

# Improving the quality of nursing documentation: An action research project

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**Dates:**

Received: 15 Jan. 2014

Accepted: 18 Aug. 2014

Published: 03 Dec. 2014

**How to cite this article:**

Okaisu, E.M., Kalikwani, F., Wanyana, G. & Coetzee, M., 2014, 'Improving the quality of nursing documentation: An action research project', *Curationis* 38(1), Art. #1251, 11 pages. <http://dx.doi.org/10.4102/curationis.v37i1.1251>

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**Background:** Documentation is an important function of professional nursing practise. In spite of numerous improvement efforts globally, inadequate documentation continues to be reported as nurse authors investigate barriers and challenges.

**Objectives:** The project aimed to improve nurses' documentation of their patient assessments at the CURE Children's Hospital of Uganda in order to enhance the quality of nursing practise.

**Method:** An action research methodology, using repeated cycles of planning, intervention, reflection and modification, was used to establish best practise approaches in this context for improving nurses' efficacy in documenting assessments in the patient record. The researchers gathered data from chart audits, literature reviews and key informant interviews. Through analysis and critical reflection, these data informed three cycles of systems and practise modifications to improve the quality of documentation.

**Results:** The initial cycle revealed that staff training alone was insufficient to achieve the project goal. To achieve improved documentation, broader changes were necessary, including building a critical mass of competent staff, redesigned orientation and continuing education, documentation form redesign, changes in nurse skill mix, and continuous leadership support.

**Conclusion:** Improving nursing documentation involved complex challenges in this setting and demanded multiple approaches. Evidence-based practise was the foundation of changes in systems required to produce visible improvement in practise. The involved role of leadership in these efforts was very important.

## Introduction

Assessment is the first standard of nursing practise (American Nurses Association 2010). Adequate assessment is essential in guiding interventions and evaluating the effect of care. Assessment includes gathering, validating and analysing subjective (symptoms) and objective (signs) information about a patient's health status. Assessment directly influences the nurses' plan of care, (Taylor *et al.* 2011:559) and is necessary for continuous provision of quality care. It is therefore important that nursing assessment is communicated accurately and stored effectively in the patient record.

In a British study, Rothman *et al.* (2012) found that substandard documentation of nursing assessments was associated with increased in-hospital and post-discharge mortality. Initial chart audits of documentation at the CURE Children's Hospital of Uganda (CCHU) revealed that the quality of the documentation of nurses' assessments was poor. Nursing leadership therefore undertook to work with nurses to improve the standard of documentation.

## Problem statement

CCHU uses paper-based documentation, with the scientific nursing process as the documentation guiding framework. However, audits of patient records for quality assurance purposes and morbidity and mortality reviews revealed poor documentation of nursing assessments and other pertinent patient care information. Since the majority of nurses employed at the hospital were enrolled nurses with limited experience and little formal training in nursing assessment.

## Aim

This project aimed to improve the documentation of nursing assessments in the patient record as a step toward improving nursing practise at the hospital.

## Background

CCHU: CCHU is a specialist paediatric neurosurgical teaching hospital, located in Mbale, Eastern Uganda. The hospital's focus is treatment of children with hydrocephalus, neural tube defects (including spina bifida), and epilepsy and brain tumours.

During the study period (2008–2012), the hospital had 40 beds (30 ward beds and 10 Intensive Care Unit [ICU] beds). There were, on average, 1230 admissions each year; 1180 of these children were being seen for the first time.

At CCHU the nursing service is led by a nurse manager and an assistant-nurse manager. A charge nurse on each shift is responsible the day-to-day running of each of the ward, ICU and operating room or theatre. The nursing care activities are organised under a total patient care delivery model in which the primary care nurse is responsible for all the care of a group of patients throughout the shift. The hospital employed 34 primary care nurses, the majority of whom were enrolled nurses. Enrolled nurses are registered with the Uganda Nurses and Midwives Council after a three year training programme in general nursing science or comprehensive (nursing & midwifery) nursing science. This level of training requires an Ordinary-level certificate (11 years of schooling) for entry into the training programme. Diploma and baccalaureate nursing training programmes require an Advanced-level certificate (13 years) and graduates are registered nurses.

Uganda: The economic cost of treating children with neurosurgical disease is substantial in developed and low resource countries alike (Rabiu & Adeleye 2013). Location in the developing world makes achieving quality health care delivery a difficult goal for a variety of reasons, not least of which is the limited availability of resources. Competent nursing as a resource is fundamental if quality outcomes for patients and hospitals are to be realised. In the authors' experiences of teaching in nursing colleges in Uganda (i.e. non-baccalaureate training institutions), critical thinking (including models like the scientific nursing process), clinical reasoning and evidence-based practise are infrequently emphasised in nursing education. The principle approach to teaching and in clinical settings seems to be task-based rather than patient-centred. Recent evidence shows that task-based care is associated with increased risk for adverse events (Dubois *et al.* 2013:113).

