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**Walk-in centres:
A review of existing research**

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*A review undertaken by the Medical Care Research Unit on behalf of the
Department of Health*

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1 Summary of findings

In brief, the available research suggests that:

- walk-in service patients tend to be children and young adults, rather than older adults;
- more than half of demand will occur out-of-hours, especially just before the working day and during the evening;
- walk-in centres can expect to deal with a wide variety of health problems, of which about 65 to 80 per cent may be minor illnesses and 20 to 35 per cent minor injuries;
- the services are likely to be able to deal with over 90 per cent of presenting problems, given appropriate training and experience, treatment protocols and access to x-ray facilities;
- walk-in services are popular with patients, who value rapid access, convenient times and locations, and no need for an appointment;
- the name of the service is likely to lead to appropriate use by patients.

There are also a number of issues which remain unresolved by existing research findings, including:

- the determinants of walk-in centre demand and the level of demand needed for service viability;
- the likely demand for health and health care information;
- the likely time distribution of demand;
- the importance of service location in influencing casemix;
- how patients choose between alternative services and how walk-in services will fit into the pathways of care which patients follow;
- the implications for the demand on and casemix of related services;
- the effects on population demand for immediate care services.

2 Policy background

The NHS Walk-in Centres initiative was announced by the Prime Minister in a speech on 13 April 1999, in the following terms: “Our proposed new centres will offer people the opportunity to see a doctor or a nurse face to face. They will open from 7am until 10pm weekdays and weekends, to provide information and treatment for minor conditions with or without appointments.”¹ Around £30m was to be made available in the current year to fund the development of the centres.

Further policy guidance was made available to prospective applicants in Health Service Circular 1999/116, which set out key criteria to be met by all pilot sites.² These included:

- Provision of a range of high quality minor ailment/treatment services (and possibly medical minor injuries services);
- Provision of information about NHS, social services and other local statutory and voluntary services;
- Provision of advice about self care and information and advice about healthy lifestyles;
- There should be a walk-in, immediate access service.

101 bids were received by the end of June 1999 and details of the first 19 pilot sites, covering approximately 6 million people, were announced on 16 July 1999.³ A further 17 sites were announced on 30 September 1999, bringing the total to 36 centres covering approximately 10 million people.⁴ A summary of the key features of these proposals is given in Appendix 1.

3 What is a walk-in centre?

The service development envisaged by policymakers in the walk-in centre initiative is new to the NHS as a whole, although there are examples of existing NHS services which may be close to those intended (Soho Centre for Health and Care, South Westminster Centre for Health). There is also a range of NHS services closely related to the emerging concept of a walk-in centre, but which are more narrowly defined in scope, such as minor injury units, drop-in counselling or mental health centres, emergency dental clinics, 24 hour pharmacies or drop-in sexual/reproductive health services.

While it is likely that the scope and form of the new NHS walk-in centres will change and develop as experience grows, it is important to try to clarify some of the essential attributes of the envisaged walk-in centres so that comparisons made with services elsewhere are appropriate and relevant.

Examining the NHSE policy guidance alongside the approved proposals for initial sites, we would suggest that a walk-in centre is broadly defined by the following features:

First contact care	Patients are expected to attend with new or unanticipated health problems for which care has not already been sought elsewhere.
Immediate access	Patients require no referral or appointment to access care.
Extended opening hours	The service will be available outside of the usual working day and the traditional opening times of general practice surgeries or hospital outpatient clinics.
No follow up or continuing care	Care or advice is given for the immediate problem. If further care is needed patients will be advised to attend other appropriate services. Follow up appointments will not be given.
Generalist	The services available are generalist rather than specialist in nature
Walk-in	Patients are expected to present with health problems which are not so severe as to render them unable to attend unaided.

It should be noted that these features of a walk-in centre are not necessarily fixed, and other important features may appear in the future. For example, future variants on the service may include 24-hour centres or mobile centres.

These features are sufficient to distinguish walk-in centres from traditional forms of care such as general practice (offers continuity of care), outpatient clinics (referral for specialist care) or A&E departments (has reception for non-ambulatory patients and specialist services are available).

Nonetheless, it is interesting to note that walk-in centres will have two or three of the four attributes which have been suggested as characterising primary care: direct access, generalist care, longitudinal care, delivery in a community setting.⁵

4 Characteristics of the initial sites

Key characteristics of the initial sites are summarised in Appendix 1. These features have been drawn from the outline proposals submitted by sites to the NHS Executive, and of course are likely to be subject to change and review as these services are set up and develop. There are number of points relevant to this review.

4.1 Location and facilities

In general, the proposed walk-in centres will be located in town centre retail settings (8 sites), adjacent to existing community-based health services such as a primary care centre (13 sites) or adjacent to hospital-based health services such as an A&E department (17 sites).

The location of sites is important for a number of reasons. First, it may determine the casemix of problems which presents, and this is discussed further below. Second, sites adjacent to hospital services are likely to have access to existing X-ray and pathology facilities, while those in community or retail settings are not. Third, co-location with other services is likely to reduce the possibility of professional isolation for walk-in centre staff, and may also facilitate easy referral of users on to other nearby services.

4.2 Staffing

All proposed sites will be nurse-led, with nurse practitioners, triage nurses or primary care nurses most usually proposed. One site proposes to employ community psychiatric nurses and two plan to employ physiotherapists. General practitioner support or advice is included in many proposals, either as dedicated on-site GP sessions or as advice on call or through a telemedicine link. A telemedicine link to a local A&E department is proposed in seven sites.

4.3 Services offered

In keeping with the criteria set out in HSC 1999/116, all sites propose treatment and advice for minor injuries and illness, and information on health and social services

available locally. Most also propose various forms of health promotion activity, including:

- Advice on healthy lifestyle
- CHD risk assessment and risk reduction advice
- Smoking cessation advice
- Advice on sexual health or substance misuse

Screening activities are proposed by a number of sites, including:

- “Health checks”
- Blood pressure screening
- Diabetes screening
- Cervical cytology

Provision of emergency contraception and advice/counselling on sexual health is also planned.

4.4 Populations to be served by the sites

All sites expect to meet demand from the local resident population, as well as from visitors, temporary residents, workers and commuters, and shoppers. In addition a number of sites expect to be providing services to a number of specific groups, including:

- Homeless people/rough sleepers
- Refugees and asylum seekers
- Students and school pupils
- Black and ethnic minority communities
- Travelling people (in all senses: tourists, workers who travel, and those whose home is permanently mobile)
- People with mental health problems
- Sex workers
- Substance abusers

Many of these groups are likely to have only intermittent or perhaps no contact with established primary care services. All sites aim to direct unregistered users towards the established system of registration with a general practitioner.

