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NURSING DOCUMENTATION AS A COMMUNICATION TOOL

(A CASE STUDY FROM GHANA)

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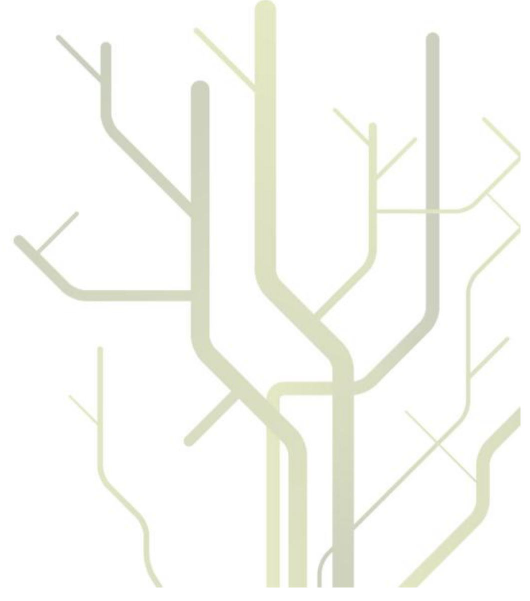

DEDICATION

This piece of work is dedicated to my mum, Anna Mawuse Doh. Her love, support, and guidance continue to be my strength throughout my academic life.

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I am very grateful to the Almighty God for leading me through my academic pursuit.

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To God Be The Glory!

BEATRICE BELLA JOHNSON

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Abstract

Quality patient's information has been proven to enhance the quality of care the patients receive as well as the guarantee of their safety. This is because information would be available to inform others and subsequently aid appropriate decision making concerning patients care. On the other hand, nurses being the professionals who spend twenty-four hours with the patients have a lot of information to capture from patients observation and care. Hence Nursing Documentation provides a lot of information to guide decision-making, and it therefore needs to be efficient in order to be effective.

The purpose of this study was to assess the effectiveness of nursing documentation as a communication tool among health professionals involved in patients care. Other aims were the extent to which nursing documentation fosters communication in the care setting and also to exploit ways in which nursing documentation could be improved upon to enhance efficiency.

The study was conducted within a period of two months at the Volta Regional Hospital, Ho, in Ghana. Qualitative research method particularly case study was used to find answers to the research question. Also Actor Network and Information Infrastructures theories guided the study. 27 nurses with different work experience and ranks, 2 physicians and 1 information officer were interviewed to exploit their divergent viewpoints on nursing documentation. In addition, participant observation was done in 4 of the wards on health personnel during work practice. The findings of the study indicated that work overload resulting from scarcity of nurses prevents the nurses from making time for documentation. Also there were too many sources of documentation with some levels of duplication without any definite structure. Further, a standard to guide nursing documentation was absent. In addition, nurses are trained in nursing care plan but had to use other types of documentation style at the work setting. Also the nurses make use and rely more on oral account of patient care than the written documentation.

In conclusion the study revealed that at times the information captured was not adequate to communicate to others. However deployment of electronic nursing documentation at the wards was found to be appropriate in addressing this problem. Also the study provides insight into issues in the nursing documentation and accordingly would inform the Nursing Body in Ghana.

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Keywords

Keywords: Actor Network theory, communication, Ghana, information infrastructure theory, Nursing Documentation, Quality patients' care and safety, Volta Regional Hospital, Ho

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List of abbreviations

ANT: Actor Network Theory

CRNBC: College Of Registered Nurses British Columbia

EPR: Electronic Patient Record

GHS: Ghana Health Service

HIS: Health Information System

ICT: Information Communication Technology

II: Information Infrastructure

MOH: Ministry of Health

NMC: Nurses and Midwives Council Of Ghana

QASP: Quality Assurance Strategy Plan

VRH: Volta Regional Hospital

WHO: World Health Organization

Chapter 1: Introduction

1.1: General Introduction

Quality health care and patients safety has been noted to be pivotal in health care delivery, especially in the developing countries where health care delivery is poor as compared to developed countries. Achieving quality health care and patients safety has been linked to quality patient information. In the case of Ghana, it is seen in a 5 year-Quality Assurance Strategic Plan (QASP) with one of its aims on client focus, safe and quality clinical care (GHS, 2007). However, the main strategy to be adopted in achieving this aim is to improve recording/documentation of patients' information by health workers with focus on developing standards for documentation of patients record (GHS, 2007). At the national level focus is on quality care, patient safety, and patient's right. Aside the QASP, the Ghana Health Service introduced the **patient charter** in 2002 to protect patient rights in the Ghana Health Service. Some of the issues addressed in the charter border on patients' rights to quality basic health care (GHS, 2002).

This points to the fact that, Ghana´s Ministry of Health is determined to ensure quality and safe care to health care consumers through deployment of quality patient information.

On the other hand, nursing documentation (part of patient information), which consists mainly of documentation of patients' care, assessments, findings, and outcome of care, is also seen to play a crucial role in attaining quality care and patients safety. As stated by Papathanassiou et al. (2007): "*The importance of nursing documentation is neuralgic, provided that without it, there cannot be a complete qualitative nursing intervention and not even an effective care for the patient"* (Papathanassiou et al., 2007). Quality care and patient´s safety is guaranteed when the nursing documentation is able to capture accurate patient information, and able to communicate what is written to all those involved in the patients care. This is because effective communication of patient information is said to be the difference between life and death as it is likened to air traffic controllers and pilots who need to clearly understand each other in what they say, given that the life of passengers who are not involved in the exchange depend on it

(Jordan 2009). Hence there is no room for deficiencies in the nursing documentation when quality care and patient safety is to be achieved.

Similarly as noted by Mbabazi & Cassimjee (2006), through appropriate nursing documentation, members of the health team would be informed on patients `status and care. Hence, creating a medium to achieve collaborative care and subsequently improving the quality of care patients receive.

Furthermore, the importance of nursing documentation in the care process is seen through the vagarious transformation of this tool over the years from attaining standards for documentation and the deployment of IT in the documentation process.

In the last few years, however, international attention has been focused on the issues of documentation and its role in ensuring collaboration in health care. In fact the World Health Organization, WHO-SEARO coding workshop held in September 2007 outlined some guidelines for medical record and clinical documentation.

In most developing countries especially sub-Saharan Africa nursing documentation is not at its best. Bakken (2007) note that large numbers of under qualified nursing staff, lack of incentives such as reimbursement, accreditation among others that are attached to efficient documentation barely exist in developing countries.

However patient's information captured in the Ghanaian hospitals especially the nursing documentation that is “neuralgic” to quality care and patient's safety is not at its best. Besides, issues at the clinical setting like time constrain and the lack of standards for documentation among others make the documentation and its uses ineffective. Consequently the study seeks to exploit how the nursing documentation is fulfilling this role of ensuring quality care and patients safety through documentation and communication of care. Secondarily, it seeks to explore ways in which nursing documentation could be improved upon to enhance efficiency. In achieving the above-mentioned aim, the study seeks to answer the following questions: How is the nursing documentation done? What is the nature of the nursing documentation? How is it used as a communication? How can it be improved to ensure efficiency? What is the role of verbal (informal) communication in the care process?

On the other hand, it has been noted that organizations that add value (IT) to and manage their information well, turn to excel in service delivery and production of goods. Accordingly, proper management of information from the health sector can be a valuable resource for planning effective and improved service. Similarly, information from patient's record systems can form the basis to optimize patient's care (Moahi, 2009). The government of Ghana envisaged this, consequently the District Health Information System was launched in 2007 to support decentralization of health care in the country, using ICT to collect data at the district/municipal level for management and policy making. This was initially piloted in twenty districts and later deployed to all the district/municipal health administrations throughout the country. The data collected at the district level, consisting of the community and public health service and the district hospitals is forwarded to the national health administration through the regional health administration (MOH, 2008). Also the DHIMS is said to provide support for Hospital Integrated electronic patient records including nursing documentation. However the DHIMS, faced a lot of challenges like irregular power supply, lack of human resource to manned the systems, among others (WHO, 2005). On the other hand the electronic patient records that is included in the HIS has not seen any implementation, as patient records at the health facilities remain paper-based, making the collection, management and use of patient information cumbersome, unreliable and incomplete.

Looking at the importance of nursing documentation in the care process, studies done in nursing documentation in developing countries especially is limited. Those done are often not accessible. Therefore this study will add to literature in this area especially in the sub-Saharan Africa, provide insight into issues in the nursing documentation and accordingly inform the Nursing body in Ghana. The study will also recommend to policy-makers ways to enhance smooth transition of paper-based nursing documentation to EPR.

1.2: Study Context and Methodology

The study was conducted in Ghana, at the Volta Region Hospital, (VRH) Ho in the Volta Region of Ghana, in four of its ward. Details of the setting of the Hospital are given in Chapter three.

The aim of the study is to assess how effectively nursing documentation at the Volta Regional Hospital is achieving collaboration between health care professionals involved in the care of the patients through communication of the nursing documentation. This requires the views of the various actors in the process and the use of nursing documentation. Hence qualitative research method focusing on case studies was employed to exploit the divergent perspectives of the actors through observations and in depth interviews and document analysis to get a deeper understanding of the questions guiding the research. As posited by Stoop & Berg (2003) qualitative methods such as observation, interviews and documentary analysis are best in understanding the point of view of participants and in its particular social and institutional context (Stoop & Berg, 2003). Also the concept of Information Infrastructure and Actor Net Work Theory were used to guide the study in the area of transforming paper-based nursing documentation into electronic nursing documentation as well as mapping the various interests of the actors in the Nursing Documentation.

