Background. Globally, child health services are a priority, but are most acutely felt in underdeveloped and developing countries. Most of the children who live in such countries die from a disease or combination of diseases that could easily have been prevented through immunisations, or treated at a primary healthcare level. Undernutrition contributes to over a third of these deaths. Preventive measures are important to proactively prevent such disease and mortality burdens. Well-baby visits are for babies who come to the clinic for preventive and promotive health, and who are not sick. One of the goals in the National Core Standards is to reduce waiting time in health establishments. However, it is imperative that all necessary assessments are conducted during a well-baby visit. The Road to Health booklet (RtHB) contains the baby’s health record, and is issued to all caregivers, usually on discharge post-delivery. It also contains lists of appropriate assessments that should be performed during each well-baby visit according to age, including immunisations and health promotion messages for caregivers. In South Africa, infant morbidity and mortality rates are decreasing very slowly, requiring effective use of the RtHB to address important applied and research problems.

Objective. To investigate how ‘well babies’ were monitored in primary healthcare facilities.

Methods. A descriptive quantitative cross-sectional survey design was used for retrospective review of 300 babies’ RtHBs, using a checklist developed directly from the assessment page of this booklet. The clinical microsystem model was used to guide the study. Data were analysed using SPSS version 22.0.

Results. Babies were shown to have been immunised in 100% of records, while discussion of side-effects and the management thereof were only recorded in 9.7% (n=20) charts. Records indicated that 98.7% (n=296) of babies were weighed, but only 71% (n=213) of weights were ‘plotted’ and 56.3% (n=169) classified according to the integrated management of childhood illnesses norms.

Conclusion. Based on the findings, this research was able to make a contribution to the body of knowledge about baby monitoring practices in primary healthcare settings.
the elements 'patients' and 'processes' are discussed. A PHC facility is a clinical microsystem within the administration it is under, and each different service rendered within the facility, such as, in this article, the 'well-baby clinic', forms a clinical microsystem within the larger clinic. Good practices in one microsystem can be replicated in other microsystems within the clinic, making their work run more smoothly. The aim of the study was to determine how thoroughly healthcare providers in the well-baby clinic monitor babies.

Methods Design
A descriptive cross-sectional design was used to conduct the study in randomly selected PHC facilities in eThekwini district in KwaZulu-Natal Province, SA. There are 8 community health centres and 102 PHC facilities in the district. In addition to these, 28 mobile units service the hard-to-reach rural areas.

Sampling
Two-stage sampling was used: of facilities, and of caregivers. A sample of 20 (32%) of 62 facilities, with an average of 190 users of the well-baby clinical microsystem a month, was randomly chosen using a fishbowl sampling technique. The names of clinics were written on pieces of paper, put in a bowl and blindly picked out. This technique afforded each facility an equal opportunity to be included in the sample. Thereafter, a systematic sample was taken, where every fifth parent or primary caregiver and legal guardian was asked for the use of the RtHB. Only parents or legal guardians could consent to the study. Naing's\(^7\) sample size calculator was used to determine an adequate sample size of facilities, and Daniel's\(^8\) formula was used to calculate the sample size of RtHBs. It was assumed that 50% of caregivers would be carrying the RtHBs. In this study, a 95% confidence level and a margin of error of 0.05 was used to calculate the sample size. The sample size calculator produced a total of 285 observations in the 20 facilities within the study, which was rounded off to 300 record reviews of RtHBs, equalling 15 reviews conducted in each facility.

The RtHBs of 300 babies and children were therefore reviewed, in order to determine whether assessments had been captured. Records of babies and children brought in by caregivers who were not their legal guardians were excluded.

Data collection
A 16-item checklist, developed directly from items in the RtHB, was used to determine the recording of assessments conducted to monitor well babies. The items were: weight; weight plotted; integrated management of childhood illness (IMCI) classification of growth; prevention of mother-to-child transmission/HIV status and tuberculosis (TB) status; feeds; date; batch number of immunisation given; signature of the nurse who administered the immunisation; side-effects to be expected; management of side-effects; prophylaxis vitamin A and deworming; milestones; oral health; and next visit. This ensured consistency and correct documentation, and enabled the researcher to go through a large number of records quickly without missing any items. A 'yes' or 'no' indicated whether the item had been recorded, and in some cases, 'N/A' indicated due to the baby's age. The researcher sat in a private room for 10 minutes while reviewing the card and completing the checklist. The researcher visited each clinic every day until the required number of RtHBs had been reviewed.

Data analysis
Data were analysed using SPSS version 22 (IBM, USA). Descriptive statistics illustrating spread, such as proportions, frequencies, ranges and central tendencies such as means, modes medians and standard deviations were computed where appropriate. Descriptive statistics were used to describe the data, such as the children's demographic data, and their assessments.

Ethical approval
The researcher obtained approval from the Durban University of Technology Ethics and Higher Degrees Committee (ref. no. REC 33/13), as well as from gatekeepers of PHC facilities. Caregivers signed informed consent forms while waiting in the queue for the service. Participant codes were used to maintain confidentiality.

Results
A total of 300 baby records was reviewed. The age range of the babies was 0 - 59 months.

Patients Demographic data on age and gender were collected. The mean age of the children was 2.49 months (standard deviation 1.957). Records indicated that there were 51% (n=153) females and 49% (n=147) males.