5 Aims of the review

The overall aim of the current review is to identify any available evidence on walk-in centres which might inform the development of the first wave of NHS walk-in centres in the UK. Specifically, the objectives of the review are:

- To identify relevant experience of walk-in centres or closely related services in the UK and internationally;
- To describe the epidemiology of walk-in centre demand, activity and outcomes;
- To describe the views of users on factors contributing to their choice of service and their satisfaction with walk-in services;
- To identify any evidence on the impact of walk-in services on other health care services.

6 Methods

A sensitive search strategy was adopted using a range of terms relevant to walk-in services. The full search strategy is detailed in Appendix 2.

The following bibliographic databases were searched:

- Medline (1966-1999)
- Science Citation Index
- Social Science Citation Index
- British Nursing Index
- PsycLIT
- CINAHL
- Cochrane trials database
- NHS CRD DARE, NEED and HTA databases
- National Research Register.

In total the initial search yielded 7470 references. These were reviewed by title alone to distil a list of 202 possibly relevant publications. These were further reviewed by abstract to generate a list of 172 references to publications which were likely to be relevant to the aims of the review. The majority of these were retrieved within the short timescale available, and read in full in order to identify any material which might contribute to the aims of the review.

7 **Results**

7.1 **What experience of walk-in centres exists?**

As indicated in section 2, above, the UK experience of walk-in centres in the form now envisaged is limited. Minor injuries services have existed in some areas for many years, and while historically these have been provided or supervised by GP clinical assistants, an increasing number of nurse-led units have been established in the past 10 years.

Although the major purpose of such units is the treatment of injury, in fact the available reports show that they also treat a small amount of minor illness. There are few units which aim to treat both minor injuries and minor illnesses; currently we know only of the two centres located in central London.

In addition, there is limited UK experience of commercial sector services which approximate to a walk-in centre model, but of course charge a fee for attendance (about £35). This experience includes Medical Express, established in 1985 (whether or not it still exists is unknown)⁶ and the recent chain of Medicentres.^{7 8} In general there is little evidence from the commercial sector available in the public domain, although one paper was identified which provides some quantitative data.⁹

By contrast, North American experience of the utilisation, costs and impacts of walk-in centres is extensive. The first “freestanding emergency center” was established in the US in 1973, and growth in such centres, later termed “urgent care centers” or “ambulatory care centers”, was rapid throughout the late 1970s and early 1980s. There were an estimated 2500 such centres by 1984¹⁰ and 3800 by 1986, taking 53 million patient visits per year.¹¹ While some centres were established alongside hospital emergency departments, the majority have been sited in suburban areas, typically in retail settings such as “strip plazas” and shopping malls, and the convenient location of the service has been regarded by investors as one of the most important ingredients of commercial success.

In Canada, walk-in centres began appearing in western provinces during the early 1980s and spread somewhat less rapidly. By 1988 it was estimated that 105 clinics were operating in Canada.¹² In both Canada and the US the development of walk-in centres met with controversy and in some cases fierce resistance from both emergency care and

family physicians, over issues of safety, possible duplication of services, competition for patients and costs of care.

Although the evidence from the US and Canada is helpful, the services proposed in the UK differ from those in North America in a number of respects. First, while British walk-in clinics, like Canadian ones, will be free at the point of use US centres make a charge for each attendance. Second, the UK proposals are for nurse-led services, in contrast to the doctor-centred North American services. Third, North American services have developed in a mixed non-profit and for-profit environment in which a range of services (family physicians, paediatricians, emergency centres, hospital emergency departments, primary care clinics) are competing for the same patients in order to survive. These differences shape the concerns of the available literature, so that for example a recurring theme in US research is identifying factors underlying consumer choice of service, while in UK research a major concern has been in establishing the safety and acceptability of nurse-led services.

7.2 Identified evidence relevant to walk-in centres

Our search identified a number of studies of walk-in centres and related services, in the UK, the US and Canada. Almost all were simple descriptive studies of the nature, caseload and activities of services. Such studies aimed to characterise the patients and problems presenting to the service, the diagnostic and therapeutic procedures undertaken and referrals made, the reasons for patients' choice of service and their satisfaction with the encounter. In some cases evidence was also provided of the clinical appropriateness or safety of the service, although we found no studies of clinical effectiveness, or studies which took patients' health status as an outcome.

Apart from simple descriptive studies, we identified one controlled before-and-after study which examined the impact of walk-in centres on A&E attendances. We identified no other controlled studies of the impact or effectiveness of walk-in services.

Below, we summarise the available evidence on a range of issues which will be relevant to developing the first and subsequent waves of walk-in services, and highlight some of the key findings which emerge from the studies to date.

7.3 Demand for walk-in services

7.3.1 Epidemiology of demand

The table below summarises the available evidence on the volume of demand for walk-in centres, and its distribution by time of day.

Table 7-1: Volume of demand

Study	Country	Service*	Location	Clinical lead	Mean demand (patients per day)	Out of hours demand (% of attendances)
Apfel & Brown ¹³	UK	MTC	Adj to other primary care services	Nurse practitioner	15 (first 4 months of the service)	
Brown ¹⁴	UK	MTC	Adj to other primary care services	Nurse practitioner	29 (after 18 months)	
Marsh & Dawes ¹⁵	UK	Minor illness nurse	General practice	Practice nurse	5	Afternoon service only
Dale & Dolan ¹⁶	UK	2 MIUs		GP clinical assistants	24	
Dolan & Dale ¹⁷	UK	2 MIUs		GP clinical assistants	27	
Mabrook & Dale ¹⁸	UK	MIU	Community hospital	Nurse practitioner	38	In hours service only
Garnett & Elton ¹⁹	UK	MIU	Inner city hospital-based	Nurse	21-28	
Freij et al ²⁰	UK	MIU	Inner city hospital-based	Nurse practitioner	19	
Beales & Baker ²¹	UK	MIU	Inner city hospital-based	Nurse practitioner	28	
Newman ²²	UK	MIU	Hospital-based	Nurse practitioner	21	
Jones ²³	UK	MIU	Housing estate	Nurse practitioner	5	Out of hours service only
Heaney & Paxton ²⁴	UK	MIU	Premises near hospital	Nurse practitioner	29	
Flynn ⁹	UK	Commercial WIC	Retail	Doctor		
Rizos et al ²⁵	Canada	WIC	Suburban retail location	Doctor	45	55%
Feldman & Cullum ²⁶	Canada	Paediatric WIC	Hospital-based adjacent to A&E	Paediatrician	43	71%
Cashman et al ²⁷	US	24 WICs	Residential areas	Doctor	20-25	About 40%
Kinney & Gerson ²⁸	US	WIC	Suburban	Doctor	20	56%
Yunker et al ²⁹	US	2 WICs	Suburban	Doctor	29	55%
Redlinger & Welch	US	212 WICs	Various	Doctor	45	

