not to take up certain options, whatever the levels of the attributes. However for this study given the context in which the choices were set (see Table 81) it was deemed appropriate that individuals would be forced to choose.

The two health vignettes used characterised two general, familiar and plausible situations in which individuals are likely to seek appointments to see the nurse or GP for an acute low worry problem and an ongoing, high worry problem. In the former case it was hypothesised that patients would trade-off continuity of care for access and convenience as being seen more quickly but at a convenient time are likely to be more important attributes to the individual than being seen by their preferred professional person (presumed to be 'doctor of your choice'). In the latter case the opposite was hypothesised, patients would trade-off some aspects of access and convenience for continuity of care. In other words being seen by your preferred professional person and for a longer consultation would be more preferable. In addition we anticipate the significance of an interaction effect between when an appointment can be booked and who the appointment is made with and that this will be negative. Table 81 presents the details of the vignettes: for 'itchy rash' and 'weight loss' respectively.

Table 78 Health vignettes

Vignette	Description
1. 'Itchy rash'	Imagine you have had an itchy rash on your hands for a week. You've seen a pharmacist who says it is probably eczema and she's advised you to go to the surgery and get it checked out. You decide to make an appointment at your general practice
2. 'Weight loss'	Imagine you have just been in hospital for some investigations because you have been losing weight. When you were discharged you were told you should contact the surgery to be monitored. You contact the surgery for an appointment.

Validity and validity checks

As DCEs are based on the intentions of individuals (stated preferences) and do not necessarily reflect how they would behave in a real situation (for example, answering choice questions do not require respondents to actually forfeit money or resources), this means there is an understandable concern over their validity. The problem of attempting to prove that the values obtained actually do reflect people's true preferences is common to all stated preference measures. In the absence of revealed preference information (i.e. actual choice data) with which to compare, arguably the next best thing is the quality of the theoretical foundations of the technique and the demonstration of the theoretical validity and hypothesised relationships in the signs of the parameter estimates. Other, less definitive validity checks may also be conducted on the data.

Three checks of this kind were conducted. The first simply asked the respondent to rate the degree of ease/difficulty they had completing the questionnaire on a five-point Likert scale. A second check examined an aspect of face validity by presenting information on the acceptability of the attribute levels used throughout. A series of questions were asked about acceptability of levels for each attribute in order to ascertain this.

The third check comprised a test of internal consistency that was built in to the series of choice questions using two pseudo choices. These were constructed to consider responses where a preference for 'more of a good thing' is violated and by implication, inconsistent.(Ryan & Farrar 2002) Each of these choices contained one clearly superior option, i.e. it dominated on all, or some of, the attribute levels and had equivalent levels for any remaining attributes for which preferences could not be predicted. Thus the test had four possible outcomes: i) 'pass' test (by selecting both dominant options), ii) 'fail' test (by selecting both dominated options); iii) 'random error' (first choice select dominant option, second choice select dominated option) and iv) 'preferences under construction' (first choice select dominated option, second choice select dominant option).

10.3.6 Survey administration

The main survey was conducted in the same eight practices participating in the qualitative study reported in Section 12 (i.e. four Advanced Access and four control practices). The survey was carried out between January and March 2006. Practices conducted the survey over consecutive days until they had received sufficient responses, against a target number set by the research team.

The same survey administration process used for the Patient Survey was followed for this survey but it is worth re-iterating the following.

Patients were included if they were attending a consultation to see a GP or nurse and excluded if they were aged under 16 years-old, if they or their companion could not complete a questionnaire in English, if they were a temporary resident, or if they were medically unable to complete a questionnaire. Receptionists recorded the reasons for exclusion.

A member of the research team attended the practice on the first day that the survey was running in each practice to train receptionists or other member of staff dedicated to the task and ensured that the survey was administered according to the protocol.

Patients were asked to return the completed questionnaires into a box on the front desk. At the end of the day, receptionists sent a reminder letter, another questionnaire and a reply paid envelope addressed to the University of Bristol to any included patient who had not returned a completed questionnaire.

It is also worth pointing out that since the DCE survey followed the Patient Survey it was anticipated that its administration would benefit from practices having prior, recent experience of a similar kind.

10.3.7 Sample size

At the present time sample size calculations for DCE surveys are guided by four 'rules of thumb': previous research which recommends samples are between 30 and 100 for each proposed sub-group;(Pearmain *et al,* 1991) the number of multiple choices per survey; regression analysis requiring a minimum sample size greater than the number of independent variables; and the anticipated response rates of the survey. In this instance the size and type of the experimental design, the number of vignettes and, hence, number of independent variables was unknown in advance of deciding upon the sample size. It was thus necessary to err on the side of caution. We asked practices to collect 150 questionnaires, 25 of each version, with a minimum target response of 105 questionnaires (70%). The response rate seemed appropriate given other studies which had been administered in a similar way.(Ryan & Gerard 2003) Such a response provides sufficient numbers to cover analysis of a number of potential models which were thought to be important to investigate.

10.3.8 Analysis and interpretation

Model estimation

All data were independently double-entered by the date entry company Wyman Dillon as a single line per respondent. One of us (KG) performed manipulations to these data to get them into the required format for analysis (i.e. as stacked data). Data were analysed in Excel 2003, SPSS version 12 and Stata version 9.

In estimating choice models most of the independent variables included are self-explanatory but in the case of the qualitative attribute 'professional person' it was necessary to measure it by using two dummy variables; one to represent an appointment with a 'doctor of the patient's choice' relative to the omitted level 'available nurse' and the other to represent an appointment with a 'doctor not of the patient's choice' relative to the omitted level 'available nurse'.

The dependent variable used for estimating choice models was a two-alternative variable taking the value of 1 if the option were chosen and 0 if not. As the dependent variable is binary, predicted values need to be constrained to lie between 0 and 1. The typical 'work horse' for predicting the impact of attributes and contextual variables on such discrete responses is the conditional logit model and is estimated by maximum likelihood.(Bunch & Batsell, 1989) [14]

The analysis plan was to fit a series of models for the examples of acute, low worry and ongoing, high worry contexts and present the best fitting ones. We examine three model specifications: i) effects allowed for in the experimental, i.e. main and single interaction effects; ii) a reduced specification of this, i.e. main effects only (to be compared with the former); and iii) a model of interactions between attributes and personal and practice variables.

Each model estimated is accompanied by a standard set of summary statistics reporting information about the model robustness - i) overall model significance; ii) goodness-of-fit; and iii) predictive capability.

Overall significance of each model is determined by the likelihood ratio test, where the test statistic [-2(Lr-Lu)] depends on the difference between the log-likelihood of the restricted (no parameters (Lr)) and unrestricted (parameterised (Lu)) models (and is chi-square distributed). The standard R^2 statistic cannot be used to test overall goodness of fit for logit models but several alternative 'pseudo' R^2 statistics exist.(Powers & Xie, 2006) The most usual is McFadden's R^2 and compares the proportional difference in log likelihood ratios of a model without parameters and one with parameters. As such, it is a scaled measure varying between 0 and 1 with explanatory power increasing as the R^2 value increases. Values that lie in the range of 0.2 and 0.4 are considered a 'good' fit but there is no commonly accepted threshold value. Bateman *et al* (2002) suggest, however, that analysts should be concerned if the statistic is less than 0.1 (Bateman, Carson, & Day 2002).

[14] This assumes an error distribution that is Gumbel distributed.

It is also common practice to report the percentage of correct predictions made by the model. This is done by comparing estimated model predictions with actual response data. In a two alternative choice model the threshold level is set at 0.5. That is to say, if the actual outcome is 1 (i.e. chose Appointment A and not Appointment B) and predicted outcomes are more than or equal to 0.5 then the latter are classified as correctly predicted. Conversely, if the actual outcome is 0 (Appointment A is not chosen) and predicted outcomes are less than 0.5, then predictions are also correct. Results are reported as percentage correctly predicted[15].

In each case results are interpreted as the size and statistical significance of coefficient estimates (β_i) determine the relative importance of individual attributes/interactions and the sign on the estimates provides the direction of the effect. If prior hypothesis are made and are subsequently shown to be correct then this provides evidence of theoretical validity. Ninety-five percent confidence intervals were used to compare like for like coefficient magnitudes. If the intervals did not overlap this was taken as strong evidence of a difference in coefficient magnitudes; if the intervals partly overlapped as weak evidence of difference and no overlap meant no difference.

For the model with personal and practice interaction terms a large number of variables was included as it can be important to establish whether different sub-groups of individuals derive different levels of utility from the attributes in the model. This issue was investigated in two stages: first, by conducting exploratory segmentation analysis testing for differences between sub-groups using log-likelihood ratio (LR) tests (not reported); and secondly, if these tests were statistically significant, to run models of interaction terms along with main effects, by considering the impact of the interaction terms on the model. The variables included were respondents age, respondents age[2][16], gender (dummy variable= 1 if respondent was female), type of practice (dummy variable =1 if practice was Advanced Access) and satisfaction with current practice booking arrangements) with main effects, many of which were not statistically significant at the 5% level. To achieve a more parsimonious model we performed a 'backwards step' regression method.

Using model results

Model results can be used to determine the trade-offs between attributes, generate utility scores for a given level type of booking system and assess the impact of, say, quality improvements to the system.

The trade-offs (or marginal rates of substitution (MRS)) between any two attributes can be calculated by taking the ratio of any two coefficient estimates (e.g. $\beta_1/\ \beta_2$). This allows important information to be conveyed about the average rate at which respondents are willing to give up a unit of

[15] Interpretation of this statistic can be a source of some contention. One consideration is the prediction rule used.(Greene 2000)

[16] A squared term is used to test for linearity, e.g. is the interaction of main effects with age non-linear (i.e. coefficient on squared term is not statistically significant), increasing with age (i.e. coefficient on squared term is statistically significantly positive) or decreasing with (i.e. coefficient on squared term is statistically significantly negative).

one attribute for an improvement in another. In this case marginal rates of substitution were calculated by taking the ratio of the coefficient estimate for an attribute and the coefficient estimate for number of days book for an appointment.

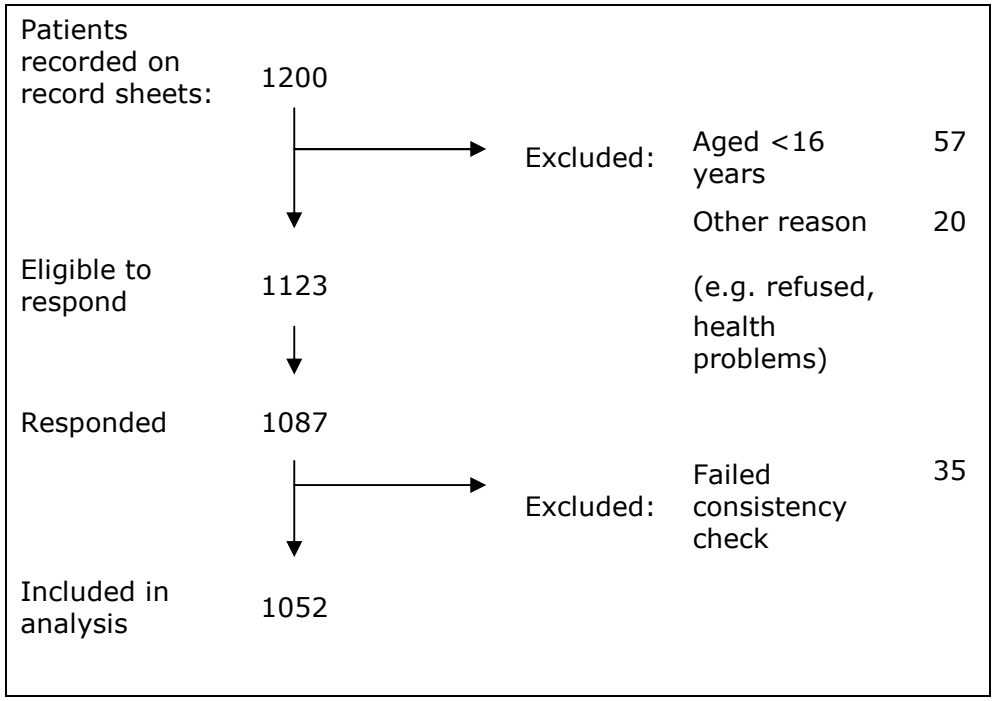
Predicted utility scores can be helpful to policy makers as they can assess the potential gain in utility from changing current practice to plausible alternative booking systems. Predicted utility scores were calculated by assigning typical experience of attribute levels or plausible new values, multiplying these by the coefficient estimates of the model and summing their product. This assumes an additive utility function and uses typical experience from surveyed patients about their current appointment.

10.4 Results

10.4.1 Response rates

In most cases practices obtained a higher number of completed questionnaires than we originally anticipated. The overall response rate was 94% (1052/1123) and is shown in more detail in the table below.

Table 79 Response rate



10.4.2 Comparison between responders and non-responders

Details of the age and sex of responders and non-responders are available from the survey sheet and the questionnaires. The response rate from men was slightly lower than that from women.

Table 80 Response rate by sex

	Valid response?				Total	
	Yes		No		Count	%
	Count	%	Count	%		
Male	376	91.2%	36	8.8%	412	100.0%
Female	666	95.6%	30	4.4%	696	100.0%
Missing	10	66.6%	5	33.3%	15	100.0%
Total	1052	93.6%	71	6.3%	1123	100.0%

The response rate was fairly consistent for patients from different age-groups, although slightly lower for the oldest patients.

Table 81 Response rate by age

		Valid response?					
		Yes		No		Total	
		Count	%	Count	%	Count	%
Age group	16-24	108	94.7%	6	5.3%	114	100.0%
	25-34	142	93.4%	10	6.6%	152	100.0%
	35-44	169	94.5%	9	5.5%	178	100.0%
	45-54	131	92.3%	10	7.7%	141	100.0%
	55-64	170	93.4%	12	6.6%	182	100.0%
	65-74	166	93.2%	12	6.8%	178	100.0%
	75-84	128	93.4%	9	6.6%	137	100.0%
	85+	25	89.2%	3	10.8%	28	100.0%
Total		1039	93.6%	71	6.4%	1110	100.0%

10.4.3 Characteristics of respondents

There were small statistically significant differences between the characteristics of respondents and their appointment in Advanced Access and control practices (

Table 82). Patients in Advanced Access practices were slightly older, more likely to care for someone at home and more likely that the current appointment was made to get medical advice or treatment for a new health problem. As expected the Advanced Access group were more likely to have booked their appointment today but less likely to have the appointment with a doctor of their choice.

Table 82 Characteristics of respondents and current appointment, comparing Advanced Access and control practices

	Advanced Access	Control
Socio-demographic characteristics		
Male	34.1%	37.8%
Mean age (years)*	55.0	48.1
Current health (median EQ5D self-rated value)	70	70
Household income:		
Low income (<£20k p.a)	61.2%	66.3%
Medium income (£20k-£39k p.a.)	27.0%	26.5%
High income (>£40k p.a.)	11.8%	7.2%
Cares for someone at home*	30.3%	24.1%
Uses a car to get to the surgery	57.2%	62.6%
Employed	46.0%	47.0%
Current appointment		
Problem perceived as urgent	29.6%	31.3%
Problem is new*	43.2%	37.0%
Booked appointment today*	48.1%	24.1%
Booked appointment with doctor of choice*	44.8%	53.4%
Booked appointment at convenient time	94.0%	95.9%
Overall satisfaction with current arrangements (% satisfied or very satisfied)	79.2%	74.0%

Note: * Statistically significantly different at 5% level of significance

10.4.4 Validity checks

The validity checks (Table 88) suggested the data collected were of a good quality. It seemed that overall, the majority of respondents found the questionnaire very easy or easy to complete. Only 3.3% found it difficult or very difficult. As expected, almost all respondents found the idea of booking ahead for up to 10 days in advance, being seen by any doctor and booking a consultation for more than 5 minutes as acceptable features of a booking system. On the other hand about a quarter of respondents were not prepared to accept an inconvenient time of day for their appointment and 16% were not prepared to accept an appointment to see a nurse.

Small numbers of respondents were shown to be inconsistent by 'failing' the test of internal consistency (3.5%). It is difficult to compare these findings directly with other studies as each study involves different degrees of task

complexity which in turn can be expected to impact on consistency. However, for reference, it is noted that Ryan (1999) found similar levels of inconsistency and Ryan and Wordsworth (2000)(found a range from 4.2% to 20.4% depending on questionnaire version. In the latter case it was decided to remove inconsistent responses from the analysis. In this study, with such small numbers of inconsistent responses it was deemed unnecessary to consider this issue further.

Table 83 Validity checks

Type of check	Outcome	Count	N
Ease of completing questionnaire	Very easy	335 (32.8%)	1020
	Easy	411 (40.3%)	
	Neither easy or difficult	24023.5%)	
	Difficult or very difficult	34 (3.3%)	
Unacceptability of attribute level	Maximum to book ahead is > 10 days	14 (1.4%)	1007
	Professional person is any doctor	63 (6.0%)	1044
	Professional person is a nurse	166 (16.0%)	1035
	Inconvenient time of day	249 (24.0%)	1036
	Length of consultation is < 5 minutes	21 (2.0%)	1011
Internal consistency	Pass	754 (74.6%)	1010
	Random error	156 (15.4%)	
	Preference construction	65 (6.4%)	
	Fail	35 (3.5%)	

10.4.5 Basic models

Tables 83 and 84 below present the findings from two different model specifications for itchy rash and weight loss vignettes respectively.

The first point to note is that, as expected, very little difference was found between the two specifications for itchy rash. Although one part of the interaction term 'days booked * see doctor, your choice' was statistically significant its coefficient magnitude was small (β= -0.064) and the other part of the term was not significant. Hence the overall contribution to model robustness was found to be minimal (e.g. McFadden's R^2 improved by 0.002). For ease of interpretation the main effects model is used. These results

showed the coefficients for the attributes were all statistically significantly different from zero with the exception of the length of the booked appointment. A negative value for the number of days in advance an appointment may be booked indicated that the longer the time before an appointment was made the less likely the respondent preferred that option. The positive signs for booked to see a doctor, not your choice and booked to see a doctor of your choice showed that both these characteristics were preferred compared with an appointment with a nurse, the latter is more preferred (it has a larger coefficient). The most important attribute was booking appointments to see a doctor of your choice, followed by an appointment at a convenient time of day, appointment to see a doctor, not of your choice and number of days to book the appointment. Thus there is some evidence that patients' are more likely to trade-off continuity of care (any doctor) for convenience but less likely to trade-off continuity of care for access.

Table 84 Results of logit regression analysis, main effects with interaction and main effects models (itchy rash, all respondents)

Attribute	Model: Main effects & interaction				Model: Main effects			
	Coefficient	**95% CI**	**SE**	**P value**	**Coefficient**	**95% CI**	**SE**	**P value**
Days booked for appointment	-0.213	-0.243 to -0.182	0.015	0.000	-0.242	-0.259 to -0.226	0.008	0.000
Booked to see doctor, not your choice	0.469	0.277 to 0.661	0.097	0.000	0.389	0.282 to 0.495	0.054	0.000
Booked to see doctor, your choice	1.082	0.863 to 1.301	0.111	0.000	0.840	0.722 to 0.958	0.060	0.000
Booked at a convenient time of day	0.524	0.443 to 0.604	0.040	0.000	0.522	0.442 to 0.602	0.040	0.000
Length of appointment booked	-0.002	-0.010 to 0.004	0.004	0.457	-0.003	-0.011 to 0.004	0.004	0.414
Days booked * see doctor, not your choice	-0.023	-0.064 to 0.018	0.020	0.270	-	-	-	-
Days booked * see doctor, your choice	-0.058	-0.101 to -0.014	0.022	0.009	-	-	-	-
Constant	0.4302	0.351 to 0.508	0.039	0.000	0.423	0.346 to 0.501	0.039	0.000
Summary statistics	N= 8190, LR χ^2 = 1604 (p<0.000), McFadden's R^2 = 0.282, % correct predictions = 77.5%				N= 8190, LR χ^2 = 1597 (p<0.000), McFadden's R^2 = 0.281, % correct predictions = 77.5%			

The results presented in table 84 again suggest little difference in the robustness of the main effects and main effects with interaction models for an ongoing, higher worry problem as described by the weight loss vignette. In this case we discuss the main effects with interaction model as it fits the initial hypothesis better. Firstly, all attributes were statistically significant (with the exception of the first part of the interaction term 'days booked * see doctor, not of choice) and signed as expected. The rank order of priority on each attribute, in descending order, was: booked to see doctor of your choice, booked at a convenient time of day, booked to see doctor not of choice, number of days to book the appointment, the interaction between days to book and who the appointment is made with and length of consultation.

This shows there is evidence to suggest it is more likely that patients' will trade-off access (length of appointment and length of slot) for continuity of care but less likely they will trade-off convenience for continuity of care. In short, being seen by your preferred professional person and for a longer consultation would be more preferable. The significant and negative interaction between when an appointment can be booked and who the appointment is made with indicates a direct trade-off between these two attributes.

Comparing model results

It was important to establish where any key differences lay between the models for the two types of health problems presented. The first point to establish is that patients appear to prefer booking systems which offer choice in the length of consultation (and more strongly prefer double appointment slots) when the problem is ongoing and more worrisome. Although the remaining attributes concerning access, continuity of care and convenience appear similar in terms of priority order between models there is weak evidence of differences in the magnitude of priority attached to some of these. Particularly, it may be argued that like for like confidence intervals barely overlap for the attributes; book an appointment with your choice of doctor and number of days to book the appointment. In the former comparison having your choice of doctor was more strongly preferred in the situation of an ongoing, high worry problem whilst in the latter comparison quicker access to appointments was preferred in acute, low worry situation.

Table 85 Results of logit regression analyses, main effects with interaction and main effects models (weight loss, all respondents)

Attribute	Model: Main effects & interaction				Model: Main effects			
	Coefficient	**95% CI**	**SE**	**P value**	**Coefficient**	**95% CI**	**SE**	**P value**
Days booked for appointment	-0.176	-0.206 to -0.147	0.015	0.000	-0.211	-0.227 to -0.195	0.008	0.000
Booked to see doctor, not your choice	0.490	0.296 to 0.684	0.098	0.000	0.378	0.274 to 0.483	0.053	0.000
Booked to see doctor, your choice	1.336	1.115 to 1.557	0.112	0.000	1.057	0.940 to 1.174	0.059	0.000
Booked at a convenient time of day	0.550	0.474 to 0.627	0.039	0.000	0.549	0.472 to 0.625	0.039	0.000
Length of appointment booked	0.008	0.000 to 0.015	0.003	0.030	0.007	-0.000 to 0.015	0.003	0.051
Days booked * see doctor, not your choice	-0.034	-0.071 to 0.010	0.020	0.145	-	-	-	-
Days booked * see doctor, your choice	-0.064	-0.106 to -0.021	0.021	0.003	-	-	-	-
Constant	0.304	0.228 to 0.381	0.038	0.000	0.302	0.227 to 0.377	0.038	0.000
Summary statistics	N= 8150, LR $\chi 2$ = 1436 (p<0.000), McFadden's R2 = 0.254, % correct predictions = 74.3%				N= 8150, LR $\chi 2$ = 1427 (p<0.000), McFadden's R2 = 0.252, % correct predictions = 74.3%			

10.4.6 Trade-offs (or marginal rates of substitution)

For the acute, low worry vignette a respondent would be prepared to wait an extra 3.5 days to book an appointment to see a doctor of choice, an extra 1.6 days to book to see with any doctor rather than a nurse and wait an extra 2.2 days to have an appointment at a convenient time of day. In comparison, the results show that for an ongoing, high worry vignette a respondent would be prepared to wait an extra 5 days to book an appointment with a doctor of choice, an extra 1.8 days to book with any doctor, wait an extra 2.6 days to have an appointment at a convenient time of day and wait only a fraction of a day longer (0.03) for a longer appointment slot.

10.4.7 Sub-group analysis

The results of the interaction models which consider personal and practice characteristics interacting with attributes are given in Table 92 and

Table 87 respectively. In general where the sign on coefficients is positive it indicates that a respondent with a particular characteristic values an attribute more and conversely if the sign is negative. The value of the coefficient on continuous variables (i.e. age, age^2 and satisfaction) applies to each unit of change.

With respect to the model for itchy rash it can be seen that for number of days for booking the appointment respondents from an Advanced Access practice value this less. This may reflect the experience of patients from these practices who were more likely to get an appointment quickly and thus may value the attribute less. For booking to see a doctor of your choice respondents with higher satisfaction with current practice arrangements valued this more. Again, this seems a reasonable finding. When considering the attribute convenience of time of day younger female respondents value this more. Longer appointments are valued less by female respondents.

Table 86 Results of logit regression analysis, interaction with patient and practice characteristics (itchy rash, all respondents)

Attribute	Coefficient	95% CI	SE	P value
Days booked for appointment	-0.260	-0.308 to -0.213	0.024	0.000
Days booked for appointment * practice is Advanced Access	-0.048	-0.081 to -0.016	0.01	0.003
Days booked for appointment * respondent's age	0.000	-0.000 to 0.001	0.00	0.088
Booked to see doctor, not your choice	0.400	0.292 to 0.508	0.05	0.000
Booked to see doctor, your choice	0.645	0.426 to 0.864	0.11	0.000
Booked to see doctor, your choice * respondent's satisfaction with current practice arrangements	0.102	0.009 to 0.195	0.04	0.031
Booked at a convenient time of day	0.585	0.410 to 0.761	0.89	0.000
Booked at a convenient time of day * respondent is female	0.139	-0.022 to 0.301	0.82	0.091
Booked at a convenient time of day * respondent's age	-0.000	-0.000 to -0.000	0.00	0.020
Length of appointment booked* practice is Advanced Access	0.012	-0.001 to 0.262	0.00	0.082
Length of appointment booked* respondent is female	-0.012	-0.024 to -0.000	0.00	0.044
Constant	0.425	0.347 to 0.504	0.04	0.000

Note: N = 8034 LR χ^2 = 1601 ($p<0.000$), McFadden's R^2 = 0.287, % correct predictions = 76.8%

With respect to the model for weight loss it can also be seen that for number of days for booking the appointment respondents from an Advanced Access practice value this less. For booking to see any doctor older respondents value this attribute more and female respondents less.

Age, age squared and higher satisfaction with current practice arrangements were found to influence a respondent's preference for booking to see a doctor of choice. High satisfaction with current practice arrangements was also found to influence the convenience of time of day of the appointment, with such

respondents valuing this more. When considering the attribute length of appointment older respondents valued this less.

Table 87Results of logit regression analysis, interaction with patient and practice characteristics (weight loss, all respondents)

Attribute	Coefficient	95% CI	SE	P value
Days booked for appointment	-0.197	-0.218 to -0.176	0.01	0.000
Days booked for appointment * practice is Advanced Access	-0.044	-0.075 to -0.013	0.01	0.004
Booked to see doctor, not your choice * practice is Advanced Access	0.302	0.121 to 0.484	0.09	0.001
Booked to see doctor, not your choice * respondent is female	-0.215	-0.398 to -0.033	0.09	0.021
Booked to see doctor, not your choice * respondent' age	0.015	0.005 to 0.025	0.00	0.002
Booked to see doctor, not your choice * respondent's age^2	-0.000	-0.000 to -0.000	0.00	0.057
Booked to see doctor, your choice	0.731	0.042 to 1.421	0.35	0.038
Booked to see doctor, your choice * respondent's age	0.047	0.019 to 0.075	0.01	0.001
Booked to see doctor, your choice * respondent's age^2	-0.000	-0.000 to -0.000	0.00	0.036
Booked to see doctor, your choice * respondent's satisfaction with current practice arrangements	0.142	0.048 to 0.236	0.04	0.003
Booked at a convenient time of day	0.395	0.229 to 0.561	0.08	0.000
Booked at a convenient time of day * respondent's satisfaction with current practice arrangements	0.080	0.006 to 0.153	0.03	0.032
Length of appointment booked	0.023	0.009 to 0.0370	0.00	0.001
Length of appointment booked * respondent's age	-0.004	-0.000 to -0.000	0.00	0.011
Constant	0.308	0.231 to 0.385	0.03	0.000

Note: N = 7988 LR χ^2 = 1484 (p<0.000), McFadden's R^2 = 0.268, % correct predictions = 75.1%

10.5 Predicting utility scores

We used the estimated models reported in Table 84 and Table 85 to predict relative utility for each general practice as it currently operated. This was made possible by using mode responses from each practice concerning how respondents had experienced booking arrangements for their current appointment. Indeed there was little variation across practices regardless of whether the practice was an Advanced Access or control practice. It was typical to find respondents most recent experience as being an appointment booked the same day, with a doctor of choice, at a convenient time and for 10 minutes duration (Current1). Where variation existed it was in the day the appointment was booked – two control practices typically offered appointments seven days later with all else being equal (Current2) and one Advance Access practice offered appointments with a doctor but not of choice, all else equal (Current3).

Table 88 reports the range of predicted utilities for the three current practice scenarios and some potential new arrangements to illustrate how policy analysis may be undertaken.

Under the first of the current arrangements all attribute levels in the model are set at the best possible level giving a maximum predicted score of 1.543 units of utility under the acute, low worry vignette and 1.704 for the ongoing, high worry vignette. However seemingly small changes in booking arrangements as indicated by 'Current2' and 'Current 3' show how sensitive the model is to reducing utility.

Under 'Current2' it is the size of the increase in actual number of days that is driving the reduction in relative utility rather than the magnitude of the coefficient for number of days booked in advance for an appointment. Conversely, it is the size of the coefficient on booking to be seen by a doctor of choice as compared with that for any available doctor that drives the utility change.

We have opted only to illustrate how the models can be used by policy makers to investigate the impact of plausible alternative arrangements. In Table 96 we consider the situation where for acute, low worry conditions it may be possible to free up doctors by booking appointments to see the nurse the same day all else being equal and for ongoing, high worry conditions how the patient may be given an appointment to see an available doctor within 48 hours. In each case the predicted utility scores are valued more highly that current practice arrangements 'Current2' and 'Current3' indicating at least that for those practices the proposed new arrangements would be more beneficial to patients.

Table 88 Predicted utility scores for current and new booking systems

Booking system	Predicted utility score	
	Acute, low worry	Ongoing, high worry
Current arrangements:		

Current1 – seen same day by doctor of choice, convenient time for 10 mins	1.543	1.704
Current2 – seen 7 days later by doctor of choice, convenient time for 10 mins	0.091	0.438
Current3 – seen same day by available doctor, convenient time for 10 mins	0.092	1.025
Alternative arrangements:		
Seen same day by nurse, convenient time for 10 mins	0.703	-
Seen in 2 days by available doctor, convenient time for 20 mins	-	1.493

Section 11 Survey of staff

11.1 Introduction and aims

It has been claimed that Advanced Access leads to improvements in job satisfaction for staff, particularly receptionists, because it is associated with less stress and conflict with patients over the availability of appointments. There is also reason to hypothesise that Advanced Access may have an impact on the experience of working in a team. Advanced Access involves small interest groups working together on practical problems using Plan-Do-Study-Act cycles. These groups should involve people from different backgrounds, but directly involved in the issue 'at the coal-face', working together to identify problems and implement solutions. This process may lead to an enhanced sense of teamwork in Advanced Access practices.

This component of the evaluation set out to assess whether or not there is evidence for these claims about job stress, job satisfaction and team-working. It is complemented by the qualitative research reported in Section 12.

11.2 Research questions

- What has been the impact of implementing Advanced Access on the level of job stress experienced by practice staff?
- What has been the impact of implementing Advanced Access on team climate?
- What has been the impact of implementing Advanced Access on job satisfaction?

11.3 Methods

11.3.1 Sample frame

The survey of staff was conducted at 46[17] practices involved in the main evaluation. We set out to examine and compare the experiences of three groups of staff: doctors, nurses and receptionists/administrative staff.

Practices were asked to include all 'core' staff within these categories. Locums and other temporary or agency staff were excluded. Amongst nurses, only practice nurses, treatment room nurses and nurse practitioners working regularly in the practice were included; community nurses, midwives, health visitors and other health care workers (e.g. smoking cessation advisors, drugs counsellors etc.) were excluded.

[17] One of the original 48 practices had withdrawn from the evaluation at an early stage, and one practice declined to participate in the staff survey.