Baccalaureate nurse training in Uganda started in 1993 (Klopper & Uys 2013). Both nursing service leaders were bachelor-prepared nurses who had a sound knowledge base in scientific processes and patient-centred care. The nursing leadership was able to identify the first step in changing established practise (from a task-based model to patient-centred practise) as the need to improve the nurses' knowledge and skills in assessment and documentation. The long-term goal was to achieve professional nursing practise that met the needs of the high acuity, neurosurgical paediatric patients and their families.

## Literature review

Documentation is reported to take up to 50% of nurses' time per shift (Gugerty *et al.* 2007:6). It serves a number of important functions, including communication amongst healthcare workers for continuity of care. Poor communication, in a broader sense, is known to contribute significantly to the occurrence of adverse events in healthcare (The Joint Commission 2012) and is therefore an important target of initiatives to improve patient safety. Additionally, documentation is important for education, research, quality assurance and for reimbursement by third party claimants (DeLaune & Ladner 2011:216). According to Wilson *et al.* (2012), nursing documentation can serve as an indicator of quality nursing practise. Additionally Collins *et al.* (2013) demonstrated that nursing documentation could be used to predict mortality.

According to Jefferies, Johnson and Griffiths (2010:119), quality nursing documentation meets seven criteria: (1) patient-centred, (2) contains the actual work of nursing, (3) reflects the nurses' clinical judgment, (4) is presented in a logical sequence, (5) is written in real time, (6) records variances in care and (7) fulfils legal requirements. Prideaux (2011) argues that the quality of nursing documentation in many countries remains poor due to numerous reasons which different authors articulated. A Dutch study found inadequate documentation of important aspects of assessment and other related nursing care, including inaccuracy of documentation (Paans *et al.* 2010). A Swedish study reported incongruence between what is documented and actual physical patient status (Gunningberg & Ehrenberg 2004), and limited documentation of the work of nurses in an Australian study was documented by Jefferies, Johnson and Nicholls (2011). These inadequacies could be related to challenges in two areas: the nurses' individual characteristics and work environments (Cheevakasemsook *et al.* 2006; Taylor 2003).

Nurses' perceptions and attitudes towards documentation impact the quality of how and what they document. Studies in various settings found that whilst nurses consider documentation important for nursing professionalisation, they consider it a burdensome secondary task that takes nurses away from direct patient care (Blair & Smith 2012; Björvell, Wredling & Thorell-Ekstrand 2003b). Also, as nurses consider increasing liability for their practise, their documentation may be negatively affected (Brown 2013; Cartwright-Vanzant 2010). Furthermore, knowledge of the nursing process, which forms the basis for nursing documentation, has been found to be inadequate (Ofi & Sowunmi 2012; Allen 1998).

The workplace environment can contribute to poor documentation. Heavy workloads, laborious documentation forms, fragmentary language (i.e. documentation language that is not understood beyond the local context), inadequate resources and hospital culture all impact the quality of nurses' documentation (Prideaux 2011; Jefferies,

Johnson & Nicholls 2011; Taylor 2003; Björvell, Wredling & Thorell-Ekstrand 2003b).

Given the significance of nursing documentation and the reality of poor documentation practises, it is not surprising that there have been resolute calls and subsequent efforts to improve its quality (Whitcomb *et al.* 2013).

Training nurses to improve knowledge, skills and documentation practises has been a widely used strategy. For example, Jefferies *et al.* (2012) used a writing coach programme to improve documentation quality. Training has been augmented by using written practise standards (Considine, Potter & Jenkins 2006); standardised nursing records, or a nursing model (Tornvall, Wahren & Wilhelmsson 2009; Björvell, Wredling & Thorell-Ekstrand 2003a).

## Research method and design

This project utilised action research and action learning methods. Revans (1982) first described action learning as the process in which groups of people that carry real responsibility in real conditions work together on real issues or problems. When this process has the added element of rigorous tracking to gain understanding and knowledge, action research takes place. Dick (2002) states that reflection that is critical, regular and systematic allows more confidence in the research outcomes. In this study, the flexible spiral process of action research, involving stages of planning, implementation, evaluation and modification allowed action (change and improvement) and research (understanding and knowledge) to be achieved at the same time. The reflective cycles utilised in this study are the 'tight cycles' described by Dick (2002) of action and critical reflection before the next action. Figure 1 shows the action research process applied in three phases of this effort to improve nursing documentation.