* WIC = walk-in clinic, MIU = minor injury unit, MTC = minor treatment centre

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Meditz et al ³¹	US	WIC	Hospital-based adjacent to A&E	Doctor	Pts triaged from A&E	
Weitzman et al ³²	US	Paediatric WIC	Hospital-based adjacent to A&E	Paediatrician	36	Out of hours service only
Butcher et al ³³	US	24hr WIC	Hospital-based adjacent to A&E	Doctor	78	
Schiff et al ³⁴	US	WIC	Inner city hospital-based	Doctor	105	
Conway & Hu ³⁵	US	WIC	Inner city hospital-based	Doctor	215	
Pinkser et al ³⁶	US	Adult WIC		Doctor	40	
Black ³⁷	US	WIC	Navy	Doctor	60-120	
Schaffer ³⁸	US	15 WICs	Various	Doctor	26	

As the table shows, evidence is available from a range of services in different settings. With some exceptions, walk-in services are dealing with about 20 to 40 patients per day, and those studies which report demand by time of day suggest that over half of daily demand occurs out of hours (bearing in mind that most services are open from 8 or so in the morning until 10 or so at night). A number of studies report that pre-9am and early evening are particularly busy times.

There is little evidence available beyond this. Cashman et al found that there was no significant difference in the time distribution of attendances between patients with or without a regular source of medical care.²⁷ However, Kinney & Gerson noted that while this was true for patients with a minor injury, it was not the case for those with a minor illness.²⁸ In this latter group, those with a usual doctor were more likely than those without a doctor to attend the service out of hours.

7.3.2 Demography of demand

The age and sex distribution of walk-in services demand, and the available data on socio-economic status and registration with a GP is summarised in Table 7-2 below.

Table 7-2: Demography of demand

Study	Country	Service	Age	Sex	Social status	Registration with GP
Apfel & Brown ¹³	UK	MTC	15% under 16y, 60% 16-64y, 25% over 64y		77% local residents	91%
Brown ¹⁴	UK	MTC	8% under 16, 70% 16 to 64, 22% over 64	60% female	70% local residents, 30% commuters	91%
Dale & Dolan ¹⁶	UK	2 MIUs		49% female		
Dolan & Dale ¹⁷	UK	2 MIUs	25% under 15, 19% 15-25, 11% 26-35, 25% 36- 60, 10% 61-75, 4% over 75	45% female		97%
Mabrook & Dale ¹⁸	UK	MIU	35% under 17y			
Garnett & Elton ¹⁹	UK	MIU	63% under 35y	Under 35y, 43% female Over 35y, 56% female		99%
Newman ²²	UK	MIU	13% < 5y, 16% 5- 14y, 41% 15-35y	34% female		98%
Heaney & Paxton ²⁴	UK	MIU	Mean age 33y, 12% under 12y	43% female		
Flynn ⁹	UK	Commercial WIC	4% Under 20, 37% 20-29, 26% 30-39, 14% 40- 49, 13% 50-59, 6% over 59	49% female	Local residents 67%, other UK 16%, overseas visitors 17%	
Rizos et al ²⁵	Canada	WIC	Mean age 26 years	60% female		79% had a regular physician
Feldman & Cullum ²⁶	Canada	Paediatric WIC	69% 5 years old or less		Of fathers, 98% employed, 44% professional. Of mothers, 52% employed, 29% professional.	98% had a regular physician
Cashman et al ²⁷	US	24 WICs	Mean age 33y: 10% under 15y, 28% 15-24, 41% 25-44, 13% 45- 64, 9% over 64y	55% female	54% educated beyond high school	55% had another source of medical care
Rylko-Bauer ³⁹	US	WIC				78%
Kinney & Gerson ²⁸	US	WIC	Mean age 33y			71% had a primary care physician
Yunker et al ²⁹	US	2 WICs	22% under 20y, 64% 20-44y, 11% 45-64y, 3% over 64y	44% female		50%
Conway & Hu ³⁵	US	WIC	63% less than 45 years old	50% female	73% unemployed	56% had no other source of primary health care, but fewer than 3% requested referral to regular care

Pinkser et al ³⁶	US	Adult WIC	Mean age 33 years	64% female	57% completed college or greater	44% had a primary care physician
Schiff et al ³⁴	US	WIC	Mean age 39y, 13% > 70y		95% African-American or Latino	
Meditz et al ³¹	US	WIC	Mean age 40y	50% female		
Weitzman et al ³²	US	Paediatric WIC	17% under 1y, 46% 1-4y, 36% over 4y		33% Medicaid	

These data suggest that, on the whole, demand is equally balanced between male and female patients but that it is dominated by younger age groups. Young adults are the heaviest users of walk-in services, and a small minority of patients are of retirement age. This may, of course, appropriately reflect the age structure of the catchment population.

Only two studies (one US, one British) have compared the age distribution of demand with that of the local population, confirming that children and young adults are over-represented among walk-in services users. Cashman et al found that those aged 15-44 years represented 68% of attenders and 49% of the catchment population, while over-65s were 9% of attenders and 15% of the population.²⁷ Similarly, Newman found that under-5s formed 13% of attenders and 5% of the population, and 5-14 year olds were 16% of attenders and 12% of the population, with all ages over 45 under-represented.²² The low use of walk-in services made by older adults contrasts strongly with their use of other primary health care services, for which rates of use increase steadily beyond middle age.⁴⁰

A number of US studies suggest that the socio-economic status of walk-in centre users tends to be above that of the surrounding area.

The majority of attenders (and in UK studies, almost all attenders) are registered with a GP. The expectation in first wave walk-in centre proposals that a substantial proportion of demand on the service will be from unregistered populations may therefore prove to be ill-founded. In addition, Conway and Hu's study of a clinic serving a deprived urban community suggested that many unregistered patients may, in any case, resist the efforts of walk-in services to incorporate them into the traditional system of primary care.³⁵

7.3.3 Casemix

The commonest conditions presenting to the various forms of walk-in service are summarised in Table 7-3 below.