1.3: Motivation

Nursing documentation is noted to be crucial in ensuring collaboration among health providers. A wide range of research has proven that efficient nursing documentation ensures quality of care and grantees patients´ safety. Consequently, my worry about the poor state of nursing documentation at the Volta Regional hospital stems from this assertion.

Nursing Documentation is an area I took special interest in, when working at the hospital as a nurse. I realized that the nursing documentation was not at its best. There were inefficiencies here and there. For example there were times when important information for patient care was not documented. These kinds of situations lead to disruptions in the care process, putting the patient safety at risk. I was also motivated to study nursing documentation due the fact that, patients in Ghana are increasingly becoming aware of their rights as patients and demanding better care, especially with the introduction of the patients' charter. Aggrieved patients and relatives are now taking nurses and hospitals to court. However nursing documentations are invariably used as a defense in these cases. Consequently most documentation could not prove the nurses claims. The above incidents motivated me to research on nursing documentation.

1.4: Outline of the Thesis

The rest of the paper is organized in the following chapters.

Chapter Two (2) the theoretical framework presents issues in nursing documentation in general and the developing countries especially. This is followed by the concept of information infrastructure, relating it to health information systems in the developing countries as well as nursing documentation. This chapter is concluded with the notion of Actor-Network theory and how these concepts relate to nursing documentation.

Details of the research setting are given in *chapter Three (3).*

The methodology guiding the study is described in *Chapter four (4).* It discusses qualitative and quantitative methods focusing on the preference for qualitative research methods. This is followed by the role of the researcher and data collection strategies used. Finally reflections from the field are highlighted on.

Chapter five (5) presents the workflow and the state of information infrastructure of the research setting. It ends with the empirical data collected.

The key findings of the research are discussed in *Chapter six (6).*

Finally, *Chapter seven (7)* consists of the conclusion drawn from the study and highlights on the implications of the study and recommendations. References used and appendices follow this Chapter.

Chapter 2: Theoretical Framework

This Chapter is in three main parts, the first part describes some concepts in nursing documentation in general and some issues pertaining to developing countries. This is followed by the notion of Information infrastructure and some of its characteristics, as well as information infrastructure (health) in developing countries and standardization. Finally, the Actor network theory (ANT) is presented. This is concerned with different groups of actors and their different interests, which need to be negotiated towards the achievement of a common goal.

2.1: Nursing Documentation

All over the world nurses perform basic duties irrespective of geographical differences. Among these is the documentation of patients' care, assessments and finding and outcome of care. " Nursing documentation exists as a daily reality of nurses' work. It is interpreted by some as the evidence of nursing actions and dismissed by others as a misrepresentation of nursing care" (Hearthfield, 1996). This duty is fundamental to professionalism that makes the nurse independent. Studies have shown that, this duty takes approximately 15-20% of the nurses' time (Moody & Snyder, 1995).

Nursing documentation has taken a different toll in recent times with regards to the process/ mode of documenting. Whereas it is common to find computer-based documentation in the developed world, most hospitals in African are still struggling with pen and paper. However, whatever means are used, documentation that is done to a large extent serves the same purpose.

Nursing documentation is the record of care planned and or care provided to patients, which reflects the quality of care provided (Irving et al., 2006). The College of Registered Nurses of British Columbia (CRNBC) an influential nursing body describes nursing documentation as any written or electronically generated information that describes the care or service rendered to individual client or group of client. In fact it is an accurate account of what has occurred and when it occurred. These records could be paper or electronic documents, comprising of medical records, faxes, email, audio, images, and videotapes. It is also a medium through which nurses

communicate their observations, decisions, interventions, and their outcomes to others (CRNBC, 2007).

On the other hand, documentation of care process can also be seen as a description of nurses tasks, a method for problem solving and decision making as well as a theoretical or philosophical model of thinking and describing the care process (Bakken & Mead, 1997; Hansebo et al., 1999).

It is impossible to substantiate decision-making and nursing actions without written notes. However a lot of studies have showed that essential facts related to nursing care are usually not included in the documentation (Karkkainen & Eriksson, 2004).

More so, the documentation of care reflects the theoretical perspectives in nursing that underpins the care process. Looking at Eriksson´s caring process module for example, the focus of care is on the patient´s participation in the care process (Karkkainen & Eriksson, 2004). Karkkainen and Eriksson (2004), argue that, when patients are seen as a “whole”, the essence of care would focus on the respect for the patient’s dignity based on the integrity of each individual that he or she would be able to contribute to the care process. Subsequently, the nursing documentation would be mainly patient centered instead of nursing tasks. Hence the nursing documentation reflects the relationship that exists between the nurse and the patient.

Also, nursing documentation reflects the recorders worldview of human beings. In situations where nurses respect the patients and their decisions concerning their care, their wishes and needs are made visible in the documentation (Karkkainen & Eriksson, 2003).

Consequently there is the need for formulated theoretical basis for nursing care; this is because without the knowledge of what consist patient care, the possibility that nursing documentation would serve other interests other than those of caring and nursing is high (Eriksson, 2001).

2.1.2: Uses/Purposes of Nursing Documentation

Nursing documentation forms a core component of clinical documentation. In fact it is a prerequisite for quality care and facilitates efficient communication and cooperation among health professionals (Ammenwerth et al., 2003).

Nursing documentation is also said to reflect professionalism through the nurse's application of nursing knowledge, skills and professional standards in the clinical setting (CRNBC, 2007).

Karkkaninen and Eriksson (2003) note that nursing documentation is indispensable for the nursing profession and aims to capture what transpires in the nursing process and what forms the bases of nursing decision-making. However, systematic nursing documentation provides on daily bases valid and reliable evidence of care. A study done in Sweden find out that nurses perceive nursing documentation as an important element in their practice and a great step to ensure patients safety (Bjorvell et al., 2003). Nursing documentation as a source of reference provides a wide range of knowledge and options from which the nurses can make choices for decision making about care (Jefferies et al., 2010).

In addition, to the above, Cheevakasemsook et al. (2006) identify these importance uses of nursing documentation. They are; furnishing legal evidence of the process and outcomes of care; supporting the evaluation of the quality, efficiency and effectiveness of patient care; providing evidence for research, financial and ethical quality-assurance purposes; providing the database infrastructure supporting development of nursing knowledge; assisting in establishing benchmarks for the development of nursing education and standards of clinical practice; ensuring the appropriate reimbursement, providing the database for planning future health-care and providing the database for other purposes such as risk management, learning experience for students and protection.

However the above-mentioned uses of nursing documentation will only be achieved when documentation is accurate. To sum up the purpose of nursing documentation as described by Ellingsen and Munkvold (2007) in their own words.

"*Nursing plans are intended to promote improved planning of the patient case, higher quality of care and better cost containment. It is assumed that a nursing plan provides for appropriate treatment and continuity of care for the patient within and across boundaries. They shall provide predictability and clear overview*" (Ellingsen & Munkvold, 2007).

On the other hand the role of nursing documentation as a source of reference in the health care system is debilitated due to confusion about the exact nature of its quality (Jefferies et al., 2010). It is also noted that, nursing documentation is the weakest component of nursing process. This is accounted for by insufficient number of nurses in relation to the patients. Lack of time

for detail documentation as well as absence of structured forms for data collection and processing and retrieval (Bakken, 2007).

It is significant to note that the main value of nursing documentation is its ability to communicate patient's care to members of the health teams, in the bid to ensure continuity of care and is subsequently pivotal to the safety of the patient who is in the center of care.

2.1.3: Evaluating Content of Nursing Documentation

The quality of nursing documentation is evaluated by comparing it with approved standards. Mostly the nursing process is used as a yardstick in this effect (Karkkaninen & Eriksson, 2003). On the other hand, Jefferies et al. (2010), in their meta studies of essentials of quality nursing documentation identify seven (7) themes, that according to them forms the core of quality documentation (see Appendix A).

In assessing nursing documentation, Ehnfore and Smedby (1993) in their study find out that, initial stages of nursing care and intervention were adequately recorded. However nursing diagnosis, planning, evaluation of care and discharge summaries were given less attention. What is usually written as evaluation of care process was noted to be a copy of notes by the physicians (Ehnfore & Smedby, 1993). Most researches done to evaluate nursing documentation found out that, most times, nursing documentation does not give a true picture of patient care (Karkkaninen & Eriksson, 2003). Other evaluations posited that, preference is given to the recording of medical treatments, admission assessments and nursing interventions (Tasks) than the care provided to the patient (Kirrane, 2001). To a large extent, discrepancies exit between documented care and actual care given. This indicates that, nursing documentation do not always constitute complete information on actual care (Hale et al., 1997). Accordingly an adequate nursing documentation may not necessary grantee that all the needs of the patient are taken care of (Nilsson & Willman, 2000). Further, Nurses ability to analyze information and draw inferences form the information gathered was seen to be lacking (Ehnfore & Smedby, 1993).

It has been noted that, the quest to meet ethical, legal, medical and institutional guidelines have greatly influenced the documentation of care based in the direction of nursing task (Street, 1992).

