WHAT IS ALREADY KNOWN ON THIS TOPIC

The size of a fetus in the first trimester of pregnancy is associated with its birth weight

This association has been suggested to be due to delayed ovulation rather than an association with slower first trimester growth

WHAT THIS STUDY ADDS

Fetal growth in the first trimester of pregnancy was strongly associated with birth weight in pregnancies with a known date of conception

Approximately half of this association was due to the effect of first trimester size on the duration of pregnancy and half on fetal growth in later pregnancy

The risk of delivering a small for gestational age infant is inversely related to first trimester growth

These findings underline the importance of detailed study of the periconceptional period and first trimester of pregnancy when assessing factors that influence the risk of adverse outcome and in the development of predictive tests.

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Impact of NHS walk-in centres on primary care access times: ecological study

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ABSTRACT

Objective To examine whether walk-in centres contribute to shorter waiting times for a general practice appointment.

Design Ecological study.

Setting 2509 general practices in 56 primary care trusts in England; 32 walk-in centres within 3 km of one of these practices.

Main outcome measure Waiting time to next available general practitioner appointment (April 2003 to December 2004), from national monthly primary care access survey.

Results The percentage of practices achieving the target waiting time of less than 48 hours to see a general practitioner increased from 67% to 87% over the 21 month study period (adjusted odds ratio 1.07 (95% confidence interval 1.06 to 1.08) per increase in month). Achievement of the waiting time target decreased with increasing multiple deprivation (0.57 (0.49 to 0.67) for most versus least deprived third) and increased with increasing practice population size (1.02 (1.00 to 1.04) per 1000 increase). No evidence was found that increasing distance from a walk-in centre was associated with decreasing odds of achieving the waiting time target (1.00 (0.99 to 1.01) per km increase). Increasing "exposure" to a walk-in centre, modelled with a distance decay function based on attendance rates, also showed little evidence of association with achievement of the waiting time target (1.02 (0.97 to 1.08) for interquartile range increase). No evidence existed that the rate of increase in achieving the 48 hour target over time was enhanced by proximity or "exposure" to a walk-in centre. Results were similar when the analysis was rerun with data for 2003 only (done because pressure in 2004 to meet the government's deadline might have led to other changes that could have masked any walk-in centre effect).

Conclusions No evidence existed that walk-in centres shortened waiting times for access to primary care, and the results do not support the use of walk-in centres for this purpose.

INTRODUCTION

Forty two National Health Service walk-in centres opened in England in 2000-3, and a further 21 opened in 2004. They are primarily nurse led, have long opening hours, and provide information and treatment for minor conditions without appointments. One of their aims is to relieve the pressure on access to primary care.[1] The introduction of walk-in centres as an additional point of first contact with the NHS received a mixed reception. One study of 10 walk-in centres reported non-significant reductions in consultation rates with general practitioners in practices within 3 km of these centres.[2] Another study of a single walk-in centre found no

evidence of an impact on consultation rates or waiting times for an appointment with a general practitioner.[3]

A national primary care access survey carried out monthly from April 2003 monitored progress towards the target of an appointment with a general practitioner within 48 hours.[4] Our aim was to examine whether walk-in centres contributed to shorter waiting times to see a general practitioner in practices situated close to walk-in centres.

METHODS

We defined the geographical areas for the study as 76 primary care trusts in England. We set out to include all general practices within these primary care trusts and examine the effect of all walk-in centres within and surrounding these primary care trusts. The outcome measure was waiting time in days to the next available appointment with a general practitioner reported in the monthly national primary care access survey.[5] We used survey data from April 2003 to December 2004.

We calculated two measures of "exposure" of practices to walk-in centres. The first was the distance in a straight line from a practice to the nearest walk-in centre. We were unable to calculate the proportion of patients attending from any particular general practice. Instead, we used a function based on walk-in centre attendance rates by distance as the second measure. We used attendance data from 2003-4, which included output area of residence from the 2001 census, for four established walk-in centres to calculate attendance rates by using 1 km concentric rings around the walk-in centres. We fitted an exponential distance decay function to the attendance rates. We used the function to calculate a spatially summed distance decay value for each general practice by month on the basis of its distance to each open walk-in centre. We attached an index of multiple deprivation 2004 score to each practice.[6]

Statistical analysis

We analysed the data with waiting time as a binary outcome (<2 days *v* ≥2 days) to reflect the 48 hour government target. The logistic regression models incorporated deprivation, list size, and month, with practice as a random effect. We examined distance and the distance decay value as continuous variables and as categorical variables.

To examine whether exposure to walk-in centres influenced the rate at which the waiting time target was achieved we incorporated interaction terms for month by walk-in centre exposure. As pressure to meet the government's target deadline of December 2004 might have led to other changes that could have masked any effect of walk-in centres, we also reran the analysis using data for 2003 only.

