AN ASSESSMENT OF THE 'ROAD-TO-HEALTH' CARD BASED ON PERCEPTIONS OF CLINIC STAFF AND MOTHERS

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Objectives. To describe the opinions of health personnel and parents at child health clinics in Cape Town; to determine the accuracy and completeness of data recorded on the present 'Road-to-Health' (RTH) card; and to ascertain the views of clinic staff and mothers regarding what information they would like to record.

Design. Descriptive prospective study.

Setting and subjects. Qualitative interviews of 35 health personnel and 150 mothers/caregivers were conducted at 17 child health clinics. The clinic practices of 32 health personnel were monitored and details of 150 RTH cards were examined.

Main outcome measures. Responses of health personnel at public and private child health clinics and of mothers were analysed. Data recorded on the card were extracted under the headings: neonatal data, immunisation schedules, measurements, and weight-for-age chart.

Results. Most nurses supported the concept of an RTH card but a large majority recommended that it be replaced with a notebook retained by the mother. A significant proportion of health personnel did not know how to use the weight-for-age chart. Most mothers attending clinics carried the card, but this number dropped for hospital visits and consultations with private doctors. Mothers' understanding of the card was limited. For mothers the weight-for-age chart, immunisation schedule and milestone section are obscure.

Conclusion. Health personnel and mothers would like to replace the RTH card with a notebook in the parents' home language. It should contain more information on health matters, adequate space to record weight and infectious diseases, an illustrated milestone chart and an improved schedule for immunisations. Mothers perceived the RTH card as belonging to the clinic and wanted a 'baby's own' document.

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A programme of growth monitoring and education can help to prevent infant malnutrition in developing countries.[1] This enables health personnel to detect early deviations from normal, to warn and educate parents of the consequences and to apply corrective measures timeously. Success depends on accurate measurements, readily available records and knowledgeable staff.

The Road-to-Health (RTH) card system was introduced in Cape Town in 1971 and in the Western Cape 2 years later. A revised version is currently used throughout South Africa. It contains a weight-for-age chart, immunisation schedules and other health-related data. To be effective such a document must be acceptable to health personnel and parents. It should be issued to all babies after birth and should contain details relevant to their present and future health. It must be easily understood and available at each visit to a clinic or hospital. This is only possible if health personnel and mothers understand the significance of the information and work together to promote the health of infants.

Although child health cards have long been recognised as being a cornerstone of preventive and promotive paediatrics in South Africa,[2] the effectiveness of the present RTH card has been questioned. A study from Tygerberg Hospital, a teaching hospital in the Western Cape,[3] showed that neither health personnel nor parents use the card effectively, and a survey in Ciskei[4] indicated that weight was measured or plotted incorrectly. In Soweto the card was considered to be too complex for all mothers to understand.[5] A study carried out in Cape Town found that health personnel did not utilise the card adequately (J Croxford, Nico Malan Nursing College — unpublished data). Similar findings were evident in a study by Makanga[6] on the use of the card in under-5 clinics in the Engcobo district, Transkei.

This study addresses these concerns. It reports the opinions of parents and health personnel at public and private child health clinics in Cape Town and determines the accuracy and completeness of recorded data. Furthermore, it obtains views from clinic staff and mothers regarding what information they would like to record.

METHODS

The study was conducted at 12 local authority clinics (7 child health clinics of the Cape Town City Council and 5 of the Western Cape Regional Services Council) and 5 clinics in the private sector. These were visited regularly but at variable times and on different days. The clinics were selected to give a wide cross-section of the local population. Mothers who attended public clinics had varied education and socio-economic backgrounds and some were illiterate. Mothers from private clinics were well educated and middle-class with an adequate income.

Interviews with health personnel

A qualitative interview was conducted with 35 health personnel (6 from private and 29 from public clinics). Open-ended questions (Table I) were used to identify their perceptions of the RTH card. Confidentiality was assured and the interview, which lasted approximately 20 minutes, was conducted by a professional nurse (DH) at the convenience of the staff. The questionnaire was written in English and when necessary was translated freely by the nurse into Afrikaans or Xhosa during the interview.