11.3.2 Questionnaire design

The questionnaire covered 4 sides, of which the first side provided general information (see Appendix 12).

The second side included basic demographic information about the respondent (age group, sex) and the working role (type of job, whether full or part time). It then included a series of 13 statements about sources of stress in general practice. These statements were largely selected from a list of sources of stress used in earlier national surveys of GP job satisfaction (Cooper *et al*, 1989; Sibbald *et al,* 2000) but only statements which were relevant to all practice staff were included. Each statement was answered on a five point ordinal scale from 'no pressure' to 'high pressure'.

The third side included 20 statements, each scored on a five point scale from 'strongly agree' to 'strongly disagree', which assessed aspects of team climate. The concept of team climate has been developed and studied by organisational psychologists over the last three decades, and is described as the 'shared perceptions of organisational policies, practices and procedures' (Anderson & West 1998). A number of measures have been developed to assess team climate, of which the most widely used is the 'Team Climate Inventory' (TCI) (Anderson & West, 1994; West & Farr, 1990).

The TCI has been developed and validated in a number of settings including primary health care teams and hospitals (Anderson & West, 1994; Anderson & West, 1998; Poulton & West, 1999; West, 1995; West & Farr, 1990; West & Wallace, 1991). It assesses the team climate in 'proximal work groups', which are the group of people with whom workers identify and interact frequently. The authors postulate that team climate arises within the proximal work group through active social construction and becomes 'embedded within the fabric of the organisation' (Anderson & West 1998).

The TCI includes five scales, but in the interests of keeping the staff questionnaire short to maximise response rates we used three scales that were particularly relevant to this study. These scales relate to 'Support for Innovation', 'Interaction Frequency' and 'Participative Safety'. Discussion with one of the originators of the TCI, Dr West, in relation to an earlier study conducted by the researchers using the TCI confirmed that the scales can be used independently, as long as all relevant questions within each scale are included.

Support for Innovation refers to the 'expectation, approval and practical support of attempts to introduce new and improved ways of doing things in the work environment' (West & Farr, 1990). Participative safety is said to exist when all members of a work group feel able to propose new ideas and problem solutions in a non-judgemental climate.(Anderson & West, 1998) Interaction frequency refers to the number of formal and informal interactions of people within a work team (Anderson & West, 1998).

The fourth side of the questionnaire was comprised of a modified version of the Warr-Cook-Wall measure of job satisfaction (Warr *et al*, 1979). The original questionnaire includes 15 items representing satisfaction with 14 job facets and an overall satisfaction measure. This was modified by Sibbald *et al*

in previous surveys of GPs to include 9 job facets and overall satisfaction (Sibbald *et al*, 2000). All 10 of these statements were equally applicable to nurses and receptionists as to GPs. Each of the question statements was scored on a seven point scale from 'extremely satisfied' to 'extremely dissatisfied'.

Finally, respondents were asked to indicate their overall satisfaction with the way the appointments system worked in their practice, on the same seven point scale as above, and given an opportunity to express any other comments.

11.3.3 Survey administration

Practice managers were asked to complete a survey record sheet with the names and staff type of each member of staff to be included in the survey listed against a unique survey ID number for each individual. Each questionnaire was numbered with the ID number and given to the member of staff, along with a covering letter, information sheet and Freepost envelope to post the questionnaire directly back to the research team. The information to staff emphasised that their responses would be anonymous and not disclosed to anyone in their practice. The practice manager then photocopied the survey record sheet, removed the column with staff names, and sent the anonymised list back to the research team.

After two weeks the research team informed the practice manager which staff members (by ID number) had not returned the questionnaire and asked them to send them another questionnaire and a reminder.

11.3.4 Analysis

In line with the previous research on which our questionnaire was based, an overall score for stress was calculated from the mean scores per respondent on the 13 statements about sources of stress. Scales for the three TCI scales of interaction frequency, support for innovation and participative safety were calculated following the guidance for this questionnaire. Scores were reversed so that high scores represent a more positive team climate. The 15 job satisfaction statements were analysed as individual statements, in line with previous similar surveys.

The main analyses consisted of comparisons between the responses of each group of staff from Advanced Access and control practices, using linear or logistic regression as appropriate. Tests of interaction were used to explore whether there was evidence of different responses from different groups of staff (doctors, nurses or receptionists and administrative staff). The results are presented for each group of staff separately, rather than combining them to compare Advanced Access and control practices, since it was anticipated that Advanced Access may have different effects on different types of staff.

All analyses took account of the clustered nature of the data by practice. Differences in means and odds ratios are reported with confidence intervals, first unadjusted (but taking account of clustering) and then adjusted for practice, age-group, sex, full-time or part-time working and practice list size.

11.4 Results

11.4.1 Response rates

The overall response rate was 85% (817/960). The response rates were similar for all types of staff, and also similar in Advanced Access and control practices (see

Table 89). The response rate varied considerably in different practices, from 26% to 100% (see Appendix 5).

Table 89 Staff survey response rates

	Advanced Access		**Control**		**All**		
	N	%	n	%	n	%	Odds ratio (CI) P value
Doctors	108/128	84.4	95/109	87.2	203/237	85.7	0.80 (0.38 to 1.67) p=0.54
Nurses	85/95	89.5	69/81	85.2	154/176	87.5	1.48 (0.60 to 3.63) p=0.39
Reception/ admin staff	241/293	82.3	219/252	86.9	460/545	84.4	0.70 (0.44 to 1.12) p=0.13
All	434/518	83.8	383/442	86.7	817/960	85.1	0.80 (0.56 to 1.14) p=0.21

The following table shows the age and sex and working time characteristics of the respondents. Slightly more than half the doctors worked full time, and a similar proportion were male. Most of the other staff worked part-time and almost all were female:

Table 90 Characteristics of respondents by professional group

	Doctors N= 203		Nurses N=154		Recep/Admin N=460		All N=817	
	N	%	N	%	n	%	n	%
Age-group*								
<25	2	1.0	0	0.0	19	4.2	21	2.6
25-34	27	13.4	13	8.6	37	8.2	77	9.6
35-44	65	32.3	49	32.2	103	22.8	217	27.0
45-54	76	37.8	67	44.1	166	36.8	309	38.4
>55	31	15.4	23	15.1	126	27.9	180	22.4
% male**	112	56.0	0	0.0	13	2.9	125	15.9
% full-time***	104	55.0	29	20.1	105	24.4	238	31.2

*N=201, N=152, n=451 for doctors, nurses, recep/admin, respectively.

**N=200, N=146, n=442 for doctors, nurses, recep/admin, respectively.

***N=189, N=144, n=431 for doctors, nurses, recep/admin, respectively.

11.4.2 Stress

The detailed findings about the responses of doctors, nurses and reception/administrative staff with regard to the sources of stress in general practice are shown in the three tables that follow.

The results show that doctors expressed higher levels of stress than nurses, who were more stressed than receptionists.

Doctors were most stressed by dealing with problem patients, dividing time between work and family and by having too much work to do in the time available. Doctors working in Advanced Access practices were more stressed by the length of surgeries than doctors in control practices ($p=0.04$). There was a suggestion that they may also have been more stressed about knowing how much they would have to do in a day ($p=0.08$).

Nurses were most stressed by having too much to do in the time available, not having enough appointments and people wanting to be seen sooner than appointments were available. There were no important differences between nurses in Advanced Access or control practices.

Receptionists generally reported lower levels of stress on most facets of their work than the doctors or nurses. The three highest sources of stress were not having enough appointments, too much work to do in the time available and people wanting to be seen sooner than appointments were available. There was no evidence of any important differences between Advanced Access and control practices, and interestingly (given the higher proportion of appointments available on the same day in Advanced Access practices) no difference in respect of the specific questions about not having enough appointments or people wanting to be seen sooner than appointments were available.

Table 91 Responses of doctors, nurses and reception/administrative staff about sources of stress in general practice

DOCTORS

	Advanced Access N=108		**Control N=95**			
Question	*Mean*	*SD*	*Mean*	*SD*	*Diff in means* *	*95% CI**
Dealing with problem patients N=202	3.26	0.94	3.29	0.97	-0.03	(-0.29 to 0.24)
Worrying about patient complaints N=202	2.91	1.02	2.99	1.22	-0.08	(-0.39 to 0.23)
Dividing time between work and family N=201	3.16	1.13	3.23	1.07	-0.07	(-0.38 to 0.24)
Unrealistically high expectations of you by other people N=202	2.88	1.08	3.03	1.04	-0.15	(-0.45 to 0.14)
Disturbance of home/family life by work N=203	2.89	1.07	2.82	1.11	0.07	(-0.23 to 0.37)
Interruptions during surgery N=203	2.98	1.07	2.75	1.05	0.23	(-0.06 to 0.53)
The working environment (surgery set-up) N=203	2.37	1.00	2.33	0.95	0.04	(-0.23 to 0.32)
Time pressures (too much work to do in the time available) N=203	3.78	1.03	3.64	1.06	0.14	(-0.15 to 0.42)
Not enough appointments N=202	2.94	1.06	2.95	1.11	-0.003	(-0.31 to 0.30)
Length of surgeries N=203	3.03	1.01	2.74	1.00	0.29	(0.01 to 0.57)
Not knowing how much you will have to do in a day N=202	2.85	1.10	2.59	1.00	0.26	(-0.03 to 0.55)
People wanting to be seen sooner than appointments are available N=202	2.71	1.08	2.69	1.09	0.02	(-0.28 to 0.32)
How long people wait in the waiting room N=203	2.72	0.95	2.82	0.96	-0.10	(-0.36 to 0.16)

* taking into account clustering effects

NURSES

	Advanced Access N=85		**Control N=69**			
Question	*Mean*	*SD*	*Mean*	*SD*	*Diff in means**	*95% CI**
Dealing with problem patients n=154	2.62	0.93	2.81	0.94	-0.19	(-0.49 to 0.11)
Worrying about patient complaints n=154	2.19	0.93	2.49	0.98	-0.30	(-0.61 to 0.001)
Dividing time between work and family n=154	2.49	1.19	2.67	1.35	-0.17	(-0.58 to 0.23)
Unrealistically high expectations of you by other people n=154	2.54	1.09	2.48	1.11	0.06	(-0.29 to 0.41)
Disturbance of home/family life by work n=154	2.07	1.09	2.23	1.23	-0.16	(-0.53 to 0.21)
Interruptions during surgery n=152	2.87	1.24	2.64	1.06	0.23	(-0.14 to 0.60)
The working environment (surgery set-up) n=153	2.40	1.21	2.16	0.99	0.25	(-0.11 to 0.60)
Time pressures (too much work to do in the time available) n=153	3.48	1.10	3.38	1.06	0.10	(-0.25 to 0.45)
Not enough appointments n=153	3.15	1.17	3.13	1.16	0.02	(-0.35 to 0.40)
Length of surgeries n=152	2.51	1.02	2.49	1.17	0.01	(-0.34 to 0.36)
Not knowing how much you will have to do in a day n=154	2.34	1.06	2.29	1.09	0.05	(-0.29 to 0.40)
People wanting to be seen sooner than appointments are available n=154	2.96	1.10	2.90	1.14	0.07	(-0.29 to 0.42)
How long people wait in the waiting room n=153	2.65	1.02	2.97	1.07	-0.32	(-0.65 to 0.02)

* taking into account clustering effects

RECEPTION/ADMIN STAFF

	Advanced Access N=241		**Control N=219**			
Question	*Mean*	*SD*	*Mean*	*SD*	*Diff in means**	*95% CI**
Dealing with problem patients N=454	2.65	1.11	2.76	1.12	-0.11	(-0.32 to 0.10)
Worrying about patient complaints N=454	2.23	1.16	2.28	0.99	-0.04	(-0.24 to 0.16)
Dividing time between work and family N=457	2.12	1.20	2.07	1.13	0.06	(-0.16 to 0.27)
Unrealistically high expectations of you by other people N=453	2.21	1.17	2.23	1.17	-0.02	(-0.23 to 0.20)
Disturbance of home/family life by work N=457	1.78	1.03	1.76	0.97	0.01	(-0.17 to 0.20)
Interruptions during surgery N=424	2.08	1.16	2.02	1.03	0.06	(-0.15 to 0.27)
The working environment (surgery set-up) N=450	2.13	1.15	2.22	1.14	-0.09	(-0.30 to 0.12)
Time pressures (too much work to do in the time available) N=454	2.94	1.28	2.86	1.14	0.08	(-0.14 to 0.31)
Not enough appointments N=440	2.94	1.27	2.98	1.31	-0.04	(-0.28 to 0.20)
Length of surgeries N=432	2.02	1.05	2.17	1.09	-0.15	(-0.35 to 0.05)
Not knowing how much you will have to do in a day N=452	2.10	1.16	2.07	1.09	0.02	(-0.19 to 0.23)
People wanting to be seen sooner than appointments are available N=441	2.80	1.28	2.83	1.33	-0.03	(-0.28 to 0.21)
How long people wait in the waiting room N=443	2.34	1.08	2.38	1.08	-0.04	(-0.24 to 0.16)

* taking into account clustering effects

There was no evidence that overall stress, as calculated from the stress scale comprised of the respondents mean scores on the above questions, was any different in Advanced Access or control practices for any of the three groups of staff. The effect of Advanced Access on overall stress did not differ according to job type (interaction test: $\chi^2(2df) = 0.12$, $p = 0.94$).

Table 92 Overall stress of different groups of staff, comparing Advanced Access and control practices

	Advanced Access N=434		Control N=383					
Question	Mean	SD	Mean	SD	Unadj Diff in means *	Adj Diff in means **	Adj 95% CI **	P **
Doctors N=203	2.96	0.62	2.91	0.67	-0.01	-0.03	-0.28 to 0.21	
Nurses N=154	2.64	0.70	2.66	0.70	-0.04	-0.08	-0.32 to 0.16	
Reception/ admin N=457	2.33	0.74	2.35	0.70	-0.004	0.003	-0.18 to 0.19	
All staff types N=814	2.55	0.75	2.55	0.73	-0.01	-0.03	-0.16 to 0.10	0.67

* taking into account clustering effects

** adjusted for practice, age-group, sex, full-time/part-time, practice list size.

11.4.3 Individual questions which make up the scales of the Team Climate Inventory

The results with regard to the individual questions which make up the team climate inventory are shown in Appendix 6 for each staff group. These question items were combined in various scales,reported in Table 95.

The scores on the three scales from the TCI are shown below. The overall pattern is that doctors and receptionists express more positive team climate scores in Advanced Access practices compared with control practices, whereas nurses report lower scores.

Participative safety

The effect of Advanced Access on participative safety appears to differ according to job type (interaction test: $\chi^2(2df) = 8.06$, $p = 0.018$). Doctors and reception/administrative staff in Advanced Access practices have higher mean scores than those in control practices, whereas nurses in Advanced Access practices have lower mean scores.

Support for innovation

The effect of Advanced Access on support for innovation showed less evidence of differing according to job type (interaction test: $\chi^2(2df) = 4.76$, $p = 0.092$). Doctors and reception/administrative staff in Advanced Access practices have similar mean scores with those in control practices, whereas nurses in Advanced Access practices have lower mean scores.

Interaction Frequency

The effect of Advanced Access on interaction frequency appears to differ according to job type (interaction test: $\chi^2(2df) = 7.44$, $p = 0.024$). Doctors and reception/administrative staff in Advanced Access practices have higher mean scores than those in control practices respectively, whereas Nurses in Advanced Access practices have lower mean scores.

Table 93 Team Climate Inventory scales for different staff groups, comparing Advanced Access and control practices

	Advanced Access N=434		Control N=383					
Question	Mean	SD	Mean	SD	Unadj Diff in means*	Adj Diff in means**	Adj 95% CI**	P **
Doctors: (n=203)								
Participative safety	3.96	0.50	3.89	0.50	0.08	0.08	-0.13 to 0.29	
Support for innovation	3.67	0.69	3.65	0.55	0.03	-0.01	-0.26 to 0.23	
Interaction frequency	4.08	0.56	3.84	0.68	0.23	0.23	-0.01 to 0.47	
Nurses: (n=153)								
Participative safety	3.52	0.69	3.74	0.69	-0.22	-0.23	-0.52 to 0.06	
Support for innovation	3.48	0.72	3.64	0.70	-0.13	-0.22	-0.56 to 0.12	
Interaction frequency	3.59	0.83	3.73	0.75	-0.13	-0.15	-0.48 to 0.18	
Receptionists/admin staff: (n=458)								
Participative safety	3.70	0.71	3.67	0.72	0.03	0.10	-0.11 to 0.31	
Support for innovation	3.62	0.67	3.59	0.68	0.03	0.07	-0.14 to 0.28	
Interaction frequency	3.74	0.72	3.64	0.78	0.09	0.14	-0.08 to 0.37	
All (n=814)								
Participative safety	3.73	0.68	3.74	0.67	-0.01	0.02	-0.14 to 0.19	0.77
Support for innovation	3.60	0.68	3.61	0.65	-0.01	-0.01	-0.21 to 0.18	0.91
Interaction frequency	3.79	0.73	3.71	0.75	0.09	0.09	-0.10 to 0.29	0.33

* taking into account clustering effects

** adjusted for practice, age-group, sex, full-time/part-time, practice list size.

11.4.4 Job satisfaction

The following tables show the findings with regard to the job satisfaction of the different groups of staff in Advanced Access and control practices.

Comparing Advanced Access and control practices, there was no evidence of difference in job satisfaction for any of the individual question items for any of the three groups of staff.

The highest source of satisfaction for doctors was their colleagues and fellow workers, and the item with the lowest satisfaction score was the hours of work. For nurses, the greatest sources of satisfaction were the amount of responsibility they were given and the amount of variety in their job, whilst least satisfaction was expressed in relation to their rate of pay. Receptionists expressed greatest satisfaction with the amount of variety in their work and their colleagues and fellow workers and least satisfaction with their rate of pay.

Table 94 Job satisfaction of each staff group, comparing Advanced Access and control practices

Mean scores for each item on the seven point scale from 'extremely satisfied' to 'extremely dissatisfied', with scores reversed so that high scores represent greater satisfaction.

DOCTORS

	Advanced Access N=108		Control N=95			
Question	Mean	SD	Mean	SD	Diff in means*	95% conf*
Amount of responsibility you are given? n=203	5.96	0.99	5.75	1.17	0.22	(-0.08 to 0.51)
The amount of variety in your job? n=202	5.86	0.78	5.57	1.03	0.29	(0.03 to 0.54)
Your colleagues and fellow workers? n=203	6.01	0.97	5.78	1.07	0.23	(-0.05 to 0.51)
Physical working conditions? n=203	5.50	1.33	5.56	1.24	-0.06	(-0.42 to 0.30)
Your opportunity to use your abilities? n=203	5.72	0.93	5.48	1.17	0.24	(-0.05 to 0.53)
Freedom to choose your own method of working? n=203	5.65	1.06	5.45	1.08	0.20	(-0.10 to 0.49)
Recognition you get for good work? n=203	5.46	1.21	5.22	1.14	0.24	(-0.08 to 0.57)
Your rate of pay? n=203	5.51	1.23	5.41	1.20	0.10	(-0.24 to 0.44)
Your hours of work? n=203	5.02	1.43	4.79	1.43	0.23	(-0.17 to 0.63)
Taking everything into consideration, how do you feel about your job? n=201	5.79	1.07	5.51	0.99	0.27	(-0.01 to 0.56)

* taking into account clustering effects

NURSES

	Advanced Access N=85		Control N=69			
Question	Mean	SD	Mean	SD	Diff in means*	95% conf*
Amount of responsibility you are given? n=153	5.84	0.88	5.94	0.84	-0.11	(-0.38 to 0.17)
The amount of variety in your job? n=153	5.85	0.91	5.99	0.97	-0.14	(-0.44 to 0.16)
Your colleagues and fellow workers? n=153	5.79	0.98	5.87	0.98	-0.08	(-0.39 to 0.23)
Physical working conditions? n=151	5.21	1.52	5.68	1.23	-0.47	(-0.92 to -0.02)
Your opportunity to use your abilities? n=153	5.69	1.07	5.84	0.99	-0.14	(-0.48 to 0.19)
Freedom to choose your own method of working? n=153	5.64	1.24	5.74	1.05	-0.10	(-0.47 to 0.27)
Recognition you get for good work? n=153	4.95	1.30	5.28	1.45	-0.33	(-0.77 to 0.11)
Your rate of pay? n=153	4.48	1.55	4.50	1.65	-0.02	(-0.53 to 0.50)
Your hours of work? n=153	5.76	1.07	5.59	1.17	0.18	(-0.18 to 0.53)
Taking everything into consideration, how do you feel about your job? n=153	5.80	0.99	5.91	0.94	-0.11	(-0.42 to 0.20)

* taking into account clustering effects

ADMIN/RECEPTION

	Advanced Access N=241		Control N=219			
Question	Mean	SD	Mean	SD	Diff in means*	95% conf*
Amount of responsibility you are given? n=457	5.70	1.03	5.70	1.02	0.001	(-0.19 to 0.19)
The amount of variety in your job? n=458	5.85	1.05	5.82	0.97	0.04	(-0.15 to 0.22)
Your colleagues and fellow workers? n=459	5.85	1.02	5.78	1.09	0.07	(-0.12 to 0.26)
Physical working conditions? n=459	5.18	1.50	5.27	1.42	-0.10	(-0.37 to 0.17)
Your opportunity to use your abilities? n=458	5.55	1.25	5.68	1.09	-0.14	(-0.35 to 0.08)
Freedom to choose your own method of working? n=459	5.54	1.30	5.60	1.13	-0.06	(-0.28 to 0.17)
Recognition you get for good work? n=456	5.18	1.37	5.22	1.38	-0.04	(-0.30 to 0.21)
Your rate of pay? n=456	4.52	1.53	4.63	1.55	-0.11	(-0.40 to 0.17)
Your hours of work? n=458	5.66	1.10	5.60	1.23	0.05	(-0.16 to 0.27)
Taking everything into consideration, how do you feel about your job? n=459	5.83	1.05	5.75	1.16	0.08	(-0.12 to 0.28)

* taking into account clustering effects

11.4.5 Overall satisfaction with job

The final question on the series of items about job satisfaction asked: 'taking all things into consideration how do you feel about your job?'. The table below shows the responses of staff (all types combined), and shows high levels of job satisfaction, with more than two-thirds of respondents stating that they were extremely or very satisfied.

There is no evidence of difference between Advanced Access and control practices (ordinal regression: unadjusted odds ratio 1.18; adjusted OR 1.17[18] (0.89 to 1.54); p=0.25).

Table 95 Overall satisfaction with job, all staff types combined

	Advanced Access N=434		**Control N=383**	
Question	n	%	n	%
Taking everything into consideration, how do you feel about your job? (n=813; 4 missing responses)				
Extremely satisfied	96	22.2	78	20.5
Very satisfied	220	50.9	186	48.8
Mildly satisfied	85	19.7	79	20.7
Neither satisfied or dissatisfied	12	2.8	16	4.2
Mildly dissatisfied	10	2.3	16	4.2
Very dissatisfied	7	1.6	4	1.0
Extremely dissatisfied	2	0.5	2	0.5

The table below shows the results of ordinal regression, adjusted for age-group, sex, full-time/part-time work, practice list size and clustering by practice, comparing Advanced Access and control practices. It suggests that doctors in Advanced Access practices had slightly greater job satisfaction, with no evidence of difference for nurses or reception/administrative staff.

Table 96 Odds ratios for overall satisfaction with job, for each group of staff

	Odds ratios comparing Advanced Access and control practices			
Question	Unadj OR*	Adj OR **	Adj OR 95% CI**	P adjusted**
Taking everything into consideration, how do you feel about your job?				
Doctors N=201	2.13	2.01	1.09 to 3.68	
Nurses N=153	0.72	0.83	0.41 to 1.70	
Reception/admin N=459	1.08	1.09	0.76 to 1.56	
All N=813	1.18	1.17	0.89 to 1.54	0.25

* taking into account clustering effects ** adjusted for practice, age-group, sex, full-time/part-time, practice list size.

[18] adjusted for practice, age-group, sex, full-time/part-time, practice list size and taking account of clustering.

A test of interaction showed that there was a significant difference in the effect of Advanced Access on overall job satisfaction according to job type (Adjusted Wald test F (2,708)=3.55 p=0.029).

Detailed results about the responses for each group of staff separately are shown in Appendix 7.

11.4.6 Overall satisfaction with the appointments system

The last question on the questionnaire asked staff: 'Overall, how satisfied are you with the way the appointments system works in your practice'? This question is likely to be a more sensitive indicator of the impact on staff of operating an Advanced Access appointments system than the more generic satisfaction question reported above in section 11.4.5.

The table below shows the responses of staff (all types combined), and shows a range of views. Fewer than half the staff in both types of practice believes that their appointment system works well, with 45% of respondents stating that they were extremely or very satisfied with it. There was no evidence of difference between Advanced Access and control practices (ordinal regression: unadjusted odds ratio 0.98; adjusted OR 1.03[19] (0.79 to 1.34); p=0.84).

Table 97 Staff satisfaction with appointments system, comparing Advanced Access and control practices

	Advanced Access N=434		Control N=383	
Question	n	%	n	%
Overall, how satisfied are you with the way the appointments system works in your practice? (n=802)				
Extremely satisfied	32	7.5	24	6.4
Very satisfied	161	37.8	147	39.1
Mildly satisfied	133	31.2	128	34.0
Neither satisfied or dissatisfied	47	11.0	29	7.7
Mildly dissatisfied	38	8.9	29	7.7
Very dissatisfied	12	2.8	14	3.7
Extremely dissatisfied	3	0.7	5	1.3

The table below shows the results of ordinal regression, adjusted for age-group, sex, full-time/part-time work, practice list size and clustering by practice, comparing Advanced Access and control practices. It provides no

[19] adjusted for practice, age-group, sex, full-time/parttime, practice list size and taking account of clustering.

evidence of difference between Advanced Access and control practices with regard to the satisfaction with the appointment system of any of the groups of staff.

There was no evidence that the effect of Advanced Access on satisfaction with the appointments system differed according to job type (Adjusted Wald test F(2,697)=0.12 p=0.88).

Detailed results about the responses for each group of staff separately are shown in Appendix 7.

Table 98 Odds ratios for overall satisfaction with appointment system for each group of staff, comparing Advanced Access and control practices

	Odds ratios comparing Advanced Access and control practices			
Question	Unadj OR*	Adj OR **	Adj OR 95% CI**	P adjusted**
Overall, how satisfied are you with the way the appointments system works in your practice?				
Doctors N=203	0.84	0.93	0.53 to 1.65	
Nurses N=152	0.86	1.04	0.53 to 2.03	
Reception/admin N=447	1.08	0.98	0.68 to 1.40	
All N=802	0.98	1.03	0.79 to 1.34	0.84

* taking into account clustering effects

** adjusted for practice, age-group, sex, full-time/part-time, practice list size.

Section 12 Qualitative case studies

This section reports the qualitative component of the evaluation. This was based on eight case study sites, and designed to facilitate an in-depth understanding of the way in which GP practices manage access on a day-to-day basis and how patients achieve access to primary health care. We employed an ethnographic approach comprising three interlinked methods.

- systematic observation of practice reception and waiting areas to provide real time descriptions of how access was achieved.
- informal and semi-structured interviews with practice staff exploring their accounts of the formation and management of the access system.
- semi-structured interviews with practice patients to understand the patients' experience of gaining access.

Taken together, these methods allowed for probing and exploration of events and issues which occurred during the data collection period, for example an action taken by a receptionist or a particular request by a patient could be discussed in more detail in the interview setting.

The ethnographic method has been shown to be an effective way of understanding organisations and identifying the ways in which formal policy is influenced by the informal systems created by individuals and groups(Savage 2000) and previous studies have demonstrated the contribution of this approach (Pollitt *et al,* 1990;Strong & Robinson 1990).

This section of the report seeks to answer the research questions set out below and for this reason is largely descriptive, providing detail about how the case study sites managed access.

12.1 Research questions

The qualitative study focused on four central questions embedded in the research protocol objectives:

- How do practices and patients manage the problem of access, in terms of the strategies employed to improve access, how practices formally and informally organise the access system, and how patients achieve access?
- What is the impact of the access system adopted on continuity of care?
- What is the impact of the access system adopted on the nature of the work of receptionists and GPs?
- What are the perceptions of different patient groups about accessibility and satisfaction?
- What are the perceptions and experience of staff in relation to different systems for patient access?

Unlike previous qualitative research, the qualitative case studies provide information from direct observation of access systems in action, as well as obtaining accounts from patients and staff about their experiences and views.

12.2 The case studies

This section of the report deals with data relating to eight practices, taken from the larger cohort of 48 practices.

12.2.1 Sampling

The eight case study practices were purposively selected to provide more detailed information across the range of different types of practice included in the larger study. The eight practices comprised four using Advanced Access and four "control" practices. This designation of Advanced Access/control status has been described in section 4.4. The practices were selected to ensure that we included those which worked in urban and rural and inner-city settings, in affluent and deprived areas, and at least one area with a high ethnic minority population. For practical reasons most (but not all) of the practices were in South West England. The key features of the case study practices are presented in Figures 6 to 15.

In describing the practices in some detail in this section of the report it will become clear that these designations cover a range of approaches to managing access. The four Advanced Access case studies exemplify different ways of operationalising the formal model of Advanced Access as described by the NPDT, and they can be seen as diverging from that formal model in some important respects. In addition some of the control practices have adopted some of the characteristics associated with the formal model of Advanced Access. The case studies presented here do not attempt to assess the single model of Advanced Access provided by the NPDT, rather they attempt to do justice to the range of ways practices grapple with and manage the problem of access.

Sampling the observation periods

In order to understand the temporal shifts in demand throughout a day and across a week we spent a minimum of five days in each practice so that each day of the week was represented. This was usually achieved over a two-week period.

Sampling staff

To capture both the organisation and implementation of access systems at the practice level it was important to capture data from a range of staff within the study sites. We conducted interviews with either the senior partner at the practice or a GP who had taken the lead in developing the present access system for insight into the range of issues that shaped access policies and how the access system has subsequently shaped clinical issues such as continuity of care. To provide a detailed account of the frontline delivery and management of the access system we interviewed between two and four receptionists at each site. We also interviewed the practice manager for a detailed account of the development and management of the access system. If appropriate we also interviewed further members of staff, often including reception managers and reception coordinators who played a key role in the day-to-day management of the access system.

Interviewees were approached by the interviewer and given information about the study and asked if they would participate in an interview.

Sampling patients

The project aimed to capture a range of patient experiences but we were particularly interested in talking to people who may have had particular difficulties with access, whose full experience may not have been captured by the patient satisfaction survey. Such patients included carers with young children or elderly dependents, the elderly, commuters, manual workers who cannot take time off during office hours, and those without telephones. Details of recruitment in relation to the above patient categories are set out in the table below. We were unable to recruit patients without telephones for interview but we were able to observe interactions between staff and patients without phones at practices and some of the patients we did speak to had trouble accessing phones during the day when they were at work.

Table 99 Categories of patients recruited for interview (N = 50).

Male	Female	Disabled & Chronically ill	Elderly	Commuters & Manual Workers	Carers	Part-Time Workers	Full-Time Workers	Self Employed
22	28	8	8	9	7	11	17	1

Note: These categories are not mutually exclusive. Commuters and manual workers have been grouped together because they appeared to face similar problems in getting time off work and accessing primary care

Patients were recruited in two ways. Firstly, by an approach from the practice who contacted those who had a booked an appointment during the time the researcher was scheduled to be at the practice and invited them to take part. Secondly, the researchers invited patients in the waiting room or presenting to the reception desk. This enabled us to capture the experiences of patients who were able to pre-book and also those who had made same day or urgent appointments.

12.2.2 Data collection

Observation

Data collection took place throughout the practice and was based around observation of staff actions and interaction with other staff and patients, along with informal conversations with both staff and patients. The main points of data collection were the reception area where staff took phone requests for appointments, the reception desk and the waiting room.

