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## **The impact of NHS walk-in centres on Emergency Departments**

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## **ABSTRACT**

### **Objectives:**

To determine the impact of establishing walk-in centres alongside emergency departments on attendance rates, visit duration, process, costs and outcome of care.

### **Methods:**

Eight hospitals with co-located emergency departments and walk-in centres were compared with eight matched emergency departments without walk-in centres. Site visits were conducted. Routine data about attendance numbers and use of resources were analysed. A random sample of records of patients attending before and after walk-in centres opened were also assessed. Patients who had not been admitted to hospital were sent a postal questionnaire.

### **Results:**

In most sites, the walk-in centres did not have a distinct identity and there were few differences in the way services were provided compared with control sites. Overall, there was no evidence of an increase in attendance at sites with walk-in centres, but considerable variability across sites. The proportion of patients managed within the four-hour NHS target improved at sites both with and without walk-in centres. There was no evidence of any difference in re-consultation rates, costs of care or patient outcomes at sites with or without walk-in centres.

### **Conclusions:**

Most hospitals in this study implemented the walk-in centre concept to a very limited extent. Consequently there was no evidence of any impact on attendance rates, process, costs or outcome of care.

## **INTRODUCTION**

The NHS introduced the first walk-in centres during 2000, with an initial wave of 40 centres opening in various community and hospital locations[1]. The aim was to improve the accessibility of NHS services by providing nurse-led information and advice for minor illnesses and injuries at times and places convenient to patients. Over the following six years successive waves of walk-in centres have been established, resulting in a total of 71 centres by 2005, including a wave opened in 2004 alongside emergency departments.

These emergency department walk-in centres have several aims, reflecting current health policy[2]. First, they are intended to provide people with greater choice in how they access health care. Rather than trying to dissuade people from attending hospital with problems which are not medical emergencies, these centres reflect a patient-centred philosophy of providing services where people choose to attend. Second, local health economies were encouraged to establish walk-in centres to relieve pressure on emergency departments having difficulty in meeting the NHS target that patients should be seen and treated or discharged within four hours of arrival. Third, these new centres were intended to offer a more appropriate environment than an emergency department for people attending hospital with less serious health problems.

However, there are several uncertainties about the potential effects of this strategy. Opening a walk-in centre may improve access overall, leading to increased patient throughput, without relieving pressure on the emergency department. Patients treated in a nurse-led walk-in centre may not have the same experience or achieve similar outcomes compared with those seen in an emergency department. Finally, establishing a walk-in centre may have an impact on NHS costs, including consequential costs if patients seen in a walk-in centre have a different pattern of subsequent consultations. The evaluation of the first wave of walk-in centres (few of which were co-located with emergency departments) suggested that although they provided safe[3] and popular[4] care, the cost of consultations was relatively high and there was no evidence of reduced demand in neighbouring services[5;6].

This paper is based on an evaluation of the eight walk-in centres co-located with emergency departments which opened during 2004.

## **METHODS**

This paper describes the impact of emergency department walk-in centres on consultation rates, waiting times, and the process, costs and outcomes of care. A survey of patients' experience is described in a companion paper.

### **Overview of design**

A controlled before-and-after study was conducted. All eight sites with a new walk-in centre established in 2004 and co-located with an emergency department were compared with matched emergency departments with no co-located walk-in centre facilities. Sites with and without walk-in centres were individually matched according to three parameters: performance on the four-hour target, size of department (based on number of new

attendances) and the proportion of these cases admitted. Using data from the third quarter of 2003/4, all emergency departments in England were ranked into quintiles. Sites were matched so that they fell into the same quintile for the four-hour target and the same or adjacent quintile for the other two parameters.

The new walk-in centres worked in a closely integrated way with their co-located emergency departments, so that in most cases patients were assessed and allocated to either the walk-in centre or the emergency department according to the nature of their problem. Therefore it was not appropriate to compare patients seen in walk-in centres with those seen in their adjacent emergency departments, as there would be systematic differences between these patient groups. A more appropriate comparison was between those patients attending combined emergency/walk-in centre sites (intervention sites) versus those attending similar emergency departments without a co-located walk-in centre (control sites).

### **Data sources**

All intervention sites were visited to collect information about the aims of the walk-in centre, staffing, policies, services provided and infrastructure. This was obtained through direct observation, interviews with managers and senior clinicians and documentary analysis. The same information was obtained from control sites via telephone interviews with local managers.

Each intervention site provided details of the number of patients consulting, admitted or discharged on a monthly basis for the period from six months before the walk-in centre opened until six months after. Identical data were collected over the same time periods at control sites, based on the walk-in centre opening date at the matched site.

