

ORIGINAL ARTICLE

The Baby Friendly Hospital Initiative and breast feeding rates in Scotland

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Objective: To examine the effect of the Baby Friendly Hospital Initiative on breast feeding rates in Scotland.
Design: Observational study using an annual survey of progress towards the WHO/UNICEF Baby Friendly Hospital Initiative and routinely collected breast feeding rates gathered on the Guthrie Inborn Errors Screening card at 7 days of postnatal age.

Setting: Scotland, UK, population 5.1 million, with about 53 000 births a year.

Participants: All 33 maternity units with over 50 births per annum and 464 246 infants born in Scotland between 1995 and 2002.

Main outcome measures: Baby Friendly status of each maternity unit at the time of an infant's birth: certificate of commitment, UK standard award, and breast feeding at 7 days postnatal age.

Results: Babies born in a hospital with the UK Baby Friendly Hospital Initiative standard award were 28% ($p < 0.001$) more likely to be exclusively breast fed at 7 days of postnatal age than those born in other maternity units after adjustment for mother's age, deprivation, hospital size, and year of birth. From 1995, breast feeding rates had increased significantly faster in hospitals with Baby Friendly status by 2002: 11.39% (95% confidence interval 10.35 to 12.43) v 7.97% (95% confidence interval 7.21 to 8.73).

Conclusion: Being born in a hospital that held the award increased the chance of being breast fed. All maternity units should be encouraged to undertake the significant strategic and practical changes required to achieve UK Baby Friendly Hospital Initiative standard status.

Since the 1970s the Department of Health has acknowledged the need to halt the decline in breast feeding initiation and duration by improving support for breast feeding during maternity care.^{1,2} In 1993, the Baby Friendly Hospital Initiative, a WHO/UNICEF initiative was introduced in the United Kingdom for this purpose.³ The initiative uses "Ten steps to successful breast feeding", research based practices intended to promote and support breast feeding (table 1), backed by an external assessment and award programme. The Scottish Executive recommended the initiative to NHS maternity service providers in Scotland in 1994 and 1996.^{4,5}

Research evidence exists for the individual Baby Friendly Hospital Initiative steps, but so far there has been limited evaluation of the relation between the overall implementation of the initiative and breast feeding rates.⁶ A recent cluster randomised trial in Belarus of the effect of an experimental implementation modelled on the Baby Friendly Hospital Initiative showed that infants from intervention sites were significantly more likely than infants from control sites to be breast fed to any degree at 12 months, and to be exclusively breast fed at both 3 and 6 months.⁷ Preliminary data from Scotland also suggested a link between Baby Friendly status and increased rates of breast feeding in 1997/8, at a stage when three Scottish maternity hospitals had received a Baby Friendly award.^{8,9}

The purpose of this study was to assess the effect of introducing the WHO/UNICEF UK Baby Friendly Hospital Initiative on rates of breast feeding at 6/7 days in Scottish maternity units, up to 2002.

METHODS

Postal questionnaires were sent in March 2000 and May 2001 to the midwife with responsibility for infant feeding at 33 Scottish maternity units with 50 or more births per annum. Information was collected on whether or not the hospital was

participating in the Baby Friendly Hospital Initiative, what stage had been reached in the accreditation process (working towards accreditation but no award yet, certificate of commitment, or UK standard award), progress with implementing each of the "ten steps", and audit of each step.¹⁰ Non-respondents were followed up and interviewed by telephone, leading to a 100% response rate in 2000 and 97% in 2001. Information, from 1995 to 2000, on the stage of accreditation and the date achieved was made available by the Baby Friendly Hospital Initiative.³

We chose to measure changes in breast feeding rates using data collected at the time of the Guthrie test (6/7 days). Other datasets provide information at different time points, but the Guthrie data have the advantage of being 99.8% complete.^{11,12} The Guthrie dataset includes the baby's address and postcode, place and date of birth, mother's date of birth, and type of feeding (tick boxes for breast, bottle, and other—intended for intravenous feeding). A total of 464 246 Guthrie records for the years 1995–2002 inclusive were included in the analysis; 9333 (2%) records of babies born outside Scotland or where the hospital of birth was unclear were excluded. A further 9290 (2%) records were identified and excluded where the age of the baby at testing was less than 4 days or greater than 30 days. The remaining 445 623 (96%) records were included in the study.

The available data allowed mother's age, size of hospital of birth (number of births per year in the year ended 31/3/2001, from Information and Statistics Division, NHS in Scotland), and deprivation as measured by the Carstairs deprivation category¹³ to be included in the analysis. Age at test date was not included, because it was not available in 1995 or in 2000. Analysis of data for the years where they were available showed no significant effect after adjustment for other variables.

The effect of poorly completed data in the Guthrie dataset was assessed for feeding, mother's age, and Carstairs

Table 1 The ten steps to successful breast feeding in the United Kingdom

- 1 Have a written breast feeding policy that is routinely communicated to all healthcare staff.
- 2 Train all healthcare staff in the skills necessary to implement the breast feeding policy.
- 3 Inform all pregnant women about the benefits and management of breast feeding.
- 4 Help mothers initiate breast feeding soon after birth.
- 5 Show mothers how to breast feed and how to maintain lactation even if they are separated from their babies.
- 6 Give newborn infants no food or drink other than breast milk, unless medically indicated.
- 7 Practice rooming-in, allowing mothers and infants to remain together 24 hours a day.
- 8 Encourage breast feeding on demand.
- 9 Give no artificial teats or dummies to breast feeding infants.
- 10 Foster the establishment of breast feeding support groups and refer mothers to them on discharge from the hospital or clinic.

deprivation category. Feeding was missing in 14 328 (3.2%) records. Mother's age was not recorded in 10 502 records (2.4%). Carstairs deprivation category is postcode based, and postcode was less well completed, with 77 682 records (17.4%) not able to be given a deprivation category. Missing postcodes for 1997 data were manually completed from the mother's address on the Guthrie card. Figure 1 shows a comparison of the data before and after completion. The difference in distribution of deprivation category before and after was small, and we have therefore made the assumption that deprivation category data from postcodes available on Guthrie cards in other years are representative of all Scottish births.