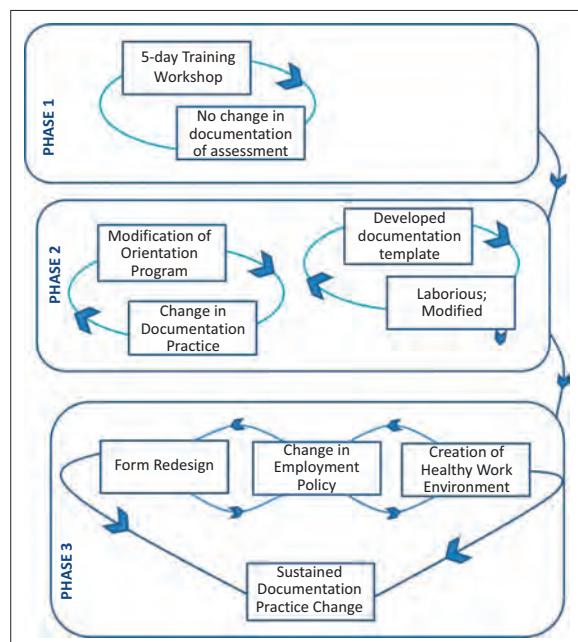


FIGURE 1: Phases of project implementation.

In Phase 1, action (training) and critical reflection on the training, informed Phase 2, resulting in change in practise and systems. In Phase 3 these were further refined to achieve the project goal – improved documentation of nursing assessments.

## Phase 1

### Training workshop

#### Methods

Data from patient records revealed poor documentation of nursing assessments. Informal interviews of nursing leadership (key informants) identified inadequate training as a likely explanation for substandard documentation.

In October 2008 a five-day training workshop for all nurses employed at the hospital was planned and conducted by a multi-disciplinary team involving the hospital anaesthesiologist, medical officers, nurse managers and human resources staff (see Figure 1, Phase 1). The training comprised topics on assessment and professional nursing practise. Trainees had access to preceptor and mentorship support post-training.

One month following the training, the researchers compared all records of patients admitted and discharged during a one week period.

## Results

Whilst training participants displayed improved assessment techniques, the chart audit showed no observable change in documentation practises. Comparison of the 2008 post-training documentation practises and content showed they were very similar to records made by different nursing personnel in 2001–2003. Therefore, training alone was insufficient to change practise.

Reflection on these findings pointed to a cultural component of documentation practise that would need to be addressed to achieve observable change in documentation of nursing assessments. The culture was defined in relation to the values, attitudes, competencies and patterns of behaviour (Feng, Bobay & Weiss 2008) of the nurses at the hospital.

## Phase 2

### Modification of orientation programme and developing a documentation template

#### Methods

In Phase 1, the researchers identified a cultural component of nursing documentation practise that was a barrier to change and conducted a literature review to gain further understanding of the concept of culture in healthcare. Interviews with nursing staff, and visiting nursing students and professors from the United States provided additional perspective.

**TABLE 1:** Topics at orientation.

Sequence	Topic
1	Nursing as a profession and role development (and rehabilitation nursing).
2	Historical perspectives in nursing critical thinking and the nursing process.
3	The nursing process.
4	Laboratory orientation.
5	The nursing health assessment (History & physical assessment/examination).
6	Respiratory and cardiovascular system assessment.
7	Neurological system and gastrointestinal assessment.
8	Psychosocial and spiritual assessment.
9	Peri-operative nursing.
10	Musculoskeletal system head-to-toe examination? (Putting it together).
11	Documentation and care planning.
12	The ECG and cardiovascular monitoring.
13	Care of a client with hydrocephalus and Spina Bifida.
14	Holistic care concepts in rehabilitative nursing.
15	Communication and teamwork.
16	BLS and PALS and the role of teamwork.
17	Medication calculations, administration and emergency drugs.
18	CIC and bowel management.

Findings guided modifications to the content and organisation of the hospital's traditional two-month orientation programme for newly hired nursing staff (Table 1). The modifications aimed to teach a new patient-centred way of thinking and doing, to consolidate the new preferred knowledge and documentation practises, and to create a critical mass of staff that would help drive the efforts to change the culture and sustain the practise change and improvement process.

Topics from the 5-day workshop on documentation were incorporated into the orientation to address identified gaps. The first month of orientation was changed to exclusively classroom-based training with only limited ward time so that the new nurses learned the preferred knowledge and practises prior to exposure to the targeted undesirable practises and cultural norms. The second month of orientation included a mentorship period that socialised the new nurses to the ward, operating room or theatre and ICU environments. During this second month of orientation, the new nurses shadowed full-time employees and were oriented to other hospital departments (e.g. radiology, laboratory and physiotherapy).

Further, the researchers developed a new form to facilitate complete documentation of nursing assessments on admission and discharge. The form prompted documentation of a comprehensive nursing history and physical examination aligned with processes taught during orientation.

Charge nurses on the wards reviewed and commented on the redesigned assessment documentation form.

## Results

This second cycle of action research focused on initiating the process of culture change in two areas: professional nursing

development – orientation, and systems changes – the redesign of the assessment documentation forms.

The charge nurses indicated that the first draft of the revised documentation form – a ruled paper with headings for complete health assessment – was unduly laborious. The form required much writing and relied on nurses' recall of what to document. Therefore, the form needed modification before it could be introduced to the wards.

After implementation of the modified orientation programme, but before implementation of the new documentation forms, chart audits revealed improvement in newly hired nurses' documentation at admission, and on a shift-by-shift basis. However, this change was not sustained; in spite of continual feedback and training, the documentation content and practise of new nursing staff reverted to the established inadequate documentation style.

