

# Use of personal child health records in the UK: findings from the millennium cohort study

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## Abstract

**Objectives** The personal child health record (PCHR) is a record of a child's growth, development, and uptake of preventive health services, designed to enhance communication between parents and health professionals. We examined its use throughout the United Kingdom with respect to recording children's weight and measures of social disadvantage and infant health.

**Design** Cross sectional survey within a cohort study.

**Setting** UK.

**Participants** Mothers of 18 503 children born between 2000 and 2002, living in the UK at 9 months of age.

**Main outcome measures** Proportion of mothers able to produce their child's PCHR; proportion of PCHRs consulted containing record of child's last weight; effective use of the PCHR (defined as production, consultation, and child's last weight recorded).

**Results** In all, 16 917 (93%) mothers produced their child's PCHR and 15 138 (85%) mothers showed effective use of their child's PCHR. Last weight was recorded in 97% of PCHRs consulted. Effective use was less in children previously admitted to hospital, and, in association with factors reflecting social disadvantage, including residence in disadvantaged communities, young maternal age, large family size (four or more children; incidence rate ratio 0.87; 95% confidence interval 0.83 to 0.91), and lone parent status (0.88; 0.86 to 0.91).

**Conclusions** Use of the PCHR is lower by women living in disadvantaged circumstances, but overall the record is retained and used by a high proportion of all mothers throughout the UK in their child's first year of life. PCHR use is endorsed in the National Service Framework for Children and has potential benefits which extend beyond the direct care of individual children.

## Introduction

The personal child health record (PCHR) is a booklet given to new parents in the United Kingdom, to be used as the main record of their child's growth, development, and uptake of preventive health services. The ethos behind the record is improved communication, enhanced continuity of care, and increased parental understanding of their child's health and development.<sup>1</sup> We examined use of the PCHR throughout the UK for recording children's weight and explored its associations with measures of social disadvantage and infant health, using cross sectional data from the millennium cohort study.<sup>2</sup>

## Methods

In the millennium cohort study, parents of 18 819 children born between 2000 and 2002 (response rate

72%) were interviewed on a range of topics when their children were 9 months old.<sup>3</sup> Interviewers asked parents to produce their child's PCHR and encouraged them to consult it to confirm their child's last weight. We analysed responses from 18 503 natural mothers of singleton and first born infants (of multiple births) with three measures: the proportion of mothers who produced the record; the proportion of records that documented the child's last weight; and the proportion of mothers showing effective use of the record, defined as producing and consulting the record and the weight having been documented. We explored these outcomes in association with a range of geographical, maternal, family, and infant characteristics. We used STATA 8.2 (StataCorp, College Station, Texas) to do  $\chi^2$  tests and Poisson regression using sample weights and the software's SVY series of commands to allow for survey design.<sup>3</sup>

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Geographical, maternal, and infant characteristics associated with effective use of the personal child health record. Values are absolute numbers (weighted percentages) and rate ratios (95% confidence intervals)

Measures	No (weighted %)*	Rate ratio (95% CI)	
		Unadjusted	Adjusted†
Country:			
England	11 500 (87)	1	1
Wales	2755 (81)	0.94 (0.91 to 0.97)	0.96 (0.93 to 0.99)
Scotland	2327 (71)	0.82 (0.77 to 0.88)	0.80 (0.75 to 0.86)
Northern Ireland	1916 (79)	0.91 (0.88 to 0.94)	0.92 (0.89 to 0.96)
Ward type:			
Advantaged	7303 (88)	1	1
Disadvantaged	8813 (79)	0.90 (0.87 to 0.93)	0.95 (0.93 to 0.98)
Ethnic minority	2382 (84)	0.95 (0.91 to 1.00)	0.99 (0.95 to 1.03)
Maternal age at cohort baby's birth‡		1.04 (1.04 to 1.05)	1.03 (1.01 to 1.04)
Maternal age at first ever live birth‡		1.06 (1.05 to 1.07)	1.01 (1.00 to 1.02)
Total number of children in household:			
1	7666 (86)	1	1
2 or 3	9283 (85)	0.99 (0.97 to 1.00)	0.96 (0.95 to 0.98)
4 or more	1549 (74)	0.86 (0.82 to 0.90)	0.87 (0.83 to 0.91)
Maternal academic qualifications:			
Some	14 854 (87)	1	1
None	3596 (75)	0.87 (0.84 to 0.89)	0.96 (0.94 to 0.98)
Lone parent:			
No	15 327 (87)	1	1
Yes	3171 (71)	0.81 (0.79 to 0.84)	0.88 (0.86 to 0.91)
Maternal longstanding illness:			
No	14 598 (85)	1	1
Yes	3892 (83)	0.98 (0.96 to 1.00)	0.98 (0.96 to 0.99)
Cohort pregnancy:			
Planned	9978 (89)	1	1
Unplanned	8489 (79)	0.89 (0.87 to 0.90)	0.96 (0.94 to 0.97)
Baby's hospital admissions:			
None	15 808 (86)	1	1
One or two	2507 (81)	0.94 (0.92 to 0.97)	0.94 (0.92 to 0.97)
Three or more	181 (72)	0.84 (0.75 to 0.93)	0.89 (0.81 to 0.97)
<b>Total</b>	<b>18 498 (85)</b>		

\*Missing values are maternal age at cohort baby's birth: 7; maternal age at first ever live birth: 641; maternal academic qualifications: 48; maternal longstanding illness: 8; planned pregnancy: 31; hospital admissions: 2.