A lot of issues have cropped up in the search of quality documenting in the nursing profession. Previous researches on patient's record show that globally nurses are faced with similar problems in documenting care (Parsley & Corrigan, 1994; Seinaruck, 1999). These problems are usually in the areas of the forms and procedures used in the documentation (Ehnfore 1993; Webb &, Pontin, 1997). More so the nursing profession has the assumption of one- on- one nurse - patient relationship, however this is in contrast with the one- on –many nurse- patient relationships that exist in work practice (Allen, 1998). The ratio is even out of hand in the developing countries. This unfortunate situation coupled with the many tasks the nurse had to perform in day impedes documentation of care (Boston & Vestal, 1994; Mills & Tibury, 1995). Even that, some of the information that is effectively captured cannot be processed into meaningful information (Herrero et al., 1998). It was also pointed out that the complexities of diagnosis terminologies (Allen, 1998), the competence of the nurse in documentation as well as the attitude of the nurse is also a major setback in achieving quality documentation (Lutjen, 1993). This is influenced by the value of long tradition of verbal communication (Manuel & Alster, 1994; Mills & Tibury, 1995). Hence less attention is paid to written communication, therefore making the work of the nurses' invisible since both information and knowledge is handed down orally (Baath et al., 2007; Pearson, 2003).

Managerial issues such as policy, management style, administration support and systems to ensure documentation greatly influences the quality of nursing documentation (Potikosoom, 1999). For instance, the emphasis on legal purposes of care documentation in health care continues to influence documentation style of nurses in the direction of nurses task instead of client care perspective (Pearson, 2003).

Also Parker and Gardner (1992) posited that, due to dissatisfaction with nursing documentation within the confines of empirical data. Nurses give preference to or value the oral communication during handing over, thereby relegating the written word to the background.

Finally, Iyer and Camp (1999) urge nurses to recognize the important of their documentation in contributing to the patient care, and also the need to focus on finding and understanding documentation to evince the role the nurse play in assisting the patient to obtain optimum health or to a peaceful death.

2.1.4: Nursing Documentation in Developing Countries

Nursing as a profession has gone through many challenges in developing countries. Topping the list is the massive movements of its scares nurses in the past years to the developed countries. This situation consequently has created shortage of nurses, which has led to compromise of health care delivery in these countries. This and inadequate working materials and poor working environment among others is affecting the quality of care provided. This unfortunate situation and its resultant poor healthcare delivery has led to redirection in the health sector in many of these countries with much emphasis on quality of patients care. In Ghana for instance, to achieve this goal, specific area in nursing has been looked into; an example is the establishment of new nursing training institutions as well as expanding and upgrading existing ones (MOH, 2009). Efficient nursing documentation has been identified as essential tool for quality care through effective communication of patient information (care) among health professions.

Nursing documentation in developing countries has not seen much research. Out of the few researchers done, most of them are handwritten and cannot be easily accessed. Bakken (2007), noted that Medical records (nursing documentation) in developing countries is inefficient due to under qualified nursing staff who had only basic training that makes it difficult for them to appropriately document patient's care. Also this situation is accounted for the fact that incentive like reimbursement, accreditation and legality that are attached to efficient documentations barely exist or are not enforced in developing countries as it is done in developed countries.

Manfredi (1993) and PAHO (1999) discovered that, the following issues undermine the quality of nursing documentation in Latin America and the Caribbean. Accordingly these issues are relevant to the case of African (Ghana). Among them is the high demand for nursing care, insufficient number of registered nurses, emphasis on specific requirements for documentation of care according to each agency, institution, levels of professional education, tradition, routines and legal environment rather than standardized documentation, lack of recognition of nursing documentation as an important aspect to explain and characterized nursing contribution to the health care, absence of documentation standard format precludes extraction for analysis, different classification systems originating from other countries that frequently are not pertinent to the local users and pattern of care, lack of knowledge and skills relative to information technology and low motivation to learn about technology complicated by lack of its recognition

as an essential personal asset in the evaluation of professional performance and nursing documentation not included as component of automated health information.

With regards to the proceeding text, nursing documentation in the developing countries needs to make headway in order to made valuable contribution to quality patient´s care. Subsequently moving from its present state, paper based to a more organized form like electronic nursing documentation. As posited by Dzenowagis (2005) ICT is crucial in all areas of health system as it has the potential to support critical functions through the improvement of gathering, analyze and manage and exchange information. She further argue that the use of ICT in the health sector is not a matter of implementing new technology but relating to: "Health professionals making better treatment decisions, Hospitals providing higher quality and safer care, Citizens making informed choices about their health, Governments becoming more responsive to health needs. National and local information systems that support the development of effective, efficient and equitable health systems, policy-makers and the public of impending threats as well as longer-term risks to health".

With the main objective of "connecting people to the information and knowledge they need for better health" (Dzenowagis, 2005).

One of the objects of this study is to exploit ways in which the nursing documentation could be improved upon into a quality communication tool at the clinical setting.

In the light of the above developments, however applying the concept of information infrastructure to the nursing documentation is crucial in transformation nursing documentation into a quality tool consequently broaden its scope of uses. This is because information infrastructure is a necessary step in developing information technology as well as changing work practice and knowledge such that it encompasses technological components as well as humans, organizations and institutions (Hanseth & Monteiro, 1998). From this point of departure the notion of information infrastructure is looked at in the proceeding text.

2.2: Information Infrastructure (II)

Information infrastructure is said to have no clear-cut definition, however, it is largely referred to as an integrated solution that is based on the combination of information and communication

technology (Hanseth & Monterio, 1998). Information infrastructure is also seen as a step in the development of information and infrastructure technologies. Even though, there are some similarities between IIs and other types of information technologies, it has some unique aspects that differentiate it from others information systems (Hanseth & Monteiro, 1998). Among these unique characteristic are enabling, shareable, open, heterogeneous and has an installed base which make IIs more of an infrastructure than a system (Hanseth & Monteiro, 1998).

On the other hand, Borgma (2007) writes that, the term information infrastructure is a collective term for the technical, social and political frame work that includes the people, technology, tolls and services that are used to facilitate the distributed and collaborative use of content over time and distance.

It is worth noting that, an information infrastructure needs to be seen in a more holistic perspective, in that, infrastructures have different components and go beyond "pure" technology. They are socio-technical networks, which are heterogeneous and encompass technological components as well as humans, organizations and institutions (Hanseth & Monteiro, 1998). They further stress that information technology would not work without people supporting it, likewise if it is not being used properly (Hanseth & Monteiro, 1998).

Infrastructures are important in organizing work and usually used as means of transformation professional and organizational through accounting and legitimating process. Hence new information infrastructure basically changes both work practice and knowledge. However this process is said to be very slow due to differences in resources, computer skills, and relationships that exist among the designers and the end uses (Bowker et al., 1999). In this regard, it is important that information infrastructure be user friendly, accepted and used in the manner it is intended for (Hanseth & Monteiro, 1998).

2.2.1: Characteristics of Information Infrastructure (II)

Harmonizing the various concepts of information infrastructure, and differentiating information infrastructure from other information system, Hanseth and Monteiro (1998) come out with some unique aspect of IIs.

Information infrastructure as enabling

This feature of infrastructure denotes the fact that, existing infrastructure allows and supports development of other elements that are introduced into it.

Infrastructure is said to be enabling in the sense that it is a technology intended to open up a field of new activities and meant to support a range of activities hence not limiting to one type of activities. The enabling feature of infrastructure also provides a stable basis for an increasing complex and dynamic world (Hanseth & Monteiro, 1998).

From the above, nursing documentation at the Volta Regional Hospital, Ho which is solely paper base, can be digitalized and developed into an electronic patient record.

Information infrastructure and shareability

An information infrastructure facilitates multiple users and could be used differently to achieve the same goal. Even though many can use it, it is seen as irreducible, and cannot be split into components by its multiple users, but can be decomposed into separate units for analytical or designing purposes. However, the different elements of an infrastructure are integrated through standardized interfaces. This can be seen when one large application is integrated with others by means of information exchange. Through this exchange of data the initial application is shared by others and also serves as a foundation that supports other applications (Hanseth, 2002). It is argued that such standards are important because the alternative, which is bilateral arrangement, is expensive as compared to standardized interface (Hanseth & Monteiro, 1998).

Standards, apart from their economic importance are necessary constituting elements of information infrastructures. If an infrastructure is built on the bases of bilateral arrangements only, there is no real infrastructure but just a collection of independent connections (Hanseth & Monteiro, 1998).

Hanseth (2002) notes that, this shareable aspect of information infrastructure makes it unique and differentiates it from the traditional information systems, which are design for individual and specific use.

Looking at nursing documentation as information infrastructure, it has multiple users; nurses use the documentation for communicating patient care; decision tool for health professionals (Nurses and doctors), e.g. reading the flow chart will give the doctor a clue about the patient's vital signs. The physiotherapist also uses the nursing documentation, it provides information

base for health statistics. It also facilitates education of nursing students, etc. All these users aim at achieving one goal that is efficient care and patient's safety.

Infrastructure and openness

According to Hanseth and Monteiro (1998) infrastructures are open, as it has no limits for its users, stakeholders, and vendors. They further argue that, this component of infrastructure does not necessary imply the extreme position that absolutely everything is included in every infrastructure but imply that one cannot draw a strict border saying that there is one infrastructure for what is on one side of the border and others for the other side and that these infrastructures have no important or relevant connections.

In addition, infrastructure is open as there is no beginning and ending in its development and also no limit to those who might be involved in its design and deployment (Hanseth, 2002).