RESULTS

We received information from 56 of 76 primary care trusts (74% response) and were supplied with primary care access survey data for 2509 of the 2564 practices within these 56 primary care trusts. Thirty two of the 63 walk-in centres were within 3 km of at least one of these 2509 practices. A decrease in waiting times to see a general practitioner occurred over the 21 months. In April 2003, 67% (1539/2308) of practices had a waiting time of less than 48 hours; this increased to 87% (2067/2369) by December 2004 (waiting times were missing for 4.5% of practice months). Table 1 shows the unadjusted percentages of practices that achieved the waiting time target in April 2003 and December 2004 by deprivation, list size, distance from a walk-in centre, and "exposure" in terms of the distance decay value; table 2 shows the adjusted odds ratios for achieving the target waiting time.

The odds of achieving a waiting time of less than 48 hours decreased with increasing deprivation. A practice in the most deprived category had an adjusted odds ratio of 0.57 (95% confidence interval 0.49 to 0.67) relative to a practice in the least deprived category. The odds of a waiting time of less than 48 hours increased over the period of study, with an adjusted odds ratio of 1.07 (1.06 to 1.08) per month. A larger registered practice population was associated with higher odds of achieving a waiting time of less than 48 hours, with an adjusted odds ratio of 1.02 (1.00 to 1.04) per 1000 increase in list size.

We found no evidence that increasing distance from a walk-in centre was associated with decreasing odds of achieving the 48 hour waiting time target (adjusted odds ratio 1.00 (0.99 to 1.01) per km increase).

Table 1 | Percentage of practices that achieved the waiting time target of less than 48 hours by multiple deprivation, practice list size, distance from the nearest walk-in centre, and distance decay value. Values are percentages (numbers) unless stated otherwise

Variables and categories	No of practices (n=2509)	Practices achieving <48 hour target*	
		April 2003	December 2004
Index of multiple deprivation (by national super output area thirds)			
Most deprived	1395	63 (788/1247)	86 (1135/1313)
Intermediate	666	68 (430/635)	86 (531/620)
Least deprived	448	75 (321/426)	92 (401/436)
List size (by thirds)†			
≥6050	778	66 (490/742)	90 (673/751)
3301-<6050	779	65 (473/724)	88 (662/756)
<3301	778	68 (471/692)	85 (618/730)
Distance from nearest walk-in centre			
<3 km	483	63 (277/440)	–
3-<6 km	734	64 (414/650)	–
≥6 km	1292	70 (848/1218)	–
<3 km	879	–	85 (709/830)
3-<6 km	792	–	89 (672/756)
≥6 km	838	–	88 (686/783)
Distance decay value‡ (by thirds based on all months)			
≥76.1	660	62 (367/591)	–
9.3-<76.1	834	66 (505/760)	–
<9.3	1015	70 (667/957)	–
≥76.1	1205	–	86 (981/1140)
9.3-<76.1	749	–	87 (622/716)
<9.3	555	–	90 (464/513)

*Denominators are lower than number of practices owing to missing data on waiting times.
†List size missing for 174 practices.
‡Summed value from all walk-in centres based on distance from walk-in centres and modelled attendance rate (see methods section for details); high value=high "exposure."

Table 2 | Effects of multiple deprivation, time, general practice list size, and exposure to walk-in centres on odds of achieving 48 hour primary care access waiting time target in 2509 practices in the study areas in England, April 2003 to December 2004

Variable	Adjusted odds ratio* (95% CI)	Significance
Deprivation (by third):		
Most deprived	0.57 (0.49 to 0.67)	χ^2=54.7, df=2; P<0.0001
Intermediate	0.71 (0.59 to 0.84)	
Least deprived	1	
Time (months)	1.07 (1.06 to 1.08)	χ^2=468.5, df=1; P<0.0001
List size (in 1000s)	1.02 (1.00 to 1.04)	χ^2=6.6, df=1; P=0.01
Distance from nearest walk-in centre (per km increase)	1.00 (0.99 to 1.01)	χ^2=0.02, df=1; P=0.90
Distance from nearest walk-in centre (by category):		
<3 km	1.01 (0.89 to 1.16)	χ^2=5.24, df=2; P=0.07
3-<6 km	0.89 (0.79 to 1.00)	
≥6 km	1	
Distance decay value‡ (interquartile range increase)	1.02 (0.97 to 1.08)	χ^2=0.5, df=1; P=0.47
Distance decay value (by thirds):		
High exposure	1.00 (0.88 to 1.14)	χ^2=0.02, df=2; P=0.99
Intermediate	1.00 (0.89 to 1.12)	
Low exposure	1	

Waiting time was modelled as the odds of having a waiting time of <48 hours (*v* ≥48 hours).
*From logistic regression models that included deprivation, time, list size, and a measure of exposure to walk-in centres (either distance or distance decay as continuous or categorical variable in separate models), with general practice as a random effect; odds ratios should not be interpreted as an approximation to relative risk because proportions achieving the waiting time target are high. Relative risk may be estimated with the formula: RR=OR/[(1−Po)+(Po×OR)] where RR=relative risk, OR=odds ratio, and Po=proportion in reference category.
‡See methods section for details.

Similarly, no evidence existed to suggest that increasing exposure to a walk-in centre in terms of the distance decay value was associated with increasing odds of achieving a waiting time under 48 hours (odds ratio 1.02 (0.97 to 1.08) for an interquartile range increase).