Reflecting on this, the researchers concluded that the power of the culture was too strong to sustain improvement with new nurses quickly taking on the prevalent practises. It was concluded that the form would need to be easier to use in order to support adoption of the new form and documentation practises.

## Phase 3

### System changes towards professionalisation

#### Methods

Phase 2 initiated the process of culture change. The purpose of Phase 3 was to build on the changes that, though not sustained, had been visible. A literature review on culture, quality improvement and change management focused reflection on systems changes as drivers of changes in practise. Necessary systems changes included: (1) redesign testing and implementation of the admission assessment form, (2) change in employment policy, and (3) new focus on creating a healthy working environment based on the American Association of Critical-Care Nurses' (AACN) standards (2005);

- **Form redesign:** Beginning in June 2010, the corresponding author and a group of nurses in orientation training redesigned the admission assessment form with review and commentary by charge nurses. The modified form was pilot tested with the ward nursing staff during August 2010. Results from the pilot guided further modification and retesting during October 2010. Nurses began using the new Nursing Admission and Discharge Record form in January 2011 (see Appendix 1).
- **Employment policy:** In 2010, in an attempt to professionalise nursing at the hospital and change the culture, nursing and hospital leadership changed policy to employ only registered nurses (RNs) with a diploma, rather than enrolled nurses. The charge nurse positions were to be filled by baccalaureate-prepared nurses. Efforts to reach appropriate staffing levels were guided by the

development of a staffing policy, including stipulating the education levels of the nurses employed.

- **Healthy work environment:** Efforts to transform the working conditions at CCHU were initiated in January 2010. Nursing leadership prioritised four areas most likely to produce change: authentic leadership, meaningful recognition, skilled communication and appropriate staffing. The former two areas required a change in leadership style, increased efforts to develop and grow nursing leadership through training, nurses' personal development and continual reflection, and recognition of nurses' work. Nurses were trained in skilled communication through monthly continuing education sessions and enhanced mentorship.

## Results

Learning from the previous phase, the researchers planned to refine the documentation form(s) and modify other systems factors (appropriate staffing and healthy work environment), to achieve sustainable change in documentation practise:

- **The nursing admission and discharge record:** This form was redesigned to make it simple to use, requiring standardised content, limited need for recall and minimal writing, whilst still enabling the capture of all information needed for the comprehensive nursing assessment. The form is a 3-page admission and discharge record requiring check off of items needed for a comprehensive assessment of a child with neurological disability in the local context (Appendix 1). It requires documentation in a standardised format that reflects a deliberate thinking process and problem-solving approach, based on the American Heart Association's Paediatric Advanced Life Support assessment (Kleinman *et al.* 2010). New nurses were trained, audited and supervised using this assessment approach and it formed the basis for continuing education efforts.

The CCHU nurses' experiences of providing care to children with neurological illness informed content revisions along with new evidence regarding the follow-up of children with neurological disability. According to Warf, Wright and Kulkarni (2011), mortality of children with spina bifida is more strongly related to their home and/or community situation than in-hospital factors. Consequently, a section to gather information about the child's and family's home and community environments, especially healthcare services and social support systems, was incorporated into the admissions form. The form includes a focus on family composition and the parents' relationships with in-laws who, according to information gathered from the parents, seemed to have a significant influence on how family decisions are made, including decisions on healthcare seeking behaviour and follow-up. The researchers anticipated that collecting this data would alert the nurses to child and family needs and inform an individualised plan that would facilitate adherence to the follow-up schedule and positively influence patient outcomes. Further, the

**TABLE 2:** Education level of nurses at the hospital.

Year (January)	Enrolled Nurses		Registered (Diploma)		Registered (BSN)		Total
	Number	%	Number	%	Number	%	
2008	23	66	11	31	01	3	<b>35</b>
2009	16	48.5	16	48.5	01	3	<b>33</b>
2010	18	48.6	17	46	02	5.4	<b>37</b>
2013	03	9.4	28	88	01	2.6	<b>32</b>

revised documentation form assesses spirituality and belief systems. Furthermore, screening on admission for sepsis and shock was included based on anecdotal evidence in this setting that suggested that these conditions were prevalent and often missed:

- **Skill mix of nurses:** Up to 2010, the nursing skill mix at the hospital comprised both enrolled and RNs, with a predominance of enrolled nurses (see Table 2). Considering the limited resources, along with the need for sustained improved outcomes, nursing leadership decided to employ only RNs. This decision was supported by research evidence showing that increasing the proportion of staff nurses with higher levels of education ultimately led to improved outcomes (Aiken *et al.* 2003). Further, the model of total patient care delivery used at the hospital requires a widened scope of practise, strong critical thinking and clinical reasoning skills (Tiedeman & Lookinland 2004) more characteristic of RNs. Retention of RNs was also better than the retention of enrolled nurses. Consequently, in 2013 there was a higher proportion of RNs providing direct care at the hospital: 88% compared to 31% in 2008 (Table 2).
- **Healthy work environment:** Efforts to improve the work environment focused on authentic leadership, meaningful recognition, skilled communication and appropriate staffing. The intent was to enhance nurses' feelings of self-worth, confidence and respect by meaningfully recognising their contributions.
- **Authentic leadership:** The nurse managers implemented transformational leadership theory as the core strategy to create authentic leadership (Cummings *et al.* 2010; Mcfadden, Henagan & Gowen 2009; Krause & Hidley 2009). Mentorship activities focused on: (1) challenging the prevailing work processes, (2) inspiring shared vision, (3) empowerment, (4) modelling the way and (5) encouraging the heart through attention to personal things (Evans 2007). The continuous education team led by a charge nurse and supervised by the nurse manager's office set monthly objectives for knowledge and skills building. Nursing leadership and the nurses evaluated progress immediately post-training and at monthly meetings.
- **Meaningful recognition:** Leadership fostered recognition of the work of nurses through intentional affirmation during daily interactions and monthly meetings. Letters of recognition of exceptional work were written to individual nurses from the executive director and human resource manager.
- **Skilled communication:** Training in communication skills is ongoing and is a core of the continuous education

efforts, especially during monthly simulated resuscitation trainings.

- **Appropriate staffing:** Policies on staffing were developed and are still being modified in light of other issues affecting nursing including staff turnover and resource availability.

## Ethical considerations

The nursing department leadership initiated this practise improvement project and the hospital administration was aware of it. Participation by nurses was voluntary. Data was gathered and reported whilst ensuring anonymity and confidentiality.

## Discussion

To achieve sustained improvement in the quality of nurses' documentation of their assessments required a change in the culture of nursing at CCHU along with modification of systems, continual training, mentorship and strong innovative nursing leadership.

### Culture

Culture, in relation to patient safety and quality improvement in healthcare, comprises the values, attitudes, competencies and patterns of behaviour of employees (Feng *et al.* 2008). Organisational culture is complex, stable, invisible and difficult to describe, yet is known to be powerful in determining how the organisation will function (Krause & Hidley 2009; Schein 2004).

Organisational culture seems to drive and sustain change in quality improvement efforts by creating a new norm of practise. At the hospital, culture change was achieved through recruiting and socialising new nurses into new ways of thinking, thereby building a critical mass of staff with similar values, beliefs, attitudes and competencies in relation to professional nursing practise (Oliver, Marwell & Teixeira 1985). This strategy was successful in changing the nurses' documentation practises, thus creating a new documentation practise norm.

Early in the project new nurses adopted improved practises, but quickly reverted to the established norm reinforced by the culture. This failure to sustain improvements elucidated a need for 'systems thinking' to consolidate the change in documentation practise. According to Waldman and Schargel (2006):

Systems thinking suggests that one can only understand (and subsequently improve) a system by looking at how all the parts interact; focusing on, even optimising, parts in isolation will not optimise final (rather than in process) outcomes. (p. 118)

Therefore, sustained change was made possible when multiple interventions were implemented in concert. These were: (a) redesigned orientation and continual training, (b) standardised documentation forms, (c) recruitment of

highly educated nurses and (d) improvement of the work environment.

### The nursing admission and discharge record

The creation of a new documentation practise norm required redesigned forms to facilitate efficient comprehensive assessment and documentation. In addition, the form established a new way of thinking and practicing, and demonstrates the significant system changes made at the hospital over a four-year period. The revised documentation form also represents progress towards professionalisation and increasing visibility of nursing through quality documentation (Pearson 2003). The use of evidence (Warf, Wright & Kulkarni 2011) to focus on patients' and families' social circumstances enabled planning of care and follow-up that is cognisant of the obstacles to adherence to this plan.

### Skill mix of nurses

Nursing leadership focused on improving nurses' skills in care planning and clinical reasoning, as well as documentation. The hospital faced a challenge of high nurse turnover, mostly due to nurses going back to school to upgrade from enrolled nursing (EN) to registered nursing (RN, Diploma). This phenomenon is not unique to this setting; it is common to nursing globally with various consequences (Hayes *et al.* 2012; Waldman *et al.* 2004). The high turnover rate presented an opportunity to adopt a policy of employing nurses with higher levels of education. This policy change was supported by evidence that higher education levels of nurses are related to improved outcomes for patients and nurses (Kutney-Lee, Sloane & Aiken 2013; Dubois *et al.* 2013; Twigg *et al.* 2012; Aiken *et al.* 2011; Aiken *et al.* 2003). It is important to note that these authors refer mainly to the proportion of nurses with a baccalaureate degree. However, due to feasibility and resource limitations, this principle was used to employ nurses with the highest possible educational level.