Nursing documentation is opened to many users, nurses, doctors, student nurses, Hospital administrator, and pharmacist, even those outside the health care institution For example, it is used to provide health statistics for the Ministry of Health, and the National Health Insurance Scheme, but the issue of confidentiality limits its openness to some extent.

Information infrastructure as an installed base

Infrastructure develops through extending and improving its installed base. An infrastructure is considered to already exist: new ones are integrated into the existing ones, as well as improving the existing ones (Hanseth & Monteiro, 1998). Hence infrastructure forms the basis for technology that enhances innovations over time. However, any new feature or version of the existing infrastructure has to be compatible with it, hence the existing infrastructure that forms the install base greatly controls the manner in which new versions are crated and evolved (Hanseth, 2002). It is also likely that new versions of infrastructure may inherit both strength and limitation from its installs based. Oversight from these limitations may jeopardize new developments (Star & Ruhleder, 1996).

More so, infrastructures are expanded through its install base which enhances new versions and integrations, it is worth noting that the designing and development of information solutions should consider and incooperate the needs of the end users (Hanseth, 2002).

Before the introduction of nurse notes and charts for documenting, other means of taking notes of events like the use of pocket note books existed. This has evolved over the years into a more structured paper forms. Hence, nursing documentation forms a "strong" installed base that could be improved upon, e.g. integrated into an EPR.

Information infrastructure as a social- technical network

Information infrastructures are complex systems that develop over time and involve large amount of independent actors including developers and uses. This points to the fact that information infrastructure goes beyond "pure" technology. In fact it involves technological components, human, organizations and institution who works together, therefore the success of IIs is dependent on the support of the end users and their ability to use it properly (Hanseth & Monteiro, 1998). This aspect of information infrastructure is discussed more under Actor-network theory.

Nursing document at the VRH as a potential information infrastructure shares the above-mentioned characteristics that would ensure its smooth transition from paper base to EPR. Hence information infrastructure in developing countries is discussed below.

2.2.2: Information Infrastructure (Health) in Developing Countries

In spite of the numerous research findings on the potentials of information technology in proving quality and safer care. ICT uses in the health sector of the developing countries remain on paper or at its basic stage. For instance electronic patients record (EPR) has been proven to be an instrument of change in the health information system especially data Collection. ERPs are noted for its ability to coordinate health care across organization through fast and accurate exchange of clinical data. (Wintereik & Vikkelsø, 2005). Despite this majority of the nursing documentation in developing countries including Ghana is still captured with pen and paper. The situation is not limited to nursing documentation alone but all information generated in the health sector.

The burden of managing and controlling HIV/AIDS among other diseases as well as the quest to achieve the millennium development goals has "ignited" the necessity for the development of integrated health information infrastructure/systems in developing countries. This is to ensure

that quality data is collected from all the various facilities for effective monitoring and evaluation of health programs (Braa et al., 2007).

However, most information systems in the developing countries only survive the pilot stages due to lack of funds to continue the programs and lack of human resource to man the systems (Braa et al., 2004).

The major problem of health information systems in developing countries is the fact that, it is characterized by fragmented structure, systems and standards with little or no integration existing among the various sources as well as poor quality and use of data (Braa et al., 2007; Kossi et al., 2009). Ghana is not an exception, it was noted that, there is a proliferation of tools for data collection among the various levels of health care delivery (MOH, 2008a). These are largely fragmented.

These issues of fragmented data collection tools and data sources is exacerbated by donor funding targeting specific programs and creating new information systems for data collection (Okuonzi & Macrae, 1995).

The existence of fragmented and uncoordinated organizational infrastructure with their separate health information systems makes it difficult for the development of information infrastructures. The fragmented information systems are characterized by rapid growth of various health initiatives (Kossi et al., 2009). The situation is worsened with the fact that, there are no shared standard for data collection. Each facility or level has its own data collection strategy, resulting in, poor database, gaps and over laps, as well as inconsistency in data produced which may not be useful in the long run (Braa et al., 2007; Kossi et al., 2009). Also access to the necessary component of infrastructure such as technological and human component organizations, institutions, networks and process varies greatly across regions and geographical areas, creating inequalities and uneven development of information infrastructures in developing countries (Braa et al., 2007).

It is also noted that, the designers and users of information technology in the developing world are often distance with regards to physical, cultural, economic and other ways hence implementation of information technology that have this kind of remoteness is often problematic (Heeks, 2002).

From all indications an integrated health information infrastructure could be achieved through creating common standard for data collection that is flexible to be adopted (Braa et al., 2007). Apart from the issue of standardization, equally important is the issue of infrastructure and human capacity, with the former encompassing physical infrastructures, such as power source, computers etc. that are necessary to support the information infrastructure, while the later involves the computer skills, information use and data analysis (Kossi et al., 2009).

In the light of the above developments, standardization of information, physical infrastructure, political will, as well as a strong human resources base is a crucial requirement for the attainment of an integrated information infrastructure in developing countries. Standardization as critical facilitator of information infrastructure is looked at in the next section.

2.2.3: Standardization and Information Infrastructure

The proceeding section clearly confirms that Information infrastructure in developing countries is fragmented with each facility having their own criteria for collecting data. However the creating of a common standard for all these data sources has been proven to be the ultimate by some researches (Braa et al., 2007; Kossi et al., 2009), in achieving integration of the fragmented data source consequently achieving quality data, that can be analyze and be of use. From this point of departure standardization in IIs will be look at.

Standardization as a term has broad meanings. For example, international standards organization (ISO) refers to standards as a "technical documents that describes the design, material composition, processing or performance characteristics of a product" (Hanseth et al., 1996). According to Hanseth et al. (1996) standardization indicates both the technical and social process of developing the underlying artefact related to IIs as well as corresponding to the alignment of actors involved in this process. Ellingsen et al. (2007) argues that standardization is socially constructed negotiating process that continually shape and are shaped by work practices. Standardization is taken a step further by the work of Bowker and star, (1999) which emphasize on the political influence that exist in the standardization process. In spite of all the dimensions of standardization, it is ultimate for the existence of IIs given that, it provides a common "language" for communication (Hanseth et al., 1996).

Distinction is made among three kinds of standards namely; reference, minimum quality and compatibility standards. Information infrastructures fall under the compatibility category

(Hanseth et al., 1996). A compatible standard allows other components or sub systems to be incorporated into it as well as “being” inter-operable with other components of other larger system. Accordingly, its purpose is to ensure that components from different systems when brought together work efficiently (Hanseth et al., 1996). This feature of compatible standards makes them a complex network as they consist of different standards and are organized in a hierarchical manner. They turn to overlap as some features may be shared among regions (Hanseth et al., 1996). The above is in line with the aspects of IIs enabling which allows IIs to support other elements introduced to it.

Standards can also be classified according to the process by which they are established: formal, de facto and de jure standards. De facto standards are created when technology is standardized through market mechanism or forces, while de jure standards are imposed by law. Standardization bodies such as international standards organization (ISO) are responsible for the creation of formational standards (Hanseth at al., 1996), such as North America Nurses Diagnostic Association (NANDA).

Hanseth et al. (1996) deliberates on two kinds of flexibility exhibited by standards. They are change and use flexibility. The former emphasizes on the ability of standards to be changed and adapt to new needs (Hanseth et al., 1996), while the latter emphasizes on how standards can support different task and activities as well as helping to change practices that are supported by the standards and not changing the standards (Braa et al., 2007).

In the case of developing countries, standardization of the highly fragmented information systems needs a national standard to enable integration of all information systems at the various levels. It is argue that flexible standards that could be easily adopted are what are needed in developing countries. However, it was noted that, reaching a consensus on standards has proven to be difficult, due to different needs of different facilities (Braa et al., 2007). In addition, Braa and Humberto (2007) identify the following reasons as at why most African countries are not able to achieve a national standard. “Conflicting interests between health programs; difficult to reach a “final” agreement. Changes the only constant; new needs keep popping up (e.g. HIV/AIDS) and multiple software and paper tools are difficult to coordinate and change; standards are “cast in” (Braa & Humberto, 2007).

To curb the above-mentioned concerns Braa et al. (2007) call for the creation of attractors by building an actor network (that is, negotiations and consultations among the various stake holders in the health information systems to reach a consensus or aligned their various interest). Secondly they stress the need to ensure that “the emerging systems of standards remain adoptive” (Braa et al., 2007). This they say could be achieve by utilizing the two characteristics of flexible standards, change and use, mentioned earlier on. Also important is the use of flexible gateways between computer and paper based information systems (Braa et al., 2007).

On the other hand, in as much as standards are flexible and can be expanded (Kossi et al., 2009), it is at times difficult due to the fact that standards are integrated with other components that depend on it. Also a large number of actors, organization and institution that use it, coupled with the relationship that exists among these actors make it difficult to effect changes (Hanseth et al., 1996) given that all the parties to the standard have to negotiate the change.

Furthermore, in nursing standardization is necessary to achieve improvement in both efficiency and quality of health care and also increase the professionalization of nursing (Ellings en et al., 2007) as well as ensuring comparability and interchange of health information (Hardiker et al., 2000).

In relation to nursing four (4) typed of standards is distinguished by Timmerman and Berg (2003) namely design, performance, terminological and procedure standards. With design standards, detailed and structured specifications of social and technical systems are present and they ensure compatibility, logistics and integration. Performance standards represents specific performance outcome of work. Terminological standards on the other hand encompass standard terminologies that are developed and used to bring consistency in meaning of working terms across geographical areas. Procedure standards are basically working guidelines that are established through the standards of work process (Ellingsen et al., 2007).