Table 7-3: Conditions presenting to walk-in services

Study	Country	Service	Location	Most common conditions
Brown P ¹⁴	UK	MTC	Inner city	60% minor injuries/dressings
Dolan & Dale ¹⁷	UK	2 MIUs		85% minor injury, 15% minor illness
Garnett & Elton ¹⁹	UK	MIU	Inner city hospital-based	48% minor injuries, 18% referred by GPs/clinics for dressings/tests, 5% head injury or headache, 4% dog bites, 3% possible fractures, 3% burns, 3% skin, 2.5% eye
Newman ²²	UK	MIU	Hospital-based	Lacerations 24%, superficial injury 18%, sprains 14%, possible fractures 11%, eye injuries 7%, minor illness 5%, stings/bites 4%
Heaney & Paxton ²⁴	UK	MIU	Premises near hospital	Musculo-skeletal and skin injuries 90%
Marsh & Dawes ¹⁵	UK	Minor illness nurse	General practice	URTIs 26%, skin 18%, tonsils/ears 14%, genitourinary/gynae 8%
Flynn ⁹	UK	Commercial WIC	Retail	Doctor: ENT/skin 14%, genitourinary 13% Nurse: travel vaccination 38%, ear syringe 15%, dressings/sutures 10%, phlebotomy 8%
Rizos et al ²⁵	Canada	WIC	Suburban retail location	Upper RTI 42%, lower RTI 9%, skin rash 6%, soft tissue injury 5%, soft tissue infection 4%, sprain 3%, gastroenteritis 3%, laceration 3%, headache 2%, conjunctivitis 2%
Feldman & Cullum ²⁶	Canada	Paediatric WIC	Hospital-based adjacent to A&E	Main diagnoses: URTI, otitis media, gastroenteritis, lower RTI
Cashman et al ²⁷	US	24 WICs	Residential areas	Medical 66% (25% of these URTI or LRTI), injury 16% (37% of these sprain or strain, 25% laceration), 18% preventive
Kinney & Gerson ²⁸	US	WIC	Suburban	Illness 64%, injury 36%
Yunker et al ²⁹	US	2 WICs	Suburban	Trauma 34%, Medical 17%, URTI 6%, Pharyngitis 2.5%
Yunker et al ⁴¹	US	2 WICS (attenders under 21y)	Suburban	URTIs 32%, trauma 28.5%, preventive 13%
Conway & Hu ³⁵	US	WIC	Inner city hospital-based	URTIs 17%, STDs 11%, musculoskeletal pain 15%, abdo pain 6%, skin 6%, back pain 5%, urinary 5%, headache 5%
Pinkser et al ³⁶	US	Adult WIC	Hospital-based adjacent to A&E	URTIs 19%, injury 12%, skin 10%, musculoskeletal 9%, gastrointestinal 8%, gynaecologic 7%, UTI 4%, chronic condition 3%
Black P ³⁷	US	WIC	Navy	URTIs 22%, musculoskeletal trauma or pain 19%, gastrointestinal 13%, skin 10%, malaise/fatigue 9%, cardiorespiratory 9%, genitourinary 8%
Schiff et al ³⁴	US	WIC	Inner city hospital-based	19% had hypertension or diabetes
Meditz et al ³¹	US	WIC	Hospital-based adjacent to A&E	24% URTI, 19% musculo-skeletal pain, 7% rash, 7% gastrointestinal
Weitzman et al ³²	US	Paediatric WIC	Hospital-based adjacent to A&E	66% respiratory infection, 5% asthma, 5% skin, 5% trauma

The data on casemix suggests that while 85-95% of MIU patients present with a minor injury, perhaps only 20-35% of walk-in clinic patients will present with injury, and 65-80% with minor illness. This is consistent with the reported experience of the Soho minor

treatment service, where 65% of users present with general health complaints, 21% with injuries and 14% with women's health complaints (data from substantive proposal).

In terms of illness, upper respiratory and related infections account for the greatest number of attendances, with lower respiratory infections, skin disorders and musculo-skeletal pain also very common. In terms of injuries, lacerations, strains, sprains and suspected fractures are the largest groups.

7.3.4 Reasons for choosing walk-in care

The table below summarises studies which report data on the proportion of attenders who had tried to contact their GP first, reasons for choosing the walk-in service, and the patient's likely alternative choice of service had the walk-in service not been available.

Table 7-4: Factors influencing choice of service

Study	Country	Service	Location	Main reasons for visiting this service	If service were not available, would have contacted
Brown ¹⁴	UK	MTC	Adj to other primary care services	No appointment No waiting Unable to get GP appointment Visited before	A&E 20% GP 67% Nowhere 6%
Dolan & Dale ¹⁷	UK	2 MIUs		More appropriate than GP 43% Surgery shut 21% Wait for GP too long 13%	A&E 48% GP 29%
Garnett & Elton ¹⁹	UK	MIU	Inner city hospital-based	Referred by local agency 50%	A&E 40% GP 27% Another clinic 12% Nowhere 16%
Newman ²²	UK	MIU	Hospital-based	More convenient than GP 40% GP inaccessible 25% Condition inappropriate for GP 23% Second opinion 3%	
Paxton & Heaney ⁴²	UK	MIU	Premises near hospital	More convenient than GP 45% GP unavailable 34% No waiting 29% Condition inappropriate for GP 27%	A&E 62% GP 28% Nowhere 9%
Bell & Szafran ⁴³	Canada	WIC users	Various	Convenient location 25% Minor problem 20% Convenient hours 20% No appointment 10%	
Feldman & Cullum ²⁶	Canada	Paediatric WIC	Hospital-based adj to A&E	Extended hours 35% Friendliness 20%	
Rizos et al ²⁵	Canada	WIC	Suburban retail location	Convenient location 33% Unable to see usual doctor soon enough 16% No appointment 13%	A&E 24% Usual doctor 28% Another WIC 28% Nowhere 16%

				No waiting 4%	
				Better care than doctors office 2%	
Cashman et al 27	US	24 WICs	Residential areas	No appointment 87%	A&E 34%
				No waiting 78%	Usual (or another) doctor 33%
				Visited before 49%	Waited/nowhere 28%
				Less expensive 34%	
				Recommended 34%	
Pinkser et al 36	US	Adult WIC		Usually go to WIC or ER for medical care 41%	
Rylko-Bauer 39	US	WIC			Usual doctor 50%

Three Canadian and one US study of walk-in centres found that only a minority of patients (from less than 20% to 39%) had attempted to contact their usual doctor before attending the centre, suggesting that patients regard the walk-in service as either more appropriate or more convenient than their own doctor for some health care needs.^{14 26 25}
⁴³ This is supported by the reasons which patients give for using the walk-in service. Both North American and British patients value the convenient hours and location which walk-in services offer, with a short wait and no need for an appointment. For some conditions, they view the walk-in service as a first choice, not as a last resort.

If the walk-in service had not been available, the majority of patients say that they would have attended either A&E or their own doctor with their health problem. There is a suggestion in the data above that patients with minor injury would choose A&E if the walk-in service were unavailable, and patients with minor illness would choose to see their usual doctor. This is concordant with the finding reported above on time distribution of attendances, which suggested that patients use walk-in services for minor illness when their usual doctor is unavailable, but use minor injury services when these are more convenient than an A&E attendance.²⁸

Based on such data, a number of investigators have claimed that walk-in services have, or are likely to, reduce demand elsewhere. However, robust direct evidence of such an effect does not yet exist (see below), and the indirect evidence provided by stated patient intention may be misleading.