Data were collected on all aspects of the access process which included:

- patients phoning for an appointment with a GP or nurse,
- patients presenting at the reception desk requesting an appointment with a GP or nurse,

- receptionists and staff members discussing decisions about access either directly to the researcher or among themselves,
- receptionists discussing and negotiating access with clinical staff,
- patients discussing access with other patients or with the researcher in the waiting area. Whilst we were usually only able to collect data from one half of a telephone conversation, this still provided valuable data as a number of factors were usually clear such as whether a patient requested a particular GP or nurse, whether they required urgent treatment or advice and whether they needed to be seen at certain times of the day. Receptionists would also 'fill in' details about phone interactions when they had the opportunity.

Throughout the study a notice was placed prominently at the reception desk informing patients about the research and detailed information sheets were also placed on the reception desk. Patients were given the option to withdraw from the research if they wished and the researchers took care to withdraw from personal or sensitive interactions between staff and patients.

Observational data were recorded by hand using pen and notebook and subsequently transcribed.

Staff interviews

Staff interviews took place in the practice, usually in a consulting room or break room but with no other members of staff present. Staff were given information sheets, which included assurances about confidentiality and anonymity, along with a detailed explanation by the researcher and were invited to ask questions about the project before consenting to interview.

Patient interviews

Patient interviews took place either at the practice, usually in a spare consulting room or office, or at the patient's home. Some patients did not have the time when they attended the practice for their appointment so a mutually convenient time was arranged to visit them at home. Patients were given a project information sheet, a letter from the practice, and a detailed explanation about the project from the researcher and were invited to ask questions about the project before consenting to interview.

12.2.3 Analysis

All Interviews were recorded using a digital sound recorder and were subsequently transcribed on to computer and anonymised.

The analysis broadly followed the principles of the comparative method outlined in the early work by Glaser and Strauss(Glaser & Strauss 1967) and developed by Strauss and Corbin.(Strauss & Corbin 1988) The data were subjected to multiple readings by two researchers to facilitate familiarity with the data and the identification of broad analytical themes, oriented around the research questions. Data were then organised into codes and categories and subsequently re-analysed using the iterative, cyclical process central to qualitative research (Pope & Mays 1999).

The coding framework was continually crosschecked and discussed by the members of the research team as the researchers met frequently throughout this process to discuss the code development. The coding continued until we had incorporated the full body of data and accounted for negative cases. A qualitative software analysis tool, ATLAS.ti, was used as an aid to data management and analysis. The emergent themes from this process were linked back to ideas developed in the research literature and the research questions for this study. Again these were discussed by the two researchers, and subsequently with other members of the research team.

The researchers then compiled eight narrative summaries (one for each site) consisting of 20-30 pages of descriptive account and excerpts from the data. These summaries, in essence, told the story of managing access at each of the case sites. These narratives were discussed and compared and the researchers developed a matrix display to distil the key themes emerging from the analysis and to facilitate cross case comparison. Here we borrowed from the framework approach to qualitative data analysis (Ritchie & Spencer 1994) and deliberately structured (or framed) the matrix display around the key research questions from the research proposal (e.g. how do patients achieve access?). The researchers continued to go back to the narrative summaries and the raw data to develop the analysis and this work will continue as we develop academic publications from this work. The matrices developed formed the basis of the descriptive account presented here.

Presentation of data

The data is presented in an anonymised form. The practice IDs used elsewhere in the project to identify practices are not used in the presentation of observation or interview data to preserve full anonymity. The observation and interview data are indexed in the following way

- Staff: [staff, interview no., transcript page No.]
- Patients: [patients, interview no., transcript page No.]
- Observation: [Obs, Researchers initials, Fieldnote document No., Page No. in fieldnotes]

All transcript data used through the report are preceded by the job type of a member of staff or simply patient for patient data (observation data is identified by the term observation and by the [Obs, ...] reference at the end of data extracts).

12.2.4 Definitions

We use the term "Advanced Access practice" in this section to refer to the four case studies which reported that they were using the Advanced Access appointment system. It is important to emphasise that practices which describe themselves as operating Advanced Access may not necessarily operate a system which fully incorporates the principles of Advanced Access as advocated by the NPDT. As was explained in section 4.4, the 24 'Advanced Access' practices in this study were selected on the basis that they described

themselves as operating Advanced Access, and the respondents on the practice questionnaire indicated that they used the 4 principles of measuring demand, matching capacity to demand, shaping demand by offering alternatives to face to face consultations, and having contingency plans. From within the 24 Advanced Access practices we purposely selected 4 Advanced Access case study practices, as described in section 4.4.

This section therefore describes how practices which believe they are operating an Advanced Access system interpret and operationalise that system. There was considerable variation between the Advanced Access practices in how they understood the term, and (as will become clear) a strong interplay between the notion of Advanced Access and same-day booking of appointments.

For this reason we further distinguish between 'strict same day' appointment systems (where most appointments are available as book on the day only and cannot be booked in advance) and systems where there is greater use of pre-booked appointments which can be made in advance. We have resisted referring to these as 'advance' appointments to avoid further confusion with the nomenclature of Advanced Access. Instead we distinguish between pre-booked appointments that are 'soon' (between 1-2 days after initial contact) and 'later' where the length of time between contact and appointment can be days or weeks. 'Embargoed' appointments are those appointments included in the diary or rota which are restricted or 'greyed out' so that staff cannot routinely offer them. Such appointments may be restricted to particular types of patient (e.g. workers) or assigned by particular staff (e.g. GPs or more senior receptionists), or only made generally available after a certain point in time.

12.2.5 Description of each site

Key features of Advanced Access and control practices

The key features of the four Advanced Access and four control practices are summarised overleaf in Figure 6 and 7. These tables enable a quick overview of the similarities and differences between the practices in terms of their motivation to introduce Advanced Access (or not), their definition of what Advanced Access means, the key features of their appointment systems, how they seek to manage their appointment system, and (for Advanced Access practices) the outcomes the practice perceive from the changes to Advanced Access.

Summary descriptions of each site

The above tables are further expanded by a series of short summaries which provide a brief description of each case study site and the research that was conducted at each site. These summaries are shown in Figures 8 to 15.

Figure 6 Case Study Practices – Advanced Access

	Advanced Access Practice 34 *(Advanced Access date 01/03/2003)*	*Advanced Access Practice 26* *(Advanced Access date 01/01/2003)*	*Advanced Access Practice 14* (Advanced Access date 01/03/2004)	*Advanced Access Practice 22* *(Advanced Access date 01/01/2002)*
Practice Motivation To Advanced Access	Long waiting times for particular Drs leading to psychological burden for senior clinical staff High DNA rates Attracted by Advanced Access model	Previous system had long waiting times High DNA rate Championed by senior staff (not all doctors in favour) Introduced as strict same day system to 'wean' patients off popular Drs.	Large backlog. Tried 'open access' led to 'chaotic' reception Senior staff impressed by Advanced Access model Resources to eradicate backlog	Previous system seen as 'archaic, out of control' High DNA rate High levels of conflict/stress at front desk Senior staff impressed by Advanced Access model Resources to eradicate backlog
Practice Definition Of Advanced Access	Advanced Access seen as same day system	System distinguished from 'pure' Advanced Access which would allow more pre-booking	Advanced Access seen as same day system Advanced Access conflated with DESA targets	Advanced Access seen as same day system
Key Features Of Practice Appointment System	Predominantly same day appointment system. 2-3 appointments per surgery booked ahead for 'workers' 2 phone / urgent appointments at end of each surgery Patients regularly asked to call back next day (embargoed appointments released)	40% of appointments available same day 40% appointments available between 1-2 days ahead 20% appointments available up to 1 week ahead Web used for repeat prescriptions	70% same day appointments/30% book in advance appointments Some patients asked to call back next day (embargoed appointments released) Some flexibility around releasing embargoed appointments 'early' Dr led triage on Monday mornings Phone consultations available	70% same day appointments/30% book in advance appointments Minimal flexibility in releasing embargoed appointments Phone consultations available but not always offered Patients regularly asked to call back next day (embargoed appointments released)

Managing Appoint'nt System	Early demand and capacity matching exercise shaped pattern of surgeries Some changes in early period, e.g. introduction of workers slots Informal contingency plans	Formal demand assessment around introduction of Advanced Access Appointments structured around fluctuations in demand, staff holidays and temporal fluctuations. Regular informal demand measurement and adjustment without formal use of PDSAs	Initially worked with Advanced Access facilitator and collaborative but once Advanced Access introduced worked independently Regularly introduce changes but do not use the formal PDSA method Established contingency plans	Following the measurement of supply and demand around Advanced Access introduction practice monitors system informally Monitoring system through daily dialogue with staff Informal contingency, e.g. some embargoed appointments taken during periods of heavy demand
Key outcomes perceived	Reduction in backlog lifted psychological burden on Drs. Better distribution of patients among practice Drs	System viewed positively by most staff and patients Increased ability to offer appointments and satisfy demand	Eradication of backlog Receptionists able to offer appointments through the week Increase in demand	Near eradication of DNAs 'Calmer' workplace Gradual increase in demand following early period of Advanced Access

Figure 7 Case Study Practices – Non Advanced Access

	Non Advanced Access *Practice 39*	*Non Advanced Access* *Practice 52*	*Non Advanced Access* *Practice 44*	*Non Advanced Access* *Practice 41*
System background.	▪ Previously 'named' doctor system – patients predominantly saw their doctor exclusively ▪ Change in partners and introduction of part-time partners forced change ▪ Practice struggles with unequal distribution of patients among doctors	▪ Practice has struggled with long waiting times for several years ▪ Introduced same day appointments to give patients choice of speed over continuity ▪ Same day appointments also introduced in anticipation of changes to out of hours service	▪ System has evolved with the move into a new building, more consulting rooms and larger waiting area have facilitated use of open surgery	▪ Practice has struggled with high demand for same day appointments. Tried various systems and settled on 50/50 split between urgent and routine appointments ▪ High DNA rate for dr and nurse appointments
Decision not to adopt Advanced Access	▪ Not persuaded by Advanced Access, seen as same day system inappropriate for patient population	▪ Practice manager interested in Advanced Access but doctors rejected system. Advanced Access seen as same day system	▪ Not persuaded by Advanced Access. Seen as same day system inconvenient for patients	▪ GP conflated Advanced Access with Direct Enhanced Service on Access Receptionists believed they are doing Advanced Access
Key Features Of Practice Appointment System	▪ Mainly routine appointments. ▪ Booked up to 6 weeks ahead with doctor of choice ▪ Typical wait for routine	▪ 2 systems. (i) pre bookable routine appointments, 10 mins. long. (ii) same day urgent slots, 7.5 mins. long with no choice of doctor. 50/50 split between two types	▪ Routine appointments available several weeks ahead with doctor of choice ▪ Open surgery every morning with nurse practitioners and support from on call doctor	▪ 2 systems: (i) routine appointments booked ahead with doctor of choice. 10 min. slots (ii) urgent same day appointments released at 9:00 and 3:15 daily with limited choice of time and

	appointment over 5 days ▪ Emergency appointment pool system – patients told to attend at 11:00 AM, no choice of dr	▪ Typical wait for routine appointment between 1-3 weeks ▪ Small no. of routine appointments released throughout week	▪ Afternoon phone triage by GP. ▪ Phone consultations available ▪ Workers appointments available late afternoon	doctor. 5 min. slots
Managing Appointment System	▪ Demand not measured regularly. ▪ Stable system ▪ Contingency plans for staff shortages	▪ Informal monitoring of demand ▪ Regular changes made to system ▪ Contingency plans for staff shortages	▪ Regular monitoring of demand ▪ Regular staff consultations ▪ Stable system ▪ Contingency plans for staff shortages	▪ Demand not measured regularly ▪ No documented contingency plans ▪ Stable system ▪ Looking at ways to reduce DNAs

Figure 7 Summary description of case study site 22

Site Details		Research Details	
Advanced Access:	Yes	Project ID:	22
Location:	Urban	Hours At Practice:	56
Patient list size:	9000	Staff interviewed:	4
Deprivation Payment:	Yes	Patients interviewed	6
Region:	South West		

Site description: The practice is based in a modern building that has been extended in recent years. It is in an economically deprived location near large housing estates (predominantly local authority and social housing) on the outskirts of a large city with a small number of shops nearby. Patients use a computerised self check in system in the waiting room. The practice has a small car park which fills up quickly during surgery times but there is roadside parking available nearby.

Practice is spacious with a large meeting room and a staff breakroom upstairs which is used by clinical and admin/reception staff. There is an easygoing relationship between doctors and reception/admin staff, the staff address doctors by their first names and are comfortable asking doctors to sign scripts and letters when they are in the reception area. Reception staff all wear uniforms as do the nurses, the doctors wear 'smart casual' clothing. There is normally one receptionist at the front desk who tends not to answer the phone and two receptionists answering phones in the rear reception area not easily visible or audible to patients in the waiting area. A typical morning surgery has 4-6 doctors available and afternoon has 2-3 doctors depending on the day of the week. There are also practice nurses and health care assistants running clinics and treatment rooms through the day. Patients are called directly by doctors over an intercom for their appointment.

Appointment system: Practice has been operating Advanced Access for 3 years, they define and operate Advanced Access as a same day system. 70% of available appointments can only be booked on the same day and 30% can be booked up to two weeks in advance at the beginning of each doctor's surgery. Each doctor has 4 telephone appointments at the end of the morning surgeries and the on call doctor has telephone appointments available during the afternoon. The same day appointments are available from 8:30 in the morning when the phones go 'live'. On most days these appointment slots are all taken between 9:30 – 10:00 and the reception phones are intensely busy during this period. Advance booking slots are also released daily but in much smaller numbers.

Figure 8 Summary description of case study site 14

Site Details		Research Details	
Advanced Access:	Yes	Project ID:	14
Location: Rural	Hours At Practice:	48	
Patient list size:	7500	Staff interviewed:	4
Deprivation Payment:	No	Patients interviewed	5
Region:	South West		

Site description: Based in a very old building on the high street of a historic market town. It is the sole practice in the town and also serves villages in the surrounding area. It is situated in an economically wealthy area and has a number of private patients. There is an independent pharmacy in the practice along with a dispensary. GP surgery rooms are furnished with traditional/antique furniture rather than modern functional. There is a small car park at the rear of the building and car parking can be difficult because of the high street location. Patients use a computerised self check in system in the waiting room. The practice serves a mainly white middle class population.

All treatment and surgery rooms are downstairs and the reception office, admin office and meeting rooms upstairs. The reception desk is staffed by one receptionist who takes phone calls when possible. The remaining reception and admin staff are upstairs where most phone calls are taken. During the busy early morning period most of the reception and admin staff answer the phones (this can be between 3-6 people). The receptionist on the front desk has to phone upstairs for assistance if struggling to cope with the number of people at the front desk, unlike most practices there is no direct visual or audible link between the waiting area/reception desk and the main admin area. Reception staff do not wear uniforms. A buzzer alerts patients to an LED screen in the waiting room when the doctor is ready to see them. Morning surgeries have 4-6 doctors available and afternoon surgeries 2-4. There are 1-2 practice nurses operating through the day.

Appointment system: Practice has been operating Advanced Access for just over 2 years. Advanced Access is defined in different ways by members of staff but all consider same day appointments as being central to the system. The practice conflate the Direct Enhanced Service on Access with Advanced Access, Advanced Access is seen as the method of meeting the targets set out within DESA. The practice has approximately 70% of appointments only available as same day appointments and 30% as routine appointments which can be booked ahead. There is some flexibility around the use of same day appointments, in certain circumstances receptionists and doctors will use them as pre-bookable appointments. The practice operates a doctor led triage session on Monday mornings and also runs a phone surgery one afternoon per week.

Figure 9 Summary description of case study site 34

Site Details		Research Details	
Advanced Access:	Yes	Project ID:	34
Location: Urban	Hours At Practice:	40	
Patient list size:	6500	Staff interviewed:	5
Deprivation Payment:	Yes	Patients interviewed	5
Region:	South East		

Site description: The practice is located in the centre of a medium sized seaside town and is based in a health and community centre, the building complex also extends into the local library. The practice shares the building with 2 other GP practices and local health clinics. The health centre has parking outside and underneath the building. The practice serves a mainly white, mixed class population. The practice normally has a branch surgery in another part of the town but this was closed for redevelopment during the period of research, this increased the pressure for space within the practice. The location of the practice within the health centre limited their ability to manage and renew the phone system used.

The waiting room was quite small and filled quickly during surgery hours. There were usually three receptionists on duty. Receptionists would attend to the desk when a patient approached, rather than permanently staffing it. Receptionists could see patients approach the desk through a clear screen that divided the reception/admin office from the front desk, the screen prevented phone conversations being audible in the waiting area. There was no dedicated break room and tea and coffee were taken by receptionists at their desks with doctors often using this area to take a break from their surgeries. This close contact contributed to a relaxed relationship between clinical and reception staff with doctors being addressed by their first names. Reception staff do not wear uniforms. Doctors call patients to their appointments directly via an intercom. There were normally 3-4 doctors available for morning surgery, with 2-3 during the afternoon. There were also practice nurses available through the day.

Appointment system: Operates predominantly same day appointment system. Patients can phone from 8:00 AM for an appointment in the morning or afternoon. There is intense pressure on the phones during this period and all appointments for the day are often taken by 10:00 AM on busy days like Monday and Tuesday. The practice reserves a small number of appointments (approx 3 per surgery) for working people and those with mobility problems.

Figure 10 Summary description of case study site 26

Site Details		Research Details	
Advanced Access:	Yes	Project ID:	26
Location:	Rural	Hours At Practice:	73.5*
Patient list size:	12000	Staff interviewed:	8
Deprivation Payment:	Yes	Patients interviewed	8
Region:	South		

Site description: Practice is located in a modern purpose built two storey medical centre with an adjoining pharmacy. Based on a main road off the High Street in a small town. A long established practice, has grown considerably over the years and moved to larger premises. The practice serves a primarily white community with a significant proportion of affluent retired people. Patients use a computerised self check in system in the waiting room. The practice is well equipped and uses a 'cascade' phone system designed to minimise the length of time patients are 'on hold'.

The main entrance leads on to a large L shaped waiting room, the practice as a whole has a light airy feel. The reception desk leads on to the reception and records office, the staff refer to the waiting room as the back room – indicating that their 'main' work takes place in the reception office where most of the phone calls are taken. Reception and admin staff wear a uniform and there is a hierarchy among staff based on years of experience and grade but there is a friendly team dynamic.

Appointment system: The practice reserves 40% of appointments for same day booking, a further 40% of appointments can be booked between 1-2 days ahead and the remaining 20% of appointments can be booked up to one week ahead. The phones are very busy during the early morning period. Each doctor has 6 telephone appointments available per day and the system also has capacity for an emergency surgery every day staffed by the duty doctor. Repeat prescriptions can be requested by patients via the internet.

* two researchers at this site for part of the time, 47.5 plus 26 hours.

Figure 11 Summary description of case study site 39

Site Details		Research Details	
Advanced Access:	No	Project ID:	39
Location:	Rural	Hours At Practice:	48
Patient list size:	4000	Staff interviewed:	4
Deprivation Payment:	Yes	Patients interviewed	6
Region:	South West		

Site description: Practice is located in the centre of a medium sized town. It is based in a large health centre which also houses another GP practice and a number of health clinics. There is a large car park at the rear of the building. The practice serves a mainly white, mixed class population. The practice is accessed via a set of double doors within the health centre which are opened at 8:30, the phones go live at 8:00.

The waiting area is spacious for the size of the practice and even when busy does not look overfull. There are normally two reception staff on at one time, usually one sits at the reception desk and books people in as well as taking phone calls. The second receptionist takes phone calls in the reception/admin office. The receptionist on the front desk will transfer a call to the back room if the call is considered to be particularly sensitive. Receptionists do not wear uniforms and there is a friendly working environment at the practice. Receptionists call patients for their appointments when they are 'buzzed' by the doctors. There are normally 3-4 doctors during morning surgery and 1-2 in the afternoon. There are practice nurses available through the day and also a health care assistant at various times.

Appointment system: Practice predominantly employs routine 10 minute appointments which can be booked up to 6 weeks in advance. There are a small number of same day appointments on morning surgeries for urgent appointments. The practice also runs an extra surgery when demand is high, patients are asked to come to the practice at 11:00 AM and doctors will divide the 'pool' of extras among themselves at the end of morning surgeries. The practice struggles to shift demand away from the senior and more popular doctors and was in the process of writing to some patients encouraging them to see other doctors.

Figure 12 Summary description of case study site 52

Site Details		Research Details	
Advanced Access:	No	Project ID:	52
Location: Urban	Hours At Practice:	40	
Patient list size:	6000	Staff interviewed:	5
Deprivation Payment:	Yes	Patients interviewed	6
Region:	South West		

Site description: Large old building located in the outer suburbs of a medium sized city. The practice is surrounded by privately owned housing with very few shops in the immediate area. Most of the treatment and surgery rooms are downstairs with a small number of treatment rooms upstairs used by the practice nurses. The practice has a large waiting room and the reception desk is behind a large hatch in the wall with slatted perspex screens fitted inside the hatch. When a patient approaches reception the receptionist manually opens the slats and talks to the patient, the slats are then closed when the patient leaves the reception desk.

There are normally two receptionists on at one time who are both based on the front desk, they book patients in and answer telephone calls from the front desk. The slatted screens give some privacy for telephone callers from patients waiting at the desk and sitting in the waiting room. The two receptionists are supported by the reception manager who also takes phone calls and books patients in during busy periods. Reception staff do not wear uniforms. There is a friendly and cooperative working environment at the practice. Patients are called in to the doctor by the receptionist who is 'buzzed' by the doctor. During morning surgeries there are between 3-4 doctors on, with usually 2 available during the afternoon.

Appointment system: The practice uses a mixture of pre-bookable routine appointments and emergency same day appointments. The routine appointments can be booked up to four weeks ahead with a doctor of choice and are 10 minute slots. Same day appointments are classified as emergency appointments which are 7.5 minutes long, they are given out sequentially and the patient is offered no choice of doctor. There are phone appointments available each day. There are also a small number of routine appointments released approximately every 2 days.

Figure 13 Summary description of case study site 44

Site Details		Research Details	
Advanced Access:	No	Project ID:	44
Location: Urban	Hours At Practice:	40	
Patient list size: 6500		Staff interviewed:	5
Deprivation Payment:	Yes	Patients interviewed	5
Region: South West			

Site description: The practice is located in a large modern building that also accommodates another smaller practice, a pharmacy and a dental clinic. There is an NHS Walk-in Centre next door. The practice is situated in an economically deprived area of a large city surrounded by large housing estates with few local shops nearby. The practice serves a mainly white, working class, population. The site has ample car parking which is patrolled by security guards throughout the day.

The waiting area is large, it is also very high, the main building is on two levels but the second level does not extend over the waiting area. All the furniture in the waiting area and the consulting/treatment rooms feels very new. The main reception desk has a sign about 2 metres away from it asking people to wait until the receptionist is ready to see them. In the mornings there is normally one receptionist at the desk booking patients in and two receptionists take phone calls in the adjoining reception office supported by a reception manager. Later in the day the receptionists tend to go to the front desk only when they become aware of patients arriving. Doctors call patients into surgery directly over an intercom. An electronic notice board gives patients the estimated wait for open surgery and other information such as the number of DNAs the previous month. Receptionists did not wear uniforms and addressed the clinical staff by their first names.

There are typically between 4-6 GPs available during morning surgery and 3-4 in the afternoon. Nurse practitioners run morning open surgery and practice nurses run a treatment room shared with the adjoining practice.

Appointment system: The practice uses a number of different appointment strategies. Routine appointments with a doctor of choice can be booked several weeks ahead. The practice also runs an open surgery every morning where patients book in and wait to be seen in turn. Open surgery is staffed by nurse practitioners with support from the 'on call' GP. The practice offers phone consultations with GPs and there are a small number of slots reserved for workers at the end of the day. There are also a small number of routine appointments released every day after 11:00 AM.

Figure 14 Summary description of case study site 41

Site Details		Research Details	
Advanced Access:	No	Project ID:	41
Location: Urban	Hours At Practice:	40	
Patient list size:	4000	Staff interviewed:	4
Deprivation Payment:	Yes	Patients interviewed	9
Region:	North		

Site description: A small practice in a modern building that has recently been refurbished. Situated in a large northern city near the city centre surrounded by Victorian terrace housing. There are a large number of shops, café/restaurants nearby, many of them owned and run by members of the local Asian community. The practice has a high proportion of Asian patients (approximately 80%). The practice is on one level, the waiting room has a large TV which normally has daytime programmes on except when the doctors are running late, at this point it displays a graphic explaining that waiting times are longer than normal, the message is displayed in Urdu and English. The practice has a small car park but many patients accessed the practice by foot.

Many of the local population do not speak English which was not a problem for the doctors at the practice who were all fluent in Urdu. The practice employed two specialist reception staff who are also interpreters. There was normally one of the interpreters on reception at any one time along with the reception manager who also took phone calls and booked patients in. Interpreters would accompany patients into the nurses treatment room when the patients could not communicate in English. Receptionists all wore uniforms. Typical morning surgeries have 2 doctors available, going down to 1 in the afternoon. Practice nurses run clinics through the day and a phlebotomist is also available mornings. Patients are called to their appointments by reception staff who are buzzed by the doctor, reception staff pass the patient notes to the patient as they go in for their appointment. Notes are collected from the consulting room by the receptionists.

Appointment system: The practice uses two main types of appointment. Routine, 10 minute appointments, can be booked in advance with a doctor of choice. Urgent, 5 minute appointments, are same day appointments which are released in two stages, at 9:00 for morning surgery and 3:15 for afternoon surgery. Three appointments are reserved for workers at the end of afternoon surgery.

12.3 Managing access

12.3.1 Managing access - the Advanced Access practices

Reasons for adopting Advanced Access

A number of different reasons were given for adopting Advanced Access. All the case study sites described problems with high DNA rates and staff at the various sites also described feeling overwhelmed by patient demand. The reception manager at one site described the previous system thus: "*it was awful before, absolutely manic*" [S, 2:4]. A GP at the same practice explained "*it was an idea that was really forced upon us, because we really didn't enjoy the actual appointment system. It was archaic, it wasn't efficient. We had lots of DNAs.*" [S, 3:14]. One site identified Advanced Access as an opportunity to attract resources which would eradicate long waits for appointments. At another site the practice manager described the decision to adopt Advanced Access. *well let's give it a go, it can't be any worse than it is at the moment*" [S, 11:1]. At this practice the practice manager was clearly someone that could be described in the diffusion of innovation literature(Greenhalgh *et al,* 2004;Rogers 1995;Schon.D.A. 1963) as an enthusiastic adopter, or in marketing parlance as a "product champion" for Advanced Access. She was supported by at least one of the senior partners who described the system as "*brilliant*" [S, 12:5]. Similar championing of Advanced Access was evident at another site where the practice manager and one of the GPs were key players in the adoption of the new system.

The Advanced Access practices were also motivated to meet the targets set out in the Direct Enhanced Service on Access (DESA) and they, to varying degrees, saw Advanced Access as the method that would best enable them to achieve this. A GP acknowledges the link between the access system and government targets

> *(GP) I think we were actually employing Advanced Access before the targets came into effect and that was our way of actually making sure we reached the targets. [S, 3:6]*

One of the Advanced Access practices displayed a sign on the noticeboard in the waiting room that read:

> Advanced Access
>
> This practice will be introducing Advanced Access. There will be a mixture of book on the day and pre bookable appointments.
>
> This will help us meet our 48 hour access targets

Managing the change to Advanced Access

The practices managed the transition to Advanced Access by attempting to educate patients about the new appointment system. They did this by a

combination of writing to patients and displaying leaflets and posters in the waiting room. The receptionists found that they spent considerable time explaining the appointment system. All four practices had initially adopted more rigid systems than those they now operated and had adapted the system over time. This meant that both staff and patients experienced different further changes and staff needed to continue this work explaining the system. In one practice there had been a deliberate move to adopt a strict same day appointment system to emphasise the break with the old appointment system:

> *(GP) To get there we thought we had to take a more radical step, so from opening a whole appointment page to patients to pick and choose and then finding out that we'd run out and we couldn't offer them and having perhaps a waiting list of two weeks, we wanted to change the thinking culture, so that's why we cut it right down to book on the day initially, a radical change; and then gradually creep forward to offering it more when they wanted it.[S, 32:8]*

How the Advanced Access practices manage access

Within the four Advanced Access practices there was variation in how access was managed. This variation occurred between the four practices, but also within the practices over time; each of the four Advanced Access practices had adapted the way they managed access over time. When we undertook the fieldwork, three of the sites were all operating predominantly same day appointment systems. One of these practices reserved 3 appointments each morning for 'workers' to pre-book and the other two reserved 30% of all appointments for pre booking. The other Advanced Access site used a more mixed model with two types of pre-booking: 'soon' (1-2 days hence) and later (between 1-2 weeks from initiation). This practice thus had a 40:40:20 split between same day and soon/later pre-booked appointments. All the practices had initially attempted to use a strict same day interpretation of Advanced Access and had, in varying degrees, made this more flexible over time. The Advanced Access practices can thus be placed on a continuum which can be seen as extending from 'strict same day' to more flexible forms of access which entail a balance between same day and pre-booked appointments, which produce a more mixed appointment system.

The norm was for practices to work with the Primary Care Collaborative and the access facilitator during the planning and introduction of the new system but when the system was up and running a more independent path was taken:

> *(GP) The Collaborative was useful in terms of we went down and spent a day, but it was all very new and shiny and no-one had really tested it, at least not in this area… And they were helpful, and they basically reinforced that there wasn't any one size fits all kind of situation really … it was actually quite a smooth transition, and we got good support from the PCT initially and then we were left to our own devices. [S, 3:9]*

As practices began to manage the Advanced Access system independently of the collaborative and the PCT and their appointment system stabilised they took a more informal approach to measuring demand and matching capacity to demand. Proactive management of the system continued but it was based around internal dialogue with staff and informally gauging the efficacy of the system.

> *(Reception manager) Well, I think we reviewed it as it went along and then ... because we changed the six slots to three in the morning and three in the afternoon, you know, we just sort of listened really to what people said. Every now and then I think we did how many calls came in the morning on sheets, you know. Every time I had a call, you know, and that sort of thing… But yeah, we just generally, you know, sort of listen to everything really and then change things slightly as they went [S, 2:10].*

The same was true of the use of Plan Do Study Act cycles (PDSAs) which were used around the transition to Advanced Access but then were used infrequently or completed as formal exercises to satisfy the PCT. Indeed, in some practices reception staff seemed unaware of the use and the meaning of PDSAs. However, as the quote below from a practice manager shows, just because the practices were not following the Advanced Access model did not mean they were not introducing innovations:

> *(practice manager) Really, we're changing things all the time, it's … I never leave it alone, I'll try something and if it doesn't seem to work it gets binned and try something else. We used to call these little experimental things PDSAs, these little cycles of trying something. I don't call them that now and mostly I don't write them up, but we're still doing it all the time [S, 6:20].*

All the Advanced Access practices had introduced some level of innovation in an effort to manage demand differently, phone consultations and phone triage being the most common policies used. At one practice the senior partner ran a phone triage session on Monday mornings to shape and redirect demand (this enabled the GP to make appointments with other GPs and GP registrars with his endorsement).

> *(Practice manager) we do telephone consultations, that's made a difference because you can get twice as many as those in, and it actually … and the telephone triage is the thing that really shapes demand and alters it. He [the GP] does give out a lot of appointments when he does that, but some people who ring in and he might get the nurse to do an ECG before they actually see the doctor when he's listened to the symptoms. Other people's he's directing them to x-ray at the local hospital maybe. One or two people he said "If you go up to the local hospital instead of coming here at 11 o'clock, then the doctor up there will be able to deal with that better there than he would here," and so lots of people … and there are the odd ones that get prescriptions, I*

> *don't know how many of that he does, but he does do some prescriptions. I've heard him ordering blood tests and things like that up front. So that triage session does help terrifically on our worst day of the week. [S, 6:20]*

It should be noted that the use of triage, telephone surgery and deploying more work to practice nurses and/or nurse practitioners was by no means the exclusive preserve of the Advanced Access practices, all the control practices used phone consultations, to varying degrees, to shape and manage demand.