Bowker et al. (1995) and Hardiker et al. (2000) argue that Terminological standards in nursing (example NIC, NANDA) is one of the major tool used by the nursing profession to establish its autonomy as well making nursing visible, given that these standards presents the range of nursing tasks that are over shadow by the works of physicians. The important thing is that these standards are necessary to achieve a system that supports nursing work in a multidisciplinary sitting and representation of its outcome in health information systems (Hardiker et al., 2000).

However, nursing depends on large amount of information sources, This means that a number of phrases may be needed to get complete information, whereas with nursing terminologies, number of phrases needed to present information on patients care are limited (Hardiker et al., 2000). It is also noted that differences existing between individual terminologies (example NIC, NANDA), which are to be used together, makes it difficult to compare and exchange nursing information (Ellingsen et al., 2007, Hardiker et al., 2000).

In the nursing documentation process a lot of negotiations goes on between the various actors who have divergent interests. These interests have to be channel towards the achieving collaboration between the various health professionals through efficient communication of documented care. Consequently ANT that helps us to map out and negotiate these interests of various actors in the network is discussed below.

2.3: Actor-Network Theory (ANT)

Actor–Network, according to Monteiro (2000) is the act where influencing factors both technological and non-technological elements are linked together in a network. He further argues that actor–network is heterogeneous, given that it has both technological and non-technological elements and that the development and the use of information infrastructure involves the interplay between these elements.

Actor–Network Theory (ANT) is a socio-technical approach to information infrastructure that originated from science and technology studies (STS) and was developed by John Law, Bruno Latour, and Michael Callon among others.

In fact, ANT is the interplay between technological determinism and social reductionism. The former presumes that the development of technology "follows it's logic and that the technology determines it's use". On the other hand the latter presumes that society and actors influences the development and use of technology (Hanseth & Monteiro, 1998).

However as a socio-technical network, ANT comprised both technical (non-human) and non-technical (human) components in a network that has common interests and therefore work together towards achieving a goal. It is also concerned with the alignment of the interests /needs

of the actors, usually involving in social negotiations in a social network (Monteiro, 2000). More importantly understanding how the interplay between technology and society works.

According to Monteiro (2000) ANT provides a language to describe how, where and to which extent technology influences human behavior, thus helping us to understand how both technical and non-technical actors in the information infrastructure network interact in the event of implementing information system. Accordingly, "*Actor – network theory exams the motivations and actions of group of actors who form elements linked by associations of heterogeneous networks of aligned interest*" (Walsham, 1997).

Another important component of ANT is how it helps us to map out actors in the information network which influence, shape or determine action, but each of these actors belong to other networks.

"An actor-network is literally the network of heterogeneous materials that make up the context. The notion of an actor-network, quite literally, instructs us to map out the set of elements ("the network") which influence, shape or determine action" (Monteiro, 2000).

Actor- network theory is taken a step further by Walsham (1997) who argues that, the theory unlike other social theories, is a combination of both theory and method, given that it provides theoretical concepts that guides the way we perceive these social technical components in the real world and also helps us to identify the components which need to be investigated. He further stresses on the fact that, ANT in a given context may help to trace and as well explain the process that a stable network of interests are created, maintained or even fail.

Two important concepts from ANT; Inscription and Transcription that are relevant in defining the various roles in the information network are looked into below.

Inscription refers to how technological artefacts or objects embody pattern of use (Akrich, 1992). Inscription includes program of action that defines the role to be played by actors and also used to describe the vision of the development and use of new technology.

Monteiro (2000) argues that artefact is always interpreted as an appropriated flexible, and that the notion of an inscription may be used to describe how concrete anticipation and restrictions

of future patterns of use are involved in the development and use of a technology. Thus inscriptions can be flexible or not depending on the context in which they are used.

More so when information infrastructure gains its roots in the alignment process, it is impossible to go back to the initial stage. This makes actor -network irreversible. The network subsequently becomes a "black box" making it stable (Walsham, 1997).

To sum up, inscriptions outlines the various roles ascribes to both users and the components of information systems Latour (1991) to ensure successful alignments of interest in the development and use of technology.

Transcription on the other hand is a model for problem solving that actually maps out the needs of the actors. It outlines how the interests of actors may be translated into specific needs. According to Monteiro (2000) in translation the designer comes out with a scenario of how the system will be used. This provides an outline of what competencies are required by both the users and the systems. The technology then becomes an actor imposing its program of action on its user. Callon et al. (1983) in their own words looks at translation as follows: "*Translation involves all the strategies through which an actor identifies other actors and arranges them in relation to each other*" (Callon et al., 1983).

Finally, four aspects of the notion of inscription and translation that are relevant to information infrastructure are as follows:

"(i) The identification of explicit anticipations (or scenarios) of use held by the various actors during design (that is, standardization),

(ii) How these anticipations are translated and inscribed into the standards (that is, the materials of the inscriptions),

(iii) Who inscribes them and

(iv) The strength of these inscriptions, that is, the effort it takes to oppose or work around them" (Monteiro, 2000).

In the case of paper- based nursing documentation, the actors in this information system are the nurses of various ranks, medical officers, physiotherapists, and laboratory technicians the paper notes, and work routine. These actors have different which needs to be identified and aligned in such a way that the optimum aim of providing continuity of care to ensure efficient care and patient safety through effective communication would be enhanced. On the other hand, in the event of developing and using an electronic nursing documentation. ANT is crucial in mapping out these divergent interests and as well as the role of the technology. So that, these interests could be channel towards the success of the technology.

Summary

In conclusion, it is evident in the literature that nursing documentation at the different part of the world is not at its best, issues' in the documentation process and its contents make the nursing documentation ineffective. However applying ICT to health information which nursing documentation is a part, is shown to eliminate the discrepancies that exist in the creation and use of health information. Developing countries especially needs Health Information Systems to Sustain the Health Sector. In achieving this IIs and ANT serve as a guide in the development and use of Health information systems.

Chapter 3: The Research Setting

This chapter is in three sections; it starts with a brief profile of the country in which the research was conducted, Ghana. This is followed by an overview of the health care delivery in Ghana. The last section talks about the research setting.

3.1: General Country Profile

The study was conducted in Ghana, at the Volta Region Hospital, (VRH) Ho in the Volta Region of Ghana. Ghana is a West African state, formerly known as Gold Coast. Ghana gained independence from its colonial masters, the British on 6th March 1957.

Ghana is a developing country with a population of 24,233,431.The country has 10 regions and 138 districts with Accra as its capital. As a formal British colony, Ghana´s official language is English. However the country is a multi- lingual state with over forty languages. Ghana shares borders with Togo on the east, Cote d´ Ivoire on the west, the Atlantic Ocean as well as the Gulf of Guinea on the south and Burkina Faso on the north. The country occupies an area of 92,100sq miles (238.533sq kilometers), out of which land area consist of 227,533 and water 11,000. Figure 1 below shows the political map of Ghana. Ghana is naturally endowed with gold, timber, industrial diamond, bauxite, manganese and petroleum among others. The primary occupation is agriculture accounting for 56% of the labor force. Also the per capita income is 1.600 US Dollars (World Factbook, 2010).

Figure 1: Ghana map showing the various regions and boundaries of Ghana.

Source: http://www.virtualexplorers.org/ghana/map.htm

3.2: Overview of Health-care Delivery in Ghana

In Ghana, the government, religious missions and private individuals are the providers of health care services (prevention, promotion, curative and rehabilitative care). Health care is mainly financed by the National Health Insurance Scheme (NHIS), or by individuals from their own resources, if they have not signed up for the Scheme. The health care system operates on a tiered system with five levels: community, sub-district, and district, regional and national levels (MOH, 2008).

At the community level health service is provided at the health post. This is organized through outreach programs from the sub-district and it is mainly preventive and primary care. Traditional birth attendants and traditional healers or herbalists provide other health services. Also at the household levels, health care is provided through the Community Health Planning

Services (CHPS). However, this service is limited to only a few communities. The sub-district level provides clinical, public health and maternity services mainly through the health centers.

At the district level health care is provided by the hospitals in the district, whilst District Health Management Team (DHMT) provides public health services. Also at the regional hospital level, in addition to primary health, referral cases from the district levels are treated. The national level is mostly administrative, that is concerned with policymaking and implementation (MOH, 2008).

There are three main teaching Hospitals in Ghana, namely Korle-bu, Komfo Anokye, and Tamale Teaching Hospitals. They provide specialist care, as well as practice for students in medical sciences. These hospitals receive referral cases from all over the country.

On the whole, traditional herbalists and health care facilities provide health care, with the former more prominent in the rural areas where health care facilities are insufficient or missing. The Ghana Health Services is vested with the responsibility of providing comprehensive health services at all the levels. However, the Ministry of health is responsible for the regulation of health services, policy formation, monitoring, and evaluation and mobilization of resources for health care delivery in Ghana (MOH, 2008).

Review on health performance reveals that, Ghana is among the leading African countries in per capita expenditure on health, but has low outcome of health indicators imperative to the skills and resources available. With regards to health delivery, health facilities have proven inept in providing basic care especially for mothers and newborns (MOH, 2009). In this regards, the ministry of health and its Agencies especially the Ghana Health Service have put in place strategic plan for 2010. Priorities to address the issues of quality health care and accessibility of care for its citizens include the following.