### Nursing professional practise environment

A nursing practise environment refers to 'the work settings' organisational characteristics that either facilitate or constrain professional nursing practice' (Dubois *et al.* 2012:6). That the environment in which nurses practise impacts both patient and nursing outcomes (including, job satisfaction, turnover and burn out) is well documented (Aiken *et al.* 2011; Aiken *et al.* 2003). Therefore, improving the work environment in order to improve quality of care and reduce turnover was an essential component of this project. Nursing leadership adopted transformational leadership practises to improve patient, nurse and hospital outcomes.

## Conclusion

The purpose of this project was to improve the documentation of nursing assessments in the patient record, initially through training. However, three cycles of action research revealed that training alone was insufficient. Sustainable practise change required multi-pronged efforts to change

organisational culture and modify systems to support rather than hinder, practise change. Successful efforts were based on the best available evidence, including nurses' experiences in providing care and patients' experiences of receiving care.

## Acknowledgements

The authors would like to thank and acknowledge the CURE Children's Hospital of Uganda and especially the nursing staff for their willing and enthusiastic participation in the project to improve their practise.

## Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

## Authors' contributions

E.M.O. (CURE Children's Hospital of Uganda) was responsible for project planning, design and implementation and preparation of the manuscript. F.K. (CURE Children's Hospital of Uganda) was responsible for project design and policy and decision making during this period. G.W. (CURE Children's Hospital of Uganda) was involved in Phase 3 implementation. M.C. (University of Cape Town) was responsible for manuscript preparation.

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## Appendix 1: Nursing admission and discharge record: page 1.

		CURE CHILDREN'S HOSPITAL OF UGANDA NURSING ADMISSION AND DISCHARGE RECORD										
		IP #	Name	D.O.B.	Sex	Weight (Kg)	Height (Cm)	Allergies				
Date ( & Time) Of Admission		(AM/PM)		Admit Diagnosis		Admitted From:	<input type="checkbox"/> OPD	<input type="checkbox"/> Neuro-ward	<input type="checkbox"/> ICU	<input type="checkbox"/> Private	To: <input type="checkbox"/> Neuro-ward	<input type="checkbox"/> ICU
Private												
Mode Of Arrival		<input type="checkbox"/> Ambulatory	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Stretcher	<input type="checkbox"/> Cuddled	<input type="checkbox"/> Other	Tribe		Languages Spoken		Religion	
Parents/Guardians' Name				Occupation				Tel No		Address		
Date Of Discharge/Referral/Death				Information Obtained From								
ORIENTATION TO FACILITY				PRESENTING COMPLAINT								
<input type="checkbox"/> ID.Band <input type="checkbox"/> Visiting Hours <input type="checkbox"/> Bath room /Toilet <input type="checkbox"/> Linen <input type="checkbox"/> Waste Disposal <input type="checkbox"/> Meal Times <input type="checkbox"/> Fall Preventions <input type="checkbox"/> Charge nurse <input type="checkbox"/> Teaching/ Training programs		Reason(s) for seeking care		History of reason for seeking care								
BIRTH HISTORY				LABOR AND DELIVERY								
Parity: _____ Antenatal Attendance _____ months Sickness during pregnancy _____ Medications taken [pregnancy] _____ Maternal age _____ yrs Typical Pregnancy diet _____ Prenatal attitude to unborn baby _____ Concurrent personal/ family crises _____				Place <input type="checkbox"/> Hospital <input type="checkbox"/> Clinic <input type="checkbox"/> TBA <input type="checkbox"/> Home <input type="checkbox"/> Other Age of pregnancy at birth _____ Duration of labor _____ Type of delivery <input type="checkbox"/> SVD <input type="checkbox"/> C/S <input type="checkbox"/> Assisted   Blood Loss _____ APGAR score _____ Other Birth complications _____ Breastfeeding commenced _____ Cord care _____ Immunization <input type="checkbox"/> BCG <input type="checkbox"/> OPV1 <input type="checkbox"/> DPT1 <input type="checkbox"/> OPV2 <input type="checkbox"/> DPT2 <input type="checkbox"/> OPV3 <input type="checkbox"/> DPT3 Maternal attitude to baby _____								
Previous illness/ Hospitalization [BABY]												
Medications												
Nutrition Assessment: Special Dietary needs/ Restrictions												
<input type="checkbox"/> Breast Feeding: Frequency _____ Adequate Breast milk <input type="checkbox"/> Yes <input type="checkbox"/> No _____ <input type="checkbox"/> Bottle Formula: Type _____ Amount _____ Frequency _____ <input type="checkbox"/> Tube Feeding: Size _____ Formula Type _____ Amount _____ Frequency _____ <input type="checkbox"/> Solids: Commonest Feeds _____						Nutritional Risk: <input type="checkbox"/> NA <input type="checkbox"/> Birth weight less than 2500mg <input type="checkbox"/> Growth chart weight percentile <10th or >95th <input type="checkbox"/> Difficulty eating and drinking <input type="checkbox"/> Special diet <input type="checkbox"/> Seizure disorder <input type="checkbox"/> Documented food allergy <input type="checkbox"/> Anemia <input type="checkbox"/> Intractable diarrhea <input type="checkbox"/> Inappropriate diet for age <input type="checkbox"/> Failure to thrive <input type="checkbox"/> Suspected metabolic disorder <input type="checkbox"/> Protein energy malnutrition (PEM)						
HOME AND COMMUNITY ENVIRONMENT						FAMILY AND COMMUNITY SUPPORT						
Type of Dwelling: <input type="checkbox"/> Urban <input type="checkbox"/> Rural <input type="checkbox"/> Mud & wat <input type="checkbox"/> tile Cow <input type="checkbox"/> dung Semi- <input type="checkbox"/> permanent Permanent						What was the family's reaction to the child's condition? _____ Who will take care of the child at home _____ Who will support the primary care giver? _____						
Description of home: # of rooms _____ # of _____ occupants <input type="checkbox"/> _____ <input type="checkbox"/> _____ Animals _____ [baby sleeps] Water source _____ Drinking water <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Not <input type="checkbox"/> boiled Boiled Other _____ Mosquito Net use _____ Waste disposal Bin Pit Burn Other _____												