A key tenet of Advanced Access is that practices should hold documented contingency plans to cope with fluctuations in demand, planned and unplanned staff shortages and abnormal illness outbreaks. The Advanced Access practices varied in their approach to contingency plans, the practice manager below had an informal approach to contingency planning, evident in her explanation of how she managed a shortage of GPs,

> *(Practice manager) I got on the GP network and I managed to fill the whole day Sunday afternoon [laughs] … so that was my contingency plan, that is I take the network home with me, I can access it from home. And I did a bit of pleading as well and told them of my situation and we didn't care how much it cost us, we just literally paid whatever they wanted basically just so that our patients were covered. [S, 11:7]*

Other practices had a more formal approach, in the practice below the practice manager explains how exceptional demand is managed and also how unforeseen staff shortages are managed

> *(Reception manager) We go through weeks that every day the appointments are gone sometimes by half 9. We had a bad week – not last week, the week before – we then look at the next day. If there is a locum in or it looks good the next day, we unblock half a surgery, and that pacifies people because they can be seen the next day … or else, I mean, we have added ... we've taken one telephone slot out of each doctor and put an appointment in … I mean if there's five doctors then that's five slots, which may get you over. [S, 2:11]*

\- -

> *(Practice manager) If we're talking about a doctor going sick or something like that, or the whole thing going ballistic, we … part of our contingency plan is that we have agreed that we will call people back from things. Now obviously if they're on holiday, you know, abroad you can't call somebody back from that, or even if they're on holiday in this country, but people who have gone out say to training courses or conferences or anything like that, the bottom line is if it goes really too much to cope with then we call them back. [S, 6:12]*

Whilst the innovations introduced with Advanced Access proved successful, practices felt they had often reached a limit or threshold and had no more to offer because of lack of suitable staff and/or lack of physical space and resources:

> *(Practice manager) We've got the potential, it's just having the places to put them [health care assistants] in this building … we are limited by this building [S, 6:10]*

There was also a view that only a certain amount of clinical work could be handled by nursing staff

> *(GP) We've got a chronic disease clinic to try and take a lot of that burden from our surgery as GPs and to the nurses remit, but the nurses are great at doing what they do, but the patients still want to see the doctors and we they still come and the nurses can only manage so much, and unfortunately you've got a patient with hypertension but they've got multiple sclerosis, they've got COPD, it's more than the nurses can deal with really. [S, 3:17]*
>
> -
>
> *(GP) we don't think nurse triage is safe. [S, 5:8]*

Adapting the access system

It was clear that an important motivation for moving away from a strict same day appointment system was feedback or complaints from patients, as at the practice below:

> *(Practice manager) we had quite a lot of patients complain at the beginning of it verbally, and coming to see me and they wanted to know why we were doing it, and they usually went away convinced that that was the only way we could think to go forward because of what we'd said… they got used to it. But I think the older people, it's like, "So I can't book an appointment for tomorrow?", "No. You've got to phone tomorrow", and it's quite hard to say, "No, I'm sorry but you've got to ring back tomorrow" [laughs], "Why?", [laughs] "Because it's not Advanced Access". And we were very rigid at the beginning of it, you know.[S, 11:13]*

At the site with a more mixed system, adapting the system was partly in response to the needs of particular patients (again the needs of elderly patients were cited), but was also linked to an early recognition that a proportion of longer term pre-booking slots would be desirable, as the practice manager explained:

> *(Practice manager) when we started that we discovered we had a problem with some of the elderly who used [volunteer and taxi transport] to bring them to the surgery, they have to book a car at least three days in advance, so then we had to expand [pre-*

> *booking]. …Over time as we've tried to relax it and be more accommodating, we're more relaxed about the booking a week in advance and my aim has always been to get on and be able to make it so people can book further in advance. [S, 39:2]*

As well as responding to the needs of elderly patients the Advanced Access practices also attempted to adapt the system to meet the needs of patients who were workers and/or commuters. At two Advanced Access practices a small number of appointments typically at the beginning or end of the day were made available for those who found the same day system inaccessible such as full-time workers, particularly commuters. There was variation in how the 'worker' category was used; at one practice the category was fairly loose and encompassed other patients who might want appointments at the beginning or end of the day. At the other practice it included any patient with mobility problems.

The practices saw the same day appointment system as having the biggest effect on the way they manage access. Whilst all the practices had moved to accommodate varying levels of pre booking there was reluctance to relinquish too much of this element of their appointment system. One practice manager, from a practice which embargoed a high proportion of appointments for same day use only, expressed concern about the criticisms of embargoing and the suggestion that they should stop doing this. For her, the key difference between their system and conventional appointment systems was that they did embargo appointments. This reduced DNAs which was the key change that produced extra capacity. If they did not embargo appointments people would start to book ahead and the appointments system would be little different from before [Obs, CS, 10:5].

Embargoed appointments

Reception staff used discretion in a number of ways to manage the access system. Some staff were able to exercise discretion regarding embargoed appointments, often this option was only available to senior staff, and/or for particular patient groups (e.g. workers):

> *(Observation) Patient asked for an appointment with a named doctor on [+2 days]. Patient was told that all appointments were only released on the day, and asked if anyone else will do. Receptionist then says, "You've got transport problems. What time would you like to come down?" and she overrides an embargoed appt to make the booking at the time of choice. [Obs, LS, 9:11]*

GPs were also able to over-ride embargoed appointments, as this GP explained:

> *(GP) I do fudge the system sometimes by over riding a booking if it's embargoed or they go "Oh, I wasn't able to book last time, it was a real slog to get through" and if they want to come at the time, and over ride it. But I don't do that very often. [S, 35:3]*

Extra appointments

Reception staff also used discretion when deciding to add 'extra' appointments into the day's rota. A receptionist at one practice described how she found ways to squeeze in additional appointments by asking the GPs to see additional patients at the end of surgery. Sometimes this was achieved by asking the GP to telephone the patient to ascertain the urgency of the request for an appointment. During an observation session the senior receptionist at a practice asked each of the GPs to make an additional four appointments available at the end of morning surgery. The receptionist explained this ad hoc decision by reference to the high demand that morning and described this process as 'magic-ing up extras' [Obs, LS, 9:7].

One of the effects of these strategies is to introduce opacity and inequity in the access system. Patients may not be aware that embargoed appointments can be released or that there are sometimes additional appointments. Indeed patients may find that their chances of obtaining a same day appointment are highly contingent on the time of contact or receptionist discretion:

> *(Observation) The receptionist offers the patient a number of appointment slots, all of which are designated as 'worker' slots, but she is unable to find a convenient time with the Dr requested. She then offers the patient an appointment for today at 1:20, the patient asks, "Is it with Dr Y", "Yes", the receptionist confirms that the appointment is with the Dr she wants to see and proceeds to confirm the appointment. This is a very unusual appointment time, as it is not in the usual surgery sessions and is not one of the workers appointments and all the appointments for that Dr had gone for the day. The receptionist has fitted them in as an extra. After the phone call the receptionist explains, "That's one of the patient types that we try and pre-book because they can't get down here. If they're elderly or frail or disabled then we will pre book but we do try not to pre book more than three appointments for a surgery." [Obs, JB, 3:6]*

There is of course a limit to the number of extra slots which can be added onto a surgery as this observation reveals:

> *(Observation)*
>
> *Fri. Conversation between reception manger and senior receptionist.*
>
> *Rec: you do realise we only have one left.*
>
> *PM: yes I know, they're just going to have to wait. I've added in all those I can. There's nothing else we can do [Obs, LS, 9:15]*

When there are no more appointments available receptionists attempt to re-route or redirect demand by suggesting alternative options to patients.

Re-routing patients

One of the Advanced Access practices had a formal policy which prohibited staff from telling patients to call back on the following day when all the appointments for the day have been filled. On such occasions the receptionist would be able to see on her computer diary that there were appointments to be released the following morning, but these were embargoed. In such cases, the receptionist was expected to ensure that the patient received an appointment – even if this was not with the chosen GP or meant a delay of a few days:

> *(Receptionist) I was picked up on things... if I said, well, maybe ring back in the morning, I was picked up on that, you're not supposed to say ring back at eight o'clock although you know appointments are kept back to the next day. Like today, for example, there's no appointments available tomorrow on the screen, so you are saying to the patient, well, there will be availability tomorrow but it's up to the patient to say, well, I'll ring back in the morning. That's fine. But you're not really supposed to say that [S, 36:2]*

Despite this injunction there were instances when reception staff at this practice suggested or hinted to patients that they should phone back the next day to get an appointment, but this was not routine practice. At the other practices it was not unusual for receptionists to suggest to patients that they call back the following day. Asking people to call back has the effect of creating an invisible or displaced backlog as illustrated in the comments by a patient below:

> *(Patient) The time I wait, the time from when I book the appointment to when I get it hasn't changed, it's just the getting through and if there isn't one, I have to phone up the next day, so really the wait has probably got …days longer because I'm having to phone up again and again rather than just book it and they give me the next time. [P, 13:4]*

It should be noted that sometimes people were asked to call back the following day not because there were no appointments left on the day they were calling but because they wanted to book an appointment for the following day.

Reception staff used a number of other strategies to re-route patients when there were few or no appointments. It was common for patients to be offered a telephone consultation but there were inconsistencies here as in one practice not all callers were offered a phone consultation. In one practice receptionists attempted to reroute patients toward a consultation with a practice nurse but this was not always successful and patient interview data indicated that patients had mixed views about being seen by a nurse:

> *(Patient) IV: how would you have felt if they had asked you to see a nurse instead of a doctor?*
>
> *Pt: No, I think I need a doctor.*

IV: You felt it was a case that needed a doctor?

Pt: Yes [P, 46:3]

- -

(Patient): I'd be quite happy as long as they [nurse] have facilities to go to the doctor, because I don't suppose they'd be able to do the prescription, but they could definitely look them over, couldn't they, and see the right way to go. [P, 49:6]

Making distinctions between urgent and routine

Three of the four Advanced Access practices did not formally distinguish between urgent and routine appointments. One site classed same day appointments as emergencies on their computer system but they tended to be dispensed as routine appointments by staff, i.e. patients were not usually offered these appointments as emergency appointments. However, staff at the Advanced Access practices were often drawn in to distinguishing between urgent and routine appointment requests when all the same day appointments had been taken. Discretion played an important role here. Some reception staff had clear views about what counted as urgent or an emergency, for example suggesting that if a patient wanted an urgent appointment they should be prepared to see any GP. Receptionists often had clear ideas about the types of patients that required urgent or emergency appointments and would act to ensure that these patients were fitted in, for example children:

*(Receptionist) Obviously children. Yeah, they need to be seen. And obviously when there's not an appointment, it's a case of the duty doctor being aware or making that doctor aware that this is a child. But, yeah, children definitely**.** [S, 36:8]*

Some practices used forms of triage to try to manage requests for urgent appointments. One practice had adopted a system of GP led triage on Monday mornings – the busiest day of the week. This relied on one of the senior partners who went through all the calls from people wanting to be seen that day. These patients were then slotted into same day appointments which had previously been embargoed, or were re-routed to telephone consultations or to appointments later in the week. Where practices did not have an explicit triage system they often used a variant of this method when busy:

(Practice manager) at the end of each surgery, if there's no appointments left, there's slots for telephone consultations, and the doctor will phone the patient to find out what the problem is before they say "Well I think you'd better come down and see me" or on the visit list we take all the telephone numbers and the new doctors will phone the patient first before they go out on a visit [S, 11:4]

Another practice had tried nurse triage in a previous version of the appointment system, but it was felt that this had not been successful, partly due to patient complaints. While the access system used at this practice did

not involve explicit triage some of the receptionists did triage patients when the practice was busy, by trying to gauge urgency:

> *(receptionist) we did have to do triaging, yes, but it's just to a certain extent, I mean, we don't really like to pry too much. People don't really want to if I'm going to the Drs I don't really like to tell them, but you just have to gauge whether it's urgent, and because a lot of people ring up and say, I want to see a doctor, and then you say, is it urgent, no next week's fine. And then you get people that say, oh, yes, I've got to see someone straightaway and then you say what is it have you got pains. The first question, obviously, is chest pains or anything like that. Well, no, it's something I've had for, like, the last month. So that's not really... that can wait another day, really. [S, 38:2]*

Similar behaviour was observed at another Advanced Access site where, although the receptionists claimed that they did not triage they regularly asked patients for medical details to establish whether the appointment was urgent [Obs, JB, 3:8].

How patients manage the access system

The Advanced Access systems prioritise patients who can telephone the practice early in the morning. However, one of the practices also releases some embargoed appointments early in the afternoon so patients have a second opportunity to obtain an appointment. Reception staff are aware that patients have had to change the way they manage access, but are possibly not aware of the patient experience. The case below was an extreme example of how patients manage getting through to their practice by phone:

> *(patient) I have to put the teletext on to make sure the time is coming up to 8 o'clock. I have the two mobile phones with the number programmed in and I have the other phone there ready to phone. If I'm really clever I can hit it on the spot and I get straight through, and if I'm not so clever I usually do it about 10 seconds before 8 o'clock and I, most times what happens if I get, is it [names out of hours service] the answering people which I don't want… because they haven't switched over, and then by the time I've cut off from them and redialled, it's been turned over and I've missed it, so then it takes me roughly about 20 minutes to get through with three phones going all the time. [P, 16:1]*

Not all patients manage to navigate getting through on the telephone. A patient who started work early in the morning expressed concern about the cost of having to use a mobile telephone and trying to make calls whilst at work [P, 6:11]. The second of the two quotes below makes a similar point about the cost of mobile telephone calls.

Some patients circumvent the difficulty of trying to get through on the telephone by presenting at the practice to secure an appointment. This is one example of what can be termed 'gaming' or 'working the system'. Examples of

this were seen at two sites. Presenting at the desk also gives patients the opportunity to physically present their symptoms and engage reception staff in triage decisions. This tactic is not always successful and the two observations below, from the same practice, illustrate the variable outcomes:

(Observation)

Pt Is it possible to see a doctor

Rec There's no more appointments available I'm afraid

Pt [patient clearly very distressed] It's for this [shows the Receptionist. The patient starts to walk away]

Rec Hang on, I'll have a look for you, I know how you feel [brings up the on call GP screen] I can get you in at 5:40 [on call GP emergencies]

Pt Is it possible to see Dr S

Rec No, all her's have gone I'm afraid

Pt Okay

Rec Are you going to be at home now

Pt Yes

Rec I'll try and see if Dr S can fit you in earlier

Pt Thanks

Rec [confirms patient details and arranges the later appointment] [obs, JB, 1:15]

- -

Pt I need to see a doctor, I've been phoning since 8:30 on my mobile and it keeps putting me on hold,

Rec We've got nothing today I'm afraid

Pt But it's my knee, it's infected, it's really bad I'll show you

Rec It's no use showing me I'm not medically trained

Pt But I need to see a doctor, it' not fair that I can't afford a proper phone

Rec All I can do is get a doctor to call you back

Pt If I go to the walk in centre they just tell me to go to my doctor's but I can't get to see one, I've got to show you

Rec It's no use I'm not medically trained

Pt [Patient insists on pulling up her trouser leg and getting the receptionist to look at it, the receptionist makes no comment]

> *Rec If you ring back at 8:30 tomorrow then I'm sure you'll get to see a doctor. Patient reluctantly leaves, she is very unhappy. [Obs, JB, 1:16]*

As access systems became more established some patients became more adept at negotiating the system, and receptionists felt that patients 'worked the system' and presented themselves as workers to secure appointments at convenient times:

> *(Receptionist) Patients are now aware that we have workers appointments and sometimes they just say they're at work'. [Obs, JB, 3:7]*

And some also used tactics to ensure continuity of care:

> *(Receptionist) The hardest thing is when people insist on seeing their own Dr, some people get quite shirty about it, if people get very difficult then I'll talk to the Drs about fitting them in, which means they're getting away with it really. The other thing now is that if people really give us a lot of earache then we tell them to write a letter to the practice manager [Obs, JB, 3:6]*

12.3.2 Managing access – the control practices

Reasons for not adopting Advanced Access

At one control site the practice manager was antagonistic to Advanced Access and staff reported resisting pressure from their PCT to adopt Advanced Access [S, 16:13]. The PM described their access system as a '*full appointment system'*. Historically they had operated a named GP access system whereby patients usually saw the GP they were registered with. Following the retirement of one of the partners who had favoured this system, the practice began to encourage patients to see available GPs. They had monitored the access system and felt that the access system they used was better for patients:

> *(Practice manager) We did look at it, yes, we did consider it and we looked at our existing appointment system and did little bits of audit here and there and quite honestly we didn't really think we were going to be benefiting ourselves or the patients by taking that on board. [S, 16:11]*

At a different site staff equated Advanced Access with strict same day access and were concerned that this model would not distribute appointment slots equitably and that it would increase demand:

> *(GP) you still have to have the right number of people to do the job. If you have thirty people wanting an appointment today and there's only twenty slots, what happens to the other ten? They have to be told to ring again tomorrow. And they're in the free for all tomorrow and what happens if the same person ends up doing that four days on the trot…I think there's potential for it*

> *here, but my concern that if we did it we would wind up demand, that people would come in because they've had a sore throat for two hours …because it's too easy. [S, 25:8]*

At the same site initial scepticism about Advanced Access was reinforced by the experiences of staff at their own practices. The practice served a city population and a significant number of patients from deprived areas and it was strongly felt that Advanced Access would further disadvantage these groups whilst placing additional burden on reception staff. Some staff were antagonistic to Advanced Access based on personal experience

> *(Practice manager) No, I didn't like … there was nothing in it that I thought that was good, and I thought there were some horrendous ideas, and some of our receptionists here belong to practices who run Advanced Access and they struggle and struggle and struggle with it …I mean you've got to phone up between half eight and nine, if you phone up at one minute past nine you can't book it, and you can't say 'Actually I'm working today, can I come at five o'clock?' 'Oh no,' you've missed your chance. There's been a few times when I've had to get on the phone and pull a practice manager rank …to get them an appointment at another practice. It's the most ridiculous thing I've ever heard of. [S, 23:11]*

In contrast, the third control site appeared less antagonistic to Advanced Access and tended to equate or confuse Advanced Access with other initiatives such as the 48hr access target/ Enhanced Service. Indeed one of the receptionists thought this practice was 'doing Advanced Access'.

At the fourth control site the practice manager was also less hostile to the idea of Advanced Access although here too staff often equated Advanced Access with a same day appointment system. The PM showed some interest in adopting Advanced Access but had not received support for this from the GPs, emphasising the important role of clinical champions in the practices which had adopted Advanced Access. The GPs resistance to Advanced Access was based on a concern that the system was too restrictive and that it was important to offer more flexibility and choice to patients.

How the control practices manage access

The range of waiting times for appointments in the control practices was greater than in the Advanced Access practices. Some appointments could be pre-booked up to 6 weeks in advance and there appeared to be more variation in the wait for non-urgent appointments: at one of the control practices, patients might wait under a week for such appointments, but they could be offered an appointment within two days depending on their choice of GP.

The control practices tended to manage the problem of access by operating mixed access systems which in some ways resemble the Advanced Access case study site with the mixed access system described above. Their access systems included pre-booked appointments up to 6 weeks ahead alongside

same day urgent appointments. The presence of pre-booked appointments up to 4-6 weeks into the future meant that all the control practices appeared to offer greater opportunity to see the GP of choice than was the case with the Advanced Access practices, but of course this could be at the 'cost' of a longer wait.

Urgent appointments were typically managed as a 'pool' of work such that patients were asked to attend an open surgery or same day appointment slots were used. The same day slots are embargoed until their day of use and the choice of doctor is non-existent or restricted. The urgent appointment slots are also nominally shorter than routine slots in Advanced Access and control practices.

Embargoed appointments

One practice operated a system which allowed pre-booking up to one month in advance, but a proportion of the appointments in this period were embargoed or 'greyed out' and released gradually as routine appointments to give more options to reception staff on a day-to-day basis. The PM expected reception staff to use discretion to judge when to break the embargo and use these slots, but felt that reception staff were reluctant to do this:

> *(Practice manager) The other side of it being that I hope that it gives the receptionists an opportunity to use their initiative and open up one of these closed appointments if they recognise that a patient desperately needs that appointment or they're under a huge amount of pressure from a patient. For one reason or another they can, if they can justify it, open up one of those greyed appointments. I don't think they do it, I don't think they have the confidence to do it, which saddens me a little bit [S, 19:11]*

Extra appointments

At one control practice urgent appointments were termed 'extras' but managed as part of the 'pool' of urgent appointments – patients were told to attend at 11am and they see GPs on a first come first served basis. However, in addition to this, reception staff had some discretion to add extra appointments onto the end of afternoon surgery. The use of a 'pool' surgery to manage urgent appointments enables reception staff to manage access partly by dissuasion: thus patients asking for urgent appointments are reminded that they "will have a wait, because it is not a proper appointment and we can't guarantee which doctor you will see" [S, 15: 5]. At this practice patients seeking urgent appointments might be re-routed to telephone consultations or telephone triage by a GP:

> *(GP) we do sort of quite a bit informal triage as I was saying from the point of view of this sort of extra appointments in the evening, you know, if I'm on my own on an afternoon, I would say to the staff, basically, I mean I do expect them to use some kind of common sense; I'll say you know, if it's getting, take a message and I'll phone them back unless it's … you know, if it's a*

> *child with an ear infection then they're obviously going to be need to seen, then put them in, but otherwise I would tend to kind of, I would often sort of triage those requests [to phone consultations [S, 17: 8]*

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> *(Receptionist) What we tend to do is if a patient rings in and wants to speak with a doctor, we as receptionists will sort of assess it really, in a way. If they ask to see the doctor and they're not available and they can't wait, we will sometimes say, "Is it something the doctor can help you with over the phone?" If they specifically want to speak with a doctor, and then we'll put a practice note through to the doctors asking them to ring the patient. Sometimes we have no idea what it's about and all we'll put on there is, "Please phone patient." Sometimes as before, when you're making an appointment, the patient will go into details of what the problem is so we're able to put that on the screen so the doctor's aware of why they're ringing the patient. [S, 14: 11]*

Making distinctions between urgent and routine

The control practices did distinguish between urgent and routine appointments, with the former available on a same day basis. However, the slots differed from routine slots in their duration and in that they could not usually be requested with a particular doctor. Access became problematic when patients requested particular doctors. As at the Advanced Access practices reception staff at control practices felt that urgent cases should be prepared to see any doctor:

> *(Observation) Receptionist lists the time slots of available appointments and the patient takes one of them and the receptionist takes the patient details. After the interaction the receptionist turns to me and says, "They said it was urgent but it couldn't have been otherwise they would have seen Dr U today. To my mind if something's urgent then it means you need to be seen that day!" [Obs, JB, 4 :12]*

Occasionally the receptionists asked the GPs to judge whether a request for an urgent appointment was justified, though as this quote points out this is not a frequent occurrence:

> *(Receptionist) ST14 if the doctor feels it's not appropriate for that patient to have come in on an emergency appointment, then that's for them to say. I wouldn't like to judge.*
>
> *INT: That's for them to tell the patient, or you?*
>
> *ST14: Yeah. The patient. Yeah.*

> *INT: Right. Do you ever get any feedback from them saying, "Oh, we're seeing too many emergencies …"*
>
> *ST14: Sometimes they do. Well sometimes the doctor might comment, "They needn't have come in today", but it's very rare actually. It is very rare. [S, 14: 8]*

The long waiting times for routine appointments had the effect of creating more pressure on the urgent appointment slots with the result that urgent slots were used by people for routine problems because patients were unwilling to wait for a routine appointment:

> *(Practice manager) I think what we're experiencing now is, is that because our routines are so booked up in advance … So anybody ringing in and saying 'Oh, I don't need to be seen today, I need a routine,' and they'll say 'Well actually, the next routine is four weeks away,' you know, you think oh blimey, you know. The probability is the patient's going to decide well actually they can't wait four weeks, they don't want to go on our waiting list for cancellation of appointments, so they say 'Well actually I'll ring up another day,' and they ring up and they say 'Yes, I need to be seen today'. So is it an emergency? Well, depends on which way the patient, you know, it's perceived really. I've always … I've always had long and interesting discussions about when is an emergency an emergency, because I think it's to do with the whole patient education and all that side of it really. So I think, almost by default now, we're saying our emergency appointments are almost becoming same day [S, 19:5]*

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> *(Doctor) a lot of our same day requests for appointments are actually not urgent and they are people who can't get routine appointments for two or three weeks, and there's a problem with access to our routine appointments, we just don't have enough of them. [S, 18:4]*

How patients manage the access system

At the practice where open surgery was used to manage urgent appointments receptionists felt that some patients worked the system by timing their calls requesting appointments so that they missed the urgent surgery and were offered appointments in the afternoon:

> *(Receptionist): Yeah, well somebody would ring after eleven o'clock, so … I mean, a lot of them know that open surgery finishes at eleven o'clock anyway so they ring just after and, you know, speak to a doctor knowing full well they're going to get an appointment for this evening. So they know how it works and everything, a lot of them, [S, 26:7]*

Similarly at another control site the staff suggested that patients awareness of the long waits for routine appointments worked the system by saying it was urgent:

> *(Receptionist) People get wise to the emergency appointments though, that you can't actually get into see the doctor that they want to see, or there's a bit of a wait to see the doctor, so I'll have an emergency appointment then, and they do become … they do become … how can I say, quite sly some of them, they know they can't get in to see the doctor, so they'll phone for an emergency appointment. [S, 20:3]*

12.3.3 Summary – managing access

The data show a division between the Advanced Access and the control practices which was mainly evident in the use of same day appointments. Although control practices all used same day appointments these were employed mainly for urgent appointments. However, the urgent slots were not normally monitored or evaluated by staff, so they tended to be used by many people as routine appointments. The control practices all had more pre-bookable appointments than the Advanced Access practices and they were available several weeks further ahead.

There was no formal division between routine and urgent appointments in most of the Advanced Access practices where same day appointments are available with the same status attached to them. However, when all same day appointments had gone receptionists would routinely have to evaluate the patients' requests in terms of urgent and routine.

The control practices all had backlogs which made access to routine appointments problematic for patients. However, the Advanced Access practices, to varying degrees, showed signs of a invisible or displaced backlog which took the form of asking patients to phone back the following day when all the same day appointments had gone.

12.4 Continuity of care

12.4.1 Continuity – the Advanced Access practices

Continuity of care was problematic in the Advanced Access practices largely because they favoured same day or 'soon' pre-booked appointments. This meant that when a specific GP was away from the practice, patients were more likely to be given appointments with an alternative choice of GP. This was particularly an issue at those practices with the highest proportion of same day appointments.

Continuity and speed of access

At one Advanced Access practice the staff had been particularly concerned about a loss of continuity and formally encouraged continuity of care by getting receptionists to ask patients which GP they usually saw. Although they

worked to achieve continuity they recognised that it was not always possible. The quote below illustrates a case where there was a perceived improvement in continuity with a same day booking system:

> *(Receptionist) I mean I'm just thinking of one patient in particular who only ever sees one particular doctor, and he's like really happy with the system, because she could never get him…And she could never get him for weeks ahead. Whereas she knows if she rings in the morning, she can get in. So … I mean I know that's just one person out of thousands.[S, 4:91]*

There was also recognition by reception staff at the same practice that the presence of same day or soon pre-booked appointments encouraged patients to trade continuity for speed of access:

> *(Receptionist) but I think probably there is less continuity. Because if people know there's a slot available that day, they'll see anyone. [S, 2:6]*

and this was borne out in repeated observations of interactions which followed the format of this one:

> *(Observation) A patient phones*
>
> *Pt [asks for an appointment with a particular dr ST]*
>
> *Rec Sorry I've got nothing with Dr ST this morning, she's not on at all today, I can give you Dr R at 10:30*
>
> *Pt [accepts]*
>
> *Rec Okay, [takes patient details and confirms appointment time] [Obs, JB, 1:6]*

Patients were aware that they traded continuity for speed, notably for urgent consultations:

> *(Patient) it's just that you've got that relationship with him, you know, when I say relationship I mean it's that he's known you since I was in my twenties and you know, they sort of build up a picture of you and they know the family, they've known the children since they were born in that sort of sense. … It's just that, when you see one particular doctor for so long, you tend to, I tend to still go for that particular doctor if you know what I mean, because as I say, they know you. But having said that, if it's something that needs attending, so it's urgent, either I want to see a doctor, I'll see any doctor, whoever is there, whoever they can give me, because whatever needs attending to, needs attending to there and then. [P, 16:6]*

Continuity for particular patient groups or types of condition

While patients were prepared to trade continuity for speed of access, in the context of urgent consultations, they were clear that some groups of patients,

or in particular medical conditions, continuity was particularly valued. Carers of young children fell into this category:

> *(Patient): Yes I do [like to see a particular doctor]. Particularly for my son and myself because we're both asthmatic. He's got quite a history of asthma, and so I know that this one doctor knows him very well, so I know that if he hears them and you know, some doctors might think it's not too bad, but he knows his pattern of what can happen with him, so he might react a bit differently, so yeah, in that case I do, but obviously it doesn't always happen because sometimes he's not on or there isn't any space and things like that. [P, 11:3]*

As did elderly patients with chronic condition who were also regarded as needing continuity:

> *(Patient) my mother… because of her condition they're extremely good actually. I know that she has had issues where she's tried to get in, and I think again, you asked the question earlier, whether having the same doctor makes a difference. I think in her situation it does because having quite a serious problem where she's on quite a lot of tablets and has to come every two weeks to be checked, I think that having the same doctor makes a heck of a difference to her and have the confidence in how she's getting on I think. [S, 13:5]*

Continuity desired by patients

There were some patients at each of the Advanced Access practices who demonstrated their desire for continuity of care by declining to book appointments which were not with their preferred GP:

> *(Observation)*
>
> *Pt [asks for appointment with Dr R]*
>
> *Rec Dr R isn't on today I'm afraid, he's on tomorrow all day*
>
> *Pt [indicates that they will try tomorrow]*
>
> *Rec Okay, give us a ring tomorrow, okay thanks, bye [Obs, JB, 1:19]*

Continuity desired by GPs

Patients were not the only ones who desired continuity of care, this was also an issue for GPs:

> *(GP) Continuity is my big bugbear and I think it's introducing this [Advanced Access]; we have lost a bit of continuity. I think it's partly our fault and partly the patients' fault; it's obviously the Government's fault. It's driving this expectation that you can be seen there and then or whenever you want to be seen because*

> *that may mean that you're not seeing the doctor who saw you last time, so you lose that continuity. And when patients do want continuity, sometimes they can't have it because it's not available within the right time scale; and that's a problem as far as clinical care is concerned. … I think you need to build some system in to allow continuity; I just don't think we've got that quite right. [S, 32:3]*

Some staff recognised that the problems surrounding lack of continuity were a result of adopting Advanced Access.

> *(GP) one of the glitches in the system that you perhaps aren't matching the appointment to the most appropriate person; I think they just appear and they go on first come first served. [S, 32:13]*

Some doctors also reported that the lack of continuity was changing the nature of the GP consultation, there was a greater proportion of patients presenting with acute, one off, problems:

> *(Observation notes)*
>
> *There were strong feelings from all the doctors that advanced access had led to reduced continuity and that this was a major downside. All the doctors came up with anecdotes about poor care people have received, e.g. from Out of Hours service, or from other practices, or from locums when they see different doctors all the time and problems are not sorted out. Particularly difficult patients, demanding patients, drug addicts, elderly people with chronic illnesses etc. They also pointed out that managing these problems is what makes general practice rewarding and without this no-one would want to do it. The doctors said that without continuity, general practice is like "crap casualty". [obs, CS, 10:4]*

However, it should also be noted that this process was viewed more positively by GPs in one particular practice. Regular contact with those with chronic illness had a debilitating effect which was alleviated by the introduction of same day appointments and the subsequent change in continuity patterns

> *(GP) the case mix was dreadful and we just had chronic, chronic, chronic, chronic, chronic patient, you never see anything to make it varied, because all the chronics was all we ever see [Obs, JB, 1:15]*

Continuity not seen as important

While there were clearly a number of patients and GPs who valued continuity and a proportion of these who were concerned about how Advanced Access had reduced continuity, there were also patients who did not view continuity of care as important. It was apparent from the observation that some patients were happy to see any GP offered, and that some attended the surgery

without knowing which GP they were going to see. One patient explained why continuity was not important to him:

> *(Patient) because I rely on my doctor to make sure their qualifications are good, do you know what I mean? Just like I rely on the bus company to supply a driver who can drive it. [P, 12:7]*

12.4.2 Continuity of care - Control practices

The nature of the access systems at the control practices, which tended to have more 'later' pre-booked appointments for routine cases, meant that continuity was often offered but at the cost of a longer wait for an appointment than in the Advanced Access practices. However for the urgent appointments continuity was seldom achieved, particularly at those practices where urgent appointments went into an 'open surgery' or 'pool'.