†The adjusted rate ratios take into account all other factors included in the table.

‡Per five year increase.

### What is already known on this topic

Use of the personal child health record to document a child's health, growth, and development has various benefits

### What this study adds

Use of the record is lower in women living in disadvantaged circumstances, but overall it is retained and used by a high proportion of mothers throughout the United Kingdom in their child's first year of life

## Results

Overall, 16 917 mothers (93%) produced the PCHR and 15 883 (weighted percentage 88%) consulted it to check their child's last weight. Of the PCHRs consulted, 97% had the weight documented. Thus, 15 138 mothers (85%) showed effective use of the record. All outcome rates were highest in England and lowest in Scotland.

The ability to produce the record was significantly lower in disadvantaged electoral wards (89%) compared with advantaged wards (95%) and ethnic minority wards (94%).<sup>3</sup> Younger mothers and those with fewer academic qualifications and lower socioeconomic status were less likely to produce the PCHR, as were mothers with larger families (86% if four or more children); women with longstanding illness (91%) or a history of depression (91%); and lone parents (83%). A similar range of factors were associated with the proportion of PCHRs that contained documentation of the child's last weight.

Multivariable regression analyses showed that less effective use of the PCHR was associated with factors reflecting social disadvantage, including residence in disadvantaged communities, young maternal age, larger family size, low maternal educational attainment, and being a lone parent (table). Effective use was also less in mothers who reported that their child had been admitted to hospital.

## Discussion

Although use of the personal child health record is lower by women living in disadvantaged circumstances, overall, the record is retained and used by a high proportion of all mothers throughout the UK in their child's first year of life. The apparent association of

hospital admissions with less PCHR use is of concern and may reflect a number of factors.

PCHR use is endorsed in the National Service Framework for Children.<sup>4</sup> The new national standard PCHR has been designed to reflect current policies.<sup>5</sup> Using the PCHR to its full potential has implications that extend beyond the direct care of the individual child. The findings from this study are therefore of relevance to healthcare staff, to public health (in respect to potential uses of these data), and to the NHS's information strategy (in terms of consideration of the PCHR within broader health information policies).

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Competing interests: HB is chairwoman of the PCHR subcommittee of the Royal College of Paediatrics and Child Health. This paper was written in a personal capacity.

Ethical approval: The millennium cohort study was approved by the London Multicentre Research Ethics Committee. This analysis needed no further approval.

- 1 Hall D, Elliman D. *Health for all children*. Oxford: Oxford University Press, 2003.
- 2 Centre for Longitudinal Studies. Millennium cohort study. London: CLS, 2005. [www.cls.ioe.ac.uk/studies.asp?section=000100020001](http://www.cls.ioe.ac.uk/studies.asp?section=000100020001) (accessed 6 Oct 2005).
- 3 Plewis I. *Millennium cohort study first survey: technical report on sampling*. London: Institute of Education, University of London, 2004.
- 4 Department of Health. *Core document, national service framework for children, young people and maternity services*. London: DoH, 2004.
- 5 Royal College of Paediatrics and Child Health. *The National Standard PCHR*. South Shields: Harlow, 2004. [www.health-for-all-children.co.uk/?SHOP=HFAC4&DO=USERPAGE&PAGE=PCHRPDF](http://www.health-for-all-children.co.uk/?SHOP=HFAC4&DO=USERPAGE&PAGE=PCHRPDF) (accessed 6 Oct 2005).

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### One hundred years ago

#### Modern prescriptions

COMPLAINTS are often heard that the new-fledged doctors of the present day cannot write prescriptions. Indeed it has been said by those who claim to speak with authority that even among older men prescriptions of the classic type have been superseded by the use of ready-made preparations. Dr. M. Clayton Thrush, a Philadelphia physician, has been at some pains to investigate the subject. As the result of observations made on 500 prescriptions in each of two of the leading pharmacies of Philadelphia, he has arrived at the following conclusions: (1) That the trend of modern prescription writing is in favour of proprietary preparations. (2) That the use of polypharmaceutical preparations is diminishing to a great extent, and their use is chiefly confined to the older

practitioners. (3) That the number of incompatibilities observed is greater than it should be. (4) That the metric system is but little employed at the present time in prescription writing, a state of things which Dr. Thrush thinks is to be deplored. (5) That over one-third of the prescriptions are incorrectly written; this is especially true among the younger practitioners. (6) That certain non-official preparations are very popular, and that some of these deserve admission to the United States *Pharmacopoeia*. (7) That the more educated the physician the greater the use of the pharmacopoeial preparations, and the greater the tendency to simple instead of complex, non-scientific, polypharmaceutical and proprietary preparations. (*BMJ* 1905;i:614)