## Appendix 1: Nursing admission and discharge record: page 2.

		CURE CHILDREN'S HOSPITAL OF UGANDA NURSING ADMISSION AND DISCHARGE RECORD																								
		FAMILY HISTORY			Siblings																					
Marital status	<input type="checkbox"/> Married	<input type="checkbox"/> Separated	<input type="checkbox"/> Divorced	<input type="checkbox"/> Other	Total	Alive	Deceased																			
Type of marriage	<input type="checkbox"/> Monogamous	<input type="checkbox"/> Polygamous	No of marriages																							
Chronic illness	<input type="checkbox"/> Hypertension	<input type="checkbox"/> Diabetes Mellitus	<input type="checkbox"/> Spina Bifida	<input type="checkbox"/> Asthma																						
	<input type="checkbox"/> Mental illness	<input type="checkbox"/> Other																								
Social history	<input type="checkbox"/> Alcohol use	<input type="checkbox"/> Smoking	Coping strategies																							
TRADITIONS AND BELIEFS (OF ILLNESS)																										
Cause																										
Community Perception of Cause																										
Treatment Options																										
Prognosis																										
Expectations of treatment and recovery																										
	Date	/	/	Time		Nurse Signature	[Completing History]																			
PHYSICAL ASSESSMENT																										
VITAL SIGNS	Temperature	°C	Respiration	/min	Blood Pressure	/ mmHg	Pulse	/min	SpO <sub>2</sub>	%	Head Circumference	cm	Weight:	kg	MUAC	cm										
AIRWAY	<input type="checkbox"/> Clear <input type="checkbox"/> Maintainable <input type="checkbox"/> OPA <input type="checkbox"/> NPA <input type="checkbox"/> Head-elev-chin <input type="checkbox"/> lift low <input type="checkbox"/> dmtrx <input type="checkbox"/> Not main- <input type="checkbox"/> tainable <input type="checkbox"/> ETT <input type="checkbox"/> Other																									
Breathing								Circulation																		
Effort	<input type="checkbox"/> Normal	<input type="checkbox"/> Nasal flaring	<input type="checkbox"/> Stridor	<input type="checkbox"/> Head bob-	<input type="checkbox"/> BING	<input type="checkbox"/> Seesaw Breathing	Lung/Airway Sounds	<input type="checkbox"/> Pink <input type="checkbox"/> Pale <input type="checkbox"/> Mottled <input type="checkbox"/> Jaundiced <input type="checkbox"/> Cyanotic <input type="checkbox"/> Dry <input type="checkbox"/> <input type="checkbox"/> Moist <input type="checkbox"/> <input type="checkbox"/> Warm <input type="checkbox"/> Cold <input type="checkbox"/> Cool <input type="checkbox"/> Hot																		
Tidal Volume	<input type="checkbox"/> Chest expansion	<input type="checkbox"/> Symmetrical	<input type="checkbox"/> Asymmetrical	<input type="checkbox"/> Breath Sounds A: Normal B: Decreased C: Wheezes D: Fine crackles E: Coarse crackles F: Bronchial G: Distracted H: Expiratory								Pulses	Central	0	+1	+2	+3	+4	Peripheral	0	+1	+2	+3	+4	CRT	seconds
Minute Ventilation	<input type="checkbox"/> Normal	<input type="checkbox"/> Hypoventilation	<input type="checkbox"/> Hyperventilation	Rhythm (Describe)								Heart Sound	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Adventitious sounds											
Disability								Edema								Comments (etc):										
MGCS: Eye 1 2 3 4 Verbal 1 2 3 4 5 Motor 1 2 3 4 5 6 Pupils: Size L mm R mm Reaction L R Fontanel: Anterior open/closed, flat/bulging Posterior open/closed, flat/bulging Shunt/ETV function normal/abnormal CN function II, III direct reaction to light/consensual reaction; VII facial symmetry IX, X normal voice, +signs reflex; XII tongue symmetry, midline Comments on abnormal findings:																										
Abdomen	<input type="checkbox"/> Soft	<input type="checkbox"/> Tense	<input type="checkbox"/> Firm	<input type="checkbox"/> Flat	<input type="checkbox"/> Round	<input type="checkbox"/> Ed	<input type="checkbox"/> Obese	<input type="checkbox"/> Guarded	Rebound Tenderness	Cord	Catheter: Type _____ Size _____															
Last BM	Stool Characteristic:															Muscle Power: Left (Upper Limb)	(Lower Limb)	Right (Upper Limb)	(Lower Limb)							

