

### What is already known on this topic

Walk-in centres are well established in North America but differ from NHS centres as they are run by doctors not nurses

### What this study adds

Introduction of an NHS walk-in centre did not affect the workload of local general practitioners

Attendance increased at the minor injuries unit, which was in the same building

Non-ambulance attendances at accident and emergency departments decreased but not by as much as in the control area

well used during the study, including by people not registered with a local general practitioner. These centres may therefore have a role in satisfying particular needs for primary care services. Whether this is a cost effective use of primary care resources, in both financial and staff terms, remains to be determined.

We thank Angela Mason-Birks and Eve Kilbourne for telephoning the practices daily for data and all the staff who provided the data. We also thank Christine Pennington and the reviewers for their helpful comments.

Contributors: See bmj.com

Funding: NHS walk-in centre local evaluation funding from the Department of Health. JK is funded by a National Public Health Career Scientist Award from the Department of Health and NHS Research and Development Programme (PHCS 022). The guarantor accepts full responsibility for the conduct of the study, had access to the data, and controlled the decision to publish.

Competing interests: None declared.

1 NHS Executive. *NHS primary care walk-in centres*. Leeds: NHSE, 1999. (HSC 1999/116).

2 Royal College of General Practitioners. *Discussion paper on the implications for general practice of NHS Direct and walk-in centres*. London: RCGP/NHS Alliance, 1999.

3 Team for the National Evaluation of NHS Walk-In Centres. *National evaluation of NHS walk-in centres*. Bristol: Division of Primary Health Care, University of Bristol, 2000.

4 Oldham J. Advanced access in primary care. NHS National Primary Care Development Team, 2001. [www.npdt.org/1626/advancedaccess.pdf](http://www.npdt.org/1626/advancedaccess.pdf) (accessed 20 January 2003).

5 Rogers A, Hassell K, Nicolaas G. *Demanding patients? Analysing the use of primary care*. Buckingham: Open University Press, 1999:39-45.

(Accepted 23 December 2002)



This is an abridged version; the full version is on [bmj.com](http://bmj.com)

Cardiff University  
School of Social  
Sciences, Cardiff  
CF10 3WT

Melanie Chalder  
senior research  
associate

Laurence Moore  
senior research fellow

Division of Primary  
Health Care,  
University of  
Bristol, Bristol  
BS6 6JL

Debbie Sharp  
professor of primary  
health care

Chris Salisbury  
reader in primary  
health care

Correspondence to:  
M Chalder  
chalderm@  
cardiff.ac.uk

BMJ 2003;326:532-4

## Impact of NHS walk-in centres on the workload of other local healthcare providers: time series analysis

Melanie Chalder, Debbie Sharp, Laurence Moore, Chris Salisbury

### Abstract

**Objectives** To assess the impact of NHS walk-in centres on the workload of local accident and emergency departments, general practices, and out of hours services.

**Design** Time series analysis in walk-in centre sites with no-treatment control series in matched sites.

**Setting** Walk-in centres and matched control towns without walk-in centres in England.

**Participants** 20 accident and emergency departments, 40 general practices, and 14 out of hours services within 3 km of a walk-in centre or the centre of a control town.

**Main outcome measures** Mean number (accident and emergency departments) or rate (general practices and out of hours services) of consultations per month in the 12 month periods before and after an index date.

**Results** A reduction in consultations at emergency departments (-175 (95% confidence interval -387 to 36) consultations per department per month) and general practices (-19.8 (-53.3 to 13.8) consultations per 1000 patients per month) close to walk-in centres became apparent, although these reductions were not statistically significant. Walk-in centres did not have any impact on consultations on out of hours services.

**Conclusion** It will be necessary to assess the impact of walk-in centres in a larger number of sites and over a prolonged period, to determine whether they reduce the demand on other local NHS providers.

### Introduction

Forty NHS walk-in centres have been established as part of the government's commitment to modernise the NHS.<sup>1</sup> One of the aims of these primarily nurse led

centres is to reduce demand on other NHS providers, particularly general practitioners and accident and emergency departments in hospitals. However, critics have indicated that increasing the accessibility of care may increase total demand on the NHS, without reducing the workload of existing services.<sup>2</sup>

Studies of walk-in centres in North America have not shown that they are likely to reduce the workload of other neighbouring health services.<sup>3-4</sup> Research on nurse led units for minor injuries in the United Kingdom (which have some similarities with walk-in centres) has shown that people use the units mainly as an alternative to accident and emergency departments rather than as an alternative to general practice.<sup>5-6</sup> The implementation of NHS walk-in centres has been subject to a comprehensive independent national evaluation. This paper describes one component of this evaluation.

### Methods

We identified a purposive sample of 10 walk-in centre sites (taking into account the geographical spread of locations and the type of services offered) and 10 control sites: towns of similar size, in the same region, but as distant as possible from any existing walk-in centre.