Plans to accelerate CHPS expansion to enhance access to healthcare in under-served areas and also the referral and emergency services as well as health information management systems are to be strengthened.

Also to strengthen disease control, scaling up HIV/AIDS prevention activities, comprehensive care and support services for PLWA[1] are to be embraced by undertaking HIV sentinel surveillance. Equally important is to prevent and control non-communicable diseases among others (Nyonator, 2010) (See Appendix B for detailed health statistics of Ghana).

However mid-year review of the above mentioned, indicated that most of the above were not fully achieved due to financial constraints, worsen of risk factors of non-communicable diseases such as smoking, obesity etc. there is also limited collaboration with other stakeholders in service delivery as well as lack of health professional especially midwives and medical Assistants and weak health information management systems among others (Nyonator, 2010). Refer to Table 1 for highlights on health statistics of Ghana.

Statistics	**Figures**
Gross national income per capita (PPP international $)	1,320
Life expectancy at birth m/f (years)	57/64
Probability of dying under five (Per 1000 live births)	60
Probability of dying between 15 and 60 years m/f (per 1000 population)	402/253
Total expenditure on health per capita (Intl $, 2009	122
Total expenditure on health as % of GDP (2009)	1.8

Table 1: Ghana´s Health statistics of Ghana

(Source WHO, 2010)

[1] People living with AIDS

3.3: Research Site

3.3.1: Volta Regional Hospital

Below is reception of the research site.

Figure 2: The reception of the Volta regional hospital

Source: Researcher 2010

The research was conducted at the Volta Regional Hospital (VRH), Ho. The Hospital is situated in Ho the capital of the Volta Region of Ghana along the Ho-Aflao highway. It occupies an area of approximately 650x500 meters and has been operational since 1998. The Volta Regional Hospital is one of the eight (8) regional hospitals in Ghana and serves the Ho municipality, with patients also from neighboring Togo, Nigeria, and Benin. The hospital is a referral and a specialist for other hospitals in the region.

Volta Regional Hospital is a 240-bed capacity facility. However, according to the Hospital Information officer, only 160 beds are in use due to the shortage of health professionals as a result of the brain drain. The hospital offers clinical care in internal medicine, surgery, pediatrics, psychiatry, obstetrics/gynecology, orthopedics, dental, Ear, Nose and Throat, and ophthalmology. It also has a 24-hour accident and emergency center. Other facilities of the hospital include a blood bank, laboratory (chemistry, hematology and microbiology), radiology

and imaging, 24-hour pharmacy, health information unit, canteen, laundry, hospital administration and a mortuary.

With reference to the hospital statistics, the average daily Out Patient attendance from January to June 2010 has increase to four hundred and eighty (480) as compared to three hundred and thirty five (335) for the same period in 2008. This increase in the number of patients per day is due to the National Health Insurance Scheme introduced in 2006 and also the introduction of primary health care in the hospital which allows non-referral patients to seek health care at the hospital, thus ensuring accessibility of health care to all. The Hospital has 10 wards with 25-bed capacity in each ward; with the exception of the maternity ward that has 40 beds. Out of the 10 wards, 8 of them are operational with average daily bed occupancy of 115.7[2]. The hospital has 10 medical officers and 101 nurses as at the time of collecting data (June 2010). This is as a result of the shortage of health personnel in the country as well as refusal of postings by health personnel, especially medical officers, to the hospital. Ideally, 30 medical officers and 237 nurses should man the hospital.

The wards consist of an accident and emergency ward, where accidents and emergency cases are initially attended to and later transferred to other wards. An orthopedics ward is attached to this ward. There are also male and female surgical wards, a male and female medical ward, a maternity ward with attached labor ward, a gynecology ward, a psychiatry ward and a pediatric ward.

Administratively VRH is organized into five (5) units with each unit headed by a line manager. They are the Nurse manager or head of nursing, head of clinical unit, head of administration, head of finance and head of pharmacy. These managers see to the day-to-day running of their various units and report directly to the medical superintendent who is the head of the hospital. The medical superintendent, who is a surgical specialist, sees to the day-to-day management of the hospital alongside his clinical duties.

The figures below show the organogram and photos of the VRH.

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[2] VRH statistics 2010

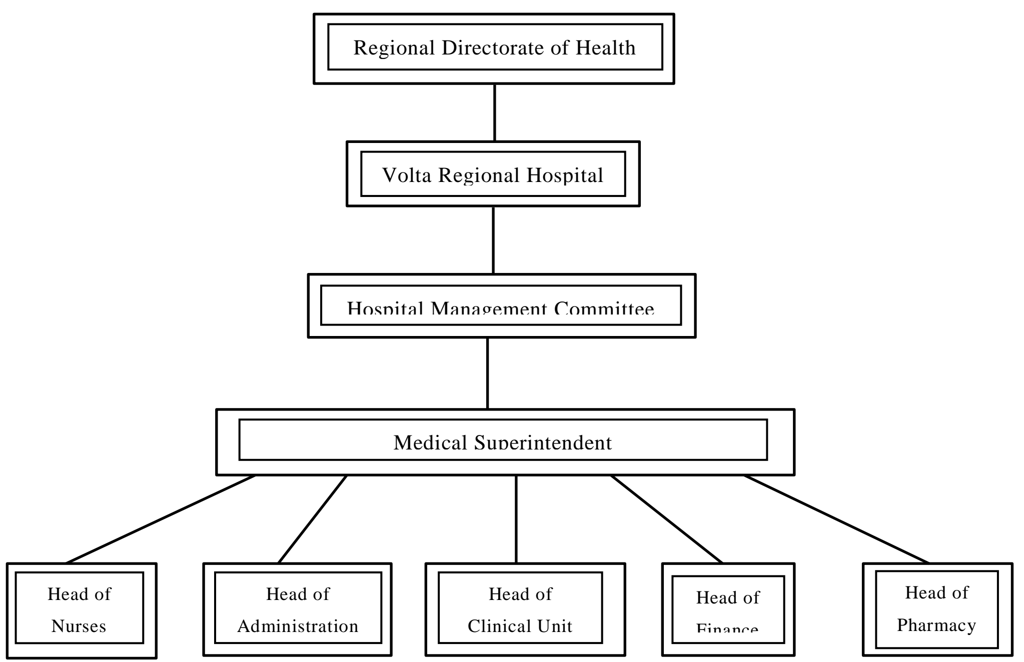

Figure 3: Organogram of the VRH

Figure 4: Volta Regional Hospital

(Source: http://www.travbuddy.com/travel-blogs/4446/photos/view/7/0

Figure 5: Walkway through the hospital

(Source: http://farm4.static.flickr.com/3026/2721891527_0f0de15a6c.jpg?v=0

Figure 6: Pediatric ward

(Source: http://farm4.static.flickr.com/3026/2721891527_0f0de15a6c.jpg?v=0)

3.4.2: Wards in the Volta Regional Hospital

The data for the study was collected in four (4) of the wards of the VRH: the male and female surgical wards, the medical ward and the pediatric ward. These wards have a bed capacity of twenty (20) with 3 cubicles and two (2) side wards (private rooms). Six (6) patients share each cubicle. This number increases when there are more patients that need to be admitted. Beds from the unused ward are used in this effect (see figure 7 below).

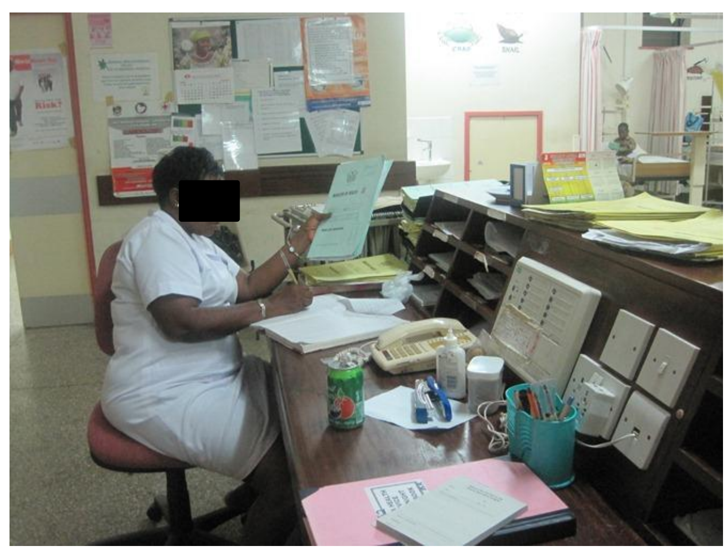

Figure 7: Nurses' station of the pediatric ward, the main base for most observations in the ward.

(Source: Researcher 2010)

Theses wards are manned by an average of two (2) Nurses and one (1) Health Assistant to gather for average patients of eighteen (18) per shift. Three (3) main shifts are run by the nurses; morning (from 8am- 4pm) Afternoon (1pm – 8pm), night (8pm- 8am). The afternoon and morning shifts overlaps for some hours so that the nurses can give bath to the patients. Also handing over process alters the above-mentioned time of work. Usually, the start of work for each shift is later than stated above. The main duties of the nurses during the various shifts are basically the same except that more procedures are carried out during the morning shift. Some of the duties are daily bed making, serving of medications including setting up intravenous line for medication, fluids and blood products, bed bath, wound dressing and chart rounds, report writing, ward rounds.