Table I. Core interview questions for 35 professional clinic nurses

What are your views on the Road-to-Health card in promoting the health of children?
Are you satisfied with the card or should it be replaced?
Many cards are not filled in completely. Would you comment?
Do you understand how to use the weight-for-age chart?
Do you understand the term 'centiles'?
Do you consider the card to be a tool for education? Comment.
How regularly do you weigh babies and children?
How often do you measure length and height?
How frequently do you measure head circumference?

Interviews with mothers/caregivers

A similar interview was conducted with 143 mothers and 7 caregivers in their home language. One hundred mothers/caregivers were from public clinics and 50 from private ones. Table II presents the questions used to identify their perceptions of the RTH card.

Table II. Core interview questions for 150 mothers and caregivers

Where was your baby born?
Of what importance to you is the RTH card?
What information do you get from it?
Was the card explained to you after giving birth, and by whom?
When visiting a clinic, hospital or doctor do you take the card with you?
Why do you take the card to these particular places?
What was the response of the doctor?
Was the card explained to you at your clinic?
Do you understand the relevant sections of the card?
How well is your baby growing?

Observations by personnel

DH monitored the clinic practices of 32 personnel. She recorded whether they requested mothers to present their cards, what difficulties were encountered in documenting the information and what action was taken if an infant had not gained weight since the previous visit.

Information on the RTH card

Details were analysed from 150 cards issued before 1995 (Table III). One hundred cards were obtained from public clinics and 50 from private ones. Information was extracted from each of the four sections of the card, namely neonatal data, immunisation schedules, measurements and a weight-for-age graph.

The study was approved by the Ethics and Research Committee of the Faculty of Medicine, University of Cape Town.

RESULTS

Interviews with health personnel (Table I)

Answers from the public and private sectors were tabled separately and expressed in percentages. Cumulative percentages were used if the difference between the answers of each group did not exceed 10%, otherwise percentages were given separately for each group. A similar procedure was followed in the interviews with mothers.

Most professional nurses (80%) supported the concept of an RTH card but many (43%) felt that its significance was not stressed adequately. The majority (80%) recommended that it be replaced with a notebook to be retained by the mother as her baby's personal health record. Reasons for this suggestion included offering more information on health matters (17%); adequate space to record weight (56%) and infectious diseases (11% private, 0% public); the provision of an illustrated milestone chart (74%); and an improved schedule for immunisations (33% private, 0% public). Nurses felt that the new book should be in the parents' home language.

Half the nurses interviewed considered that they were too busy to fill in details, and a significant proportion (37%) did not know how to use the weight-for-age chart. For some (11%) the centiles were a mystery. Many nurses at private clinics (22%) lacked interest in the RTH card, 11% considered it to be confusing and 33% thought that the plotting area was cramped.

All nurses interviewed felt that the RTH card should play an educational role and 71% stressed that the significance of the weight-for-age chart should be explained to parents. Seventy-four per cent believed that the achievement of normal milestones for a given age is a valuable measurement of health and should be clearly indicated. Similarly, 43% of nurses believed that immunisations are a valuable measure of health and 31% considered adequate nutrition to be important, although no advice on the latter features on the card. Twenty-six per cent of nurses thought that tests for hearing and sight should also be stressed. This contrasts with the few tests actually recorded (Table III).

Most infants were weighed monthly in public clinics (62%), whereas weekly weighing was the norm in private clinics (78%). Height was measured monthly in 56% of private clinics

Table III. Details recorded on 150 RTH cards issued before 1995 (%)