Each intervention site provided detailed anonymised data from patient records for 200 patients consulting *before* and 200 patients consulting *after* the walk-in centre opened. These patients were randomly selected by the research team, using a series of computer generated numbers matched to patient ID numbers, from those consulting in a two-week period at least three months after the walk-in centre opened, and the same period one year earlier, before the walk-in centre opened. The same data were collected for the corresponding time periods at control sites. Data extracted from patients' records included the facility consulted (walk-in centre and/or emergency department), age, sex, professional staff consulted, investigations, treatments, times of arrival, consultation, admission or discharge, and type of disposal including details of onward referrals.

From the above samples of 200 people consulting in each site after the walk-in centre opened (or during the same period at control sites), all those who were not admitted to hospital were sent an anonymous postal questionnaire four weeks after their consultation. This included questions about re-consultations with the same health problem since attending the hospital and the resolution of their problem. Further details on the survey methods are provided in the companion paper.

An economic evaluation was conducted from the viewpoint of the NHS. Set-up costs for the walk-in centres were not included due to a lack of comparable, reliable information being available. Resource use before and after the opening of each walk-in centre was identified, measured for each site separately, and valued. Sites provided data about clinical staff costs and fixed and semi-fixed costs such as administrative and clerical staff, buildings, utilities,

consumables and equipment. Estimation of variable costs (investigations, treatments, medication, admissions, onward referrals and re-consultations) was based on data obtained from the anonymised patient records and the patient survey described above. Because sites with walk-in centres may make greater use of nurse practitioners, and staff costs were likely to account for most of the overall consultation cost, a 'time and motion' study was conducted in four sites to obtain data about the proportion of time spent by different types of staff with different types of patient. Since admissions accounted for a high proportion of the total cost per patient, but are unlikely to be related to the existence of a walk-in centre, these were excluded from the main analysis but included in a sensitivity analysis.

## **Analysis**

Comparisons between intervention and control groups were conducted using appropriate (linear or logistic) regression models which took account of the clustered nature of the data and of individuals' different probabilities of being sampled across time and sites.

## **RESULTS**

### **Site visits: implementation of walk-in centres**

The latest wave of eight walk-in centres co-located with emergency departments had implemented the walk-in centre concept to a more limited extent than previous waves. In most sites, from the perspective of patients, the service appeared little different from the way it had been provided before. Few of the walk-in centres had a distinct visible identity and none had advertised their existence to the local population. Three of the new facilities were not known locally as walk-in centres, and in several sites the walk-in centre was effectively a re-badging of a pre-existing service.

There was resistance in several sites to the concept of providing a more convenient walk in service, due to concerns that increasing accessibility would lead to an increase in demand. Most managers and clinicians saw the main function of the walk-in centre as being to reduce demand on the emergency department rather than to increase patient choice. At the majority of sites, patients could not directly walk in to the new facility, but were directed there by a receptionist or following nurse assessment. The staffing of the walk-in centres and their co-located emergency departments was flexible, with nurses and doctors moving between each facility according to demand.

### **Impact on patient throughput**

Patient throughput increased during the study, both at hospitals with and without walk-in centres. The mean increase in attendances was 813 per month (95% CI -30.3 to 1655,  $p = 0.06$ ) and 270 per month (95% CI -114 to 655,  $p = 0.17$ ) in the intervention and control groups respectively. There was no evidence of any difference in change between intervention and control groups between pre- and post- periods (difference in change = 542, 95% CI -347 to 1431,  $p = 0.23$ ). Whilst the point estimate suggested there was a greater increase in throughput at intervention sites (that is, those with walk-in centres), there was wide variability between individual sites. The estimate itself had a very wide confidence interval including zero, indicating that this finding may have occurred due to chance.

### Impact on visit duration

The mean visit duration (time from arrival to being admitted or discharged) reduced during the study at sites with and without walk-in centres, and there was no significant difference between these types of site. The proportion of patients managed within the target time of four hours was 94.8% at both intervention and control sites. Table 1 provides details of these results. Figure 1 illustrates the impact of the four-hour target on waiting times.

**Table 1: Mean visit duration and compliance with four-hour target**

	TYPE OF FACILITY ATTENDED						P*
	BEFORE		AFTER				
	intervention A&E	control A&E	intervention A&E	intervention WIC	intervention combined	control A&E	
	n=1315	n=1534	n=785	n=761	n=1546	n=1530	
mean visit duration in minutes	156.6	143.9	142.2	107.6	134.8	133.5	0.44
percentage of cases complying with four-hour target	87.4%	89.0%	94.6%	95.6%	94.8%	94.8%	0.73

\* p-value for group\*time interaction i.e. difference in change between baseline and follow-up for intervention v. control sites

### Process of care

There were few differences between the processes of care provided at sites with and without walk-in centres, in terms of investigations and treatments. However, patients attending a walk-in centre were more likely to be managed by a nurse, without the involvement of a doctor. Of patients seen in a walk-in centre, only 39.5% saw a doctor compared with 95.7% of patients in emergency departments with a co-located walk-in centre and 86.6% of patients in control emergency departments. The value of this comparison is limited since patients were, in most cases, being allocated at intervention sites to the walk-in centre because they were suitable for nurse care.