The increased choice of services which follows from the introduction of walk-in centres alongside traditional primary care and emergency care settings raises the question of whether users are able to select the service most appropriate to their problem (and of course whether users choose appropriately between GP and A&E has long been a matter

of debate). On the one hand, users may attend a service which is unable to provide the definitive care they need, which will result in delay at best and poorer health outcomes at worst. On the other, users may attend a service which is more sophisticated (and usually more expensive) than they need, which will result in greater costs and possibly delay to other patients who do need that service. Currently there is little evidence available on whether users are able to select walk-in care appropriately from the range of available services. A telephone survey of a US population found that a substantial minority of people presented with hypothetical medical problems would have chosen a service (a freestanding emergency centre) unable to deal with the problem.⁴⁴ The authors of this study argue that the term “emergency” leads the public to believe that 24-hour care is available from FECs for all medical and surgical emergencies. In the UK the decision to describe the new services as “walk-in centres” may be important in reducing this problem.

Other evidence suggests that the choice to attend a walk-in centre may in part be determined by the perceived urgency of the problem. While the casemix of walk-in services in the US does not seem to be more serious than that of family practice, patients attending walk-in centres with conditions of “marginal urgency” are likely to perceive these to be more urgent than patients attending their GP with similar conditions.⁴⁵ For example, 34% of those attending a walk-in centre with a respiratory infection felt they should be seen within 2 hours, compared with none of those visiting their GP. Similar findings have been reported from Canada.⁴⁶

7.4 Processes of care

7.4.1 Activity

There are few studies which report the activities undertaken by walk-in services in very much detail. The table below summarises those we identified.

Table 7-5: Clinical activity in walk-in services

Study	Country	Service	Diagnostic activity	Therapeutic activity
Brown ¹⁴	UK	MTC	Phlebotomy 16%	Health advice 77%, dressings 63%, family planning 10%, sutures 1%
Heaney & Paxton ²⁴	UK	MIU	X-ray 28%	Bandage/splint 40%, wound cleaning 29%, wound dressing 27%, medication 19%
Garnett & Elton ¹⁹	UK	MIU	Blood tests 10%, cervical smear 1%	Dressing 38%, advice 17%, wound cleaned 9%, steristrips 8%, ears

				syringed 3%, sutures 2.5%, eye care 1%
Mabrook & Dale ¹⁸	UK	MIU	X-ray 23%	
Newman ²²	UK	MIU	X-ray 22%	Dressings 35%, prescribed drugs 23%, bandaging 21%, advice only 20%, 7% head injury instruction, sutures 6%
Yunker et al ²⁹	US	2 WICs	Lab tests 30%: blood count/urine 11%, x-ray 11%, biochemistry 3%	
Yunker et al ⁴¹	US	2 WICs (patients under 21y)	Blood tests 13%, x-ray 11%	

As the table shows, the picture of activity is reasonably good for UK minor injury services. In particular, such services will typically require an X-ray investigation for about one in four of patients. However, we have little data on the investigations or treatments carried out in services for minor illnesses.

7.4.2 Safety

The development of nurse-led walk-in services in the UK, and to a lesser extent in the US, has prompted a number of studies to examine the ability of nurses safely to undertake diagnosis and management of minor injury and illness. These studies are presented in Table 7-6 below.

Table 7-6: Safety of walk-in care

Study	Country	Service	Location	Clinical lead	Safety
Freij et al ²⁰	UK	MIU	Inner city hospital-based	Nurse practitioner	X-ray request/interpretation for injuries distal to elbow/knee in patients aged 10 and over: Appropriate requests: NPs 76%, A&E SHOs 70% Sensitivity: NPs 94%, A&E SHOs 93% Specificity: NPs 93%, A&E SHOs 93%
Heaney & Paxton ²⁴	UK	MIU	Premises near hospital	Nurse practitioner	Audit of casenotes: history taking satisfactory in 99%, protocol use satisfactory in 99%, use of investigations appropriate in 58%, referrals appropriate in 88%, management of care appropriate in 93%
Jones ²³	UK	MIU	Housing estate	Nurse practitioner	Consultant review of first 906 patients showed no incorrect assessment or treatment
Mabrook & Dale ¹⁸	UK	MIU	Community hospital	Nurse practitioner	X-ray interpretation: 22/1945 missed fractures: 99% sensitivity 57/1945 false positive fractures: 97% specificity
Marsh & Dawes ¹⁵	UK	Minor illness	General practice	Practice nurse	Routine follow up of patients did not reveal any "serious errors in assessment

		nurse			and management"
Buchanan & Powers ⁴⁷	US	Minor emergency area	Hospital-based adjacent to A&E	Nurse practitioner	No lawsuits in 18 years of operation (100,000 patients)

These findings are generally reassuring. Specifically, nurse practitioner interpretation of X-rays has been assessed in two studies and found to be as good as A&E senior house officers. Medical audit of nurse management of patients in minor injuries units and a minor illness nurse in general practice suggest that these services are provided safely. However, evaluation of the processes of care in the management of patients with minor illness is limited and there is clearly a need for rigorous research to be conducted in this area.

7.5 Effects of walk-in services

7.5.1 Clinical and health outcomes

Our search revealed only one study specifically examining clinical outcomes in a walk-in service setting.

Table 7-7: Clinical outcomes in walk-in services

Study	Country	Service	Outcomes
Butcher et al ³³	US	24hr WIC	Adults presenting to a WIC with cough, breathlessness or pleuritic chest pain have a high probability (35%) of new clinically important abnormality on chest x-ray

This study found that adult walk-in centre patients with respiratory symptoms may harbour serious pathology, and serves as a valuable reminder that some proportion of patients presenting to minor illness services with apparently minor complaints will have serious illnesses. Whether the particular results of this study would apply in a UK population is not clear.

7.5.2 Patient referral

Clearly, not all conditions presenting to a walk-in service will fall within the scope of the skills and facilities available on site. The table below summarises the experience of walk-in services in referring patients onward to other services.

Table 7-8: Patient referral from walk-in services

Study	Country	Service	Referred to own doctor	Referred to A&E	Admitted to hospital
Beales & Baker ²¹	UK	MIU		10%	
Brown ¹⁴	UK	MTC	10% (half of these for antibiotics)		
Dale & Dolan ¹⁶	UK	2 MIUs		2%	0.5%
Garnett & Elton ¹⁹	UK	MIU	12%	8%	
Heaney & Paxton ²⁴	UK	MIU	6%	18%	
Jones ²³	UK	MIU	9%	8.5%	
Mabrook & Dale ¹⁸	UK	MIU		3% (0.4% by ambulance)	
Newman ²²	UK	MIU	14% for follow up	21% (prior to X-ray facility), 1% by ambulance	
Marsh & Dawes ¹⁵	UK	Minor illness nurse	8% referred to GP 6% discussed with GP		
Ling & Gold ⁴⁸	US	8 WICs		0.6%	0.3%
Pinkser et al ³⁶	US	Adult WIC	7%	3.3%	
Schaffer ³⁸	US	15 WICs		0.07% by ambulance, 0.3% by other transport	
Schiff et al ³⁴	US	WIC	53% referred for some follow up care		8% admitted in following 6 months
Yunker et al ²⁹	US	2 WICs	1.5%	1.4%	
Yunker et al ⁴¹	US	2 WICs (patients under 21y)	8.8% referred "elsewhere"		

The data above do not provide a clear picture on the proportion of cases which walk-in services are able to manage. Most of the available data relates to minor injury services, and little to minor illnesses. The US evidence relates to doctor-led services, while the UK data come from nurse-led services. In addition, studies frequently fail to distinguish between referral for the immediate management of a problem which is beyond the scope of the service, and referral for follow up or review of a problem for which immediate treatment has been adequately provided by the walk-in service.