Trading continuity for speed of access

Notwithstanding the preference of many patients for continuity, as evidenced by their preparedness to wait some time to be seen by the GP of choice, some were prepared to make similar trade offs between speed and continuity as patients in the Advanced Access practices.

> *(Patient) No I don't mind, as long as I see a doctor I don't really mind you know. …I suppose if I had some kind of ongoing, you know (inaudible) build a relationship with my doctor but because I don't use the practice very often I don't actually mind who I see as long as I can get to see someone when I need to, like I did today. [P, 18:3]*

Continuity desired by patients

There was a sense from staff in the control practices that patients valued continuity, and that the long waits to see popular GPs were a feature of this. As in the Advanced Access practices there was a feeling that patients who were urgent or "really ill" should not expect continuity. Although these practices were able to book routine cases in advance there were clearly issues around the issue of continuity of care for these urgent cases (just as there were for urgent and soon pre-booked appointments in Advanced Access practices).

One particular case highlighted the difficulties for patients seeking continuity for urgent issues.

> *(Observation)*
>
> *In the initial telephone encounter with reception the patient asked for a same day appointment with a named GP. This could not be accommodated as the appointments were all taken. Finally the patient put the phone down on the receptionist and the receptionist explained to the researcher that the patient is 'difficult', but that patient was coming in to see the nurse this*

> *afternoon, 'that's why he wanted to see Dr L today, because he's already coming in'. Later in the day the case developed further. The patient had come in for his appointment with the nurse, and insisted to the nurse that he wanted to see his GP. The reception manager intervened to tell the nurse, 'there is no way that Dr L can see him' however it later transpired that the patient saw Dr L that day and after this consultation Dr L gave the administrative staff an urgent letter for the hospital to be fast tracked under the 2 week rule (suspected cancer). [Obs, JB, 5:15]*

This case was an interesting example of the struggle between continuity and urgent access, the patient was very unwilling to make a compromise and his insistence on seeing a particular doctor was particularly striking.

Reception staff certainly felt that patients frequently wanted continuity of care:

> *INT: And do people normally like to see a particular doctor?*
>
> *ST24: (Reception manager) Yeah, they do, yeah.*
>
> *INT: Okay. And do they get … do people … for reception staff, is it … are people okay with the wait or is that a kind of point, is that a difficult issue sometimes?*
>
> *ST24: Um, it is … if it is a problem with a patient, then we'll always say 'We'll get the doctor to call you back,' so they can have a word with the doctor, their own GP. If the GP feels that they need to see him before, then they'll slot them into a surgery to see them. [S, 24:4]*

Patients desired continuity partly because they had built up a relationship with particular GPs, and some did not distinguish between urgent and routine/ongoing health needs, preferring to see the same GP for both sorts of consultations:

> *(Patient) The thing is, I think you build up a bit of a rapport as well don't you, with your own doctor and you have a bit of trust with them as well, you know, and they know, you know, like I mean I've just been in to see my doctor now and, although I went in to see him about something totally different today, he still asked me how I was from this ongoing thing that I'd had. You know, so, whereas another doctor wouldn't have asked you so it made you feel a little bit, you know, well he hadn't, you know, forgotten about all what I've gone through. [P, 30:6]*

Continuity not seen as important

While patients were prepared to wait considerable periods to achieve continuity, as at the Advanced Access practices there were some who felt that continuity was not important. As this quote illustrates:

> *(Patient) I like this system, there are several people, I haven't got to just be reliant on one, I feel confident that I can come into this practice. [P, 39, 17:4]*

12.4.3 Continuity – summary

In the Advanced Access practices the choice of doctor was affected by the predominant use of same day or soon appointment systems. Patients would often, but not always, tend to take an appointment with a doctor other than their usual doctor rather than have to phone again the following day. However, the control practices also experienced problems around continuity. The control practices often had long waiting times and patients would often choose to use a same day urgent appointment which tended to prohibit or cut down on their choice of doctor.

12.5 Patient experience of the access system

12.5.1 Patient experience – Advanced Access practices

Convenience of appointment

A key feature of the Advanced Access practices we have already noted is the dominance of same day and soon pre-booked appointments. There were a number of patients who appreciated the shorter waiting times for appointments. Those with acute conditions particularly liked being able to access the surgery "when they were ill":

> *(Patient) I mean, before when ... before they brought this in, you used to have to phone up and they'd say 'Oh, we'll see you a month on Tuesday,' and you'd think 'Well, I'm not ill a month on Tuesday, I'm ill now,' so it is better that you do get seen on the day because at least you do get seen the day you're not well. [P, 5:4]*

Frustrations with the access system

However, as we have already noted, while patients experience speed of access this was often at the cost of continuity (0) and speed of access did not always ensure that appointments offered were convenient.

Observation data show that many patients found it difficult to get an appointment at a convenient time or found the speed of access difficult to accommodate. Of particular concern were those patients who had to rely on public transport, or those who preferred appointments at particular times of day. This was a particular problem for practices which served a wide catchment (e.g. one of the Advanced Access practices was in a rural location and covered a geographically large area). Some elderly patients had concerns about travelling after dark and preferred early afternoon appointment. Others with mobility problems relied on volunteer transport which could not be arranged at short notice, or public transport which could not be relied on at particular times of day. Workers did not always find the appointments offered

convenient and carers of school aged children found particular times of day inconvenient (e.g. 3pm). All these groups did not necessarily find the more immediate access offered by the Advanced Access practices convenient.

Difficulties faced by workers in accessing the practice

Those in work – either full or part time – often found the access system frustrating because of the difficulties getting through to the practice (due to the pressure of calls early in the morning) and then the difficulties in planning for the appointment:

> *(Patient) It's just frustrating, because having known that you, you know, I sometimes phone on my mobile and then they're constantly engaged at that time because everybody else is trying to get through at the same time as well, it is a little bit frustrating. I think it would be better, you know, I mean the workers points are good, that they're making them at night you know, earlier or later in the day, however I think booking the appointment could be a little bit better simply, just book, I mean if you get the appointment, you know where you are, you know where you stand, but having to phone up every day, I'm arranging my diary around that as well and trying to think at work, have I got a 9 o'clock appointment, have I got a 10 o'clock, that kind of thing. [P, 13:3]*

- -

> *(Patient) I mean, the system they've got down there now where you can ring up on the day and you will be seen by a doctor, that is great for people who are … like a young mums with babies and children, because obviously if you're child's ill, you want them seen on that day. For retired people, or people who work shifts and can get there in the day, but for people like me and my husband who work full time, there is no flexibility, and it seems as if you're penalised because you're working; if you don't work you can get to see the doctor whenever you want. If you're working, tough! [P, 3:5]*

Difficulties associated with long term/routine follow-up

Another difficulty with same day and soon pre-book types of appointment booking was that it made long term follow-ups problematic. Patients were expected to remember when they were due an appointment and to book close to the time this was required. Some patients found this difficult to do and preferred the idea of booking these appointments further in advance, and they were sometimes anxious about whether they would be able to get an appointment nearer the time, as this patient explained:

> *(Patient) Oh I think it was a shame that the system got changed. Because as I said, you could come out from the doctor and make*

> *an appointment, or even sometimes she'd make it for you while you were in there. [P, 44:5]*

Failure to achieve access

There were patients who did not manage to get appointments and this occurred in all of the Advanced Access practices. Typically patients would telephone after all the appointments had been allocated, and when told that there were no appointments left they often hung up on the receptionist or were re-routed to call back the next day:

> *(Receptionist): I'm afraid I can't book an appointment, you'll have to ring back on the day you want the appointment on unless you work? The patient then put the phone down, the receptionist told me that the patient had said "Oh I thought you'd finished with that stupid system" [then put the telephone down] [Obs, JB, 3:15]*

There were also patients who, on finding that they could not see their GP of choice, chose not to make an appointment:

> *(Observation)*
>
> *Male patient came to the desk and was very upset that he was not able to see his doctor, the receptionist offered an appointment with a different doctor on the same day but he remained unhappy and the receptionist responded to him,*
>
> *Rec Well I've offered you an alternative doctor [this was said in a very formal manner almost as if saying that we have fulfilled our part of the contract]*
>
> *Pt I'll tell you what it is, it's rubbish [now walking away from the desk] rubbish that's what it is. [Obs, JB, 1:26]*

12.5.2 Patient experience – control practices

Speed and convenience of access

The control practices were characterised by longer waiting times for routine appointments, so speed of access was (formally at least) reserved for urgent appointments. All the control practices had systems in place to accommodate urgent requests for appointments. At three of the practices patients were typically offered an urgent or open appointment if the wait for a routine appointment was long. Indeed, it was evident that the urgent appointments were often used almost as routine appointments (without the choice of doctor), their status had become normalised. Patients using these appointments were often seen as rapidly as patients in the Advanced Access practices. The longer waiting times for routine appointments were frustrating for many patients (see below) but these later pre-booked appointments did offer greater opportunities to achieve continuity of care (0). In the interviews patients tended to focus on the waiting times, both the long wait to get a

routine appointment and the delays experienced in the waiting room for urgent appointments:

> *(Patient)… when we first came here, when the children were ill we could phone up, get an appointment, and within two days they were seen. That is not the case now. I don't like the fact that you are analysed by a receptionist as priority, whether you think your appointment is an emergency or not … and I don't like the fact that you have to wait a week to have an appointment. It's taken me five days to get the appointment that I've just been in to today to get my appointment. It wasn't an emergency, however, you know, I just … I don't think it's suitable to wait a week. If you're ill you want to be seen, you know. Sometimes in the case of this practice I feel that you have to pre-empt the fact when you're going to be ill and need to seek advice from a doctor. Personally I'm not particularly impressed. [P, 19:1]*

Frustrations with the access system

Some patients enjoyed being able to book ahead for routine appointments but, as this introduced long waiting times, other patients found this frustrating:

> *(Patient) The thing I find is the amount of time that it takes to actually get in. Because you phone up … I phoned up two weeks ago and the closest they could get me was seven days, so I had to leave it for two weeks because I was on nights last week anyway, which was inappropriate. But it's always minimum of a week … I find that really annoying … you really want something when you're in pain and normally when you're in pain is the time when you phone up for an appointment [P, 24:1]*

- -

> *(Patient) Three weeks ago I booked it, and that was the first appointment available. You know, on a normal appointment. Obviously emergency I think I could have got quicker, but this one was three weeks which is, I think, too long. Three weeks I think is too long with your own GP. I daresay I could have gone to another one, but I do feel when you've got an ongoing illness, your own GP knows the ins and outs of your illness and I feel more comfortable then talking to, you know, a doctor, the one that I deal with, rather than go to another GP and you've got to go through it all again.[P, 28:2]*

Failing to achieve access

While there were instances of patients failing to make a routine appointment, for example because the diary/rota had not been finalised for the next block of time and the preceding week's appointments were all taken, this was less of an issue at the control practices, by virtue of the fact they were able to

book several weeks ahead. There was much more of a problem at the control practices of patients not being seen because they failed to attend

12.5.3 Patient experience – summary

As expected there were a wide variety of viewpoints expressed across the patient data in both practice types, Advanced Access and control. However, clear patterns of data did emerge. In most of the Advanced Access practices patients experienced difficulty entering the access process because the phone systems were not able to handle the volume of calls. There was a division within the Advanced Access practices between people who worked full-time and those who were not working or working part-time. Whilst the working population found the system extremely frustrating, there were some patients who found the same or soon day appointment system very responsive, particularly when faced with acute health issues.

There was a different set of concerns in the control practices where people were unhappy with the length of time they had to wait for a routine appointment. All the control practices had established mechanisms that enabled patients to be seen on the same day but this was usually at the cost of not being able to choose which doctor they saw for these more urgent problems.

12.6 The practice experience

12.6.1 The practice experience – Advanced Access practices

As we have already indicated, the organisational structures and composition of the case study practices were all very different. This shaped the way they interpreted and implemented their access systems, the nature of the work undertaken in managing access, and the nature of general practice work itself.

The Advanced Access practices appeared to have different priorities which underpinned their approach to managing access. One of the Advanced Access practices had a distinctly customer oriented approach which meant that much of the work of reception was, in essence, about meeting customer demand, such that reception staff sought to ensure that every patient that contacted them went away with an appointment (although not necessarily their first choice of appointment). This approach informed their formal policy of not re-routing patients to call back the following day (even if this was not always adhered to). By contrast, a different Advanced Access practice appeared to place more emphasis on managing the appointment slots available, so while they "try to accommodate" patient/customer requests they were less averse to the idea of re-routing patients to the option of calling back the next day.

Content of GP work

Some of the GPs in the Advanced Access practices suggested that the system had altered the types of patients they saw, and they sensed that the system

encouraged those with acute conditions to consult and that it sometimes privileged patients with self limiting conditions (cases which are sometimes referred to in the literature as 'trivia'):

> *(GP) And in fact we've seen more people with very early symptoms which should have resolved themselves. So we're probably seeing more trivia coming in whereas the old fashioned barrier actually sorted a lot of these problems out. We are responsible for trying to educate patients and I guess we all do that slightly differently. So it has biased the urgent need. [S, 32:4]*

The counterweight to this argument made by another GP was that patients considered the need to make follow-up visits more carefully and thus came back less. Advanced Access, because it prioritised same day and soon pre-booked type appointments, did not facilitate longer term follow-up and the kinds of later pre-booking that some patients had experienced in the past:

> *(GP) I think people are coming back less just because they feel they should come in and see the doctor, or the doctor has said come in. I think its making us much more aware that there's, there isn't a need to keep seeing these patients or there's not a need for doctors to keep seeing these patients. That's changing and I think that the new system is helping that in that patients who would normally rebook a month ahead are now thinking "oh well you know do I really want to phone up and have I got a need". So it's making the patient think much more positively about themselves and I think in a way it makes them better, less ill. You know "do I really need to get up at 8 o'clock in the morning to phone a doctor, I mean am I really that ill". [S, 12: 14]*

Temporal patterning of activity

One of the most striking features coming out of the observational work was the temporal patterning of work in the Advanced Access practices. The dominance of same day appointments encouraged patients to try to obtain appointments early in the morning and there were clear peaks of activity, notably in the first 90 minutes after the phone lines or practice opened. There was often a sense in these practices that the job of receptionists was quite different after 10am. As well as 'front loading' the peak of activity to the early part of the day, another effect of Advanced Access was to push demand to the early part of the week, so that Mondays and Tuesdays were particularly busy. Although control practices were also busier early in the day and on Mondays, this temporal patterning of the week was much less of an issue. Some Advanced Access practices had tried to accommodate the pressures at certain times by rostering additional reception staff on in the mornings and in the early part of the week and installing improved phone systems to help deal with this demand, but there were always limits (of numbers of staff, phone lines and space) to the extent to which this was possible.

There was also a sense in which these practices were vulnerable to contingencies – despite trying to plan ahead, in part because they had less flexibility to simply stretch demand for appointments into the future. As we will see below this placed additional stress on reception staff, but it also made them concerned about times when they had fewer than expected GPs or reception staff:

> *(Receptionist) When you've got a full house of doctors it actually runs quite smoothly. A lot of doctors are off and then they've either got meetings in the afternoon. So that's when it struggles, no doctors, hardly any appointments; that is the time when I find it frustrating. … Some want appointments and we've got nothing. It's like the manager goes at ten past four, five o'clock in the afternoon and we've got nothing to offer somebody, we've then got to throw it past the duty doctor, who could be out on a house visit. There are a lot of times when you're just, what do I do? [S, 34:10]*

Stress and conflict in reception work

We have already suggested that there was strong temporal patterning to activity in the Advanced Access practices. Reception staff, while predominantly positive about Advanced Access, nonetheless pointed out that the system made their work stressful, especially at these peak times:

> *(Receptionist) the hardest bit was trying to keep your cool while it was going on actually, because you can imagine, you've seen how many phone calls we take, which you presumably see at other places, and it's actually just trying to think "Well don't look at the other calls below, just do one at a time", because you can't do two calls at a time, so …Because the thing is if you don't get through them quickly, you then get people saying you're not answering and you know it's going to cause aggro. [S, 13: 9]*

Reception staff were on the whole very favourable towards Advanced Access, as interpreted within their own practice:

> *(Receptionist) My hand on my heart it's a lot, lot better. The last, the other system, you used to get lots of verbal abuse on the phone because if they wanted to see a doctor on that day, if it wasn't an urgent problem the chances are they probably wouldn't be seen for you know 3 or 4 days. Which is the norm at the doctor's surgery that I go to. [S, 1:7]*

Receptionists were very positive about the immediacy of appointment giving as this reception manager explained:

> *[Reception manager] they ring up now and you say 'I can give you an appointment at 10 o'clock,' and they think 'Oh,' you know. When you first did it, I used to love the shock reaction of people's faces when they walked in if I was on the front desk and, you*

> *know, 'I want an appointment today,' I said 'Yeah, I can give you one,' it's 'Oh, oh,' you know. [S, 2:4]*

One area of stress or frustration which the reception staff experienced, in common with receptionists in the control practices was around patients who manipulated or worked the system. They also felt some tension when the GPs appeared to collude in these rule breaking activities, thereby undermining the access system:

> *13:(rec) And they do find a way of manipulating it as well, certain ones that are very hardcore.*
>
> *JB: How do they do that, can you elaborate on that?*
>
> *13: Well, there are certain ones … of Dr X who will know exactly when he's in and come in before the surgery starts, walk in and then cause havoc and "He normally does this", so …*
>
> *JB: Right, so make a bit of a fuss and …*
>
> *13: Yeah. Two of them, one of them was in today, came in at quarter past eight, knew he was here and so he saw them before he sort of started, so they know when he's here and things like that, and because of his nature he will do that, which then just reinforces the fact that we've told them lies and they know they can come in again. [S, 13: 5]*

The GP experience

GPs tended to be mixed in their satisfaction with the access system, perhaps understandably those who had championed Advanced Access were especially positive. There was also a sense that GPs appreciated the way Advanced Access managed the demand, this was especially vivid for one GP who felt that the 'burden' of demand was more equally shared out:

> *(GP) our lists are now becoming much more contained so we're not doing 25, 30 patients while the flexible careers have got 2 patients….so that's spreading the workload so that's been going on now for about a year and patients are gradually starting to drift away from our list and Dr Hs list. They can still, they can still ask for me, some patients like a lady this morning she's tried 5 mornings on the trot to get me. [S, 12:2]*

Part of what Advanced Access practices had done was to relocate some of the demand pressures away from GPs and onto the reception staff, as the same GP acknowledged:

> *(GP) I mean it's taken a lot of stress off me, I just, it's so nice coming in and seeing an empty surgery and thinking well maybe no-one will book in you know (laughs) it's a dream I know but I mean…. But you know just to come in and just see this massive solid block of patients you know oh god 100 patients in there. You know you can't escape or change anything, if you wanted to*

> *do something there's no way you can do it because there's 20 people that all have fixed in their brain that's their day. That has been such a godsend you know [S, 12:15]*

Whilst GPs recognised some of the problems that the Advanced Access and/or same day booking system had produced most felt that it was such an improvement on the previous system used that they would be reluctant to change the system.

> *(Practice manager) The doctors don't want to change back. I mean, we obviously have complaints, and I've just recently done the complaints audit, and last year we had five complaints about the appointment system, which I think in a year with seven thousand patients isn't bad. [S, 11:8]*

Telephone system

The nature of the work and the temporal patterning of activity placed particular pressure on the telephone infrastructure of the Advanced Access practices. Staff and patients were often acutely aware of problems associated with getting through to the practice, and this appeared to be an inevitable feature of the sheer volume of calls focused on peak activity periods (e.g. Monday mornings), as this GP explained.

> *(GP) One of the biggest problems is patients actually getting through on the phones. You have like a hundred calls an hour, or even more, especially first thing on a morning. The constant feedbacks that we get, even from our patient questionnaires, is people trying up to 20 minutes, 25 minutes to get through on the phones, and it's just a volume kind of situation and it can be very difficult for the receptionist to, you know ... people get frustrated on the phone. [S, 3:2]*

One of the practices had introduced a cascade system which allowed incoming calls to be routed through a series of connected telephones and this typically ensured that those patients who go through were answered on the first or second ring. However patients still experienced problems getting through and this was a source of complaints:

> *(Patient) It'll be engaged a long time. So whether that is that they've only got one line in, I suppose, but a few lines would be quite good. It's just at that time. And then you choose your options, but you choose your options and then there's a delay so sometimes you think, oh, I'll put the phone down and try again, then, because you don't believe you've actually got through to anything. [P, 49:7]*

The Advanced Access practice that was located within the health centre experienced particular problems because it was tied in to using the health centre telephone system. This meant that it could not expand the provision of lines and this caused problems (notably the lines crashing completely when they first adopted Advanced Access). The telephone system was a massive

source of frustration for some patients, but not by any means all, as these contrasting quotes show:

> *(Observation) The man hung up in the end but as soon as he got through he started to complain about the phone saying he had been ringing constantly, not being able to get through and then putting the phone down. When I explained to him that if you keep putting the phone down then you go to the back of the queue and really he needed to stay on and at this point he just put the phone down on me and he never got to make his appointment [Obs,JB, 3:9]*

- -

> *(Patient) it's actually quite easy to get through, they've got a direct line now to each individual practice I think, so you don't feel a sense, …[of having] to wait for someone else to answer, having had to wait for them. It's a lot easier. I found it a lot quicker now they've got a direct line. [P, 14:1]*

12.6.2 The practice experience – control practices

The control practices, as described, adopted mixed access systems which did not prioritise same day or soon-pre-booked types of appointments. In contrast to the Advanced Access practices, reception work in the control practices entailed booking (and managing) appointments further ahead, and managing the pool of urgent patients each day. This made the access system complicated and frustrating as the practice manager below pointed out:

> *(Practice manager) I think that the … the appointment system that we run at the moment is already extremely complicated, you know, because of the way we, you know … and we've made it that way ourselves. And it … and I know it does cause huge frustrations to the receptionists. [S, 19:22]*

Temporal patterning of activity

The control practices were busier in the earlier part of the week, like their Advanced Access counterparts, but the workload was more evenly spread during the day. Unlike the Advanced Access practices there did not seem to be the same volume of telephone calls concentrated in the early morning period.

Stress and conflict in reception work

Whereas some of the stress and conflict in the Advanced Access practices centred on issues related to continuity, one of the key problems for reception staff in the control practices was managing the pool of urgent work. In the practice that ran an open clinic patients were seen on "a first come first served" basis which meant that during these surgeries the waiting room could be quite full and waiting times high. In two of the other practices the build up of patients waiting, sometimes for long periods, in the waiting room was often

exacerbated by the shorter time allocated to these urgent appointments, sometimes causing these surgeries to over-run [Obs, JB, 7:12], and this caused frustration amongst patients and created stress for staff:

> *(Observation) Spoke with young man in waiting room who had brought his young daughter in but did not have a formal appointment, he explained that he had come along at 3:00 but the practice told him they didn't open until 3:30, he was frustrated that he had to come back and wait to be seen. He felt it was unfair that they always saw those with formal appointments before they saw anyone else, he may have to wait an hour or more whereas if they saw him sooner then the person with an appointment would only have to wait an extra 5 or 10 minutes … Stressed that he liked the doctors here but felt that something needed to change, 'for when you don't know you're going to be ill'. [Obs, JB, 7:22]*

Managing DNAs

One area of work that was very different for the control practices was in the management of DNAs (patients who did not attend). By virtue of their same day and soon pre-book systems the Advanced Access practices experienced far fewer DNAs than the control practices. The frequency of DNAs in the control practices meant that reception staff often had to take on the task of admonishing and 'educating' patients who had failed to attend.

> *(Observation)*
>
> *Rec [informs client they missed a smoking clinic appointment earlier this week]*
>
> *Pt [denies knowledge of the missed appointment]*
>
> *Rec Well you did have an appointment, I remember because I booked it for you [an appointment is booked for next Monday with the practice nurse]*
>
> *Receptionist turns to me following the phone call; She never even apologised, I remember booking the appointment and she never even apologised, I don't understand it. She's booked another one and I'm not sure they'll come to that. The thing is that's a 15 minute appointment as well. Drs and nurses do get frustrated by it. We do write to them but we're a bit soft [I ask at what point they write to the patient]. I think we write to them after about 3 or 4 DNAs [Obs, JB, 4:9]*

The frequency of DNAs was frustrating for reception staff, who invested considerable emotional energy on these cases and felt that these appointment slots were wasted unnecessarily:

> *(Receptionist) when you're really desperate for appointments, it makes you cross. You think ah, why couldn't they damn well*

> *phone, just pick up the phone and say 'I won't be coming.' [S, 22:8]*

Reception staff at three practices were concerned about the higher rates of DNAs and this represented a form of 'emotional labour' (Hochschild 1983;James 1992) for them, a source of stress and frustration, and some dissatisfaction. DNAs were an issue, along with filling cancellations, which they had to actively and pro-actively manage. The comparatively lower numbers of DNAs at the Advanced Access practices meant that this type of emotional labour/task was strikingly absent.

At one control practice staff were clear that the access system was patient *and* service led. In essence it was an attempt to balance the demands of patients against the needs of the GPs, as this GP explained the access system had evolved in part to allow GPs to take some control over their work:

> *(GP) we do want to offer a reasonable service but on the other hand to a certain extent, well we have to protect ourselves and we've all got families and we all you know, so although we want to offer a reasonable service we're not prepared to sacrifice our own lives really [S, 17:5]*

In many respects this quote echoes the comments made in 0 by a GP and it is interesting that these two GPs, one from an Advanced Access and the other from a control practice, are both satisfied that the access system they use has allowed them to gain control/balance over their work/professional practice.

12.6.3 The practice experience – summary

The senior staff at the Advanced Access practices felt that Advanced Access, or the version of Advanced Access they were using, gave them a high degree of control. They acknowledged some of the problems for patients but the lack of a formal backlog was described by one GP in terms of a psychological burden being lifted.

The most striking contrast between the working environments of the two types of practice was the frustration felt by staff at control practices at the high numbers of DNAs that their practices experienced. It was striking that it was the receptionists who felt this frustration more than other members of staff. The staff found it extremely frustrating to have people DNA when others were requesting appointments that were not available.

Section 13 Access facilitators

13.1 Access Facilitators – qualitative interviews

As part of the evaluation of Advanced Access we set out to understand how practices had introduced and managed the new appointment system. During the early stages of the research project we established contact with Access Facilitators at the twelve PCTs facilitating the research. It became apparent that the facilitators could provide valuable data, particularly in relation to the following research themes.

13.2 Research questions

- How had practices implemented the Advanced Access system?
- What motivated practices to employ Advanced Access?
- What successes and problems had been encountered in the different PCTs?
- How had the policy been practically implemented at particular sites?

13.3 Methods

When the research started many of the Access Facilitators had left their roles, which were no longer funded, and either worked elsewhere in the same PCT or had moved on to different employment. This shaped our selection of interviewees as we no longer had contact details for those who had moved on to different PCTs. We were able to contact 6 Access Facilitators and arrange interviews. The 6 interviewees were split neatly between urban and rural, three of each.

Facilitators were invited to participate via an initial contact letter and then interviews were arranged at PCT offices. All facilitators who were contacted agreed to be interviewed. Interviews were semi-structured and lasted between 40-60 minutes. Five facilitators consented to digital audio recording of interviews and one consented to hand written notes being taken during the interview. The qualitative research associate conducted all the interviews. All interviews were subsequently transcribed and anonymised.

Analysis followed the same method outlined in more detail in the main qualitative methods section and employed the comparative method developed by Glaser and Strauss(Glaser & Strauss 1967) and subsequently by Strauss and Corbin.(Strauss & Corbin 1988) Data were then organised into codes and categories and subsequently re-analysed using the iterative, cyclical process central to qualitative research (Pope & Mays 1999). A qualitative software analysis tool, ATLAS.ti, was used as an aid to data management and analysis. The emergent themes from this process were linked back to ideas developed in the research literature and the research questions for the main study. The two qualitative researchers discussed these themes and developed them with other members of the research team.

13.4 Results

13.4.1 Access facilitators – Roles and Responsibilities

Access Facilitators were employed by the PCTs but the funding for their roles was provided by the NPDT. Initially the facilitators provided support to the 'core' practices who had made a formal commitment to introduce Advanced Access; once these practices were up and running the facilitators then started a dialogue with all practices within their PCT and assisted those who decided to introduce Advanced Access.

Facilitators assisted practices in a number of ways: measuring capacity and demand; providing advice on matching capacity and demand; running collaborative workshops with key personnel from the local practices to disseminate good practice and innovation; providing logistical support for practices to work down their backlogs; practical support and advice for practices running PDSAs.

Access facilitators were generally positive about the introduction of Advanced Access and their role within the process. They felt that most practices that had used Advanced Access had got significant benefits from the system, particularly in relation to the staff working environment which they felt was more relaxed.

13.4.2 Measuring demand and capacity

One of the key aspects for the facilitators was to illustrate to practices that patient demand could be met by the practice using it's capacity to better effect. The comments by the facilitators below show that the biggest challenge was to convince key personnel from the practices that demand can be measured and managed by the practice.

> *AF2: An important figure for me was that I think it's something like between 5-7% of people in a local population will need to see their doctor at any one time, the thing was that GPs thought it was limitless, however much they managed to increase the contact time they would not be able to satisfy demand but when I was able to say that it was always going to be within this certain figure then it seemed to change them slightly, I found this quite powerful, it really made them stop and think … I found that using statistics and particularly making bar charts to show them mismatches between demand and supply really had an effect on them. I was able to get their interest and attention with these tools. [48:10]*
>
> -
>
> *AF3 (8:39): What, you know, what they had to do to start with was to measure their demand against their capacity. That was the first key measure. And when they did do those measures, all of them, there wasn't one that didn't have enough capacity ... but*

what they were doing was embargoing slots so they were blocking off slots each day and releasing them at the last minute. [50:8]

13.4.3 The Collaborative method

Part of the role of Access Facilitators involved encouraging practices to work collaboratively, via national, regional and local workshops and training days. The facilitator below articulates the positive aspects of this approach

AF3 (15:30): ..so they learn from colleagues throughout the region, sometimes nationally with national speakers, so that they can compare. I also used to hold, um, um, "sharing" sessions, sharing of good practice sessions in XXXXX XXXXXX so that the practices could get together because that doesn't tend to happen a lot.

JB (15:48): So this was, this has happened, this sharing idea has come about through the Advanced Access programme? And has that been quite effective?

AF3 (15:57): Yes, I was really pleased with that because I don't think it's something that happens very often, and it was nice for the receptionists to get together with other receptionists too which they don't normally have time to do. They don't get time out, and one or two of the GPs that were operating it successfully and quite quickly, because they picked up all the knowledge quickly, invited other practices to come and see how it worked, which was great. [50:23]

Where some facilitators found the collaborative approach difficult and had difficulty recruiting practices to participate, all the facilitators were able to identify positive outcomes from the process:

AF (16:22): I was also kind of under orders basically to hold a 6-8 weekly sort of discussion forum for all my practices involved, um..

INT (16:41): ....and was that face to face?

AF (16:42): That was locally. We'd all get together over lunch. Um. There was a hard core of people that you knew would always attend. Um. There was one practice that actually said at the very beginning "no I'm sorry, we're not going to take part in that" Um … I hated these meetings, I really did. (accompanied by laughter) It's sort of like getting blood out of a stone and there was a fair bit of, sort of, not aggro. directed towards... well it was actually towards me but it wasn't meant for me, it was just about the whole process and that, but I have to say that I think everybody, you know, on several occasions, people went off and did something because of what they'd heard about in that forum.

