Handover among nurses working in selected newborn units in Kenya; its purpose and structure

Mary Nyikuri (Maria) *

Strathmore University Business School, P.O. Box 59857, 00200, City Square, Nairobi, Kenya

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ABSTRACT

Introduction: Examining how nurses handover provides an opportunity to identify opportunities for improvement. Although recognised as a complex and dynamic interaction among nurses, there is little consensus regarding the primary function, location and structure of handover. The aim of this study was to understand from nurses' perspectives, the purpose and structure of handover in three different health sector newborn units in Nairobi.

Methods: This was an ethnographic qualitative research designed study. Between January 2017 and March 2018, I carried out 150 hours of non-participant observations, conducted 29 in-depth interviews with nurses (10) public sector (8) faith based and (11) private sector. All data was managed by Nvivo 10 (QSR International) and analysed using a thematic framework.

Results: The purpose of handover was to pass on the management of a patient(s) from one outgoing nurse to incoming nurse at the end of a shift. In all three hospitals, handover took place at the nurse station, but for the nurses in both public and faith based hospitals, this was followed up by bed to bed handover. The structure differed from hospital to hospital, from nurse to nurse and what was actually handed over. The shift system, time available for handover, familiarity with babies, medical emergencies and use of notes were factors that influenced the structure of handover across hospitals.

Conclusion: Although the purpose of handover was similar across the newborn units, the structure was different. There is need to perhaps develop communication guidelines for this key care process so that all relevant information about the patients is maintained across nurses.

1. Introduction

Kenya has one of the highest neonatal mortality in the world at a neonatal mortality rate of 22/1000 live births annually. Improving the quality of newborn care would greatly improve survival rates (Government of Kenya, 2014). Quality of care can be improved by addressing challenges in structure and process of care (Donabedian, 1997). Handover is one of the processes of care that nurses are involved in at the beginning and end of their shifts and that can compromise on the quality of care is not well managed (Thomson et al., 2018).

A shift handover in this context is “the process of transferring primary authority and responsibility for providing clinical care to a patient from one departing caregiver to one oncoming caregiver” (Machaczek et al., 2013). It has been described as a collective narrative of nursing practice that involves a complexity of communication (Manias and Street, 2000; Parker et al., 1992). The ‘what’ of what is shared at handover helps plan patient care, identify safety concerns and facilitate continuity of information (Alvarado et al., 2006). An effective handover has been described as promoting patient safety and continuity of care and also contributing to increased job satisfaction for nurses (Ballantyne, 2017 #537). Handovers are opportunities for staff to discuss the treatment they are giving, discuss any problems and concerns (Sabet Sarvestani, 2015 #538). Examining how nurses handover provides an opportunity to identify areas that could be strengthened for improved quality care (Kerr et al., 2011). Although considered important, authors have noted that there remains little consensus regarding the primary purpose, its location and nature of handover [6,7].

A Cochrane review to understand how effective different handover systems were for ensuring continuity of information in hospitalised patient did not find any study conducted in Sub Saharan Africa [8]. Although there have been studies conducted in Nigeria and South Africa, there remains a paucity of literature on handover on the African continent (Alberta et al., 2018; Makkink et al., 2019). The findings reported here are part of the researcher's doctoral studies where the
The overriding question was to understand from nurses’ perspectives, what influences their ability to provide quality care to inpatient newborns across three different health sector newborn units in Nairobi, Kenya. In this paper, the author presents the findings on handover, a process that was identified by nurses as one of the crucial moments when vital patient information can be lost and thus pose a challenge to their ability to provide quality care. This paper therefore describes the purpose, structure, and challenges of handover in three different health sector newborn units in Nairobi.

2. Methods

2.1. Study setting

This study was conducted in newborn units of three hospitals from public, private and faith based offering 24-hour inpatient care for sick newborns in Nairobi, Kenya. This is because Kenya operates a pluralistic healthcare sector with care services being provided by the Government (public), private for profit and private not for profit (herein referred to as faith based) institutions (Muthaka et al., 2004). The public sector provides approximately 50–60% of the health services, while the remaining health services are provided by the private and faith based sectors (Ministry of Health, 2013; Population & MEASURE/DHS+, 2005). This study was undertaken in the Newborn Units (NBUs, i.e., the inpatient neonatal care wards) of one public, one faith based and one private hospital, in Nairobi County, Kenya. These hospitals were selected based on their referral status, number of admissions and willingness to participate in the study.