	Public clinic	Private clinic		Public clinic	Private clinic
Date of birth	100	100	Serology (mother)	70	0
Birth weight	100	100	Family planning	69	0
Baby's discharge data	100	100	Local clinic indicated	65	74
Place of birth	100	100	Postnatal clinic appointment	60	24
Surname	100	100	Home visit	48	42
Immunisation schedule	100	100	Folder number	45	6
Mother's name	100	100	Weight graph	45	66
Address	99	100	Birth length	44	100
Birth head circumference	98	100	Head circumference	33	100
Apgar	98	100	Telephone number	32	100
Sex	98	100	Notes	31	22
Child's name	98	88	Medical scheme	25	50
Grav/para	97	100	Birth at private hospital	25	98
Hospital number	96	100	Length	22	100
Pregnancy/labour details	93	100	Milestones	12	8
Problems and management	90	34	Birth at home	10	0
Gestation period	88	100	Serology (baby)	3	6
Blood group (mother)	83	86	Hearing test	3	8
Births at MOU/provincial hospital	74	2	Vision test	2	6

and infrequently in public ones. In the public sector head circumference was usually recorded at birth (65%), 9 months (85%) and 5 years of age (27%), in contrast to monthly (33%) for the first 9 months in private clinics.

Interviews with mothers/caregivers (Table II)

Most mothers (98%) from private clinics had delivered their babies in private hospitals. The pattern was more variable for those in public clinics, with 51% having delivered in provincial hospitals, 26% in private ones and 23% in midwife obstetric units.

The distribution of the RTH card from these sources was generally satisfactory, but 2 mothers had not received a card. One was given a card belonging to another infant, 2 received theirs through the post, 3 stated that their husbands were given the document, and 1 indicated that it had been given to a relative.

Only 60% of mothers claimed that they had received an explanation of the card at the time of issue, while 73% received instructions at subsequent clinic visits. In most cases the information had been given by district nurses or clinic staff. Nevertheless most mothers (64%) considered it to be a very important document, particularly for recording weight and immunisations (88%).

All mothers who attended public clinics carried the RTH card. The percentage dropped for public hospital visits (57%) or for consultations with a private doctor (34%). Only 14% of the latter ever asked to see the card. A similar pattern occurred in the private sector. At clinic visits 84% of mothers stated that they would produce the card whereas 62% presented it at visits to a doctor.

Mothers' understanding of the card was limited. Half stated that they did not comprehend the weight-for-age chart. Its centiles were felt to be puzzling (97%) and the representation of weight as a dot on a graph was felt to be obscure (52%). Mothers requested that weight should also be recorded in writing at each visit. Similar problems of understanding were posed by the immunisation schedule (47%) and by the milestone section (73%). Despite these limitations most mothers (85%) perceived the growth of their infants to be adequate.

Observations by health personnel

All mothers who attended public clinics and most of those at private ones (92%) were asked to produce the RTH card. In private clinics this was done specifically to record immunisations. Staff at public clinics were more likely to check previously entered data (84%) than staff at private clinics (46%). Similarly, new information was always entered on the RTH card at public clinics but not at private ones (64%). However, the details were mostly incomplete as they excluded notes of previous BCG results, tine tests and milestones.

In public clinics most mothers (74%) received some explanation of the card. The sections discussed were the weight chart (58%), immunisation schedules (26%), developmental milestones (5%) and special sense tests (5%).

In private clinics relatively few mothers (31%) received an explanation of the RTH card, and interpretation of the weight chart tended to be ignored (92%). Lack of plotting space on the weight-for-age chart frequently led to inaccurate results in both public (79%) and private (54%) clinics. In private clinics weight was recorded in a book (100%) and the significance was explained to every mother. Clinic personnel responded to a

failure to gain weight by counselling on breast-feeding (public 53%, private 61%) or bottle-feeding (public 52%, private 16%), usually accompanied by dietary advice (public 32%, private 46%) and a request to re-weigh in a week's time (public 26%, private 54%). At public clinics the economic state of the family tended to be reviewed (37%) and the mother was sometimes asked if the child had been ill (21%).

Information on the RTH card (Table III)

In public clinics antenatal and neonatal details were entered satisfactorily on the RTH card, with the exception of head circumference and length measurements, which were frequently omitted. Subsequent measurements including weight were often lacking and milestones and special sense testing were rarely recorded.