Nonetheless, some tentative conclusions can be drawn. Minor injury services may need to refer between 2 and 10% of cases to A&E for immediate management. However, if the service lacks an X-ray facility then many more patients (about one in four of those with

an injury) will need to be directed to the A&E department. Nurse-led minor illness services will probably require medical advice in fewer than one in ten cases.

At least two of the first wave walk-in centre sites propose telemedicine links to local A&E departments. A study of a telemedicine link between the South Westminster minor treatment centre and an A&E department provides some support for such proposals.⁴⁹ In the year before the introduction of the telemedicine link, the nurse-led minor treatment centre referred 2.4% of patients to A&E and 12% to their GPs. In the year following its introduction, 1.5% of patients were referred to A&E and 3.8% to GPs. Interestingly, however, the telemedicine link was actually only used for 51 (0.5%) patients during this period, suggesting an indirect effect on patient management perhaps through confidence building or providing training.

It is important to note that referral to another service for treatment or follow up does not guarantee that the patient complies with the referral. In a US paediatric walk-in centre, only 35% of those recommended for follow up actually attended.³² A study of a US adult walk-in centre recorded that about 50% of those attending the service were instructed to obtain follow up care, of whom only half complied.³⁶ However, if the appointment was arranged while the patient was still in the centre, compliance was far more likely (89%) than if the patient was asked to make their own appointment (45%).

7.5.3 User satisfaction with care

Studies reporting user satisfaction with care received in walk-in services are shown in Table 7-9, below.

Table 7-9: Patient satisfaction with walk-in services

Study	Country	Service	Clinical lead	Satisfaction
Dolan & Dale ¹⁷	UK	2 MIUs	GP clinical assistant	98 – 99.5% satisfied
Garnett & Elton ¹⁹	UK	MIU	Nurse	92% very satisfied, 6% fairly satisfied, 2% not satisfied
Mabrook & Dale ¹⁸	UK	MIU	Nurse practitioner	98% satisfied with NP treatment. 2% of patients would have preferred to see a doctor
Paxton & Heaney ⁴²	UK	MIU	Nurse practitioner	90% good care, 9% adequate care, 1% poor care. 6% of patients would have preferred to see a doctor
Rizos et al ²⁵	Canada	WIC	Doctor	Very satisfied 61%, satisfied 22%
Cashman et al ²⁷	US	24 WICs	Doctor	Excellent 75%, adequate 24%, unsatisfactory 1%
Chesteen et al ⁵⁰	US	4 WICs	Doctor	Satisfaction is related to perceived physician concern, quality of care and clear follow up plans
Froehlich & Welch ⁵¹	US	WIC	Doctor	Satisfaction was related to the provider's interpersonal behaviour but unrelated to meeting the patient's expectations for tests
Pollock et al ⁵²	US	WIC	Doctor	Satisfaction most strongly influenced by interpersonal aspects of care

The available data suggest generally high levels of satisfaction with walk-in centre care. If anything, satisfaction is higher in nurse-led than doctor-led services (though UK and North American users of services may have different expectations of services). Some studies note that patients particularly value the friendliness of walk-in centre staff and the promptness of the care provided. One US study found that while patients frequently have expectations for testing (62% of patients) or medication (63% of patients) their satisfaction with the care depends on the interpersonal behaviour of the clinician rather than on meeting their expectations for testing or medication.⁵¹

7.5.4 Impact on other services

The limited evidence available on the impact of walk-in services on other related services is summarised in the table below.

Table 7-10: Impact of walk-in care on other services

Study	Country	Service	Impact
Heaney & Paxton ²⁴	UK	MIU	Attendances for minor injuries at nearby A&E fell 5% overall, but 24% from area served by MIU, comparing 3 month periods before and after MIU established
Paxton & Heaney ⁴²	UK	MIU	21% of patients had been to their GP in the 10-14d after attending MIU
Bell & Szafran ⁴³	US	WIC	Of patients with a family physician, 46% of those attending a WIC subsequently visited their own doctor with the same problem
Ferber & Becker ⁵³	US	Before and after analysis of A&E data in WIC and non-WIC areas	No apparent effect of WICs on A&E attendances. WICs tend to open in areas with high A&E attendance rates
Hellstern ¹¹	US	Review of WIC literature	Notes that visits to A&E departments in the US fell by 7% over the period 1981-84 while ambulatory care centre visits rose tenfold

In terms of the impact of walk-in centres on A&E departments, the picture is mixed. One widely cited US study which examined data from a large number of centres and nearby A&E departments found no significant effect of walk-in services on A&E attendances.⁵³ Conversely, a study of a single UK minor injury unit found a marked fall in minor injuries presenting to a local A&E department after the new service had been established. It is entirely plausible that walk-in centres may have differential effects on A&E attendances for injuries or illnesses, and this would be a fruitful area for further research.

In terms of impact on GP consultations, no direct evidence exists from either the UK or North America. However, there is some evidence that some proportion of patients follow a visit to a walk-in service with a visit to their own doctor. One UK study found that 21% of patients had visited their GP and 14% had seen a practice nurse in the 10-14 days after using an MIU.⁴² In a Canadian study, 46% of patients using a walk-in centre subsequently saw their own doctor for follow up of the same problem, of whom two-thirds saw their doctor within a week of the walk-in clinic attendance.⁴³ Whether these visits represent duplication of services through patients seeking a “second opinion”, or simply appropriate follow up of a health problem, is not known.

8 Conclusions

8.1 Summary of findings

The evidence reviewed above offers a clear picture of some aspects of walk-in services but leaves other issues unresolved. The research available leads to the following broad conclusions:

8.1.1 Demand for walk-in care

Most of the services described in the literature expect to treat 20 to 40 patients per day, of whom more than a half will be seen out of hours. The busiest times are the two hours before the working day and the early evening. Walk-in service users tend to be children or young adults, registered with a GP, and of higher socio-economic status than the catchment population as a whole. Adults of retirement age are far less likely to use walk-in care than might be expected from their use of other health services.