2.2. Study design

To gain the inside’ of what nurses, say and what they do, the researcher adopted a qualitative study design. This enabled the author to be present on the ward, observing the activities of the nurses, participating in informal conversations with them in addition to conducting in depth interviews (Hammersley and Atkinson, 2007). Ethnography was best suitable for this study because it offers in situ observations where the researcher can ‘immerse’ themselves in a research setting, thereby generating a rich understanding of social action. Through the participant observation the researcher has the opportunity to gather insights into social practices which are normally ‘hidden’. The study was approved by the Strathmore University ethics committee SU SU-IRB 0060/16. The researcher also sought permission from top hospital administrators and NBU ward managers. After permission was granted, the author had to create rapport with nurses working in the NBUs. A detailed information sheet regarding the study was shared with all nurses prior to consenting them. It was between January 2017 and March 2018, when MN conducted 150 h of non-participant observations of ward routines during day shifts between Monday and Friday: 60 h in the faith based; 36 in the private; and 54 h in public hospital.

Sampling: All nurses working in the newborn units of the three hospitals were eligible for interview. However, only those who were on duty and not away due to study or some other permissible leave were not included. The faith based hospital had 8 nurses in total and they were all present during field work. The public hospital had 12 nurses in total but only 10 were available while out of 22 who worked in the private hospital, only 11 were available. Therefore, twenty-nine face to face in-depth interviews using an interview guide were conducted with nurses who were selected using a purposive sampling strategy. These were 10 in the public, 8 in the faith-based and 11 in the private hospital.

Data collection: Data were collected over a 4-month period across the hospitals between 2017 and 2018. All except 3 interviews were digitally recorded using an audio digital recorder. Three interviewees did not consent to be recorded. All available nurses during the study period in the hospital were eligible for participation and except in the private hospital, all available nurses in the public and faith based were interviewed after voluntary consenting. Twenty-eight interviews were conducted in English while one was conducted in Kiswahili, Kenya’s national language. Participants names were replaced with pseudonyms while all data was anonymised and kept on a password protected computer. The author had no prior knowledge of the nurses.

2.3. Data analysis

Analysis began by open coding to understand quality from nurses’ perspectives. Initial codes were generated from the research objectives which were ‘the purpose of handover; how it is structured. Additional nodes were developed iteratively as they arose from observation notes and an repeated careful reading of the transcripts. All the data was entered into Nvivo version 10 (Castleberry, 2014) software for management. The nodes generated earlier were used to code both interview and observation data. Content analysis was used. Using Nvivo 10 software for management, the data was coded in their original language and translated where necessary (Castleberry, 2014). Emerging themes were triangulated across different methods of data collection (Denzin et al., 2006) to identify any irregularities and inconsistencies within the data from what nurses were observed doing and what they reported doing in the interviews.

Trustworthiness: In line with Lincoln and Guba (1986) technique for establishing credibility, these findings were fed back to the nurses working in these hospitals for input (member checking) and to ensure trustworthiness and credibility (Cohen, 2006 #496). Additionally, the utilization of detailed transcription system, systematic coding by means of Nvivo program, as well as triangulation above were the modalities to ensure rigor and trustworthiness.

The findings have been reported using the SRQR checklist. ‘See Supplementary File 1’.

3. Results

3.1. Characteristics of the respondents

A total of twenty-nine nurses were interviewed. Most of these nurses were aged between 30-39 years. More than half had attained a diploma in nursing which is awarded after 3 years of training. During their training, they receive 2 weeks of specific training in neonatal care.

Table 1 summarises demographic characteristics of the study sample.

The public and faith based hospitals had a three shift system with the day having two shifts while the night lasting 12 h while the Private hospital had two shift of 12 h each. All wards had a nursing officer in charge who was present during the day shifts only.

3.1.1. The purpose of handover

All nurses mentioned that handover was for continuity of care for the babies. It was at handover that an incoming nurse received a verbal as well as written report of each baby in the ward. Handover was an opportunity for the outgoing nurse to account for each admitted baby. It also marked the end and beginning of a shift.

‘The essence of handover is to ensure that there is continuity of care and accountability of the babies to the incoming nurse...so we start with receiving the report, or it is called handing over. So whoever was on night duty is supposed to tell us what happened during the night and state of children during the night up to the point is handing over. so we take some time receiving the report, talking about it, the condition of the baby, generally discussing about the plan for this baby at times and of course doctor's management versus our management, because we usually have our own management as much as it should run concurrently but usually have our own management versus the doctor's management...’ Faith based 4
From observations in the public hospitals, nurses advised students to always ensure that handover is done to avoid them from receiving bodies thinking they are babies.