### Resource utilisation and costs

Table 2 shows the estimated total cost by resource use group for the January – March quarter before and after the opening of the walk-in centres. The year-on-year total cost increased by 22% in the intervention group and 10% in the control group. The differential between the two groups is largely due to the difference in the increase in clinical staff costs of 28% in the intervention group and 15% in the control group.

**Table 2: Estimated total cost (£000) of intervention and control sites for three-month period January-March 2004 by category of resource use**

TYPE OF RESOURCE USE	TYPE OF FACILITY ATTENDED			
	BEFORE (January - March 2004)		AFTER (January - March 2005)	
	intervention A&E	intervention walk-in centre	intervention combined	control A&E
doctors	3086	3323	4172	4055
nurses	4904	4297	6062	4740
other clinical staff	161	39	198	48
<i>all clinical staff</i>	<i>8151</i>	<i>7659</i>	<i>10432</i>	<i>8843</i>
other fixed and semi-fixed costs	3502	1997	4452	2266
<b>total fixed and semi-fixed costs</b>	<b>11653</b>	<b>9656</b>	<b>14884</b>	<b>11109</b>
investigations	1656	2696	2080	2895
medication	280	157	213	164
onward referral i.e. out-patients	2263	2892	2209	2797
re-consultations*	1041	988	1229	1044
<b>total variable costs</b>	<b>5240</b>	<b>6733</b>	<b>5731</b>	<b>6900</b>
<b>TOTAL COSTS</b>	<b>16893</b>	<b>16389</b>	<b>20615</b>	<b>18009</b>

\* including GP, practice nurse, walk-in centre or NHS Direct

Table 3 shows the cost per patient. These increased at intervention sites by £6.20 per patient but costs at control sites also increased (£8.28 per patient) so there was no evidence of any difference between the change in cost per patient at the intervention sites compared with the control sites (-£3.06 (95% CI -£16.50, £10.39)). When admission costs are included in a sensitivity analysis, there remains no evidence of difference in the change in cost per patient (-£20.97 (95% CI £-64.98, £23.04) per patient).

**Table 3: Total cost per patient (£) of intervention and control sites for three-month period January-March 2004 by category of resource use**

TYPE OF RESOURCE USE	TYPE OF FACILITY ATTENDED			
	BEFORE (January - March 2004)		AFTER (January - March 2005)	
	intervention A&E	intervention walk-in centre	intervention combined	control A&E
doctors	20.27	22.99	23.71	27.40
nurses	32.21	29.73	34.46	32.02
other clinical staff	1.06	0.27	1.12	0.33
<i>all clinical staff</i>	<i>53.54</i>	<i>52.99</i>	<i>59.29</i>	<i>59.73</i>
other fixed and semi-fixed costs	23.00	13.82	25.31	15.31
<b>total fixed and semi-fixed costs</b>	<b>76.54</b>	<b>66.79</b>	<b>84.60</b>	<b>75.04</b>
investigations	10.87	18.65	11.82	19.56
medication	1.84	1.09	1.21	1.11
onward referral i.e. out-patients	14.87	20.01	12.55	18.90
re-consultations*	6.84	6.84	6.98	7.05
<b>total variable costs</b>	<b>34.42</b>	<b>46.59</b>	<b>32.56</b>	<b>46.62</b>
<b>TOTAL COSTS</b>	<b>110.96</b>	<b>113.38</b>	<b>117.16</b>	<b>121.66</b>

\* including GP, practice nurse, walk-in centre or NHS Direct

### **Patient outcome and re-consultation**

A total of 704 patients successfully completed and returned a questionnaire – giving an overall survey response rate of 36.1%. Almost half of these had a re-consultation about the same problem in the four weeks after they attended the hospital, and the majority of these consultations were with doctors or nurses in general practice – Table 4. There was no evidence of any difference between patients seen at hospitals with or without walk-in centres. Neither was there any evidence of differences in patient outcomes – Table 5.