8.1.2 Problems presenting to walk-in services

Walk-in services can expect to deal with a wide variety of health problems. More than 90 per cent of the health problems presented are likely to be amenable to immediate management by either nurse or doctor-led services, so long as staff have appropriate training and experience, clear management protocols and access to x-ray facilities. A greater proportion may be manageable if senior medical advice is available, for example through a telemedicine link. This suggests that, on the whole, users are able to make appropriate choices about which health problems to bring to walk-in services. It may be the case that the title of the service (for example, “minor injury unit”, “minor treatment centre”) is important in indicating the scope of the service and thus helping users to choose appropriately between alternative services.

Experience from existing services suggests that walk-in centres might expect 65 to 80 per cent of patients to attend with minor illness (with the commonest problems being coughs and colds, aches and pains, and skin rashes) and 20 to 35 per cent with minor injury (with the commonest being cuts and bruises, strains and sprains, and suspected fractures).

8.1.3 *User views of walk-in services*

Walk-in services are popular with users because they offer rapid access to advice or treatment at convenient times and locations. Opening hours beyond the working day allow attendance before or after work, and at times when GP surgeries are closed. About one in four of users of minor injuries services in any case regard their condition as inappropriate for their GP.

The lack of need for an appointment and the short waiting times are also attractive to users. Almost all users are satisfied with the care they receive, and satisfaction with nurse-led care is at least as high as that with doctor-led care. Compared with attenders at general practices, users of walk-in centres are more likely to believe that their problem requires urgent attention.

8.1.4 *Impact on other services*

The impact on other immediate care services is uncertain. There is some suggestion that minor injury units may reduce demand on local A&E services. No direct evidence is available regarding the impact on primary care services.

8.2 *Outstanding issues*

There are a number of important clinical, policy and operational issues which remain unresolved by the existing research, and will be important areas for future research in this area.

8.2.1 *Overall demand and service viability*

The level of walk-in service use suggested by the reviewed research is equivalent to an annual attendance rate of about 10,000 patients per annum. For comparison, it is generally acknowledged that an A&E department needs to see about 40,000 patients per year to remain viable. The appropriate threshold for walk-in centre viability is not yet known.

In addition, the determinants of overall demand are unclear, although the size of the catchment population, public awareness of the service, alternative services available and levels of morbidity and injury in the population will all obviously be relevant. Since a key reason for using walk-in services is convenience of location, catchment population size

may ultimately be determined by the travel time to the walk-in service compared with alternative sources of care.

8.2.2 Casemix and service location

Both existing research and the first wave proposals demonstrate the wide variety of locations in which walk-in centres may be established. Broadly, these fall into three groups:

- a) **retail locations in residential areas:** these are likely to serve the local resident population, along with shoppers and employees
- b) **adjacent to existing health services,** such as an A&E department or a health centre: these may serve a larger catchment population, since public awareness of the existing service will be established
- c) **non-residential locations,** such as railway stations, airports or large shopping centres: these services will expect a greater proportion of demand to be from transient populations, such as travellers, commuters and shoppers.

As well as influencing the volume and time distribution of demand, location may also be important in altering the casemix of the service. For example, centres sited adjacent to A&E are unlikely to see serious trauma, and indeed may see no trauma at all, depending on the triage policy of the A&E department (and there is some support for this idea from the evidence reviewed). Conversely, centres located away from existing services may expect a much more varied, and potentially more serious, mix of health problems.

8.2.3 Information, health checks and health problems

The evidence on casemix from the literature concentrates on patients presenting with health problems. However, policy guidance on walk-in centres, and the first wave proposals, suggest that health information and advice, health promotion activities and disease screening are expected to be important components of this initiative. Currently we have no information on likely demand for these services, nor on how such demand might impact on the diagnostic and treatment activity of the centres.

8.2.4 Demand through the day

No detailed data on the time distribution of demand has been published. Such information is important for at least two reasons: first, to establish that the proposed

service hours of 7am to 10pm are reasonably matched to the need for the service; and second, to inform staffing levels throughout the day.

8.2.5 Service and clinical management

Little of the literature reviewed discusses issues of service and clinical management, such as appropriate skill-mix, training, clinical updating, clinical audit, and interfaces with other services. However, the helpful guidance previously offered by an NHS Executive working group on minor injury units is likely to remain relevant to the new walk-in centres.⁵⁴

8.2.6 Subsequent health service use and health outcomes

No studies have adequately followed-up users of walk-in services to determine previous and subsequent use of other health care and eventual health outcomes. There is the possibility that some patients will need to seek further care following their walk-in episode in order to obtain adequate treatment. Research is required to determine the proportion of patients for whom this is the case, and the conditions for which walk-in care is insufficient.

There is existing evidence that a substantial proportion of walk-in centre users go on to consult their GP with the same problem, but it is not known whether this represents progression or duplication of care. Research is needed which clarifies the place of walk-in centres in service users' pathways through care, and the implications for the work of related services.

8.2.7 Total demand for health care

The introduction of a new species into the complex ecology of health care is sure to have effects, whether obvious or subtle, on other health services. There may be effects on the volume of new patient demand, the need for follow up care, the casemix or time distribution of demand, and so on. Such effects may have implications for the staffing, resourcing or indeed viability of other services, and research will be needed to identify these effects. More broadly, there is an important question of whether, and how, walk-in centres will influence the volume and distribution of population demand for health care services. Again, this will be an important issue for future research.

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Summary of first 36 walk-in centres

Site	Lead agency	Location	Staffing	Target populations	Xray	Testing	Prescribing
Bath	PCG	City centre retail site	Triage nurses Telemedicine link to A&E	Residents, workers Visitors, temp residents, homeless, students			
Birmingham	GP co-op Children's hospital 2 community trusts Complementary medical centre	City centre retail site	Nurses GP advice on call Voluntary sector advisors	Workers Shoppers		Some "near patient testing"	
Bristol	3 PCGs Health authority	1: Resource centre adj to MIU/PCC 2: City centre retail setting	Triage nurses Extended role nurses	Families with young children Residents Employees Students			
Bury & Rochdale	GP co-op	1: Bury town centre adj co-op/health promotion 2: Rochdale, adj to A&E	Nurse practitioners	Employees NHS staff School students Temporary residents			
Coventry	Community trust	Adj to A&E/GP co-op/women's health centre	Nurses	Residents			Yes
Croydon	Community trust GP co-op	Undetermined	Nurse consultant	Young people Refugees & asylum seekers Local commuters and shoppers Students Temporary residents Substance misusers			Yes
Exeter	GP co-op and PCG	1: Adj. to A&E and PC centre 2: High street retail site	Nurse practitioners GP sessions GP advice on call Telemedicine link to A&E	Residents Visitors Homeless			Yes
Harlow	PCG	1: Acute hospital 2: Mobile healthy living centre 3: Young people's information centre	Nurses GPs				Yes
Leigh	PCG Combined trust	Existing MIU at subacute hospital	Nurse practitioners	Commuters Residents Homeless	Yes	Yes	Yes
Liverpool	Community trust/ GP co-op/ HA/GP practice	City centre retail site Adj. to other primary care services	Nurse practitioners GP sessions				
London Edgware	PCG	1: Adj. to PC centre/co-op 2: Possible mobile service	Nurses	Residents Refugees Black and ethnic minorities			
London Fulham London Parson's Green	PCG/community trust	1: adj. A&E 2: In community health centre	Nurses Telemedicine A&E and GP advice GP sessions	Residents Commuters Homeless Refugees People with mental health problems			Yes
London Tooting	PCG/community trust	Adj. to walk-in mental health clinic.	Nurse practitioners	Residents Refugees			Yes