Processes: Assessments in the well-baby clinic
Analysis of 300 RtHBs found that 208 babies and children had attended the clinic for immunisation, and all had had the immunisation date, batch number and signature of the nurse administering it recorded in 100% (n=208) of the charts. Records indicated that 98.7% (n=296) of babies were weighed, but only 71% (n=213) of the weights were 'plotted' in the RtHBs. Depending on the reading of the graph, weights are used to classify growth according to IMCI norms. Classification of growth was recorded in 56.3% (n=169) of the charts. There is a requirement that the HIV status or exposure to HIV from the mother is established from 3 days to 10 weeks of age, and at 6-monthly intervals thereafter until 18 months of age, and then whenever necessary. There were 172 records in which this was expected to have been recorded; however, records indicated that 'PMTCT [prevention of mother-to-child transmission]/HIV status' was only recorded in 77.3% (n=133) of charts. Healthcare providers were supposed to ask about feeding options (exclusive breast or bottle feeding, or mixed feeding) from caregivers of babies that were from birth to 6 months old. Of 137 baby records, feeding was recorded as having been asked about in 73.7% (n=101) of baby records. Vitamin A and deworm prophylactic treatment is routinely given to babies from the age of 6 months, and every 6 months until the child is 60 months old. Baby charts indicated that 'vitamin A prophylaxis' was given in 99.3% (n=150) of 151 babies and children, and 'deworm prophylaxis' was recorded to have been given in 98.2% (n=113) of 115 babies and children. These included babies and children who were due for the prophylaxis according to age, and those who were catching up because of missing doses at the due age. Caregivers are given a date to bring babies for the next visit, and baby records indicated that 'booklet next visit' was recorded in 90% (n=270) of baby records.

However, the record review indicated the following elements as the least often recorded. According to the RtHB, milestones are supposed to be assessed on babies at 6 weeks, 14 weeks, 6 months, 9 months, 18 months, 36 months and 60 months of age, but in this study the milestones were recorded in only 33.5% (n=51) of 152 records of children who were of the correct age for the milestones to be assessed. TB status is supposed to be assessed from the age of 14 weeks, but it was found to be recorded in 12.6% (n=27) of the 214 records. Side-effects to immunisation and the management thereof are to be discussed with caregivers at every immunisation session, either by providing the information or checking previous knowledge. This was found to be recorded as having been done in 9.6% (n=20) of the 208 babies' charts. Oral health should have been assessed and recorded in 154 charts; however, it was observed that it was not recorded in 100% of these charts (Table 1).
Discussion

Babies and children assessed in this clinical microsystem were between the ages of 0 and 59 months. Administration of immunisation, dates and batch numbers of vaccines were adequately documented. This indicates the efficiency of immunisation services in the process of the clinical microsystem. If the child becomes sick within 72 hours of receiving an immunisation, an adverse event is recorded. This enables all vaccines with the same batch number to be checked, and all babies who received immunisations from that batch to be monitored for signs of side-effects.

Regular weighing and recording of babies assists in early detection of malnutrition, which may prevent vulnerability to diseases and death, and allow early intervention to be implemented. Deviation from the pattern of child growth indicates that the child might have an illness, or alternatively, lack nutrients in the body. The classification of growth directs the health worker to the relevant/suitable intervention for the child’s nutritional status. It indicates the efficiency of immunisation services in the process of the clinical microsystem. If the child becomes sick within 72 hours of receiving an immunisation, an adverse event is recorded. This enables all vaccines with the same batch number to be checked, and all babies who received immunisations from that batch to be monitored for signs of side-effects.

Well-baby care is an important component of PHC, as all assessments and batch numbers of vaccines were adequately documented. This indicates the efficiency of immunisation services in the process of the clinical microsystem. If the child becomes sick within 72 hours of receiving an immunisation, an adverse event is recorded. This enables all vaccines with the same batch number to be checked, and all babies who received immunisations from that batch to be monitored for signs of side-effects.

Conclusion

Well-baby care is an important component of PHC, as all assessments and batch numbers of vaccines were adequately documented. This indicates the efficiency of immunisation services in the process of the clinical microsystem. If the child becomes sick within 72 hours of receiving an immunisation, an adverse event is recorded. This enables all vaccines with the same batch number to be checked, and all babies who received immunisations from that batch to be monitored for signs of side-effects.

Recommendations

Good practices found in this clinical microsystem should be replicated in other clinical microsystems within the facility. Healthcare providers need to be reminded of or given in-service training on the use of the RtHB. Emphasis has to be placed on the importance of well-babies’ assessments, to improve child morbidity and mortality, which remain a challenge in SA. If healthcare providers were to carry the assessments out appropriately, the country could be well on the way to overcoming some of the obstacles to reaching the SDGs. Improved and effective communication with caregivers about side-effects to look out for following immunisation is recommended, as this would minimise hospital admissions and deaths. Discussions on how some of these could be managed at home, and which ones to bring the child back to the clinic for, should be seen as vital. Supportive supervision by clinic managers may assist in identifying staff development requirements regarding child assessments and the recording thereof. Assessment of milestones is very important for early intervention and referral to relevant agents where required, to improve the lives of children.

Limitations

The RtHBs of babies and children brought in by other people other than biological parents and legal guardians were not reviewed. Crucial information might have been missed from these records.

Conflict of interest

None.

Accepted 21 December 2017.