## Appendix 1: Nursing admission and discharge record: page 3.

 <b>CURE CHILDREN'S HOSPITAL OF UGANDA</b> <b>NURSING ADMISSION AND DISCHARGE RECORD</b>					
SEPSIS SCREENING		SCREENING	SHOCK SCREENING		
<b>SIRS Diagnostic Criteria</b> <i>Are 2 or more of the following present?</i> <p> <input type="checkbox"/> Temperature <math>&gt;38.3^{\circ}\text{C}</math> or <math>&lt;36^{\circ}\text{C}</math>  <input type="checkbox"/> Heart Rate: 2 SD above normal for age  <input type="checkbox"/> Respiratory Rate <math>&gt;20/\text{min}</math>  <input type="checkbox"/> White cells <math>&lt;4</math> or <math>&gt;12 \times 10^9/\text{L}</math>  <input type="checkbox"/> Acutely Altered Mental Status  <input type="checkbox"/> Glucose <math>&gt;6.6\text{mmol/L}</math> </p>		<b>Source Of Infection</b> <i>Is there a documented source of infection?</i> <p> <input type="checkbox"/> Meningitis, Ventriculitis  <input type="checkbox"/> Skin/soft tissue infection  <input type="checkbox"/> Shunt Infection  <input type="checkbox"/> Bone/joint infection  <input type="checkbox"/> Wound Infection  <input type="checkbox"/> Spina Bifida  <input type="checkbox"/> Pneumonia, empyema  <input type="checkbox"/> Implantable device infection  <input type="checkbox"/> Urinary tract infection  <input type="checkbox"/> Other: _____  <input type="checkbox"/> Acute abdominal infection         </p>	<b>SHOCK CRITERIA</b> <i>Does the patient show signs of poor perfusion?</i> <p> <input type="checkbox"/> Poor Peripheral Pulses <b>OR</b> <input type="checkbox"/> bounding peripheral pulses  <input type="checkbox"/> Delayed CRT <b>OR</b> <input type="checkbox"/> Bradycardia  <input type="checkbox"/> Cool-cold Extremities <b>OR</b> <input type="checkbox"/> Warm Extremities  <input type="checkbox"/> Tachycardia  <input type="checkbox"/> Tachypnoea  <input type="checkbox"/> Increased WOB  <input type="checkbox"/> Altered Mental Status  <input type="checkbox"/> Oliguria         </p>		
SIRS + Infection = SEPSIS. Evaluate for severe sepsis; Initiate Severe Sepsis Protocol					
DEVELOPMENTAL SCREENING		NEEDS SUMMARY			
<b>Developmental Milestones [Current]</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____		<b>Developmental Milestones [Target]</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____	<b>Family/Caretaker Needs</b> _____ _____ _____ _____ _____ _____ _____	<b>Patient Needs</b> _____ _____ _____ _____ _____ _____ _____	<b>Community Needs</b> _____ _____ _____ _____ _____ _____ _____
SPIRITUAL ASSESSMENT		[Completing Assessment]			
<b>Fact</b> _____ _____ _____		<b>Coping</b> _____ _____ _____			
<b>Active</b> _____ _____ _____		<b>Treatment Plan</b> _____ _____ _____			
<b>Date</b> _____ / _____ / _____ <b>Time</b> _____ <b>Nurse Signature</b> _____		<b>If discharged AMA, Release Signed</b> <input type="checkbox"/> No <input type="checkbox"/> Yes <b>Reason</b> _____			
<b>Discharge Education</b> <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Documented _____ <b>Discharge</b> <input type="checkbox"/> to: <input type="checkbox"/> Home <input type="checkbox"/> Other		<b>OPD Appointment</b> <input type="checkbox"/> No <input type="checkbox"/> Yes <b>Date</b> _____ <b>Place</b> _____			
<b>Referred To:</b> _____ <b>Place</b> _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Date of Next Appointment:</b> _____ <b>If deceased: Mode of Discharge:</b> <input type="checkbox"/> Car <input type="checkbox"/> Ambulance <input type="checkbox"/> Other _____ <b>Discharge Notes:</b> _____		<b>Discharge Instruction sheet given</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Mode of discharge</b> <input type="checkbox"/> Charge <input type="checkbox"/> Ambulato- <input type="checkbox"/> ry <input type="checkbox"/> Wheel			
<b>Discharge Discharged By [initials]</b> _____ <b>Signature</b> _____ <b>Date</b> _____ <b>From</b> _____					