“The students who were coming in for the afternoon shift arrived, those who were in the morning shift wanted to leave but the nurse reminded them to always conduct a mini handover among themselves. If you don’t, you might receive bodies without knowing thinking they are babies...”. Day 15 observation notes

In the private hospital, nurses mentioned that a handover was like a ritual that they had to undergo, it is what helped them plan for care including allocating duties to the health care assistants.

“When we meet at the handover, it is a chance to know how ‘heavy’ the day is, and what support we will need from each other and from other departments...”. Private 06

3.1.2. Structure of nurse handover

Handover was structured to mark the beginning and end of a shift. It was a time for incoming nurse[s] to assume responsibility of the patients. It was described by the nurses as a time when their day began. It was characterised by giving and taking a report which contained the patients’ census, their names and level of care.

“...My typical day in NBU, starts when I report in the morning, I take the report from the staff who was there in the night, after the report and if all babies are stable, there is none that needs critical care, special investigations, I just proceed to administer medication; there is just a routine that is followed...” Public 02

“...When I come in the morning, the first thing to do is to take the report from the outgoing nurse...” Private 04

“...When we arrive; we receive a report from the night shift team in order to know the number of babies, go cot-to-cot to physically inspect the babies – their condition, those on oxygen, IV fluids and then begin care ...” Faith based 02

3.2. Methods of nurse handover

Three methods of handover were identified in this study.

3.2.1. Handover done at the nurse station

This type of handover was for general overview of all the babies and the ward. It also covered the number of admissions and those discharged or referred to other hospitals. Nurses felt that having a general overview of the ward was useful especially if they were being allocated new patients. It gave them confidence to respond to parents and relatives’ questions regarding care. From my observations, office handover served as catch-up time on individual nurse updates, informal debriefing and day-to-day team support. This method of handover tended to last longer in the private than in the public and faith based hospitals.

3.2.2. Bedside handover

The researcher observed what appeared to be bedside handover in both public and faith based where nurses walked from baby to baby confirming what had been covered during office handover. The time spent on each baby depended on whether the nurse was new to the ward, change in baby care management, the baby was a new admission, change in baby care management, the baby was a new admission.

“On day thirteen of hospital ethnography, I observed that after the handover at the desk the nurses quickly moved round from baby to baby, then the nurse realized there was a baby who didn’t have a cardex, she asked a student to start a cardex for the baby. Three days later, when I arrived, the nurses had already finished office handover...the nurses went round from baby to baby and because the incoming nurse was familiar with the babies, much time was taken on the new admissions.”

3.2.3. Self-handover

In addition to the two types of handovers, there was a third one observed in the public hospital only where an incoming nurse did self-handover. Self-handover happened when the incoming nurse did not find the outgoing nurse. This involved reading the notes in the cardex to familiarise themselves with the general picture of the ward and what treatments and procedures to carry out for each baby.

“On day twenty third of ethnography in this hospital, I observed a nurse who reported to work, went through the notes in the cardex and immediately started the preparation of drugs for treatment...” Day 23 observation notes

In the following section, I describe in details, the structure of handover across the three hospitals albeit not uniform as presented above.

Table 1. Demographic characteristics of the study participants.

| Characteristic          | Sector   | Public | Private | Faith based |
|-------------------------|----------|--------|---------|-------------|
| Age distribution        |          |        |         |             |
| 20-29                   |          | 0      | 1       | 4           |
| 30-39                   |          | 4      | 8       | 2           |
| 40-49                   |          | 5      | 2       | 2           |
| 50 and above            |          | 1      | 0       | 0           |
| Training level          |          |        |         |             |
| Diploma                 |          | 8      | 4       | 6           |
| Higher Diploma          |          | 2      | 0       | 1           |
| Bachelors               |          | 0      | 6       | 1           |
| Masters                 |          | 0      | 1       | 0           |
| Time in NBU             |          |        |         |             |
| Range in months and years |        | 2 months to 8 years | 6 months to 7 years | 1-18 years |
| Mode                    |          | 3.5 years | 2.5 years | 4 years    |
The handover in the faith based hospital.