**Table 4: Re-consultations about the same problem**

	TYPE OF FACILITY PATIENT ATTENDED								P*
	intervention A&E		intervention walk-in centre		intervention combined		control A&E		
	count	%	count	%	count	%	count	%	
have you been back to the hospital or consulted another healthcare professional about the same problem since your visit?	n=115		n=222		n=336		n=362		
yes	54	(48.2)	95	(43.3)	149	(46.6)	177	(48.5)	0.69
no	61	(51.8)	127	(56.7)	187	(53.4)	185	(51.5)	
who have you consulted about the same problem? †	n=53		n=93		n=146		n=172		P*
GP	34	(62.7)	52	(55.2)	86	(60.5)	96	(56.3)	0.72
nurse at GP surgery	6	(10.0)	7	(8.3)	13	(9.5)	23	(13.3)	0.42
emergency department	8	(14.9)	18	(18.2)	26	(15.9)	22	(13.1)	0.53
NHS walk-in centre	0	(0.0)	7	(5.7)	7	(1.7)	7	(3.8)	0.16
outpatient department	7	(16.6)	16	(19.0)	23	(17.3)	40	(22.3)	0.43
NHS Direct helpline	1	(.6)	2	(3.3)	3	(1.4)	4	(2.4)	0.58
other	11	(18.1)	13	(16.7)	24	(17.7)	35	(21.3)	0.48

\* comparison between intervention combined and control sites, using appropriate regression models, allowing for clustering and sampling probability. Percentages in table also take account of probability of being sampled.

† people may have consulted in more than one place, so column totals exceed 100%

**Table 4: Re-consultations about the same problem**

	TYPE OF FACILITY PATIENT ATTENDED								P*
	intervention A&E		intervention walk-in centre		intervention combined		control A&E		
	count	%	count	%	count	%	count	%	
how much has this problem improved, if at all?	n=114		n=221		n=335		n=358		
very much better	45	(37.5)	90	(43.6)	135	(39.5)	142	(39.6)	0.99
much better	36	(31.6)	91	(39.0)	127	(34.1)	138	(38.2)	
no change	18	(18.0)	28	(12.1)	46	(16.0)	48	(13.5)	
much worse	3	(3.0)	3	(1.0)	6	(2.4)	8	(2.4)	
very much worse	2	(1.6)	3	(1.3)	5	(1.5)	9	(2.6)	
not applicable	10	(8.3)	6	(3.0)	16	(6.5)	13	(3.7)	

\* comparison between intervention combined and control sites, using appropriate regression models, allowing for clustering and sampling probability. Percentages in table also take account of probability of being sampled.

## CONCLUSIONS

In most cases, the new co-located walk-in centres appear to have implemented the original walk-in centre concept to a very limited extent, although there are considerable differences between individual sites. Some walk-in centres have created a slightly different organisational environment, with a greater role for nurse management of patients compared with standard emergency departments, but in other cases the main change appears to be in the way that episodes of care are labelled. It is therefore unsurprising that overall there are few differences between emergency departments with or without co-located walk-in centres in terms of patient attendance rates, waiting times, costs or outcomes.

The intervention sites in this study appear to have nominally achieved the aim of diverting some activity from emergency departments to walk-in centres, but this was mainly an exercise in streaming with no evidence of benefit or detriment to patients or health service costs. It is difficult to determine whether these walk-in centres have achieved the aim of helping emergency departments meet access targets. Visit durations improved both at sites with and without walk-in centres, and it is likely that those sites without walk-in centres used other strategies to reduce waiting times[7;8]. The current data support the findings of previous research that the waiting time target has had a galvanising effect on patient management within emergency departments, with many patients being admitted or discharged just within the four-hour limit[9].

There appears to be a disconnection between the centrally-determined aims for walk-in centres alongside emergency departments and the way in which this policy has been implemented locally. This may reflect a perceived tension between the aims of improving access to care and at the same time reducing pressures on co-located emergency departments. Historically, emergency departments have struggled to meet increasing demand, while also being expected to reduce waiting times. They have used various strategies to discourage people from attending with conditions which are neither accidents nor emergencies[10]. Encouraging people to 'walk in' with any problem to suit the convenience of the individual requires a major cultural shift in attitude on the part of service providers, which has not yet been achieved.

This study has a number of limitations. Firstly, it was conducted after the centres had been open for only a few months and the organisational model and patients' use of the new facilities may change once the facility is well established. Secondly, most of the data were collected from routine records which may be of uncertain quality. Thirdly, the low survey response rate limits the generalisability of the findings on patients' experience reported here. Finally, although it included all of the new emergency department focused walk-in centres in England, the small number of sites provides limited power to detect quantitative differences.

Establishing walk-in centres co-located with emergency departments is just one of a panoply of initiatives intended to provide people with choice in how they access care[11]. This study does not address the issue of other alternatives that might be adopted to improve waiting times in emergency departments or to improve access to primary care. The investment used to introduce walk-in centres could equally have been utilised to increase investment in existing emergency departments, expand emergency nurse practitioner roles or increase integration with primary care services outside hospital. Further research should therefore

compare different models of organisation in order to determine which is the optimal approach.

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**Ethics:**

Ethical approval was given by Metropolitan Multicentre Research Ethics Committee, London.

**Figure 1 Duration of visits to intervention and control sites after walk-in centres had opened**

The vertical line indicates the NHS target of 4 hours within which patients should be discharged or admitted.