13.4.4 Two models of Advanced Access

The access facilitators all defined Advanced Access as a dynamic model that involved changing the way in which patients accessed and practices delivered primary care. Facilitators described the value of reducing face to face contact where possible by increasing the use of phone consultations for minor issues such as enquiries about medicines and prescriptions, and by using GP and nurse triage. These factors, along with measuring and responding to patient demand on a regular basis, were at the heart of the Advanced Access project.

The data from the access facilitators indicated that there was a struggle between the dynamic model of Advanced Access promoted by the facilitators and a model with a higher degree of rigidity that a number of practices employed. This struggle was most evident around the issue of embargoed appointments where many practices reserved around 70% of their appointments for the same day. Facilitators identified a change in policy by the NPDT as being a significant factor in shaping this struggle around the methodological techniques of Advanced Access.

> *AF1: Um, the whole... kind of ... philosophy of Advanced Access suddenly began changing. I mean when we were first appointed you know we were told.... um, I could not get my head, from day one, around how you could you maintain your on the day appointments without some form of embargoing. Um and that was, I think that was actually being sort of you know you were told that that was how it happened. They were released on the day at the very beginning but that... but within about 3 or 4 months that actually changed quite swiftly but no real explanation was given as to how you could.... you know from day one I was asking how can you preserve them without some form of embargoing. Um....I don't think there was enough ...there was a lot of emphasis on PDSAs, which are important, but I actually think the key to all of it is capacity and demand management and I think that that is the bottom line and I think it probably took me about a year to understand that and it's something that when I took on practices later on that was very much my emphasis to them. I mean obviously, yes do PDSAs but I think, you know, that that is the nuts and bolts of it, it is all down to that. [49:25]*

The tension between the different conceptions of Advanced Access and the perceived shift in policy was something the Access Facilitators continued to struggle with throughout their period of employment in the role.

> *AF5: And I think people still are a little bit unclear about what Advanced Access is …What we are trying to do is get patients away … surgeries away from limiting access, which is … they seem to go from one to the other …*
>
> *INT: Right.*

> *AF5: … that they give as much access and will let you book as far in advance as you want, to only same day, which is something we totally are against. You shouldn't limit, you should give a good mix. And that's what Advanced Access is all about really, getting the balance right. [52:23]*

Bound up with the idea of Advanced Access is a guiding principle that GP demand is not infinite, it is a relatively stable entity and its level and temporal fluctuations can be measured and adjusted for using the tools of Advanced Access. However, a number of Access Facilitators identified a reluctance by practice managers and GPs to fully embrace this philosophy. This reluctance contributed to the adoption of a more rigid system dominated by same day appointments.

> *INT (28:36): Do you think in general practices have adopted a, a ...or practices who use Advanced Access now have adopted a different approach, a different mindset so that they see demand as, kind of finite, or do they still see it as, sort of, infinite demand....?*
>
> *AF (28:56): They still see it as infinite.*
>
> *INT (28:57): Do they?*
>
> *AF (28:58): Yes.*
>
> *INT (28:58): That's interesting.*
>
> *AF (28:59): Yes, I think the majority of them do, actually.*
>
> *INT (29:2): And they still see that's something they've got to, kind of, cap and…*
>
> *AF (29:7): … And, and that, that is why a lot of practices embargo because that is their control mechanism. [49:21]*

13.4.5 The Impact of DESA targets on the introduction of Advanced Access

A number of the facilitators also saw the government access targets, introduced as part of the Direct Enhanced Service on Access, as shaping the way in which the Advanced Access programme was adopted by the practices. On the one hand many of the Access Facilitators described using the targets as a means of selling Advanced Access as a method that would enable them to reach their access targets. However, facilitators also felt that targets contributed to a narrower, rigid perception of Advanced Access. The emphasis on making sure that patients could see a GP within 48 hours led to a focus on the use of same day booking systems as the main method of ensuring the DESA targets were met

> *AF4 (3:10): I defi.....well I think, um, the hard bit was, was the access targets behind it really. Um you know if it..... they, they saw it as something that they were being, the majority, were*

> *being um told that they would have to do. So rather than actually seeing it as a stand alone quality improvement measure, they saw it as, as, as, a government sort of thrust, a government push and this is something, you know, they're leading us down this path and making us do it. So that, that was the main barrier was getting, getting over that and actually getting them to realise well actually there are, you know, if you get it right, there are some gains, there are gains for patients and there are some gains for you. [51:22]*

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> *AF4 (6:2): Um, I think a lot of practices misread the targets in many ways, you know, there was "patients must be seen within 24/48" um, hours, so they kind of sort you know gathered the flock up and sort of forced them into, into their little holding pens which was this day and that day, asking people to ring back once all the appointments had gone, or ring back the following day, um ... that sort of um, you know that, that kind of herding and rather controlling it, rather than, than actually doing, meeting patients needs. So it did become overly focused on that thing of like booking on the day [51:23]*

Access facilitators all expressed a vision of Advanced Access that was dynamic and responsive to patient needs, a package of measures and techniques that fundamentally changed the way that practices engage with their patient population. However, many described a struggle to get practices to embrace the total vision of Advanced Access, with many 'cherry picking' certain aspects of the policy and negating other elements. It should also be noted that all facilitators described at least one exemplar practice, a practice who had taken the whole Advanced Access programme and implemented it in a way they saw as being true to the model of Advanced Access.

Section 14 Discussion

This discussion has several sections. The first summarises the main findings in relation to the research objectives. This is followed by a discussion of the strengths, limitations and methodological issues relevant to each of the component sub-studies. The third section reviews other research about Advanced Access, most of which has been published during the course of this study, in order to compare and contrast the findings from this study. The fourth section discusses the implications of the findings for patients and practices, policy, and future research. The fifth section makes recommendations for practices and policy makers, before the final conclusion to the study.

14.1 Synthesis of findings in relation to research objectives

The overall research aim was to evaluate Advanced Access in general practice and to assess its impact on patients, practice organisation, activity and staff. This was achieved through a number of sub-studies. The following section synthesises the main findings from these sub-studies in relation to each of the research objectives.

14.1.1 To describe the range of strategies that general practices have employed to improve access to care

Information about this objective came from the initial survey of practices and also from the observation and interviews conducted in case study practices

Survey of practices and selection of study sites

This involved a postal questionnaire survey of all practices in 12 PCTs which were representative of the English population. The results show that the majority of practices had adopted at least some elements of the Advanced Access approach. Those practices which had implemented Advanced Access were working in a range of settings and had similar characteristics to practices not operating Advanced Access. The practice survey also demonstrated the wide range of innovative measures that practices, whether or not they operated Advanced Access, had introduced in an attempt to improve access to care for patients.

Although most practices claimed to operate Advanced Access, fewer than half of these appeared to be following all of the principles and strategies that are central to the Advanced Access approach. Conversely, many of the practices which did not describe themselves as operating Advanced Access used some of the same ideas (although not necessarily as a result of the Advanced Access initiative).

It is notable that some of the strategies that have been promoted to improve access had not been widely implemented. Surprisingly, practices operating

Advanced Access did not appear to make greater use of skill mix. Technological approaches to improve access such as email consultations and advice on practice web-sites were rarely used.

In this study, Advanced Access practices embargoed a higher proportion of doctors' appointments until the same day than non-Advanced Access practices. There was no evidence in this study that practices operating Advanced Access offered more appointments in total.

Observation of case study practices

Eight practices (four Advanced Access and four control) were purposefully selected as case studies. Patients and staff in these practices were interviewed and access to care was studied using direct observation within an ethnographic approach.

A number of different factors motivated the decision to introduce Advanced Access in the practices that did so, including perceptions of problems with the previous appointments system and the incentives offered by the DES on Access. Three of the four Advanced Access practices operated systems where most appointments were only available for booking on the same day, although some practices had become more flexible over time about allowing pre-booked appointments, partly in response to negative patient feedback. It was notable that the defining characteristic of Advanced Access for most practices (whether or not they operated Advanced Access themselves) seemed to be that appointments were made on the same day, rather than that patients should be seen when they wished.

Several of the practices which did not introduce Advanced Access took this stance because they also characterised it as a system which only allowed people to be seen on the same day, and they believed this would not suit their population or would disadvantage particular groups of patients.

The staff in both Advanced Access and control practices appeared to assume that demand would exceed supply and so had to be capped, in contrast to the assumption of the Advanced Access model that access was predictable and manageable. Murray points out that it is a truism of the quality improvement movement that 'every system is perfectly designed to get the results it gets' (Murray 2000). The systems in both Advanced Access and control practices appeared to be designed to limit access. In the case of control practices this was due to the wait for an appointment, but in Advanced Access practices demand was limited by the pressure to telephone the practice early in the day, and by the lack of flexibility in when appointments could be made.

There were important contextual factors which influenced whether and how practices organised their appointment systems. There was a sense that practices designed systems that they felt worked for them. These included factors to do with the local population, the building or the local geography. But it also included factors in the history of the practice, often as a reaction to problems generated by the particular ways of working of different doctors, sometimes including the attitudes or working styles of doctors who had long since retired.

Receptionists in both Advanced Access and control practices used a variety of strategies to overcome the problems they experienced when unable to offer patients suitable appointments, and it was evident that this was a process of negotiation with patients that allowed considerable discretion on the part of the receptionists. In some cases this introduced an element of opacity or allowed 'unwritten rules' to operate in the appointment system. The ways in which receptionists operated their discretion reflected their underlying attitudes about the needs of particular individuals or groups of patients. There were several examples of moralistic language, where receptionists talked about people 'deserving' an appointment, or 'abusing' the system and some patients' claims to urgent status were given more credibility than others. Most receptionists gave accounts of people getting 'wise' to the system, knowing what to say or knowing the best time to ring to secure an appointment.

Patients also learnt certain behaviours, such as volunteering medical information, asserting themselves, exaggerating the urgency of their problem or just turning up at the practice and demanding to be seen, in response to systems which did not meet their perceived needs. These findings are consistent with previous research.(Gallagher *et al,* 2001)

The appointment system had a marked effect on other aspects of the practices' work. In Advanced Access practices there was a clear and strong temporal patterning of work over the day, with considerable stress on the telephone system and the receptionists early in the day. By contrast, in control practices there was discussion about the problems generated by patients who failed to attend appointments.

Patients expressed different sources of satisfaction and frustration with the appointment systems in Advanced Access and control practices. In Advanced Access practices, patients complained about the inflexibility and apparent illogicality of the system, but appreciated the speed of access. In control practices, patients expressed frustration with the wait for an appointment.

Amongst staff, receptionists in case study practices seemed more satisfied with the appointment system in Advanced Access practices (although this finding was not supported in the survey of staff in all practices – see section 11.4.6). In most of the Advanced Access practices there was also at least one doctor who was enthusiastic about Advanced Access and who acted as 'product champion' for the change, but some doctors were more ambivalent. Staff in control practices tended to emphasise how they felt their appointment system had developed organically to meet the particular needs of their practice and population.

14.1.2 To determine the impact of Advanced Access on the wait for an appointment, continuity of care, practice workload, and demand on other NHS services.

The issue of the wait to get an appointment was addressed in two sub-studies: the study based on contacting the practice to make an appointment by telephone (section 7) and the survey of patients (section 8). The findings from these two studies were remarkably consistent.

Wait for an appointment: telephone survey

We attempted to contact each practice by telephone, posing as a patient wishing to make an appointment, on 11 occasions at monthly intervals and at different times. If practices were engaged we called again at 2 minute intervals, for up to 6 calls if necessary.

It was possible to make telephone contact with practices within 6 calls on 97% of occasions, but the researcher was more likely to be able to contact the Advanced Access practices than the control practices (98% and 92% of attempts respectively, p=0.002). There was no difference in the length of time spent telephoning to obtain an appointment (median 3 minutes at both types of practice).

Although the researcher could nearly always contact the practice, on only 85% of occasions were they able to book an appointment, with no evidence of difference between Advanced Access and control practices. However there was a tendency for the practices to behave differently when they were unable to offer a routine appointment, with Advanced Access practices being more likely to ask the researcher to phone back the next day, and control practices being more likely to tell the researcher to turn up at the practice and wait to be seen.

When asking to see *any* doctor, it was possible to make an appointment on the same day on 53% of occasions at Advanced Access practices and 34% of occasions at control practices (p= 0.062). The median wait for an appointment was the same day in Advanced Access practices and the next day for control practices, and the median wait for the third available appointment was one day and two days respectively. The median length of wait for a first appointment with a *particular* doctor was two days in both Advanced Access and control practices.

It is notable that both types of practice in this study failed by a large margin to achieve the NHS Plan access target of offering a routine appointment within two working days. Advanced Access practices met this target on 73% of occasions and control practices on 65% of occasions (p= 0.347).

The researcher disclosed their identity during only 15% (77/507) of calls, so the responses obtained in this study are likely to be representative of the experience of real patients.

Survey of patients attending the surgery

This survey is described in more detail in relation to the next objective, but provides some data about the delay to obtain an appointment. Patients responding to the survey in Advanced Access practices were more likely than those in control practices to be seen on the same day as they contacted the surgery. In Advanced Access practices, 57% of patients were seen the same day, and 75% were seen within two days. In control practices 32% of patients were seen the same day and 57% within two days. Note that these figures are not equivalent with the NHS Plan target or the results of our telephone survey (section 7.4.6), since patients in the survey may have chosen to wait longer for an appointment for reasons of convenience or to see a particular

doctor. Overall, patients in Advanced Access practices were seen sooner than those in control practices, after adjusting for important confounding variables at patient and practice levels ($p<0.001$).

Continuity of care

Data were collected about 114,675 consultations conducted with 5541 patients in 47 practices. This included all consultations over a period from at least a year before and at least a year after the practices introduced Advanced Access, or the same period in matched control practices.

There was no evidence of any difference between Advanced Access and control practices in continuity of care, either for surgery consultations with GPs or if all types of consultations with doctors or nurses were considered.

A question about continuity of care in the survey of patients consulting the practice also revealed no difference in the experience of patients in Advanced Access or control practices.

However in the qualitative work at the case study practices continuity of care was a common theme in many interviews with both patients and staff. Many patients commentated on the importance to them of an enduring doctor-patient relationship, but for others this was not important at all. Staff in both Advanced Access and control practices highlighted concerns that an excessive emphasis on speed of access could have a detrimental effect on continuity of care. Both patients and staff treated speed of access and continuity of care as values which could be traded off against each other, and the outcome of this trade-off would depend on the nature and seriousness of the problem.

Continuity of care was a tension in both types of practice for different reasons. In Advanced Access practices, patients sometimes accepted an appointment with any doctor to avoid having to phone again another day. In control practices, patients often accepted an appointment with any doctor rather than have a long wait for their preferred doctor. All of the control practices also kept 'urgent' appointments, which often accounted for a large proportion of the total workload, and the use of these restricted choice of doctor.

There perceptions from both patients and staff about the impact of Advanced Access on continuity of care do not appear consistent with the quantitative findings. Some possible explanations for this discrepancy are discussed in section 14.2.2.

Practice workload

We conducted an audit of practice capacity (number of appointments available), workload (number of patients seen) and DNA rates in 47 practices. Only 38 of these practices were able to provide reliable data before the introduction of Advanced Access in order to contribute to a before-and-after analysis.

There was strong evidence that both Advanced Access and control practices were providing more appointments and seeing more patients in the 'post' period (2005) than they had been doing in the pre-period (2001 –2003,

varied in different practices). There was no evidence to suggest that this increase in capacity and workload had been any different in Advanced Access or control practices. There was no evidence that Advanced Access practices had increased skill mix by delegating more of their appointments to staff. There was a suggestion that Advanced Access practices had increased the use of telephone consultations than control practices. The crude estimates also suggested that DNA rates had declined (from 4.3% to 3.4% for appointments with a GP in surgery) in Advanced Access practices and had not changed (4.8% before, 4.7% after) in control practices. However the findings about telephone consultations and DNA rates could well be due to chance, in the light of the small sample of practices and high variability between them.

Impact on other NHS providers

Information about the impact of Advanced Access on other NHS providers comes from the patient survey and non-user survey (sections 8 and 9). It was hypothesised that if patients were unable to obtain appointments at Advanced Access or control practices they may be more likely to use other NHS providers such as NHS walk-in centres or GP out-of-hours providers. There was no evidence from the patient survey of any difference between the two types of practice in patients' use of other NHS services. In the survey of people who had not consulted recently in general practice there was some evidence that people registered with Advanced Access practices were more likely to have consulted an NHS walk-in centre, an A&E department, a pharmacy or another general practice than those registered with control practices. However the numbers of respondents indicating these consultations were small and confidence intervals for these estimates were very wide so these findings should be interpreted with caution.

14.1.3 To explore the perceptions of different groups of patients, including both users and non-users of services, about the accessibility of care and their satisfaction with access to care in relation to different models of organisation.

Surveys were conducted amongst patients attending the practice and amongst people who were registered with the practices but who had not attended in the previous 12 months.

Survey of patients attending

Consecutive patients consulting in 47 practices were invited to complete a questionnaire in the waiting room and 10821 people did so, with an overall response rate of 84% (10821/12825). It was notable that most consultations were not for acute problems, with 70% of people having had their problem for at least a few weeks.

The most important factors for patients in making an appointment appeared to be being able to choose to book an appointment on a day of their choice, followed by being able to book as soon as possible, being able to see a doctor rather than a nurse and being able to see a particular doctor. However these

preferences varied considerably for different patient groups. Elderly patients and those with chronic illnesses placed greater priority on seeing a particular doctor, while younger patients put greater priority on being seen on a day of their choice and being seen as quickly as possible. Women placed relatively more importance than men on seeing a female doctor or nurse. Patients who were in employment placed more importance on being seen on a day of their choice and being seen at a convenient time compared with patients of other employment status.

Patients in Advanced Access practices were no more likely than those in control practices to say that they had obtained their *current* appointment on the day of their choice or to say they were seen as soon as they wished. Patients in Advanced Access practices were also less likely to say they had been able to book the appointment in advance.

However, when asked about their *usual* experience of making appointments, patients in Advanced Access practices stated they were able to make an appointment with a particular doctor more quickly than those in control practices, and they rated this more highly. Similar findings applied to making an appointment with any doctor, and also the experience of asking to see a doctor urgently.

Apart from this finding, there were no important differences between the experiences of patients in Advanced Access or control practices. In particular there were no differences in satisfaction with other topics such as the receptionists, practice opening times, waiting times in the surgery, getting through on the telephone, speaking to a doctor on the telephone, continuity of care, communication in consultations, enablement, overall satisfaction with the practice or with the appointment system.

Non-user survey

A postal survey was conducted to seek the views and experiences of patients in the case study practices who had not had a consultation with a member of their general practice team in the previous 12 months. It showed that an important minority of patients had wanted to make an appointment in general practice but had not been able to, or had not tried to make an appointment because they thought this would be difficult. Patients in Advanced Access practices appear to have had more difficulty making appointments than those in control practices, and the nature of these difficulties was also different.

Patients in Advanced Access practices were more likely to have experienced or to have anticipated difficulties in contacting the practice or in getting an appointment at a convenient time. Patients in control practices were more likely to have experienced or to have anticipated difficulties in getting an appointment within a reasonable length of time.

These findings are based on the relatively small number of patients who had not been able to make an appointment, so they must be interpreted with caution.

14.1.4 To explore the trade-offs that patients make between speed of access, continuity of care and other factors when making an appointment in general practice.

We used the discrete choice experiment method to assess the relative importance of four generic attributes of general practice appointment systems, the trade-offs between attributes, the impact of different conditions on preferences for appointment systems and whether different patient groups have different priorities. We also illustrated how the results can be used for policy analysis. In brief, and in order of importance, the average respondent's propensity to prefer an option for booking an appointment for an acute, low worry condition was determined by:

- seeing a doctor of choice (continuity of care);
- booking at a convenient time of day (convenience);
- seeing any available doctor rather than a nurse (continuity of care); and
- appointment time sooner rather than later (access).

These findings suggest weak evidence that patients' are more likely to trade-off continuity of care for convenience and less likely to trade-off continuity of care for access.

On the other hand, when booking for an ongoing, high worry condition the average respondent's propensity to prefer an option was determined by the same order of attributes as listed above but in addition the duration of the booking slot was also of value. In this case patients' were more likely to trade-off access for continuity of care and less likely to trade-off convenience for continuity of care.

When the models for acute, low worry and ongoing, high worry conditions were compared we found evidence that continuity of care is more strongly preferred for an ongoing, high worry condition and quicker access more strongly preferred for an acute, low worry condition.

These findings at first glance seem at odds with those from our Patient Survey. In that survey almost all the groups studied indicated the top priority given to factors considered important when making an appointment was being seen on the day of choice and this was more important than being seen by a particular doctor or nurse (see section 8.4.7). But this can be easily explained. It is important to remember that these data are not comparable since the basis of the valuation is different. Without relative weights being attached to different criteria it is not possible to consider them simultaneously or to consider how different combinations may affect responses. This is the essence of the nature of the response data collected in the Patient Survey where the results for each booking factor are independent of each other. We need both sorts of information but can only use choice-based priorities to inform about priorities for resource allocation decisions.

Our findings are in broad agreement with those of Turner *et al,*(Turner, Freeman, Baker, Tarrant, Windridge, Boulton, & Hutton 2005) Both appear to support the ideas i) that patients are willing to make trade-offs between access and other aspects of primary care appointments/consultations and ii)

that the reason for the appointment indicates that patients have views on when they need continuity or convenience. However, it is also important to remember the differences between these studies; Baker *et al* were concerned with continuity of care in the primary care consultation, our study focused on the booking system itself.

More generally, the DCE study has demonstrated that patients have valid preferences for how general practice appointments are organised and that they respond differently depending on the nature of the presenting condition and personal and practice characteristics. It is important that policy makers take note of these preferences.

14.1.4 To explore the perceptions of general practitioners and receptionists about the experience of working with the NPDT and implementing changes to practice arrangements designed to improve access.

The data in relation to this objective came mainly from the qualitative interviews with staff in the case study practices and indirectly from the interviews with the Access Facilitators. Contact with NPDT was in practice through the local Primary Care Collaboratives.

Qualitative research at case study sites

It was noteworthy that while the Primary Care Collaborative and the PCT access facilitators had some influence during the introduction of Advanced Access, their involvement in shaping practice policy was significantly reduced once the new appointment system was up and running. Similarly measuring demand and matching capacity to demand were activities that were important in setting up the system used by the practice but their role then tended to became negligible once the system was established. It is worth noting that many of the practice managers at Advanced Access practices felt they had reached the limits of their capacity; they felt that their buildings and their staff could not be moulded to deliver any further capacity. This directed attention to controlling the numbers of people who could book at any one time. There was only limited evidence of quality improvement approaches such as the use of PDSA cycles, and little to suggest that the introduction of Advanced Access was associated with learning an approach to quality improvement which would benefit other aspects of practice organisation in the way envisaged by the NPDT.

Interviews with access facilitators

Six PCT access facilitators were interviewed about their perceptions of helping practices implement Advanced Access. Their reflections were very helpful and tended to re-inforce our observations at the case study practices. The main challenges were to persuade practitioners to re-think assumptions about the supply and demand for appointments. The facilitators recognised that the practices' attempts to meet demand were sometimes frustrated by a lack of infrastructure capacity (telephone lines, consulting rooms etc.) The facilitators had to deal with confusion between the Advanced Access model, the access

targets, and the appropriateness of embargoing appointments. They also experienced difficulties in getting doctors to fully engage with the collaborative process, and felt that practices tended to take some ideas from Advanced Access but failed to embrace the complete model. On the other hand, although these issues were all challenges, the facilitators remained generally enthusiastic about Advanced Access and positive about their experience of working with practices to introduce change.

14.1.5 To assess the impact of the above changes in practice organisation on staff job satisfaction and team climate.

This objective was addressed through a survey of staff (section 11). This was conducted amongst the doctors, nurses, receptionists and administrative staff in 46 practices, and 817/960 (85%) of staff responded. The survey included validated questions about sources of stress in general practice, team climate and job satisfaction.

The results show that generally doctors expressed higher levels of stress than nurses, who were more stressed than receptionists/administrative staff. There were few differences between Advanced Access and control practices in the perceptions of stress experienced by any of the groups of staff, except that doctors in Advanced Access practices were more stressed about the length of their surgeries.

The Team Climate Inventory (TCI) is a validated measure of various aspects of team-working and team culture, and three of the five scales from the TCI were included in the staff questionnaire. The overall pattern of results was that doctors and receptionists expressed more positive team climate scores in Advanced Access practices compared with control practices, whereas nurses reported lower scores.

There appeared to be a high level of job satisfaction for all groups of staff in both types of practice. However doctors in Advanced Access practices had slightly greater job satisfaction than those in control practices, with no evidence of difference for nurses or reception/administrative staff.

14.2 Strengths, limitations and methodological issues

14.2.1 Overall Strengths

There are several important strengths of this study. First, it appears to be the largest study of appointment systems in general, and of Advanced Access in particular, to have been conducted in the world. Unlike earlier case study research, it is based on a study of the widespread implementation of Advanced Access in representative general practices, rather than 'early-adopters' of this approach (Pickin *et al*, 2004).

Second, it involved a number of integrated research studies which enabled us to explore research questions from a range of perspectives and using a range

of methods. In particular, the qualitative and quantitative research components were closely integrated, and were conducted by the same research team and in the same practices. This process of integration and complementarity enabled us to understand the relationships between context, process and outcomes, and helped us to interpret and explain findings with greater confidence than would have been possible from smaller isolated studies.

14.2.2 Overall limitations

Selection of sites for the main evaluation

The practice survey, which was used as the basis for selecting practices for the main evaluation, shows that there is considerable overlap in the approaches used to improve access by practices which do or not describe themselves as operating Advanced Access. Although the main evaluation was designed to compare practices which operated Advanced Access and control practices, it is clear that this is not a clear dichotomy. For these reasons, once the survey of practices had been analysed, discussions were held with the project advisory group and others about the approach to selecting practices for the main evaluation. We decided that we should seek to maximise the differences between the Advanced Access and control practices by selecting Advanced Access practices on the basis that they both stated that they used Advanced Access and also responded positively to the four questions about key principles of Advanced Access. Control practices were those which stated that they did not operate Advanced Access and also did not respond positively to all four Advanced Access questions on the practice survey.

On one hand it could be argued that some of the 'Advanced Access' practices may not have been operating Advanced Access in line with the model advocated by the NPDT, but rather they may have given responses which they thought were 'acceptable' on the questionnaire. It is impossible to know if this is the case. On the other hand, it could be argued that some of the control practices were operating most of the same principles as the Advanced Access practices (some control practices responded positively to three of the four questions about Advanced Access principles), even if they did not describe themselves as operating Advanced Access.

It is important to recognise that any policy or model of organisation, including Advanced Access, does not exist in the abstract, but has to be implemented in real practices, and the way in which the policy is implemented will vary in different contexts. There is a reciprocal relationship interaction between the programme of innovation and the wider setting in which it takes place.(Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou 2004) This process of operationalisation is in itself an important aspect of this evaluation, and one which is addressed in the qualitative case studies. The fact that the practice survey suggested overlap between the strategies used by Advanced Access and control practices has implications for the quantitative components of the evaluation, as it will reduce the potential for detecting differences in outcomes. However, by selecting practices which are as far as possible at the extremes of implementation, this maximised the chances of detecting

differences between practices which explicitly seek to implement the Advanced Access approach and those that do not, if such differences actually exist.

The observational design of the study

Some components of the study (the audits of continuity of care and of practice activity) included data both before and after practices introduced Advanced Access. However other research components were based only on data after practices introduced Advanced Access. This type of observational design is vulnerable to confounding effects. Without baseline data we cannot exclude the possibility that Advanced Access and control practices had different performance at baseline. For this reason, in all analyses we took account of potentially important confounding variables which related to their patient populations or to other aspects of practice organisation.

The use of multiple sources of data

This study involved several different components which collected data using different methodologies. In some ways this is a strength, as it helps to reinforce and explain key findings. However there are several examples where different sources of information generated apparently inconsistent findings. For example, in the qualitative study, receptionists and doctors in Advanced Access practices interviewed for the qualitative study expressed satisfaction with Advanced Access, but there were widespread concerns about difficulties patients had in managing to get through on the phone. However the quantitative survey of staff views found no evidence of difference in satisfaction levels between staff in Advanced Access or control practices, and both the patient survey and our audit of telephone accessibility found no evidence of greater difficulty in making telephone contact with Advanced Access practices. Similarly, patients and staff expressed concerns that Advanced Access had a detrimental effect on continuity of care, yet the quantitative work did not identify any differences between the practices in continuity.

There are several possible explanations for these inconsistencies. It could be that the small number of case study practices were not representative of the larger number involved in the quantitative research, or that the staff interviewed were not representative of other staff. It could be that staff perceptions of patients experience were inaccurate. Or it could be the case that practices were more likely to change to Advanced Access if they had major problems with access beforehand (there were certainly examples of this in the case study data), whereas practices with fewer problems felt less need to change, therefore Advanced Access practices may have experienced greater improvements. We cannot provide data to answer this question, since we were not able to conduct a before and after study.

User involvement

We determined to involve service users as far as possible in this research, as discussed in section 14.2.2. In practice this met with limited success. On the positive side, user involvement was a standing agenda item and was

discussed at every project meeting. The service user facilitator (MB) was able to contribute to most of these meetings and actively sought ways of involving service users at every opportunity. We successfully recruited seven users representatives and they were able to contribute to some elements of the research design, particularly the design of patient information and questionnaires. On the other hand, the potential for meaningful service user involvement was constrained by a number of factors. Most aspects of the research design, including the design of most questionnaires (to which users may have had a particularly useful contribution) had to be determined against tight timetables before the project officially started and funding was available, in order to gain ethical approval. Recruiting people to contribute to a service user advisory group was resource intensive, time consuming, and not very successful, despite various attempts in different ways. Although the argument for involving service users in research is clear, how best to achieve this remains problematic.

14.2.3 Strengths and limitations of each sub-study

Survey of practices and selection of study sites

This is the first study to explore the use of Advanced Access by a large and representative sample of general practices in England. The response rate of 63% is reasonably high for a survey of general practice staff, but the differences identified in the characteristics of practices which did or did not respond raises the possibility of bias if non-responding practices had a different approach to patient access. The fact that responding and non-responding practices had similar scores for patient access in the Quality and Outcomes Framework provides some reassurance in this regard.

Although the size of the survey was sufficient to detect large differences between practices there may be differences in other characteristics (such as the proportion of training practices) for which the power in this study, and hence the precision around the estimates, was insufficient to exclude the null. The study was not based on a formal power calculation, as it included all the practices which were available in the participating PCTs.

This survey is based only on the reports of practice managers Some of the issues covered in the questionnaire, such as 'triage' and 'measuring demand' are hard to define and may have been interpreted differently by different participants. There may also be a concern that practice managers may be likely to state that they carry out certain activities such as measuring demand which attract financial incentives in the DES on access, even if the extent to which they conduct these activities is limited.

Impact on practice activity

Collecting activity data was particularly difficult because of the variety of ways in which practices recorded data about appointments and consultations. Some practices had not kept data from earlier years, reducing the number of practices which could contribute to before-and-after comparisons. Although some practices recorded all consultations on computer, and in theory could easily produce reports about the number of consultations of different types, it

became apparent that there was variability in recording both within and between practices. For example some administrative messages could be recorded as consultations, and consultations not attended by patients were recorded in various ways. Therefore we decided to collect data manually from both manual and computerised records. This process was extremely laborious and time-consuming, reducing the amount of data it was possible to collect. Data was collected over the equivalent of a week (but based on 5 randomly selected days, including each day of the week, spread over several weeks) rather than over two weeks as originally planned. This will reduce the precision of the estimates from each practice and increase the confidence intervals for comparisons between different types of practice.

Continuity of care

The study of continuity of care had to be based on records kept routinely by different practices. These practices used a variety of computerised and manual record systems, and in some cases these changed over time within practices. Even practices which used the same computer software may have used this in different ways. Therefore the process of data collection involved different processes in different practices, with the aim of getting as much high quality data as possible. This pragmatic approach meant that different volumes of data were collected in different practices. It also involved some value judgements about which consultations should be included in the calculations, and different judgements would lead to different continuity scores.

Nevertheless, this study is probably the largest study attempted in the UK on continuity of care and provides the most reliable and representative data.