Summary

Ghana is developing country in the sub- Saharan African with a large population. Though rich in natural resources, basic needs of its populace are not met. Health care for example remains poor especially in the rural areas where health infrastructure and personnel are lacking. The research was conducted at the Volta regional hospital, Ho, one of the 8 regional hospitals in Ghana, specifically 4 of its wards. The Hospital serves as a referral hospital for other hospital in the Region. However shortage of staff undermines the operations of the hospital, consequently some wards remain redundant which otherwise could have serve the numerous patients. Also acute shortage of health professionals has led to work over load, that may compromise care provided.

Chapter 4: Methodology

This chapter is organized in three main parts. The first part introduces the research objectives and questions that guide the research. This is then followed by the research design. The research design discusses the two main research approaches, quantitative and qualitative with emphasis on interpretative research. The second part, gives accounts of the research strategies adopted in data collection. The final part looks at reflections on issues in the research field that may influence the study.

4.1: Research Approach

The purpose of this research is to assess the effectiveness of nursing documentation as a communication tool. In order to explore this, various views of the different actors involved in the use of nursing documentation are crucial in this study. Qualitative research approach was considered as the most appropriate research method to achieve this purpose.

4.1.1: Research Objective

The primary purpose of this study is to assess the effectiveness of nursing documentation as a communication tool. Other objectives of the study are:

- To determine the extent to which nursing documentation is used as a communication tool
- To explore ways in which nursing documentation could be improved upon.

However to achieve the above mentioned objectives the following questions were asked:

- How is the nursing documentation done?
- How is it used as a communication tool?
- What is the nature of the nursing documentation?
- How can it be improved to ensure efficiency?
- What is the role of verbal (informal) communication in the care process?

4.1.2: Research Design

Research design provides guidance about all the facts of the study, from assessing philosophical ideas backing the study to the detailed data collection and analysis process (Creswell, 2002). In the words of Mayers "*A research method is a strategy of inquiry which moves from the underlying philosophical assumptions to research design and data collection. The choice of research method influences the way in which the researcher collects data"* (Mayers, 2009). Consequently the two major research approaches are discussed below.

4.1.2.1: Qualitative versus Quantitative Research

There are two main research approaches to choose from when conducting a study. They are the quantitative and qualitative research methods (Yin, 1994). Yin further points out that, quantitative research method reports are based on numbers and statistics that are presented in figures whiles qualitative methods describes an event with the use of words.

However, the differences between quantitative and qualitative research methods go beyond the presence and absence of numbers (Kuper et al., 2008). Quantitative researchers are concerned with answering the questions "what?" "how much?" and "why?" whereas qualitative researches focuses on"why?" and "how?" of situations (Kuper et al., 2008; Stoop & Berg, 2003). Also qualitative research enables researchers to generate rich data and the exploration of "real life" behavior that enables the research participants to speak for themselves (Kuper et al., 2008).

As Pope and Mays noted "Qualitative studies are concerned with answering questions such as 'what is X and how does X vary in different circumstances, and why?" rather than "How many Xs are there?" Qualitative research does not generally seek to enumerate" (Pope & Mays, 1995).

Furthermore, qualitative research seeks to develop concepts that help us to understand social phenomena in natural settings, and takes into account meanings that participants make into situations, their experience of views, etc (Pope & Mays, 1995).

Interpretative research is a branch of qualitative research and is based on the fact that, reality is social constructed and focuses on the complexity of human sense in situations (Klein & Myers, 1999). Qualitative research on the other hand works with the assumption that, there is an absolute truth, a "reality," which they are trying to discover and they believe that knowledge is objective and neutral (Kuper et al., 2008).

Also in fixed (quantitative) design studies, emphasis is mostly on the measurement and analysis of causal relationships that exist between variables and, not processes (Robson, 2002).

An important distinctive feature of the two research methods is that, in quantitative (fixed) research, one has to get everything right before embarking on the major phase of data collection, hence the importance of pilot works to test the feasibility of the questions (Robson, 2002, p. 82). Robson adds that, a core feature of fixed design is that, some form of change is deliberately introduced in circumstances of the researcher in order to produce a result or change in behavior.

In contrast to quantitative research, the detailed framework of the qualitative design emerges as one carries out the study. Activities such as collecting and analyzing data, refining and modifying the set of research questions, developing theory, changing the intended sample to follow up interesting lines and even reviewing the purpose of the study to response to a changed context, are likely to occur together (Robson 2002, p. 81).

Apart from using the above mentioned research methods independently, the combination of the two methods has been advocated. For instance, Stoop and Berg (2003) argue that both methods when used together could yield the richest results especially when results from one method are used as input for the other. Furthermore, Pope and Mays (1995) recommend that, qualitative research methods can be used to conduct an essential preliminary quantitative research using observation, in depth study and interviews to provide a description and understanding of a situation or behavior. However, Guba and Lincoln (1994) believe that quantitative and qualitative research methods are incompatible. These views might be influenced by the fact that researchers have underlying theories that determine their worldview hence influences their choice of methods. I share the views of Stoop and Berg (2003) and Pope and Mays (1995) in the combination of both methods. I believe that, based on what questions are to be answered, one method can be used as input for the other. Judging from the above, qualitative research approach is the obvious choice to answer my research question. Consequently aspects of the qualitative research are looked at.

4.1.2.2: Dimensions of Qualitative Research Method

Klein and Myers (1999) argue that there is no clear distinction between qualitative and interpretative research. Qualitative research can be done using interpretative, positivist or

critical approach depending on the philosophical assumption of the researcher (Klein & Myers, 1999). According to them, interpretative research approach is based on the assumption that our knowledge of reality is gained through only social constructions like language, consciousness, shared meanings, documents, etc. It is also mostly concerned with complexity of human sense in emerging situations, thereby understanding phenomenon through the meaning people assign to them. This, I believe, will help the information system researcher to better understand how the system influences and is being influenced by social factors.

Positivist research approach to qualitative research, on the other hand, is concerned with evidence of formal proportions, quantifiable measures of variables, testing of hypothesis and drawing of inferences from phenomenon from a representative sample of a population (Orlikowski & Baroudi, 1991). Positivist is also based on a theoretical framework that seeks to search for an objective truth, which is important to the progress of human begins (Kuper et al., 2008).

On the other hand, the critical research approach is based on the assumptions that the ability of people to work and be able to change their social and economic situations is restricted by political, social, cultural dominations coupled with limitations of resources (Klein & Myers, 1999). Besides, critical researchers operate from a theoretical framework that assumes that, there exist an oppressive relation between the powerful and the powerless. Hence they rely on this background to eliminate the inequalities that exist (Kuper et al., 2008).

What is more, Stoop and Berg (2003) stated that, the research method that is most suitable would depend on the type of questions to be answered. In their view, qualitative research methods like interviews, observations and document analysis are capable of answering the question of what, why and how of a social phenomenon.

In light of the above, interpretative approach would be the best approach to adopt in answering the research questions. The reason for this preference is illustrated in the next text.

4.1.2.3: Interpretative Research Approach

According to Klein and Myers (1999) interpretative research is based on the fact that, reality is social constructed and focuses on the complexity of human sense in situations and tries to understand the phenomena through the meaning people assign to them. This reflects their first

principle, *The Fundamental Principal of Hermeneutic Circle* which states that, in order to understand the complex whole there is the need to iterate between the different components that form the complex whole (Klein & Myers, 1999). Therefore, reality would be appreciated when one explores people's perceptions and views in their social setting (work place). On the other hand, Interpretative research can help information researchers to understand the context of the information system and its influences in social and organizational contexts (Walsham, 1993, p. 4-5).

More so, qualitative (interpretative) methods such as observation, interviews and documentary analysis are best in understanding the point of view of participants and in its particular social and institutional context (Stoop & Berg, 2003). Also Kaplan and Maxwell (1994) highlight that, the aim of understanding a phenomenon from the perspective of the participants in their social context is largely lost when the data has to be quantified.

It is worth mentioning that, the health care setting deals with people who are considered to be complex than subjects of natural science. Consequently, there is the need for health care professionals to answer questions concerning human interaction and how people interpret such interactions. Experimental and quantitative methods are noted to be less suitable to answer such questions (Pope & Mays, 1995).

In light of the above, it is appropriate to consider interpretative research design when you are seeking an understanding into nursing documentation and how it is used as a communication tool. This is because the actors involved interact and their actions and thoughts are influenced by the social and institutional context they find themselves and the meanings they assigned to it.

However, interpretative research could be done using case study and ethnography. The main difference between them is the time spent in collecting data, with the later requiring more time in the field (Randal et al., 2007).

Ethnography is a qualitative research that emphasizes the detailed observation of people in natural settings, hence seeing the real world in social settings. Again ethnographic study is capable of producing detailed description of the day-to-day activities of social actors within specific contexts (Randal et al., 2007).

Case study is commonly used in information system study. It seeks to investigate contemporary phenomenon occurring in real-life situations, especially in cases where there is no clear-cut difference between phenomenon and the social context. They are also the appropriate approach to answer the question of "how "and why with the researcher having little control over the event, it usually focuses on contemporary phenomenon in real life situations (Yin, 1994). Methods that are commonly used for data collection in case study are documents, archival records, interviews, direct observation, participant observation and physical artifacts. However, none of the above is the absolute, they work to complement each other and best result is achieved when they are combined (Yin, 1994).

Field studies are therefore, considered the appropriate research methods to generate valid interpretative knowledge since it allows humans to be examined in their social setting with the belief that reality is socially constructed (Orlikowski & Baroudi, 1991). However, "eyebrows" have been raised about the validity of results from interpretative research. The next text seeks to justify its validity.