Medical Care Research Unit

Site	Lead agency	Location	Staffing	Target populations	Xray	Testing	Prescribing
		Near A&E		Homeless Teenagers Travellers and tourists Commuters People with mental health problems			
London Tottenham	2 PCGs Acute trust	Adj to A&E and dental WIC	Nurse practitioners sessional GPs	Black and ethnic minorities Asylum seekers and refugees			Yes
London West End	Community trust	Soho centre	Nurse practitioners GP sessions	Residents Workers Commuters Shoppers Visitors Homeless Refugees	Yes	Limited pathology tests	
London Whitechapel	Community trust/PCG	Adj. to A&E and co-op plus 2 spokes	Nurses CPN GP sessions	Residents Young people Non-registered Black and ethnic minorities Homeless Refugees & asylum seekers			Yes
Loughborough	Community trust PCG GP co-op	Town centre, adj to MIU and co-op	Nurse practitioners Salaried GP sessions Telemedicine link to A&E		Yes		Yes
Manchester Airport	PCG	Airport retail site	Nurses First aider	Employees Passengers			Possibly
Newcastle	PCG/ acute trust	Adj. to A&E/MIU/Co-op	Nurse practitioners	Residents	Yes		
Newham	Community trust GP coop Acute trust	Adj to A&E and co-op	Nurse practitioners Salaried GP sessions	Residents Visitors			
Norwich	GP practice PCG Community health partnership	City centre retail site	Nurse practitioners	Residents Visitors			Yes
Nottingham	GP co-op Community trust PCG A&E dept	New build near city centre, adj NHS Direct and PCC	Nurses Social services advisors				Yes
Peterborough	PCG/ community trust	City centre retail site	Nurses	Residents Commuters Shoppers Young people Travellers Homeless	No		Yes
Sheffield	GP co-op	Adj. to MIU/co-op/eye casualty/ emergency admission unit	Nurses	Residents, workers, visitors, people with learning disabilities, substance abusers, homeless, children, students and pupils, sex workers, travellers			Yes
Slough	PCG	Adj to general practice and		Children	No		Yes

Medical Care Research Unit

Site	Lead agency	Location	Staffing	Target populations	Xray	Testing	Prescribing
		dental practice					
St Helens	2 PCGs	Town centre, adj to GP co-op			No		Yes
Stoke on Trent	Acute trust/ PCG	In existing MIU	Nurse practitioners GP sessions Telemedicine link to A&E	Residents Travellers	Yes		In GP sessions
Swindon	Community trust/ PCG/ HA	Health centre adj to other services	Nurse practitioners	Residents Commuters Shoppers Employees Homeless Black and ethnic minorities			
Wakefield	GP co-op	Medical centre adj. to PCC	Nurses	Residents Workers Shoppers Black and ethnic minorities Teenagers Adult men			
Walsall	GP co-op	College campus near town centre	Nurse practitioners Dentist Salaried GP	Residents Homeless Travellers Students Visitors			Yes
Weybridge	Community trust PCG	Community hospital and PCC (existing MIU)	Nurse practitioners Physio Health visitor Telemedicine link to A&E		Yes	Yes	Yes
Wirral		1: adj to A&E/PCC/dental clinic 2: at existing MIU	Nurse practitioners Telemedicine link between sites	Staff and visitors Parents Commuters Residents Shoppers Employees			
Woking	Community trust PCG	Community hospital adj to PCC, MIU	Nurse practitioners Physio Telemedicine link to A&E	Residents Commuters	Yes	Yes	Yes
York	PCG/ GP co-op/ community trust	Primary care centre	Nurse prescribers	Residents Travellers Homeless Tourists and visitors			Yes

Appendix 2: Medline search strategy used for the review

- 1 service\$.tw.
- 2 unit\$.tw.
- 3 clinic\$.tw.
- 4 centre\$.tw.
- 5 center\$.tw.
- 6 access\$.tw.
- 7 facilit\$.tw.
- 8 consult\$.tw.
- 9 walk\$.tw.
- 10 drop\$.tw.
- 11 mobile\$.tw.
- 12 unplanned.tw.
- 13 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
- 14 9 or 10 or 11 or 12
- 15 ((service\$ or unit\$ or clinic\$ or centre\$ or center\$ or access\$ or facilit\$ or consult\$) adj2 (walk\$ or drop\$ or mobile\$ or unplanned)).tw.
- 16 intermediate tier.tw.
- 17 self referral.tw.
- 18 same day appointment\$.tw.
- 19 fast track.tw.
- 20 one stop.tw.
- 21 immediate access.tw.
- 22 appointment\$.tw.
- 23 (without or necessary or unnecessary).tw.
- 24 (appointment\$ adj2 (without or necessary or unnecessary)).tw.
- 25 (unscheduled access or unplanned access).tw.
- 26 16 or 17 or 18 or 19 or 20 or 21 or 24 or 25
- 27 nurse led.tw.
- 28 minor injur\$.tw.
- 29 minor illness\$.tw.
- 30 minor trauma\$.tw.
- 31 minor treatment\$.tw.
- 32 27 or 28 or 29 or 30 or 31
- 33 ((service\$ or unit\$ or clinic\$ or centre\$ or center\$ or access\$ or facilit\$ or consult\$) adj2 (nurse led or minor injur\$ or minor illness\$ or minor trauma\$ or minor treatment\$)).tw.
- 34 28 or 29 or 30 or 31
- 35 (nurse led adj2 (minor injur\$ or minor illness\$ or minor trauma\$ or minor treatment\$)).tw.
- 36 (miu or mius).tw.
- 37 "Wounds and injuries"/
- 38 36 and 37
- 39 mtc\$.tw.
- 40 37 and 39
- 41 maxi nurse\$.tw.
- 42 maxinurse\$.tw.
- 43 polyclinic\$.tw.
- 44 (hour\$ adj2 pharmac\$).tw. 44
- 45 15 or 26 or 33 or 35 or 38 or 43 or 44