Making an appointment

This study involved researchers telephoning practices in the guise of patients seeking an appointment. This is the most valid way of exploring the wait for an appointment, and is certainly more valid than identified PCT staff obtaining data, as is the case in the Primary Care Access Survey. In planning the study there was a concern that practices would ask the caller's name at an early stage of the conversation, and having realised the research nature of the call would offer sooner appointments than those offered to real patients. However, the researchers only needed to disclose their identity during 15% of calls, so the results are likely to be representative of patients' experience.

The data about the first available appointment is vulnerable to fluctuation due to short notice cancellations, which is why the NPDT prefer the measure of the third available appointment. However the nature of this study meant that obtaining data about the third available appointment was difficult and the findings may be less reliable. The fact that this study involves relatively large numbers of calls means that random fluctuations are less of a problem than they would be if collecting one item of data from an individual practice, and the first available appointment is the most appropriate measure in this study.

The sample of calls was made at different times of day and different days of the week, but with most calls in the morning. This judgement was based on

our experience, but the distribution of times of calls may not exactly match the times at which most patients call.

In some cases the receptionist advised the researcher to phone again the next day to try to book a same day appointment, but this was not possible in the research context. Within this research, such calls were coded as not leading to an appointment, which is the same approach used within the Primary Care Access Survey.[20] If we had made return calls the next day, we may have been able to obtain an appointment.

Patient survey

This is a large-scale survey of patients, and the fairly high response rate suggests that the findings are likely to be representative of patient experience in these practices. Most of the questionnaire was based on the well-developed and validated GPAQ instrument. However, some additional questions were developed specifically for this study and as such have not been validated. The issue of the difficulty that patients have in booking appointments in advance became prominent during the course of the research and in retrospect it would been useful to include more questions about this issue.

The patient survey questioned patients about their usual experience and we recognize that patients' reports are likely to be filtered by their expectations. Patients with different socio-economic characteristics may have different expectations. For example, a professional worker who commutes to work may wish to have an appointment time that fits with their travel arrangements and work schedule. They may also have an expectation that the GP provides a service similar to other services she/he consumes and that the practice should meet these 'consumer-oriented' demands. An elderly retired individual may have fewer problems with getting to the practice, but expect continuity. These are oversimplifications but satisfaction with access may well be influenced by preferences and expectations such as these. The nature of the survey method does not allow us to determine how much patients' self-reports are influenced by these expectations. Whether differences in the care reported by different groups of patients reflect differences in the care offered to patients with different characteristics or simply these different expectations is unclear.

As discussed above (Section 14.2.1), the patient survey is an observational comparison, and any differences in patient experience may not necessarily be due to Advanced Access. For this reason we took account of as many patient and practice factors as possible which may have acted as confounders in the analyses. This is important because it is clear that differences between types of patients may have a bigger impact than differences between models of

[20] The PCAS survey guidance to PCTs 2004(Department of Health 2004a;Department of Health 2004b) states that people should be able to book an appointment with any GP within two working days. Equally may wish to wait longer to see a particular GP or to be seen at a time convenient to them. They must be able to book an appointment, rather than be told to turn up and wait. The NHS Plan targets are based on availability of routine appointments, not urgent appointments. If a practice is unable to offer an appointment at the time and tells the patient to phone back they are not fulfilling the target.(2004c)

organisation, and there were some differences between the characteristics of patients registered with Advanced Access and control practices.

Non-user survey

This survey was based on only eight case study practices so may not be generalisable to other practices. The response rate was only moderate (47%), which although better than might have been expected for a survey of people not in contact with primary health care, still raises the possibility of non-response bias. Some of the most important findings were based on the responses of the small number of people in these practices who had had difficulty making an appointment, so they should be interpreted as exploratory only. However the strength of this component is that does provide information about an important group of patients whose experience is usually ignored in research. Most surveys are based only on those patients in contact with health providers, who by definition are a selected group because they have been able to successfully gain access to health care.

Discrete Choice Experiment

A key strength of this study lies in its design. We accomplished two key things: i) set out to establish whether significant interactions between attributes existed rather than presume they were insignificant at the outset (which has been previously untested in this context and generally infrequently tested in other studies); and ii) set up a within subject comparison of two vignettes by careful allocation of choice sets amongst a large number of questionnaire versions (an important short-coming of the design used by Turner *et al*, 2005).(Turner, Freeman, Baker, Tarrant, Windridge, Boulton, & Hutton 2005)

We have learnt from previous studies that eliciting good quality (valid and complete) choice data requires careful attention to the administration of the survey. Because we were able to offer the practices a high level of support we achieved much higher than anticipated response rates with careful training of administrative staff achieved high quality responses. As only 3.5% of respondents failed our test of consistency, it seemed acceptable to presume it unnecessary to examine the impact of inconsistent responders on the estimated models.

There were a number of limitations of the study. One important one was our capacity to examine only a small selection of the reasons why patients book an appointment. Turner *et al* classified six different consulting problems (acute, low worry; acute, high worry; emotional, complex requiring disclosure; ongoing condition, low worry, ongoing condition, high worry; embarrassing ' awkward problem), we were able to examine only two of these. Clearly these could reveal other important differences in the relative priority attached to attributes. It would, in time, be important to understand these differences and similarities before informing decision makers about how best to improve appointment systems in general practice. It would also be important to conduct further qualitative work to validate our choice of examples for acute, low worry and ongoing, high worry conditions.

Another important limitation of the study was a lack of evidence on an order effect. We always presented the itchy rash vignette before the weight loss one and therefore cannot rule out an order effect influencing the overall results. Unfortunately the large number of questionnaire versions used meant that testing for an order effect would have expanded the scale of the survey beyond our means.

Finally we highlight a concern with the analysis undertaken. In the time available we have assumed the errors across responses are independent and not tested this using a more sophisticated logit analysis (e.g. mixed logit model). We intend to look at this issue at a later date and publish our findings.

Staff survey

This survey had a high response rate and is likely to be representative of the views of staff in these practices. However the total numbers of staff of each type participating in the study are modest so the study is only able to detect fairly large differences between Advanced Access and control practices. The survey was based on widely used and validated instruments. Despite assurances of confidentiality and anonymity, it is possible that staff may have not wanted to complain about their practices and that the responses therefore are biased in a positive direction.

Observation of case study practices

This study was based on direct observation of practice activities over periods of one to two weeks in each practice. Most of the practice visits were made by the same researcher, which enhances the reliability of the comparisons, but additional visits were also made by other members of the practice team to compare findings and enhance validity.

We recognise that the presence of a researcher inevitably impacts upon the research setting in some way. However, we attempted to minimise the influence of the researcher on the behaviour of the reception staff in a number of ways. The researcher would, wherever possible, meet practice staff before the formal process of research started and explain the project and the role of the practice staff within the project. Once data collection started the researcher took time to explain their role and the purpose of the data collection exercise they were engaged. All these steps were taken to ensure that staff felt comfortable with the presence of the researcher.

We also acknowledge that case study research cannot be used to make statements which can necessarily be generalised to other practices. However, it has provided an in depth account of the actual interactional dynamics around policies such as same day appointment systems and the impact of such polices on the working lives of practice staff and the way that patients experience access to primary care.

14.3 Other research about Advanced Access

This section summarises other research about Advanced Access appointment systems, in order to form a basis for a discussion of how this study compares

and contrasts with earlier research. Most of this research has been published over the last two years and was not available when this study was planned, but the small number of earlier studies are included for completeness, even though they have been previously mentioned in section 1.7.

14.3.1 The original work of Murray in the USA

In one of the earliest published academic papers about Advanced Access, Murray and Tatou describe in general terms their experience with introducing 'same day scheduling' in Kaiser Permanante in the USA, including descriptions of 'success stories' from several clinics. They report dramatically reduced waits for an appointment, increased patient satisfaction, increased continuity of care and reduced consultation numbers (Murray & Tantau 2000).

In a subsequent paper Murray provides a more reflective and more academically rigorous qualitative description of four practices which successfully implemented Advanced Access and three which tried unsuccessfully to implement it.(Murray, Bodenheimer, Rittenhouse, & Grumbach 2003) Key issues for implementation were the importance of matching supply to measured demand, the need for strong and ongoing management support and the need to motivate clinicians. Implementation was more successful in smaller practices which were owned by the doctors themselves, rather than those which were externally managed. Amongst the practices that did not successfully implement Advanced Access, most never managed to fully work off the backlog of appointments.

14.3.2 Recent studies from the USA

A number of studies of Advanced Access were published in the USA during 2004. The most useful and detailed of these describes the introduction of Advanced Access in all of the 17 primary care clinics operated by the HealthPartners Medical Group and Clinics, Minnesota.(Solberg *et al,* 2004) The report is based on analysis of routinely collected appointments data and interviews with physicians and nurses. The paper shows that clinics achieved a reduction in the mean wait for the third available appointment from 17.8 days to 3.9 days over 3 years. Interviews with staff suggested that key facilitators affecting the implementation of Advanced Access included strong medical leadership, the training provided by the collaborative and by external consultants, being able to promote a well-defined and practical approach, highlighting the clear advantages of the change for all stakeholders and having clear measures of progress and success. Barriers to implementation included the attitudes of some doctors and the relationship between capacity and demand. Those clinics with fewer doctors per patient found it much harder to implement Advanced Access than those were demand and capacity were more closely matched.

It is important to note that the introduction of Advanced Access described in this paper was associated with a change in payment mechanisms, so that doctors were paid in relation to their productivity. The authors acknowledge that this may have been an important factor in both cutting delays but also the failure of the group to achieve true same day access, as doctors were

concerned to avoid gaps in their schedules which would affect productivity (Solberg, Hroscikoski, Sperl-Hillen, O'Connor, & Crabtree 2004).

Another study of 17 primary care clinics in one medical group used quality improvement methods in an attempt to improve access and continuity of care using Advanced Access principles. (Solberg, Crain, Sperl-Hillen, Hroscikoski, Engebretson, & O'Connor 2006) Analyses of routinely collected data showed that these quality improvements were associated with improvements with various markers of quality of care for depression such as improved follow-up and persistence on medication for 6 months. Multiple regression models suggested that the mechanism for these improvements appeared to be the improvement in continuity. This paper is important as it is the only study identified which provides data about the relationship between Advanced Access and improved quality of care which may lead to benefits in patient outcomes.

In contrast to the above paper, a before and after study of three clinics in Denver introducing Advanced Access found no evidence of any impact on continuity of care. (Loomis & Matthews 2005) There were greater differences between individual clinics than change between before and after introducing Advanced Access. It is important to note that the levels of continuity reported in this study (0.71 using the Modified, Modified Continuity Index, similar to the COC index used in this study) were generally much higher than those reported in studies in the UK.

14.3.3 Studies from the UK

The first evaluation of Advanced Access in the UK has been described in section 1.7. Briefly, this uncontrolled study of Advanced Access practices showed that over time these practices were able to shorten waits for an appointment and more people were seen on the day of their choice.(Pickin *et al*, 2004) Qualitative work conducted as part of this evaluation showed that staff perceived benefits from Advanced Access in terms of reduced stress for staff and the practice being more pro-active about planning and improving services, but they expressed concerns about the impact of Advanced Access on different groups of patients (Dixon *et al*, 2006).

Another recent qualitative study in the UK was based on interviews with 18 staff in 6 practices operating Advanced Access (Ahluwalia & Offredy, 2005). They perceived the advantages of Advanced Access as including less stress for staff, and better use of the practice team, but concerns included a perception of increased workload, and decreased continuity of care.

14.3.4 Case studies in the USA and Australia

The remaining published evidence about Advanced Access comes from small studies of individual practices or small numbers of practices. Most of these papers come from the USA and consist of descriptive case studies with few details of how data were collected or analysed. The more rigorous of these studies are described below, with the findings from the remainder being summarised at the end of this section.

A before and after study from the USA compared the performance of two faculty-resident teams in one family medicine center, one operating Advanced Access and the other a traditional appointment system (Belardi *et al*, 2004) The Advanced Access team embargoed 75% of appointments for same day use only. The paper shows that the wait to the third available appointment for the Advanced Access team was reduced to five days compared with 21 days previously, with no change in the team operating the traditional appointments system. The Advanced Access team achieved a greater improvement in continuity of care. There were no differences in workload, non-attendance rates or patient satisfaction.

A pilot study in four North Carolina practices (2 family medicine and 2 paediatric) used interrupted time series analysis to examine the impact of introducing 'open access scheduling' (Bundy *et al*, 2005). The mean delay for an appointment reduced from 32 days to 4 days. Non-attendance rates declined from 16% to 11%, patient satisfaction improved, and no changes were observed in continuity or staff satisfaction.

A case study of two practices in Australia which had introduced Advanced Access showed that these practices perceived reduced delays and other improvements for both patients and staff. A National Primary Care Collaborative in Australia now intends to evaluate the experience of 300 practices as they implement Advanced Access (Knight *et al,* 2005).

The following section summarises findings from a number of other case study reports which describe the effects of introducing Advanced Access, mostly in the USA (Ahluwalia & Offredy, 2005; Anderson & Sotolongo, 2005; Belardi *et al*, 2004; Bundy *et al*, 2005; Knight *et al*, 2005; Murray *et al*, 2003; Murray & Tantau, 2000; Newman *et al,* 2004; O'Hare & Corlett 2004; Pierdon *et al,* 2004). Most of these case reports provide very little objective data. In any event it is debatable whether experience in the USA, which has a very different health care system producing serious inequities of access, has much relevance to the organisation of primary health care under the NHS (Salisbury, 2004). In this context, it is important to reiterate that Advanced Access was developed in the context of much longer waits for a routine appointment with a GP (or Family Physician) in the USA than is usual in the UK (see 1.5.2).

Summary of results from case study reports of Advanced Access

- Reduced wait for an appointment (Anderson & Sotolongo, 2005; Belardi *et al*, 2004; Bundy *et al*, 2005; Dixon *et al*, 2006; Kennedy & Hsu, 2003; Mallard *et al,* 2004; Murray *et al*, 2003; Newman *et al*, 2004; O'Hare & Corlett, 2004; Pickin *et al*, 2004; Solberg *et al*, 2004).
- Reduction in non-attendance rates (Bundy *et al*, 2005; Kennedy & Hsu, 2003; Mallard *et al*, 2004).
- Improved patient satisfaction.(Anderson & Sotolongo, 2005; Bundy *et al*, 2005; Kennedy & Hsu, 2003; Murray *et al*, 2003; Newman *et al*, 2004; O'Hare & Corlett, 2004; Pierdon *et al*, 2004).
- Increased continuity of care (Belardi *et al*, 2003; O'Hare & Corlett, 2004; Solberg *et al*, 2006)

- Increased staff satisfaction.(Anderson & Sotolongo, 2005; Belardi *et al*, 2004).
- Increased clinic profitability(Kennedy & Hsu, 2003; Newman *et al*, 2004; O'Hare & Corlett, 2004).

14.4 Implications of the results of this research

14.4.1 How should we interpret the findings?

There are several possible interpretations for the finding that there were relatively few differences between Advanced Access and control practice detected in this evaluation. Although Advanced Access did perform better on some indicators, notably in the fact that people were seen more quickly with no evidence of detriment to other important indicators such as continuity, it was not associated with the dramatic benefits claimed in previous documents or case studies of individual practices.

One possible interpretation is that Advanced Access has only relatively modest effects, and offers slight benefits in terms of access (and possibly on DNA rates) as described but has little or no impact on patient or staff satisfaction, or continuity of care. This raises questions about why it appeared to have such dramatic benefits in previously reported case studies from the USA and in the practices participating in the first wave of the Collaborative in the UK.

A second interpretation could be that the reason for the limited impact was that the practices were not operating the Advanced Access model as advocated by the NPDT. This may be considered a form of 'dilution' of the concept. There is some support for this view in the qualitative work, although we cannot necessarily generalise from the four case study practices to all the other practices in the evaluation. However this evaluation is the largest and most representative study of Advanced Access so far conducted anywhere in the world. If the above interpretation is accepted, the implication is that, contrary to the claim that large numbers of practices in England are operating Advanced Access with considerable benefits to patients, in fact few practices are actually operating Advanced Access. This raises questions about why, despite the considerable efforts of the Primary Care Collaborative to disseminate principles of quality improvement using Advanced Access as an exemplar programme, few practices have been willing or able to implement Advanced Access as advocated. The issue of how and why policies are implemented in practice is discussed further in section 14.4.5.

A third interpretation is that few differences were detected because the control practices have learnt from the experience of the Advanced Access practices and are now operating many of the same principles, even if they do not describe themselves as operating Advanced Access. If so, this could be considered a success for the collaborative approach which is based on the idea that the best way to effect change is for good ideas to spread from peer to peer. This might be termed 'diffusion'. However it is important to note that there is no reason to suppose from this evaluation that there is a causal link between the introduction of Advanced Access and the use of strategies by

practices to improve access. Many of the strategies which are followed by control practices had been widely discussed, researched and implemented by practices before the NPDT was established. Examples include the use of telephone triage (Jiwa *et al*, 2002; McKinstry *et al,* 2002; Richards *et al,* 2002) and enhancing the role of nurses (Horrocks *et al*, 2002). With regard to the more fundamental principles of Advanced Access, such as a belief in the need to match capacity to demand, there is no evidence that control practices have changed.

Taking all the findings of this study together, our interpretation of this evaluation would be that both dilution and diffusion of the Advanced Access concept have occurred. Most practices claiming to operate Advanced Access appear to have implemented the principles of this model to only a limited extent. This has occurred against a background of all practices seeking to improve access in response to the pressures and incentives following the NHS Plan, and also pressure to implement a wide range of initiatives in other areas of practice organisation.

This interpretation is supported by the findings of the qualitative evaluation of case study practices and also the practice survey, which showed that many of those practices claiming to operate Advanced Access did not use key principles of this approach, and many embargoed a high proportion of appointments for same day use only. The aim of the Primary Care Collaborative to use Advanced Access as an exemplar programme through which practices learn about quality improvement principles so that they can improve performance in other areas of patient care does not appear to have been widely achieved. Part of the explanation for this may be the way in which the work of the Collaborative in promoting Advanced Access was inextricably linked in the minds of primary care professionals with the NHS Plan access targets. Some of the possible reasons for this phenomenon were discussed in section 1. The effect has been that practices have concentrated on achieving the targets in the most direct way possible, which is by insisting that all or most appointments are embargoed and only booked on the same day. It will be interesting to observe the effects of the recent changes in the access targets, which now require practices to offer patients the opportunity to wait to see a doctor of their choice or to book in advance. This may mean that practices that currently embargo appointments revert to using similar appointments systems to those they used in the past, but achieving the new targets may require them to re-think the potential relevance of Advanced Access principles.

If this explanation is accepted, it raises issues about the difficulty of altering the attitudes of professionals, which is fundamental if real quality improvement is to be achieved, and suggests that the collaborative approach has so far had only limited impact.

14.4.2 Implications for patients

The most important implication for patients is that different groups of patients have different priorities, needs and expectations. All systems designed to improve access to primary care have advantages and disadvantages and both patients and practices have to make trade-offs between different values such

as being seen quickly or seeing a preferred health professional. Systems need to allow flexibility, as the trade-offs individual patients may wish to make may be different for different types of problems and at different times.

However there is some evidence that, overall, practices which operate Advanced Access based systems offer faster access to care. There is no strong evidence of any disadvantages to patients. None of the concerns expressed by critics of Advanced Access, such as difficulties in getting through on the telephone and reductions in continuity of care, were supported by the evidence of this evaluation.

14.4.3 Implications for practice activity

Critics of Advanced Access have expressed concern that this approach would lead to an increase in demand and an increase in practice workload. Although it is notable that the number of patients seen increased in both Advanced Access and control practices, there no evidence that this phenomenon increase was any greater in the former. It is important to note that any such effect may depend on changes in patient expectations and may not be apparent for several years.

The case study research demonstrates how changes in appointment systems can have widespread impacts on other aspects of practice activity, including continuity of care, DNA rates, the management of the telephone system, staffing needs and the limitations imposed by the building.

There was some suggestion in section 5.4.6 that Advanced Access practices had experienced a reduced DNA rate, although this change was not as marked as might have been anticipated in the light of the reported case studies and the qualitative research in this study. Both types of practice had slightly lower DNA rates than is the national average rate of about 7% (George & Rubin 2003) Earlier qualitative research suggests that the quality of the relationship between patient, GP and receptionists is an important factor in determining DNA rates. Ensuring that patients have a choice of doctor and time at booking should reduce the situation where patients are given an appointment which is not suitable, which they subsequently fail to attend. In this study, ease of access and choice were important factors in their ability to attend and chance of them not attending.(Martin, Perfect, & Mantle 2005) In relation to the discussion of Advanced Access, the shorter wait for an appointment may reduce DNA rates, but if people are given an appointment at short notice without any choice about the time or who they see, they may be more likely to fail to attend.

Surprisingly, there was no evidence that practices operating Advanced Access employed a greater number or wider range of non-medical staff in order to increase the skill-mix available in the workforce. Indeed, there was some evidence that they employed fewer nurses, and that patients were less likely to have a consultation with a nurse.

14.4.4 Implications for practice staff

The introduction of Advanced Access appeared to be associated with some benefits for some groups of practice staff. In particular the doctors and receptionists in Advanced Access practices had a stronger sense of working in a team which interacts frequently and in a climate which allows them to express new ideas. In the qualitative research, some receptionists described benefits for them of Advanced Access. The ability to offer an appointment relatively soon in most cases gave receptionists a sense of control.

As previously noted, one of the aims of the Primary Care Collaborative was that staff should share experiences across as well as within practices, but there was little evidence from the qualitative research that this was an important feature of the implementation of Advanced Access in practices.

The findings of this research were consistent with earlier studies in showing the importance of strong leadership from the doctors in the practice if Advanced Access was to be implemented successfully (Ahluwalia & Offredy, 2005; Dixon *et al*, 2006; Murray *et al*, 2003; Solberg *et al*, 2004)

14.4.5 Implications for policy

This study has several implications for the policy of promoting Advanced Access as a means to improve access to primary care.

Patients experience of access to primary health care

This study provides a number of sources of evidence about the ease with which patients can gain access, in terms of making an appointment, in general practice. On one hand, it can be seen that many patients were seen very quickly, with the median wait for an appointment in the accessibility study being the same day in Advanced Access practices and the next day for control practices. On the other hand, during 15% of attempts to make an appointment, it was not possible to book an appointment at all. Advanced Access practices met the NHS Plan target of offering a routine appointment with any doctor within 2 working day on only 73% of occasions and control practices on only 65% of occasions. These figures are considerably worse than the results reported from the PCAS, which may raise doubts about the validity of the PCAS findings.[21] In the patient survey only 77% of patients in Advanced Access practices and 69% of patients in control practices were seen on the day of their choice, and only 63% and 56% respectively were with the health professional the patient wanted to see. These findings suggest that gaining access in primary care remains a problem. The patient survey also reinforces earlier findings(Bower *et al,* 2003) that patients have high expectations, in that most people only considered access to a routine appointment with any doctor to be very good or excellent if they can be seen the same day.

[21] Interestingly the Department of Health has recently announced stricter checks on the access targets, with calls being made at randomly selected times (DH 2006b).

The main benefit of Advanced Access identified in this research is that patients get seen slightly more quickly, but this effect was modest. We have already discussed possible interpretations of this finding, and the possibility that the fact it is due to control practices being influenced by their peers and introducing some of the same strategies to improve access. Because we were not able to conduct a before-and-after study we do not have baseline data and cannot tell whether either group of practices improved access to care following the introduction of Advanced Access. However it is interesting to compare the results of this study with the earlier national surveys of NHS patients.

The 1998 national survey, which was used to justify the policy imperative to improve access, showed that of those who wanted an appointment on a particular day, 66% of respondents had been given an appointment on the day of their choice and 81% of respondents said they were seen as soon as necessary. In a question about their usual experience, 24% said they usually had to wait four or more days for an appointment with a doctor of their choice.

In a similar survey in 2002 (before the widespread introduction of Advanced Access), 61% of respondents stated that when they last went to the doctor they had been given an appointment on the day of their choice, 77% felt they should have been sooner and 42% of patients said they usually had to wait four or more days for an appointment with a doctor of their choice (or could not get an appointment).(Boreham, Airey, Erens, & Tobin 2002) The most recent national survey was conducted in 2004, but is not possible to extract the same information on all of the items mentioned above. Of people making an appointment, 76% said they were seen as soon as necessary, a similar result to 2002.

Although the questions used in this study are not exactly the same as those in the national surveys above, 77% of patients in Advanced Access practices and 69% of patients in control practices were seen on the day of their choice. Some 86% of patients in Advanced Access practices and 80% of patients in control practices were seen as quickly as they wanted. When wanting to see a particular doctor, 16% of patients in Advanced Access practices and 30% of patients in control practices said they usually had to wait four days or more.

All of the above figures for control practices are similar to those for practices nationally in 1998 and slightly better than the national experience of patients in 2002. This implies that access to care worsened between 1998 and 2002 and has now returned to 1998 levels, but does not suggest that the control practices in this study have radically improved their performance as a result of copying ideas from Advanced Access.

Interestingly, the median wait for an appointment with a particular doctor, based on actually phoning practices in this study to make an appointment, was two days in both Advanced Access and control practices. This is considerably better than patients' reports in the patient survey about how long they usually had to wait for an appointment. This suggests that asking patients in surveys about their 'usual experience' may not be reliable.

As discussed in the first section of this report, improving access to health care is a top priority for current policy. However, the priorities of patients, health professionals and government may not be the same.(Haigh Smith & Armstrong 1989) A review of previous surveys of patients has highlighted that interpersonal aspects of care may be more important than speed of access' although quick access is important in emergencies.(Wensing *et al,* 1998) There is evidence in this evaluation that rapid access to care is an important consideration for most patients, but that these priorities change, particularly as people get older and for people with ongoing health needs.

The best evidence about this issue comes from the DCE reported here, which shows that the top priorities for patients are being able to see a doctor of their choice and to be seen at a convenient time, which does not necessarily equate with the soonest available time. The fact that being soon as soon as possible is not the top priority for patients is perhaps unsurprising considering the finding in the patient survey that most consultations were not for acute illnesses of recent onset, and 70% of patients had had their problem for at least a few weeks.

Finally, it is important to note that problems with access to primary health care are a cause for concern in almost all countries, even though they have very different organisational structures which create different incentives for patients and providers. In a study of five developed countries, patients from the UK reported better access to a GP than patients from Canada or the USA, but less good access than patients in Australia and New Zealand. On the other hand a much higher proportion of patients from Australia, New Zealand and the US reported not obtaining medical care because of concerns about the cost.(Schoen *et al,* 2004)

Can service redesign ensure that supply matches demand?

Probably the most fundamental and radical assertion in the Advanced Access model is that demand is predictable, finite, and can be managed (Murray & Tantau, 1999). However it has long been believed that demand for health care is not fixed but is strongly related to supply.

There is some evidence to support the predictability of demand (Kendrick & Kerry, 1999) and experience shows that waiting times tend to stabilise and not to increase inexorably, as they would if demand consistently exceeded supply (Frankel, 1989; Frankel *et al*, 2000) However, observing that demand is predictable may simply reflect the moderation of public expectations by the limitations on supply that exist in the NHS. The experience that waiting times stabilise may suggest that waiting acts as a brake on demand or that when delays exceed a certain point people find other ways of addressing their needs or get better while waiting. In a system without financial disincentives to consult, waiting for care may act as an important constraint. Although demand may not be unlimited, it may be limited at a much higher level than currently supplied.

Advanced Access recognises that demand can be 'shaped' by changes in the way that care is delivered. But given what we know about the clinical iceberg of disease, whereby only a small proportion of all symptoms experienced by

patients result in a consultation, if reducing delays leads to a lowering of the threshold for consulting the impact on total workload in primary care could be large (Warren, 2003). These questions about the impact of increasing supply on demand could only be answered following experience of a better supply of care over an extended period.

Laing and Shioyama argue that the problem for the NHS, unlike in the majority of service sector organisations, is not one of fluctuating demand but rather of ongoing excess demand for its services (Laing & Shiroyama, 1995). In the absence of price as a regulator of demand, many conventional demand management tools employed in the service sector are of little use in the NHS. They argue that the NHS should use 'demarketing' to discourage people from using its services. This should not be achieved by treating people badly but by managing information and expectations about the services available, and structuring services to facilitate easy access to low cost services and discourage access to high cost specialist services. This argument would support the policy drive to strengthen primary care, since good access to primary care may reduce demand in other services. But the argument about 'demarketing' is more controversial. The authors claim that: 'Until the political nettle of rationing is grasped at a national level, the efforts of individual units to manage the demand for their services is fundamentally compromised' (Laing & Shiroyama, 1995).

Several studies from the USA highlight that Advanced Access has been implemented most successfully when it is easiest to match capacity to demand. Murray and Berwick acknowledge that if demand permanently exceeds supply, no appointments system (including Advanced Access) will work (Murray, 2005; Murray & Berwick, 2003b). The question is whether this is the case in UK general practice. The fact that relatively few practices appear to have fully implemented Advanced Access in the way envisaged by its proponents may indicate that it was not possible to match capacity to demand, but it may alteratively indicate that practitioners have not accepted the fundamental premise that demand can be managed and matched.

The implementation of policy

The finding that the Advanced Access concept has been diluted and altered once it is widely implemented in practices is consistent with earlier research on the implementation of policy. There is a considerable body of research on this topic, including a programme of work funded by NHS R&D Programme on Service Delivery and Organisation of Care (SDO Programme). In a review of this literature, Iles and Sutherland identify and summarise empirical studies of the effectiveness of change models in health service organisations (Iles & Sutherland, 2001). Examples of change models include Total Quality Management and Business Process Reengineering. The review shows a consistent story of many small case studies being published which are enthusiastic about the benefits of various programmes, but subsequent larger and more rigorous studies (e.g. Joss and Kogan (1995) tend to show mixed and less positive results. Attempts to introduce a central policy using a defined change model frequently fail because they do not take account of the important cultural and structural contexts which vary locally and are crucial to

the impact of initiatives. The field is often heavily influenced by 'gurus' promoting a particular model in the absence of evidence, and a general reluctance to accept that obtaining empirical evidence is relevant or possible. In many ways this situation is very reminiscent of the situation in medicine before the growth of the 'evidence-based-medicine' movement of the 1990s.

Through the example of a study of NHS Treatment Centres, Pope *et al* have shown show how an apparently simple, relatively unformed, concept of a Treatment Centre framed by central government was translated and transmuted by subsequent layers in the health service administration, and by players in local health economies, and, ultimately, by Treatment Centres themselves, picking up new rationales and meanings as it went along (Pope *et al,* 2006). This situation has strong parallels with the widespread implementation of Advanced Access.

In another very comprehensive review on the diffusion of innovations in service organisations, also funded by the SDO Programme, Greenhalgh *et al* highlight how the meaning of an innovation for the agency that introduces it may be very different from that held by the intended adopters, and that the 'innovation-system fit' is generally a more useful construct than assuming that the innovation has fixed and clearly defined attributes (Greenhalgh *et al,* 2003; Greenhalgh *et al*, 2004). This concept is very relevant to the current study of Advanced Access, and the way in which it is interpreted differently in practices from the way intended by the NPDT.

Greenhalgh *et al*'s review also includes a conceptual model for considering the diffusion of innovations in health service organisations. This model is too complex to be applied in depth here, but there are particular aspects of the model which are particularly relevant to this study of Advanced Access. The model includes a list of attributes of innovations which predict (but do not guarantee) its successful adoption. The innovation should have clear and unambiguous advantages for those adopting it. Advanced Access offers most advantages for receptionists and patients, but possibly fewer for doctors (who wield most power in decision making), which may explain the varying enthusiasm for the idea identified in our qualitative research. Successful innovations are likely to be compatible with the adopters' values, norms and ways of working. However, as already discussed, Advanced Access is based on claims about the limits to demand which are strongly counter-intuitive for most doctors. This may lead them to ignore, modify or even corrupt the principles on which Advanced Access is based, for example by embargoing the booking of future appointments or by telling people to phone back the next day once all appointments are taken. Innovations which are less complex, and which can be broken down into manageable parts, are more likely to be implemented. The clear strategies offered by Advanced Access may have facilitated the adoption of some aspects of this innovation. If an innovation carries a high degree of uncertainty of outcome that the intended adopter perceives as personally risky, the less likely it is to be adopted. The idea from Advanced Access that doctors can allow any patient to be seen when they wish, without pre-imposed limits, is inherently very risky for doctors who feel stressed about the length of their surgeries and uncertainty about the length of their working day (see Section 11.4.2).