In private clinics the birth weight, length and head size were always noted on the RTH card and subsequent measurements were also recorded regularly. However milestones and special sense tests were rarely entered.

Perinatal problems were frequently noted on RTH cards issued by provincial hospitals and midwife obstetric units, but not on those issued by private hospitals. Information on subsequent problems or illnesses was rarely available on either.

Discussion

Evidence worldwide has demonstrated the futility of growth monitoring without concurrent education programmes.[1] The two complement each other and local clinic staff realise that counselling is essential. Mothers need to understand the significance of faltering growth and how to avert malnutrition. They require assurance that their child's development is normal and need to comprehend the importance of adequate immunisation.

The RTH card ought to promote self-reliance in these matters, but is it warranted as a screening tool in its present form? To be effective it should detect the abnormal early and provide appropriate corrective information. However there is little evidence to suggest that it is functioning successfully. Clinic staff supported the concept of the card but not its composition. Moreover the card is not sturdy and often tears along a fold, making accurate plotting impossible. As a consequence staff made little effort to explain it to mothers or to fill in the required details. Those in private clinics have all but abandoned it in favour of their own records, although they were still using it as an immunisation record.

Clinic staff (public and private) and mothers cannot be entirely blamed for the poor utilisation of the RTH card. The original was designed and implemented without their advice and it does not meet their needs. All those interviewed favoured a more personal document containing nutritional data, illustrated milestones, a simple weight chart, a more comprehensive immunisation schedule, information regarding the treatment of common problems and space for clinic staff and mothers to make notes.

The weight-for-age chart was singled out as being a major source of frustration, especially by private clinic nurses, who recorded anthropometric measurements more frequently than other nursing staff. Staff at all the study clinics had difficulty in understanding the graph and in plotting weight accurately. Spaces on the chart are too small to ensure validity and an inexact calculation of age can compound the error. What is needed is a weight chart that clearly shows small changes in growth velocity and is easily understood by staff and mothers. Additional space to record weight in writing was also recommended.

The weight-for-age chart has also been criticised in a rural survey that identified only 22% of underweight-for-age children.[3] This was attributed to incorrect measurements or inexact plotting of weight and age. The use of age calculators or an improved chart design could overcome some of these difficulties.

Milestones were rarely entered on the RTH card and health personnel and mothers considered this section to be confusing. They requested a separate illustrated chart to be completed by staff and mothers. Special sense testing was largely ignored but reasons for this were not established. Staff may have been too busy or unfamiliar with tests for different ages.

Public clinic personnel should record head circumference, especially before 2 years of age. They need to appreciate its importance as an indirect indicator of brain growth.

Mothers perceived the card as belonging to the clinic as it carries the instruction 'to be filled-in by health personnel'. They refrained from entering information that could assist clinic staff, particularly when an infant was accompanied by a day mother. They favoured a 'baby's own' document in which they would record health details and which would give them simple advice on breast-feeding, weaning and common problems such as nappy rash. Illiterate mothers were no exception as they claimed that the information could be read by a child or friend. Mothers felt that they would be more likely to carry such a document to hospitals and doctors' surgeries and to ensure that it is filled in. Completion of the present RTH card was neglected. This was substantiated by a recent report in which 55% of mothers produced a card at a paediatric outpatient department,[2] and only 40% of available cards had illnesses recorded.

The revised RTH card introduced in 1995 does not meet any of the needs identified by clinic staff and mothers. Critical comments of this RTH card were offered spontaneously by health personnel and mothers.

The success of preschool health monitoring relies solely on the enthusiastic support of mothers and clinic staff. This will only be achieved when the needs and wishes of this group for an alternative health record are met. The desired contents cannot be contained in a card so a book is preferable.

Distribution will have to be accompanied by in-service training to ensure that the document is understood and completed at maternity units and clinics. Accurate measurements are essential and precise age is needed for plotting weight. Staff will have to impart their knowledge to mothers, who must become active partners in the health monitoring of the children of South Africa.

A personal retained health record acceptable to and understood by clinic staff and mothers could play an important role in successful growth monitoring.[7]

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