We asked the health authority for each walk-in centre and control town to provide lists of all general practitioners' surgeries within 3 km of the walk-in centre (or town centre in control sites), and to identify the closest accident and emergency department, and the largest general practitioners' out of hours service covering the walk-in centre or town centre. We randomly selected eight general practices in each location, stratified by size (three or fewer partners and four or more

partners). These eight practices, together with the accident and emergency department and out of hours provider in each of the 20 chosen sites, formed the sampling frame of healthcare providers for the study. We asked each provider to supply a series of anonymised data relating to their workload in the 12 month periods before and after the opening date of the local walk-in centre or, in the case of control sites, the opening date of the walk-in centre in the "matched" site. All face to face consultations involving general practitioners were included, along with any consultations with a practice nurse where recorded.

### Analyses

The primary workload variable for general practitioners' surgeries and out of hours services was the monthly consultation rate (the number of consultations each month divided by the size of the respective list of patients). For accident and emergency departments we used the number of consultations per month for each department as the indicator of workload.

For each of the three service types, we calculated the mean workload for each month separately for walk-in centre sites and control sites. We plotted this against time on a graph that also included best fit trend lines.

A second set of models estimated change in workload for control and walk-in centre sites, respectively, with a binary timing variable (before or after the index month of opening) included as the only independent variable.

We estimated a third model where index month, site status, timing, and the interaction between timing and site status as independent variables, with the interaction term giving an estimate of the difference in change in workload between the control sites and walk-in centre sites. We also estimated these final models with calendar month, consultation type, and matched set included as covariates, to adjust for seasonal effects or any variation in the type of consultations included in the data. See [bmj.com](http://bmj.com) for full details of analysis.

### Results

In total, 74 responses to the requests for data were positive. For both walk-in centre sites and control sites, we received data from 20 general practitioners' surgeries (25% response rate), 10 accident and emergency departments (100% response rate), and seven out of hours services (70% response rate). Of the 20 general practitioners' responses in each group, seven were from practices with four or more partners and 13 were from practices with two or three partners. None of the responding practices was single handed.

### Number of consultations and consultation rates

The table shows the mean number of consultations per type of service per month, for the 12 months before and the 12 months after the opening of the walk-in centre. Consultation rates are also presented for out of hours services and general practices, as is the change in workload, derived from models estimated separately for walk-in centre and control sites (for figures showing all these values see [bmj.com](http://bmj.com)).

### Impact on accident and emergency departments

Among the 10 accident and emergency departments in walk-in centre towns the mean number of consultations per month increased slightly. However, this is largely an artefactual increase because the accident and emergency department at one site merged with another department during the 10th month of data collection at that site. Once this had been adjusted for by including in the model a fixed term indicator variable for all measurements in one site after the 10th month, an estimated reduction of 173.3 (95% confidence interval -334 to -12) consultations per month per site occurred after the walk-in centre opened.

We anticipated that the impact of walk-in centres on the workload of accident and emergency departments would be greatest where they were on the same site, as was the case in three of the sites. An analysis of change in consultations in these three sites alone showed a reduction of 349 (-696 to -2) consultations per site per month. By contrast, the change in workload among the 10 accident and emergency departments in control sites over the 24 months was negligible.

The model of accident and emergency departments' workload estimates that 175 fewer consultations per month took place in accident and emergency departments in walk-in centre towns than in control towns in the year after opening (-387 to 36,  $P=0.11$ ). Even when this final model was re-estimated, taking into account only those three matched pairs of sites where the walk-in centre shared its location with an accident and emergency department, the overall effect was still not statistically significant because of the small sample size (-651 to 122,  $P=0.18$ ).

### Impact on general practice

Among general practices in walk-in centre sites, a small increase in workload was noted in the year after the centre had been opened compared with a larger increase among practices in control sites.

The model of the workload of general practices estimates that in the year after the walk-in centres opened, practices in walk-in centre sites had 19.8 fewer consultations per 1000 patients per month than control sites (-53.3 to 13.8,  $P=0.25$ ).

Consultations per healthcare provider before and after opening of walk-in centres

	Mean No of consultations per month		Rate per 1000 registered patients per month (95% CI)		Change (95% CI)
	Before*	After*	Before*	After*	
Walk-in centre sites:					
Emergency departments†	5267	5316	—	—	-173.3 (-334 to -12)
Out of hours services	2690	2650	11.4 (7.2 to 15.7)	11.3 (6.6 to 16.1)	-0.09 (-0.63 to 0.44)
General practitioners	1661	1686	258 (229 to 286)	261 (229 to 293)	3.9 (-13.9 to 21.7)
Control sites:					
Emergency departments	5769	5766	—	—	-3 (-145 to 139)
Out of hours services	2296	2200	12.3 (8.8 to 15.8)	11.8 (8.4 to 15.1)	-0.5 (-0.95 to -0)
General practitioners	1867	2040	256 (217 to 295)	279 (247 to 312)	23.7 (-8.0 to 55.3)

\*Based on 12 months of data. †Model includes fixed effect indicator variable for all measurements from month 10 onwards at one site.