The data on Baby Friendly status of hospitals were used to categorise each Guthrie record into one of three categories, according to whether the baby was born in a hospital that on the infant's date of birth:

- held the UNICEF UK Baby Friendly Hospital Initiative standard award
- held a UNICEF UK Baby Friendly Hospital Initiative certificate of commitment
- held no Baby Friendly accreditation.

SSPS for windows was used to perform *t* tests to compare mean breast feeding rates, and multivariate analysis to detect association between breast feeding and Baby Friendly status, after adjustment for Carstairs deprivation category, mother's age, size of hospital, and year of birth.

Ethics approval was obtained from the Greater Glasgow Primary Care research ethics committee.

RESULTS

Women giving birth in Scottish hospitals from 1995 to 2002 were 28% (OR = 1.28, 95% CI: 1.24 to 1.31) more likely to be

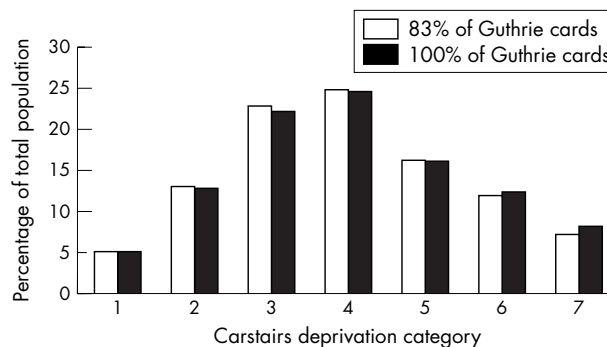


Figure 1 Distribution of Carstairs deprivation category for those Guthrie cards for babies born in 1997 with postcode completed by the midwife (83%) and after determination of the absent postcodes from the address on the Guthrie card (100%).

breast feeding at 7 days if they gave birth in a hospital with the UK Baby Friendly Hospital Initiative standard award (table 2) after adjustment for Carstairs deprivation category, mother's age, number of births at hospital, and year of birth. The difference is significant, and remains significant after adjustment for the confounding variables above.

For all hospitals that had achieved the UK Baby Friendly standard award by 2002, the mean breast feeding rate was 41.1% in 1995 and had reached 52.5% by 2002, an increase of 11.4% (95% confidence interval 10.4 to 12.4). For hospitals without the UK Baby Friendly standard award by 2002, the mean breast feeding rate was 38.9% in 1995 and had reached 46.9% by 2002, an increase of 8.0% (95% confidence interval 7.2 to 8.7).

DISCUSSION

This study shows a significant association between the achievement of the UK Baby Friendly standard award and higher breast feeding rates at 7 days. Also, maternity hospitals that had received the UK Baby Friendly standard award by 2002 had a significantly larger increase in breast feeding rate from 1995 to 2002 than other maternity units. However, we cannot be sure that this association is solely attributable to UK Baby Friendly status. Most NHS boards in Scotland have a breast feeding strategy, and in many areas a number of other initiatives, such as peer support for breast feeding, advertising campaigns, and training for primary care staff have also been introduced.¹⁴ We suggest our study be repeated over time to confirm the association we have identified.

We have not considered the process of the intervention or attempted to explain the effect of individual components. However, it is clear that a certificate of commitment (table 2), which involves committing to the Baby Friendly award process over a finite period, did little in itself to change breast feeding rates. We endorse the call for high quality evaluation

Table 2 Baby Friendly status of hospital versus breast feeding at 7 days

	Breast feeding		% Breast	OR	95% CI	OR*	95% CI
	Yes	No					
UK standard award	19418	19922	49.4	1.34	1.32 to 1.37	1.28	1.24 to 1.31
Certificate of commitment	46256	60207	43.4	1.06	1.05 to 1.08	1.04	1.02 to 1.06
No accreditation	121668	167785	42.0	1		1	
Total births	187342	247914	43.0				

*Adjusted for Carstairs deprivation category, mother's age, number of births at hospital and year of birth.

of the effect of single and combined interventions to promote breast feeding, including women's views of the service.¹⁵

Our study is the first in the United Kingdom to use routinely collected data to evaluate an intervention to promote breast feeding. It looks to be a useful method, avoiding the cost of data collection. Unfortunately, data were not available to us for feeding at later stages, as we used the Guthrie card system collected at about 7 days postnatal age. Data are collected routinely on breast feeding at birth, discharge from hospital, and at 10 days, 6 weeks, and 8 months which may allow the evaluation of health promotion interventions on initiation and duration of breast feeding. More work is required to ensure the use of standard breast feeding definitions and to validate large datasets. However, the potential is clear.

All maternity units should be encouraged to undertake the changes required to achieve the WHO/UNICEF UK Baby Friendly Hospital Initiative UK standard award in order to improve breast feeding rates and the health and wellbeing of mothers and babies.

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