Part of Greenhalgh *et al*'s conceptual model is to consider the outer context – the inter-organisational networks and collaboration. They discuss the tension between 'dissemination', where the spread of an innovation centrally driven and controlled, and 'diffusion', where good ideas are spread through local informal networks in a largely uncontrolled way. Advanced Access is a centrally driven innovation, but the use of the Primary Care Collaborative has been a deliberate strategy to encourage local diffusion, which Greenhalgh *et al* categorise as an 'intentional spread strategy'. In reviewing the evidence about the effects of quality improvement collaboratives, Greenhalgh concludes that they are sometimes but not always effective, that they are expensive and that the gains from them are hard to measure.

It is important not to characterise practices which implement Advanced Access as 'innovative' or 'adopters', and practices which do not implement Advanced Access as 'resistant to change' or 'laggards'. Greenhalgh highlights the lack of evidence to support these widely used but value laden terms, which fail to recognise that '…the adopter is an actor who interacts purposefully and creatively with a complex innovation' (page 598, (Greenhalgh *et al*, 2004). In many ways, non-adoption of an innovation is just as interesting as adoption, although it has received far less attention in the literature. It may reflect differences in the interaction between the innovation and the local culture or context, or between the values embodied by the innovation and those held by the intended adopter. In the case of Advanced Access, it may be that those not implementing the model as intended did so because they found a different approach to making appointments which they felt worked better in their circumstances (see section 12.3.2).

The argument above is pertinent to this study because, contrary to the perception that general practice is resistant to changes that would improve access, the evidence from the practice survey and the qualitative study suggests that practices of all types (both those labelled as Advanced Access and as 'control') are very active in introducing a wide range of different strategies and innovative ideas in an attempt to balance the potentially conflicting demands of fast access, maintaining continuity, providing high quality care, ensuring that patients in greatest need get the highest priority and creating a working life for staff which is sustainable.

Implications beyond primary care

The principles of Advanced Access may be equally applicable to problems caused by delays in other parts of the NHS. Advanced Access appointments systems have already been studied in specialist settings in the USA (Newman *et al*, 2004; Randolph & Randolph, 2005) and have been promoted as a means for hospital out-patient departments to manage waiting lists by the former Modernisation Agency (Demand Management Group, 2002).

Access, appropriateness, effectiveness, efficiency and equity

Any health care re-design should seek to achieve the optimum balance between the values of access, appropriateness, effectiveness and equity which characterise high quality health systems. This is very relevant to the implementation of Advanced Access. There is a tension between Advanced

Access as it was conceived and as it is actually implemented in UK general practice. The main purpose of the Advanced Access approach is to ensure that patients can see the practitioner of their choice at a time which suits them. Improving access in this way should also increase the appropriateness of consultations, and should have no detrimental effect on effectiveness or equity. However, the way in which most practices have implemented Advanced Access in the UK means that they have prioritised improving speed of access, possibly at the expense of reduced flexibility for patients (evidenced by the greater difficulty patients in these practices had in booking in advance).

It is clear from various aspects of this evaluation that speed of access in itself is not the top priority for most patients. Choice of time of appointment and choice of professional are more important, and these priorities vary for understandable reasons for different groups of patients. For example those with chronic illness and the elderly place a higher priority on continuity of care than other patients. A system which places emphasis only on speed of access may lead to *inappropriate* care for patients with chronic problems. It is important to note that most consultations in general practice do not involve problems of recent onset, so a later consultation of the right type is likely to be more appropriate, effective and efficient than an earlier consultation of the wrong type. It is also likely to be associated with greater patient satisfaction.

Prioritising rapid access and reducing delays for care could have subtle effects, apart from the concerns about increasing demand already discussed. It may lead to increased medicalisation of minor problems and social difficulties, if it is easier to see a doctor than any other source of help. A perception that all medical problems should be dealt with immediately may undermine peoples' confidence that they can manage most symptoms themselves. There may also be an impact on doctors' behaviour and prescribing rates if people present with symptoms at a very early stage before it is clear if they represent a self-limiting illness (Salisbury, 2004). Pressure to 'do something' may lead to *ineffective* and *inefficient* care.

It is noteworthy that the number of appointments offered and patients seen increased considerably during the period studied in both Advanced Access and control practices. This is almost certainly related to national pressures to improve access. If faster access leads to more timely access and better treatment this may be associated with improved health outcomes. However, if the increased number of consultations is accounted for by minor or self-limiting problems this is likely to increase expenditure without health benefit and therefore reduce *efficiency*. This study provides no data about effectiveness or efficiency but this is an important topic for further research.

If appointment systems are implemented in an excessively rigid way, this may lead to problems with *equity*. As described above, different patient groups have different priorities. Patients who commute, for example, may need to be able to book an appointment in advance, those in employment may need an appointment at the end of the day, and a patient with a complex psychosocial problem may particularly need to see a particular doctor in whom he or she has confidence. Appointment systems which restrict prebooking tend to advantage those who prioritise speed of access (often the

minority of patient with acute minor illness) and disadvantage those with other priorities (predominantly patient groups with greater health needs, as shown in the patient survey) This illustrates the importance of ensuring flexibility, both within the practice to meet the needs of different patients, and in the way in which incentives impact on practices, as different appointment systems may be needed to meet the needs of different types of patient population.

14.4.6 Implications for future research

This project raises several priority areas for future research.

The most fundamental question is to explore the relationship between the supply and demand for primary health care. Addressing this question would not be simple, but it may be possible to explore the demand for healthcare in similar settings but with varying levels of availability of care.

A second fundamental question is whether improved speed of access is related to improved health outcomes, and whether it is associated with increased or decreased efficiency.

Despite the investment of time and resources in this research project, we cannot answer with confidence the question about whether Advanced Access, as promoted by the NPDT, does lead to the benefits claimed when it is implemented on a large scale. Earlier reports based on small case studies had suggested that Advanced Access can lead to large benefits but these are not apparent in this study. This may be because of failures in the process of implementation, because the earlier case study sites were atypical, because of selective reporting or publication bias in these case study descriptions, or because the initiative itself cannot be widely implemented in its original form. In order to answer this question it would be necessary to design a different and more effective approach to encouraging practices to adopt Advanced Access principles, and to ensure close adherence to the original Advanced Access model in the practices studied.

Future research about Advanced Access should consider the costs as well as the effects of both the initiative itself and also the Collaborative approach used to disseminate the initiative. Although quality collaboratives are increasingly used in many countries to improve health care, there is little evidence about their impact and cost-effectiveness (Ovretveit *et al,* 2002).

This leads to a further priority for research. Although a programme of research about the implementation of policy has been conducted by the NHS R&D Programme on Service Delivery and Organisation of Care, much of the existing literature about both the means and consequences of promoting innovations in the NHS is conceptual or descriptive (Iles & Sutherland, 2001). In particular there is little empirical evidence about the benefits of different strategies to encourage general practices to implement innovations, and good reason to suppose that the different scale, culture and contractual arrangements for primary care organisations (in comparison with hospitals) may require different approaches from those relevant to secondary care. Future research needs to use a sophisticated approach which is based on a clear theory of change, involves the implementation of an innovation in a wide

variety of realistic settings, documents using a variety of methods the ways in which the innovation is operationalised, and explores the relationship between how and why an innovation has different effects in different contexts. We hope that all of these features are evident in this evaluation, but further research is needed into other heavily promoted innovations in primary health care for which there is little evidence of effectiveness.

Recommendations

14.5.1 Local – recommendations for practices

There is evidence that practices operating Advanced Access had slightly shorter delays for an appointment with any doctor, with no evidence of any detrimental effects on practice workload, continuity of care, patient satisfaction or staff satisfaction. Doctors in Advanced Access practices experienced slightly greater satisfaction than those in control practices. In addition, those practices which had introduced Advanced Access were generally positive about it, although they had often become more flexible about its implementation over time. Therefore practices may wish to introduce Advanced Access systems if they have not already done. However, no overwhelming advantages of Advanced Access were identified, therefore practices which already have a well functioning appointment system may see no reason to change.

It is important that any appointment system is flexible to meet the needs of different types of patients. This is likely to include a mixture of appointments which can be booked in advance and a mechanism to ensure that people who need to be seen on the same day can do so. This could involve some appointments which are only available for same day booking or an open surgery where patients turn up and wait. Some patients experienced problems in practices which embargoed most appointments until the same day.

Appointment systems should reflect the fact that most consultations are for non-urgent problems and an appointment at a convenient time is more important for most patients than being seen as soon as possible. Seeing a preferred professional is also important to many patients, and many are not satisfied with seeing a nurse instead of a doctor. Appointment systems should therefore maximise opportunities for patients to exercise choice of time and professional, while also catering for people who do want to be seen quickly.

14.5.2 National

Policymakers should undertake robust evaluation before encouraging widespread implementation of new models of service delivery. Conducting this evaluation was problematic because of the widespread implementation of Advanced Access before the research was commissioned. Providing extra financial support to PCTs and practices to improve access could have been linked to a requirement to participate in evaluation of different approaches.

Policymakers should recognise that innovations may have costs as well as benefits. With regard to Advanced Access, the way in which this was implemented, when combined with the impact of NHS access targets and financial incentives, led to well publicised public complaints (BBC News, 2005) which could have been avoided if lessons had been learnt from pilot studies and earlier evaluation.

In particular, the NPDT has not had a culture of encouraging independent evaluation of its activities, and this should be re-considered.

Encouraging health providers to introduce Advanced Access appointment systems may have some advantages, but these should not be 'over-sold'. Advanced Access is unlikely to be a 'magic bullet' which will solve problems of supply and demand within the NHS. This lesson is relevant to the introduction of similar systems in hospitals as well as in primary care.

Many of the problems experienced with the implementation of Advanced Access were due to the linkage between the supportive work of the NPDT and Access facilitators and the pressure to achieve NHS access targets. Financial targets appear to be an effective means of altering health professionals' behaviour, but are a blunt instrument which can have unintended adverse consequences. It may have been better to set targets but leave practices free to determine how best to achieve them, rather to link a policy objective with an incentive to introduce a particular way of working, as was done with the Access DES.

Policy with regard to primary health care should recognise that most consultations are for long-standing problems, rather than for acute minor illness. A high proportion of consultations involve the elderly and people with chronic illness, for whom convenience of appointment time, continuity of care and choice of professional are more important than speed of access. This endorses the recent policy to encourage practices to introduce flexible appointment systems that maximise patient choice of appointment rather than speed of access alone. (Secretary of States Direction 2006)

14.6 Conclusion

Most of the practices in 12 representative PCTs in this study claim to have introduced Advanced Access, but the extent to which these practices have actually implemented the principles of this model is limited. Many practices appear to interpret an Advanced Access system as one based on same day access, while paying less attention to the fundamental principles of matching capacity to demand and seeing patients when they wish. Practices of all types have introduced a wide range of strategies in an attempt to improve access to care. Those practices which have implemented Advanced Access offer slightly faster access to care than those which have not, with no evidence of any disadvantages in terms of workload, contacting the practice or continuity of care. The priorities and demands of different groups of patients are very different, and different appointment systems suit some groups better than others. Overall, there was no evidence of difference in patient or staff satisfaction with the systems operated by Advanced Access or control practices.

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Appendices

Appendix 1 Patients groups invited to participate in the 'virtual' advisory group

Action on Elder Abuse	Age Concern England
Alzheimer's Society	Anchor Trust
Breast Cancer Care	British Red Cross
British Thyroid Association	CancerBackup
Carers UK	Chiropractic Patients' Association
CLIC	Contact a Family
Continence Foundation	Diabetes UK
Disabilities Trust	Epilepsy Action
Equalities	Hemophilia Society
Health Link	Hearing Concern
Help the Health Trust	Help the Aged
Home from Hospital Care	Huntington's Disease Association
Leukemia Care	Link Centre for Deafened People
London Voluntary Service Council	Long-Term Medical Conditions Alliance
Manic Depression Fellowship	Marie Curie Cancer Care
MENCAP	Meningitis Trust
Mental Health Foundation	Migraine Trust
MIND	Motor Neurone Disease Association
Multiple Sclerosis Society	Multiple Sclerosis Trust
National Aids Trust	National Asthma Campaign
National Cancer Alliance	National Council for Hospice and Specialist Palliative Care Services
National Endometriosis Society	Neurological Alliance
Pain Society	Patients Association
Princess Royal Trust for Carers	Relatives and Residents Association
Rethink	Royal National Institute for Deaf People
Royal National Institute for the Blind	Sickle Cell Society
Sign	Speakability
Stroke Association	UK Breast Cancer Coalition
Women's Health	

Appendix 2 Patient survey: response rates for each practice

		Valid response?				Total	
		Yes		No		Count	Row %
		Count	Row %	Count	Row %		
practice	11.00	357	81.9%	79	18.1%	436	100.0%
	12.00	164	93.2%	12	6.8%	176	100.0%
	13.00	219	75.8%	70	24.2%	289	100.0%
	14.00	231	84.9%	41	15.1%	272	100.0%
	15.00	71	64.0%	40	36.0%	111	100.0%
	16.00	110	80.3%	27	19.7%	137	100.0%
	17.00	299	89.0%	37	11.0%	336	100.0%
	18.00	210	84.7%	38	15.3%	248	100.0%
	19.00	388	89.4%	46	10.6%	434	100.0%
	20.00	267	88.4%	35	11.6%	302	100.0%
	21.00	148	85.5%	25	14.5%	173	100.0%
	22.00	225	79.8%	57	20.2%	282	100.0%
	23.00	144	77.4%	42	22.6%	186	100.0%
	24.00	190	76.3%	59	23.7%	249	100.0%
	25.00	170	93.4%	12	6.6%	182	100.0%
	26.00	344	87.5%	49	12.5%	393	100.0%
	27.00	332	81.2%	77	18.8%	409	100.0%
	28.00	339	78.8%	91	21.2%	430	100.0%
	29.00	441	81.4%	101	18.6%	542	100.0%
	30.00	95	96.9%	3	3.1%	98	100.0%
	31.00	355	96.5%	13	3.5%	368	100.0%
	32.00	341	79.5%	88	20.5%	429	100.0%
	33.00	101	83.5%	20	16.5%	121	100.0%
	34.00	212	86.9%	32	13.1%	244	100.0%
	35.00	155	90.6%	16	9.4%	171	100.0%
	36.00	112	79.4%	29	20.6%	141	100.0%
	37.00	154	91.1%	15	8.9%	169	100.0%
	38.00	229	90.5%	24	9.5%	253	100.0%
	39.00	153	93.9%	10	6.1%	163	100.0%
	40.00	122	83.0%	25	17.0%	147	100.0%
	41.00	98	74.2%	34	25.8%	132	100.0%
	42.00	548	89.7%	63	10.3%	611	100.0%

	43.00	284	92.8%	22	7.2%	306	100.0%
	44.00	227	74.7%	77	25.3%	304	100.0%
	45.00	382	93.2%	28	6.8%	410	100.0%
	46.00	189	88.3%	25	11.7%	214	100.0%
	47.00	299	86.4%	47	13.6%	346	100.0%
	48.00	117	89.3%	14	10.7%	131	100.0%
	49.00	244	81.3%	56	18.7%	300	100.0%
	50.00	245	85.4%	42	14.6%	287	100.0%
	51.00	139	86.9%	21	13.1%	160	100.0%
	52.00	213	88.8%	27	11.3%	240	100.0%
	53.00	142	57.3%	106	42.7%	248	100.0%
	54.00	352	73.5%	127	26.5%	479	100.0%
	55.00	168	73.7%	60	26.3%	228	100.0%
	56.00	308	93.9%	20	6.1%	328	100.0%
	57.00	188	89.5%	22	10.5%	210	100.0%
Total		10821	84.4%	2004	15.6%	12825	100.0%

Appendix 3 Enablement questions comparing Advanced Access and control practices

			Using Advanced Access?		Total
			Advanced Access	Control	
Able to understand your problem(s) or illness?	Much more than before the visit	Count	2110	1841	3951
		Col %	39.7%	39.4%	39.6%
	A little more than before the visit	Count	1405	1308	2713
		Col %	26.4%	28.0%	27.2%
	The same or less than before the visit	Count	847	680	1527
		Col %	15.9%	14.6%	15.3%
	Does not apply	Count	954	839	1793
		Col %	17.9%	18.0%	18.0%
Able to cope with your problem(s) or illness?	Much more than before the visit	Count	1791	1584	3375
		Col %	34.5%	35.0%	34.7%
	A little more than before the visit	Count	1406	1281	2687
		Col %	27.1%	28.3%	27.7%
	The same or less than before the visit	Count	977	752	1729
		Col %	18.8%	16.6%	17.8%
	Does not apply	Count	1020	905	1925
		Col %	19.6%	20.0%	19.8%
Able to keep yourself healthy?	Much more than before the visit	Count	1451	1300	2751
		Col %	28.3%	29.2%	28.7%
	A little more than before the visit	Count	1129	1071	2200
		Col %	22.0%	24.0%	22.9%
	The same or less than before the visit	Count	1017	859	1876
		Col %	19.8%	19.3%	19.6%
	Does not apply	Count	1538	1226	2764
		Col %	30.0%	27.5%	28.8%

Appendix 4 An experimental design for 24 pairs

Appointment A				Appointment B			
0	0	0	0	1	1	1	1
1	0	0	0	2	1	1	1
2	0	0	1	3	1	1	0
3	0	0	1	0	1	1	0
2	0	1	0	3	1	0	1
3	0	1	0	0	1	0	1
0	0	1	1	1	1	0	0
1	0	1	1	2	1	0	0
0	1	0	0	1	2	1	1
1	1	0	0	2	2	1	1
2	1	0	1	3	2	1	0
3	1	0	1	0	2	1	0
2	1	1	0	3	2	0	1
3	1	1	0	0	2	0	1
0	1	1	1	1	2	0	0
1	1	1	1	2	2	0	0
0	2	0	0	1	0	1	1
1	2	0	0	2	0	1	1
2	2	0	1	3	0	1	0
3	2	0	1	0	0	1	0
2	2	1	0	3	0	0	1
3	2	1	0	0	0	0	1
0	2	1	1	1	0	0	0
1	2	1	1	2	0	0	0

Appendix 5 Response rate to staff survey at each practice

Practice ID	Respondents/ denominator	%
11	27/32	84.4
12	11/15	73.3
13	19/25	76.0
14	28/29	96.6
16	8/9	88.9
17	27/32	84.4
18	19/22	86.4
19	26/30	86.7
20	25/29	86.2
21	10/10	100.0
22	24/30	80.0
23	5/9	55.6
24	14/15	93.3
25	17/18	94.4
26	31/35	88.6
27	24/29	82.8
28	19/24	79.2
29	20/20	100.0
30	12/13	92.3
31	28/28	100.0
32	14/31	45.2
33	10/10	100.0
34	16/23	69.6
35	12/13	92.3
36	9/12	75.0
37	11/13	84.6
38	20/21	95.2
39	13/14	92.9
40	10/10	100.0
41	12/13	92.3
42	29/36	80.6
43	22/23	95.7
44	16/21	76.2
45	22/26	84.6
46	20/22	90.9
47	21/27	77.8
48	10/14	71.4

49	19/20	95.0
50	21/21	100.0
51	9/9	100.0
52	18/19	94.7
53	18/20	90.0
54	5/19	26.3
55	18/18	100.0
56	27/29	93.1
57	21/22	95.5
Total	817/960	85.1

Appendix 6 Individual question items included in the Team Climate Inventory

DOCTORS

	AA N=108		Control N=95			
Question	mean	SD	Mean	SD	Diff in means*	95% CI*
We share information generally in the team rather than keeping it to ourselves	4.22	0.53	4.08	0.75	0.13	(-0.05 to 0.31)
Assistance in developing new ideas is readily available	3.76	0.80	3.66	0.85	0.09	(-0.13 to 0.32)
We all influence each other n=203	4.01	0.71	3.89	0.61	0.12	(-0.06 to 0.31)
We keep in regular contact with each other n=203	4.19	0.64	3.98	0.73	0.21	(0.02 to 0.40)
In this team we take the time needed to develop new ideas n=203	3.54	0.93	3.43	0.82	0.11	(-0.14 to 0.35)
People feel understood and accepted by each other n=203	3.77	0.73	3.83	0.77	-0.06	(-0.27 to 0.14)
Everyone's view is listened to, even if it's a minority n=203	3.90	0.75	3.93	0.72	-0.03	(-0.23 to 0.18)
The team is open and responsive to change n=203	3.90	0.84	3.93	0.79	-0.03	(-0.25 to 0.20)
People in the team co-operate in order to help develop and apply new ideas n=203	3.82	0.76	3.86	0.75	-0.04	(-0.25 to 0.17)
We have a 'we are in it together' attitude n=203	3.97	0.80	3.93	0.80	0.05	(-0.18 to 0.27)
We interact frequently n=203	4.06	0.69	3.84	0.89	0.22	
People keep each other informed about n=203	4.03	0.65	3.76	0.71	0.27	(0.08 to 0.46)
Members of the team provide & share	3.69	0.79	3.80	0.60	-0.11	(-0.30 to 0.09)

resources to help in the application of new ideas n=201						
There is a lot of give and take n=203	3.79	0.79	3.78	0.83	0.01	(-0.22 to 0.23)
We keep in touch with each other as a team n=203	4.02	0.63	3.87	0.70	0.14	(-0.04 to 0.33)
People in this team are always searching for fresh, new ways of looking at problems n=202	3.44	0.88	3.38	0.86	0.06	(-0.18 to 0.30)
There are real attempts to share information throughout the team n=202	4.01	0.62	3.89	0.68	0.11	(-0.07 to 0.29)
The team is always moving towards the development of new answers n=202	3.56	0.83	3.46	0.82	0.10	(-0.13 to 0.33)
Team members provide practical support for new ideas and their application n=203	3.67	0.75	3.64	0.73	0.02	(-0.18 to 0.23)
Members of the team meet frequently to talk both formally and informally n=203	4.04	0.72	3.67	0.87	0.36	(0.14 to 0.58)

* taking into account clustering effects

NURSES

	AA N=85		Non-AA N=69			
Question	mean	SD	Mean	SD	Diff in means*	95% conf*
We share information generally in the team rather than keeping it to ourselves n=153	3.74	0.97	4.00	0.83	-0.26	(-0.55 to 0.03)
Assistance in developing new ideas is readily available n=153	3.60	0.89	3.79	0.74	-0.19	(-0.46 to 0.07)

We all influence each other n=151	3.65	0.82	3.76	0.85	-0.11	(-0.38 to 0.15)
We keep in regular contact with each other n=153	3.78	0.90	3.76	0.83	0.01	(-0.27 to 0.29)
In this team we take the time needed to develop new ideas n=153	3.24	0.93	3.49	0.86	-0.25	(-0.54 to 0.04)
People feel understood and accepted by each other n=152	3.46	0.87	3.70	0.92	-0.24	(-0.53 to 0.05)
Everyone's view is listened to, even if it's a minority n=153	3.47	0.95	3.71	0.96	-0.24	(-0.54 to 0.07)
The team is open and responsive to change n=153	3.58	0.92	3.72	0.97	-0.14	(-0.45 to 0.16)
People in the team co-operate in order to help develop and apply new ideas n=153	3.66	0.82	3.79	0.86	-0.14	(-0.40 to 0.13)
We have a 'we are in it together' attitude n=153	3.51	0.91	3.69	0.98	-0.19	(-0.49 to 0.12)
We interact frequently n=152	3.59	0.95	3.76	0.94	-0.17	(-0.48 to 0.13)
People keep each other informed about n=153	3.33	0.98	3.68	0.80	-0.35	(-0.64 to -0.06)
Members of the team provide & share resources to help in the application of new ideas n=152	3.40	0.87	3.63	0.84	-0.23	(-0.50 to 0.05)
There is a lot of give and take n=152	3.44	0.90	3.60	0.90	-0.16	(-0.45 to 0.13)
We keep in touch with each other as a team n=153	3.54	0.87	3.71	0.90	-0.16	(-0.45 to 0.12)
People in this team are always searching for fresh, new ways of looking at problems n=152	3.49	0.86	3.50	0.95	-0.01	(-0.30 to 0.28)

There are real attempts to share information throughout the team n=153	3.58	0.88	3.78	0.79	-0.20	(-0.47 to 0.07)
The team is always moving towards the development of new answers n=153	3.49	0.84	3.60	0.79	-0.11	(-0.37 to 0.15)
Team members provide practical support for new ideas and their application n=153	3.42	0.84	3.62	0.79	-0.19	(-0.46 to 0.07)
Members of the team meet frequently to talk both formally and informally n=153	3.47	1.09	3.66	0.94	-0.19	(-0.52 to 0.14)

* taking into account clustering effects

ADMINISTRATIVE / RECEPTION STAFF

	AA N=241		Non-AA N=219			
Question	mean	SD	Mean	SD	Diff in means*	95% conf*
We share information generally in the team rather than keeping it to ourselves n=457	3.92	0.95	3.90	0.89	0.02	(-0.15 to 0.19)
Assistance in developing new ideas is readily available n=455	3.63	0.91	3.73	0.81	-0.10	(-0.26 to 0.06)
We all influence each other n=456	3.78	0.78	3.77	0.83	0.004	(-0.15 to 0.15)
We keep in regular contact with each other n=453	3.85	0.88	3.77	0.90	0.07	(-0.09 to 0.24)
In this team we take the time needed to develop new ideas n=453	3.44	0.94	3.43	0.96	0.01	(-0.17 to 0.19)
People feel understood and accepted by each other n=457	3.62	0.90	3.54	0.94	0.08	(-0.09 to 0.25)
Everyone's view is listened to, even if it's a minority n=454	3.59	0.96	3.73	0.95	-0.13	(-0.31 to 0.04)
The team is open and responsive to change n=455	3.64	0.90	3.63	0.93	0.01	(-0.16 to 0.18)
People in the team co-operate in order to help develop and apply new ideas n=454	3.76	0.78	3.71	0.88	0.04	(-0.11 to 0.20)
We have a 'we are in it together' attitude n=455	3.62	0.93	3.55	1.03	0.08	(-0.10 to 0.26)
We interact frequently n=455	3.77	0.85	3.71	0.87	0.05	(-0.11 to 0.21)
People keep each other informed about n=458	3.66	0.96	3.72	0.86	-0.06	(-0.23 to 0.11)
Members of the team provide & share resources to help in the application of new ideas n=453	3.63	0.82	3.63	0.77	0.004	(-0.14 to 0.15)

There is a lot of give and take n=456	3.68	0.88	3.54	0.96	0.14	(-0.03 to 0.31)
We keep in touch with each other as a team n=456	3.72	0.86	3.61	0.91	0.11	(-0.05 to 0.27)
People in this team are always searching for fresh, new ways of looking at problems n=454	3.55	0.81	3.44	0.83	0.11	(-0.04 to 0.27)
There are real attempts to share information throughout the team n=454	3.66	0.88	3.60	0.81	0.06	(-0.10 to 0.21)
The team is always moving towards the development of new answers n=451	3.59	0.80	3.52	0.78	0.07	(-0.08 to 0.22)
Team members provide practical support for new ideas and their application n=454	3.66	0.77	3.59	0.79	0.07	(-0.07 to 0.22)
Members of the team meet frequently to talk both formally and informally n=453	3.61	0.92	3.45	0.97	0.16	(-0.01 to 0.34)

* taking into account clustering effects

Appendix 7 Overall satisfaction with job and with the way the appointments system works in their practice, for each group of staff

DOCTORS

Question	AA N=108 n	%	Non-AA N=95 n	%	Unadj OR*	Adj OR**	Adj OR 95% CI**
TAKING EVERYTHING INTO CONSIDERATION, HOW DO YOU FEEL ABOUT YOUR JOB? (N=201)					2.13	2.01	1.09 to 3.68
Extremely satisfied	20	18.7	10	10.6			
Very satisfied	63	58.9	45	47.9			
Mildly satisfied	15	14.0	28	29.8			
Neither satisfied or dissatisfied	2	1.9	6	6.4			
Mildly dissatisfied	4	3.7	4	4.3			
Very dissatisfied	3	2.8	1	1.1			
Extremely dissatisfied	0	0.0	0	0.0			
OVERALL, HOW SATISFIED ARE YOU WITH THE WAY THE APPOINTMENTS SYSTEM WORKS IN YOUR PRACTICE? (N=203)					0.84	0.93	0.53 to 1.65
Extremely satisfied	7	6.5	3	3.2			
Very satisfied	38	35.2	39	41.1			
Mildly satisfied	36	33.3	37	38.9			
Neither satisfied or dissatisfied	13	12.0	8	8.4			
Mildly dissatisfied	10	9.3	5	5.3			
Very dissatisfied	3	2.8	3	3.2			
Extremely dissatisfied	1	0.9	0	0.0			

* taking into account clustering effects

** adjusted for practice, age-group, sex, full-time/part-time, practice list size.

NURSES

Question	AA N=85 n	%	Non-AA N=69 n	%	Unadj OR*	Adj OR **	Adj OR 95% CI**
TAKING EVERYTHING INTO CONSIDERATION, HOW DO YOU FEEL ABOUT YOUR JOB? (N=153)					0.72	0.83	0.41 to 1.70
Extremely satisfied	18	21.2	14	20.6			
Very satisfied	41	48.2	42	61.8			
Mildly satisfied	22	25.9	8	11.8			
Neither satisfied or dissatisfied	1	1.2	1	1.5			
Mildly dissatisfied	1	1.2	2	2.9			
Very dissatisfied	2	2.4	1	1.5			
Extremely dissatisfied	0	0.0	0	0.0			
OVERALL, HOW SATISFIED ARE YOU WITH THE WAY THE APPOINTMENTS SYSTEM WORKS IN YOUR PRACTICE? (N=152)					0.86	1.04	0.53 to 2.03
Extremely satisfied	6	7.1	5	7.4			
Very satisfied	34	40.5	30	44.1			
Mildly satisfied	28	33.3	22	32.4			
Neither satisfied or dissatisfied	4	4.8	3	4.4			
Mildly dissatisfied	10	11.9	6	8.8			
Very dissatisfied	2	2.4	1	1.5			
Extremely dissatisfied	0	0.0	1	1.5			

* taking into account clustering effects ** adjusted for practice, age-group, sex, full-time/part-time, list size.

ADMINISTRATIVE / RECEPTION STAFF

Question	AA N=241 n	%	Non-AA N=219 n	%	Unadj OR*	Adj OR**	Adj OR 95% CI**
Taking everything into consideration, how do you feel about your job? (n=459)					1.08	1.09	0.76 to 1.56
Extremely satisfied	58	24.2	54	24.7			
Very satisfied	116	48.3	99	45.2			
Mildly satisfied	48	20.0	43	19.6			
Neither satisfied or dissatisfied	9	3.8	9	4.1			
Mildly dissatisfied	5	2.1	10	4.6			
Very dissatisfied	2	0.8	2	0.9			
Extremely dissatisfied	2	0.8	2	0.9			
Overall, how satisfied are you with the way the appointments system works in your practice? (n=447)					1.08	0.98	0.68 to 1.40
Extremely satisfied	19	8.1	16	7.5			
Very satisfied	89	38.0	78	36.6			
Mildly satisfied	69	29.5	69	32.4			
Neither satisfied or dissatisfied	30	12.8	18	8.5			
Mildly dissatisfied	18	7.7	18	8.5			
Very dissatisfied	7	3.0	10	4.7			
Extremely dissatisfied	2	0.9	4	1.9			

* taking into account clustering effects ** adjusted for practice, age-group, sex, full-time/part-time, list size.

Appendices – copies of questionnaires

Copies of the questionnaires used in this study are shown on the following pages

Appendix 8 **Questionnaire for survey of practices**
Appendix 9 **Patient survey questionnaire**
Appendix 10 **Non-user survey questionnaire**
Appendix 11 **Discrete Choice Experiment questionnaire**
Appendix 12 **Staff survey questionnaire**

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