### What is already known on this topic

One of the objectives for NHS walk-in centres was to reduce demand on other NHS services, particularly general practitioners' and emergency services

Studies of walk-in centres in North America have indicated that such centres do not reduce demand on other healthcare services

Studies of minor injuries units in the United Kingdom (which have some similarities with walk-in centres) indicate that these units substitute mainly for consultations in accident and emergency departments

### What this study adds

The data imply that walk-in centres may moderate the increasing demand on general practice and reduce the number of consultations in accident and emergency departments

The high level of background variability in consultation rates means that any impact of a walk-in centre is not statistically significant

To draw robust conclusions about the impact of walk-in centres on other health providers will require study of a large number of sites over an extended period of time

### Impact on out of hours services

As shown in the table, consultation rates for out of hours services decreased slightly at both walk-in centre sites and control sites over the period of the study.

In the adjusted model, the net difference in consultation rates between the control and walk-in centre sites is estimated as a reduction that is 0.38 per 1000 per month greater in control sites than in walk-in centre sites ( $-0.26$  to  $1.02$ ,  $P=0.242$ ).

### Discussion

Consultation rates at accident and emergency departments in towns with walk-in centres may be slightly reduced, especially in towns where the walk-in centre shares its location with the accident and emergency department. In general practices, workload increased in both walk-in centre sites and control sites in the 12 months before walk-in centres opened, but this rise continued for the following 12 months only at control sites. For out of hours services we found little evidence of any change in consultation rates at either walk-in centre or control sites. None of these apparent changes was statistically significant.

### Limitations of the study

#### Follow up

Firstly, the relatively short period of follow up combined with the small number of sites and the very wide variation between them in workload leads to findings that do not reach statistical significance. Secondly, we matched walk-in centre sites to control sites to account for seasonal and regional effects on workload, but other local confounding factors may have influenced activity at one or more sites. Thirdly, the results for general practices may not be representative; only a minority (25%) of general practices were able or willing to supply data about the number of consultations at their practices, and the responding practices were not evenly distributed across our chosen 20 sites. However, sites with four or five responding

practices will not have an undue influence on the results since the statistical analyses are appropriately conservative, taking full account of the clustering of practices in sites and of the matched sites. Furthermore, none of the responding practices was single handed, which may be associated with the fact that practices may not have been able to supply the data we requested unless they had computerised appointment systems. It is difficult to conceive, however, that any impact of walk-in centres on workload would have a differential effect on those practices able to supply data, so this low response rate may be less of a problem than it would be in a questionnaire survey of opinion. Fourthly, this study was based on routinely collected data extracted by the sites themselves and may therefore be of uncertain reliability.

### Settings

In this study, walk-in centres of different types—for example, next to accident and emergency departments, in hospitals without this facility, in shopping centres or located with primary care facilities—were selected purposively and analysed together. It is, however, likely that certain types of centre will have differential impacts on the workload of other health service providers. A further sustained period of evaluation will be needed to disentangle the relation between setting, model of walk-in centre organisation, and impact on other local services.<sup>7</sup>

Even if walk-in centres reduce demand on other healthcare providers, this is efficient only if walk-in centres provide care more economically and efficiently. These issues are addressed in other components of the national evaluation of walk-in centres.<sup>8</sup>

Throughput of patients at walk-in centres increased steadily over the first few months after opening, but it is still too early to predict how patients will use walk-in centres in the longer term. This study illustrates the tension between the desire of policy makers to learn lessons at an early stage from a small sample of sites piloting a new initiative and the difficulty of obtaining robust quantitative evidence about the impact of the initiative.

We thank the staff at general practices, accident and emergency departments, and out of hours services who provided the data on which this study is based.

Contributors: See [bmj.com](http://bmj.com)

Funding: This research has been conducted independently by the University of Bristol, funded by the Department of Health. The views expressed in this publication are those of the authors and not necessarily those of the Department of Health.

Competing interests: None declared.

- 1 Department of Health. *Up to £30 million to develop 20 fast access walk-in centres*. Press release 1999/0226. London: DoH, 1999.
- 2 Royal College of General Practitioners. *Discussion paper on the implications for general practice of NHS Direct and walk-in centres*. London: RCGP/NHS Alliance, 1999.
- 3 Bell NR, Szafran O. Use of walk-in clinics by family-practice patients. *Can Fam Physician* 1992;38:507-13.
- 4 Ferber M, Becker L. Impact of freestanding emergency centers on hospital emergency department use. *Ann Emerg Med* 1983;12:429-33.
- 5 Heaney D, Paxton F. Evaluation of a nurse-led minor injuries unit. *Nurs Stand* 1997;12:35-8.
- 6 Salisbury C, Munro J. Walk-in centres in primary care: a review of the international literature. *Br J Gen Pract* (in press).
- 7 Pawson R, Tilley N. *Realistic evaluation*. London: Sage, 1997.
- 8 Coast J, Noble SM, Chalder M, Baxter K, Peters TJ, Salisbury C. Walk-in centres: a cost analysis. Submitted to *Br J Gen Pract* September 2002.

(Accepted 9 January)