No evidence existed that the rate of increase in achieving the 48 hour target over time was enhanced by exposure to a walk-in centre. Results were similar with the analysis restricted to 2003.

DISCUSSION

An increase occurred in the percentage of practices that achieved the target waiting time of less than 48 hours to see a general practitioner over the 21 month study period. However, we found no evidence that walk-in centres contributed to shorter waiting times for access to primary care.

Limitations

One possible explanation for the lack of effect of walk-in centres is that an effect existed but was not detected by our study. The once monthly survey may be an insensitive measure of waiting time. We cannot rule out the possibility that extra appointments were opened up around dates of the waiting time survey to reduce waiting times. However, a validation survey carried out previously found no overall reporting bias towards shorter waiting times.[7] When we restricted the analysis to 2003, when there would have been less pressure to meet the December 2004 target, no walk-in centre effect was evident.

A further limitation relates to the assessment of exposure of practices to walk-in centres. As information on walk-in centre patients' general practitioners was missing, we had to rely instead on proximity measures. However, the walk-in centre attendance data showed that a high proportion of attenders lived close to the walk-in centres. The incomplete information on general practitioners also meant that we could not assess the extent to which patients attending walk-in centres were not registered with a general practitioner.

Interpretation of results

Another interpretation of the results is that walk-in centres had little impact on waiting times for access to primary care. Walk-in centres may have mainly extended the role of first contact services rather than offering an alternative to general practitioners. Evidence exists that the age, sex, ethnic, and socioeconomic profile of walk-in centre attenders is slightly different from that of general practitioner attenders.[8] Duplication of services could also have arisen.

In a survey of users of walk-in centres, 13% were referred back to their practice and a further 32% intended to make an appointment with their general

WHAT IS ALREADY KNOWN ON THIS TOPIC

NHS walk-in centres are primarily nurse led, have long opening hours, and provide information and treatment for minor conditions without the need for appointments

One of their aims is to relieve the pressure on access to primary care by freeing up time during normal surgery hours for patients who need to see their general practitioner

Concerns exist that they increase demand rather than reduce the workload for primary care, but the evidence to date is inconclusive

WHAT THIS STUDY ADDS

No evidence existed that walk-in centres shortened waiting times for access to primary care, and the results do not support the use of walk-in centres for this purpose

practitioner.[8] In a survey of healthcare providers, one third of respondents thought that patients' expectations had increased and 15% thought that workload had also increased since their local walk-in centre opened.[9]

Conclusion

Walk-in centres may extend and at times potentially duplicate rather than offer an alternative to care provided by general practitioners. We found no evidence that walk-in centres shortened waiting times for access to primary care, and our study does not support the use of walk-in centres for this purpose.

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BMJ UPDATES

Living with a smoker increases non-smokers' mortality

Research question

Is passive smoking at home associated with an increased risk of death?

Answer

Yes.

Why did the authors do the study?

Living with a smoker is bad for your health. These researchers wanted to know if it is also life threatening. There is relatively little published information linking passive smoking with increased mortality, and most of it comes from the US. These authors wanted to strengthen the evidence by looking at non-smokers from New Zealand.

What did they do?

They linked entries from two New Zealand censuses (1981 and 1996) with national mortality records three years after each census to create two cohorts of non-smokers followed up for three years. They then compared the death rates of cohort members living with smokers and cohort members living in a smoke-free household at the time of the censuses. Together, the cohorts included 668ï¿½262 adults aged between 45 and 74.

The authors looked at all cause mortality and mortality from smoking related diseases, including cardiovascular disease and lung cancer. They adjusted their findings for age, ethnicity, and various socioeconomic variables, including education and income, that might confound any link between passive smoking and mortality. They presented their findings separately for the earlier and later cohort and for men and women.

What did they find?

Overall, adults living with smokers had a higher risk of death from any cause than adults living in smoke-free homes. The association was significant for men from both cohorts (adjusted relative risk 1.17 (95% CI 1.05 to 1.30) in 1981, and 1.16 (1.04 to 1.3) in 1996). But in women the association was significant only for the later cohort (1.28 (1.16 to 1.42)).

Men and women in the later cohort who were living with smokers were significantly more likely to die from cardiovascular disease (1.25 (1.06 to 1.47) for men, 1.35 (1.11 to 1.64) for women. The researchers also found a significant association between passive smoking and death from respiratory disease and cerebrovascular disease in men from the later cohort (1.81 (1.00 to 3.28), 1.82 (1.20 to 2.77)), but not in women. They found no association between passive smoking and death from lung cancer in either cohort.

What does it mean?

These findings confirm that passive smoking is a threat to life as well as health. The authors found a link between reduced survival and living with a smoker that was unexplained by social factors such as poverty, education, or neighbourhood of residence. They are fairly certain the association they found is causal, not least because passive smoking was associated with smoking related diseases, not just all cause mortality. They didn't find a link between passive smoking and lung cancer deaths, but the follow-up was too short and number of cancer deaths too small to be certain of this finding.

Hill et al. Mortality among lifelong nonsmokers exposed to secondhand smoke at home: cohort data and sensitivity analyses. *American Journal of Epidemiology* 2007;165:530-40

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