The handover process begins with a word of prayer. The outgoing nurse/nurses sit with the incoming nurses after the incoming nurses do a quick walk around of observation of the babies within the NBU. The outgoing nurse goes through file after file starting with those in NBU, then those roomed in, and lastly those in the Kangaroo Mother Care (KMC) room. I did not see the incoming nurses confirm the babies in the KMC room and that roomed in. The handover is composed of the following information: total census, then each baby's name, gestation, reason for admission, general appearance; weight at admission and current weight; feeding mode and amount; temperature; any procedures done/to be done; involvement of relatives and referrals. They also shared information on who has been discharged/admitted/changed medication/need critical care. The incoming nurses listen to the report; ask questions some make own short notes while others don't. Although they read from babies' files, what was covered was also not uniform, for example, at times the age of the mother was mentioned and her parity. Relatives/mother mentioned when there needs to be a referral, counselling, a test to be undertaken outside the hospital or if they are not cooperating. The handover ends with the outgoing nurse wishing the incoming nurse/s a good day.

The handover in the public hospital.

In public hospital, the night nurse gave a general overview of the ward and then individual baby condition using the files. The incoming nurse/nurses listened and asked questions regarding any procedures done/undone, they took notes either on paper or on the palm of their hands. After the verbal report, the outgoing nurse took the incoming nurse round inspecting the babies and confirming their presence. The in charge attended these sessions if on duty and when available, but this was rarely observed. On occasions when the incoming nurse was delayed elsewhere or there was an emergency referral, there was no handover process, but an incoming nurse had to read the cardex to familiarize themselves of what needed to be done.

The handover in the private hospital.

The handover session began with a word of prayer where all nurses gave their reports to the whole unit team, with the incoming nurses jotting notes of all the babies on small pads. Questions from nurses were raised mainly regarding the different regimens that were mentioned and tests that were recommended for the patient. After the general group handover, each nurse went to inspect and receive the babies physically from the outgoing nurse. The nurse in-charge always attended these handover sessions and clarified where a nurse needed more information. It was from these meetings that the in-charge prioritized administratively and nursing tasks.

4. Discussion

The aim of this study was to describe the various forms of handover, purpose, structure and challenges of handover across the three health sector newborn units. There was no attempt to discuss which mode would contribute to better quality, as an integrative review of the different models and process of handover available found no evidence that any one model displayed superior efficacy (Bakon, 2017 #524). This study showed that handover in all the three hospitals was meant for passing on patient information from one nurse to another at the end of the shift. Although the researcher did not see any guidelines for handover, three handover styles were identified in this study; nurse station, bedside and self-handover. Although taped handover has been recorded in literature, this was not a finding in this study [8]. The researchers observed variations in practice and a lack of consensus on the format of nurse handover. Where the hospital observes a twelve-hour nursing shift, the implication is that the outgoing shift is always due to go off duty after handover and more information is therefore shared and the possibilities of remembering 12 h information may diminish. This is different in a hospital that observes a three-shift system, where there is a built-in overlap of handover during the middle handover and therefore less time consuming and less information required for the outgoing nurse to share with the incoming nurse. Literature shows that when the process for handover varies between settings or healthcare providers, the risk of missed or incorrect information is elevated (Alvarado et al., 2006 #522).

However, a qualitative study to explore nurses’ perspectives on the introduction of bedside handover and the use of written notes showed that nurses tended to be flexible within their work spaces. This study called for standardised communication of information guided by written handover summary sheets (Johnson, 2013 #523). Although the Cochrane review by Smeeuwers et al. (Smeeuwers et al., 2014) suggested that, based on current knowledge, handovers should also be face-to-face and involve patients, it is may be difficult in newborn units and in contexts experiencing nursing shortage. Nurses may also need to be trained in family (parent) involvement in handover.

4.1. Limitations

These study findings are limited; firstly, the study was conducted in a small number of places in one city, but it provides detailed work on the process of handover and triangulation of interviews and observations gives depth to the study. Secondly, the author did not start out by looking at handover as a category on its own but it emerged in nurses’ narratives of what influences their ability to provide quality care, handover process emerged as an important aspect of their ability to provide quality care. This is also the premier study that has gathered data from three sectors that offers important contrasting views.

5. Conclusion

Nurses working in newborn units in Kenya are involved in the process of handover at the end and beginning of their shifts. The purpose is to transfer as well as take over patient care and responsibility from the outgoing nurse as a category on its own, but it emerged in nurses’ narratives of what influences their ability to provide quality care, handover process emerged as an important aspect of their ability to provide quality care. This is also the premier study that has gathered data from three sectors that offers important contrasting views.
M. Nyikuri: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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