4.1.2.4: Validity of Interpretative Method

Whereas qualitative research method is considered to be the best approach in seeking answers to social phenomena, concerns have been raised about the validity of findings from interpretative research. This has led to series of debates, consequently leading to the devolvement of guidelines for assessing the validity of interpretative research. Among these guidelines are Klein and Myers's (1999) seven principles for interpretative field research, Mays and Pope's (2000) quality guidelines and Golden-Biddle and Locke's (1993) three dimension of convincing. These guidelines are presented below.

In the light of criticisms of the authenticity of qualitative methods in general, Klein and Myers (1999) proposed seven principles for interpretative field research as summarized below. These principles were derived from phenomenology, anthropology and hermeneutics. They are to serve as guidelines and evaluation of interpretative research in information systems. Most of these principles however are relevant to my study field.

The first principle is *The Fundamental Principal of Hermeneutic Circle*, which states that, in order to understand the complex whole there is the need to iterate between the different

components that form the complex whole. They further argue that this principle forms the core of the other principles.

The second principle, *The Principle of Contextualization,* requires that the researcher reflect on the social and historical background of the research setting so that the intended audience can appreciate how changes occurring over time have influenced the current situation.

The third, *Principle of Interaction between the Researchers and the Subject* requires that, data should be socially constructed through the interaction between the researchers and participants.

The fourth, *Principle of Abstraction and Generalization* ,requires that, theoretical abstractions and general concepts need to be reflected in the interpretation of results and to show how the researcher came to the theoretical insights in describing human understanding and social action.

The fifth principle, *The Principle of Dialogical Reasoning,* requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings.

The sixth, *Principle of Multiply Interpretation,* implies the researcher should be aware of possible differences in interpretation among participants due to the fact that social contexts are involved with multiple agents. It is therefore necessary that the researchers consider the influence this might have on the study and seek multiple viewpoints and find reasons for them.

The seventh principle, *The Principle of Suspicion* requires that the researcher pay attention to possible biases and distortions in the narrative collected from the participants.

In addition to concerns about validity of qualitative research findings, Mays and Pope (2000) came up with two broad criteria with which to assess qualitative methods. These are *validity* and *relevance.*

Relevance, according to Mays and Pope (2000) is the ability of a study to come up with new knowledge or boost the confidence people have in existing knowledge. Also a study is said to be relevant when it's finding can be applicable in other settings apart from the study setting. This, they noted, could be enhanced by ensuring true representation of the population under study through probability sampling.

However they proposed the following *quality guidelines* to help qualitative researchers assess the validity and relevance of the study results.

“Worth or relevance: Was this piece of work worth doing at all? Has it contributed usefully to knowledge?

- Clarity of research question: If not at the outset of the study, by the end of the research process was the research question clear? Was the researcher able to set aside his or her research preconceptions?

-Appropriateness of the design to the question: Would a different method have been more appropriate? For example, if a causal hypothesis was being tested, was a qualitative approach really appropriate?

- Context: Is the context or setting adequately described so that the reader could relate the findings to other settings?

- Sampling: Did the sample include the full range of possible cases or settings so that conceptual rather than statistical generalizations could be made? (that is, more than convenience sampling) If appropriate, were efforts made to obtain data that might contradict or modify the analysis by extending the sample? (for example, to a different type of area)

-Data collection and analysis: Were the data collection and analysis procedures systematic? Was an "audit trail" provided such that someone else could repeat each stage, including the analysis? How well did the analysis succeed in incorporating all the observations? To what extent did the analysis develop concepts and categories capable of explaining key processes or respondents' accounts or observations? Was it possible to follow the iteration between data and the explanations for the data? (theory). Did the researcher search for disconfirming cases?

-Reflexivity of the account: Did the researcher self-consciously assess the likely impact of the methods used on the data obtained? Were sufficient data included in the reports of the study to provide sufficient evidence for readers to assess whether analytical criteria had been met?” (Mays & Pope, 2000).

In addition, Golden-Biddle and Locke (1993) presented three dimensions of convincing the reader about the validity of the research results: namely “authenticity”, “plausibility” and “criticality”.

Authenticity is concerned with the ability of the research report to convey to the reader the genuiness of the field experienced in terms of actually being present at the study field and also giving accurate account of the field experience. Walsham (1995) also added that, establishing credibility of interpretative research (case study) findings in the eyes of the reader requires a detailed description of the research setting, reasons for the choice of site. Number of participants, their professional positions, and the duration of the study.

Plausibility, in their own words, “Is the ability of a text to connect two worlds that are put in play in the reading of the written account. These worlds are depicted descriptively and conceptually in the text and which comprise the readers’ personal and professional experience.” In short plausibility is the ability to bridge the gap between the reader’s knowledge and experience and the reality of research findings. This will help to convince the readers of the study about new discoveries that emerge in a study.

On the other hand, criticality focuses on the ability of the research report to make the readers reflect on their preconception and enable them to judge the opportunities offered by the study in the text.

The interpretative researcher is faced with the challenge of analyzing, making deductions from other interpretations using their own conceptual approach and also giving feedback to participants and significant others, hence the need for the researcher to identify their role in complex human process (Walsham, 1995). Kuper et al. (2008) also mention that, it is important for researchers to identify their own perspectives (context) in order to understand how their views and beliefs which may directly or indirectly influence their research. However, to some extent, the ethnographer has no specific role; his role unfolds whiles he or she interacts with the observant (Randal et al., 2007). Accordingly the various views on the role of the researcher are unfolded below.

4.1.2.5: The Role of the Researcher

The role of the researcher in interpretative study is said to be that of an insider (participant observer) and an outsider (outside observer). These roles are mostly depended on the fact that, the data collection and analysis is influenced by the researcher's perceptions (Walsham, 1995).

The outsider in this context is referred to the researcher who is seen as not having personal influence over the process of the research and therefore distant from the participants who see them as "strangers". The researcher's role as an outsider has the advantage of participants opening up on their views once a trusting relationship is established. However the outsider (outside observer) may not gain access to important data and issues, which are regarded as confidential and sensitive. Again since the outsider is not part of the organization, he or she may not get a direct sense of the field or organization from the inside (Walsham, 1995).

On the other hand, the insider (participant observer) involves the researcher being part of the field group or the organization under observation. The advantage to this role is that, the researcher gets access to important information especially confidential and sensitive data that is not always the same for an outsider (Walsham, 1995). Randal et al. (2007) also mentions that the insider or participant observer can take advantage of the expertise associated with the field of study with their knowledge about the field. They further argue that, the insider may not know all the information about the organization but have more advantage over the outsider in terms of time and finance. On the contrary, Forsythe (1999) argue that, the insider will not be an accurate observer, and that an outsider with some amount of experience would perform better than an insider. Looking at the above, one will not always get the opportunity to be an insider. But being an insider is the best option with respect to accessibility, acceptance and the fact that, one is familiar with work procedures and flow and can read meanings into things.

Randal et al. (2007) argue that, it does not matter whether the ethnographer is an insider or outsider. What matters is that the observers must respect his or her views. They further stress the need to approach the study without any theoretical preconception regarding what to find in the field, since this will be revealed as the study evolves. This is in line with Klein and Myers (1999) fifth principle: *Principle of dialogical reasoning* which states that, the researcher should be conscious of his or her theoretical preconceptions which may change as the research unfolds.

Again, Randal et al. (2007) argue that, what matters in ethnography is that the researcher should be courteous and an unthreatening human who is seen to be interested in what people do and ready to listen and watch them for a long period of time. They made it clear that, ethnography is an ordinary activity that requires ordinary skills and some amount of common sense. This is contrary to what Forsythe (1999) argues that, ethnography requires training and experience to perform better. I think with the appropriate guidelines of what to look for, an ordinary person can perform ethnography to some extent.

4.2: Data Collection

This research is aimed at looking at how nursing documentation is used effectively as a communication tool. After reviewing the various research methods available; quantitative and qualitative approaches, it became evident that, the qualitative research approach, particularly interpretative focusing on case study, is the obvious choice in answering the research questions.

I appreciate the fact that reality is socially constructed and that humans are complex, hence the need to do detailed observation of people in their natural settings (work place) to get the understanding of how they are influenced by information systems and vice versa, paying particular attention to the individual's perceptions and interests. I also share the views of Pope and Mays (1995), Stoop and Berg (2003), Orlikowski and Baroudi (1991) who argue that interpretative research approach is the best when it comes to seeking meaning into the how and the why of social phenomenon. Interpretative research methods such as interviews, participant observation and document review were used in this study to get the different views of the actors on nursing documentation.

The data was collected within a period of two months in four of the wards of the Volta Regional Hospital, Ho. Beforehand, two Staff Nurses, one Nursing Officers, and one Principal Nursing Officer who is a unit head of one of the wards of the above-mentioned hospital were interviewed on telephone.

The study was done using in-depth interviews with open-ended semi structured questions to encourage discussion. This involved two Nurse Managers who are Deputy Directors of Nursing Services, three Principal Nursing Officers, four Senior Nursing Officers, six Nursing Officers,

five Senior Staff Nurses, five Staff Nurses, one Midwifery Superintendent, two Superintendent Enrolled Nurses, two Physicians and the Hospital Information Officer. These respondents have work experience from two to thirty five years. Selection of informants from all the nursing ranks and varying years of experience helped me to capture diverse views and interest of actors involved in the use of nursing documentation. An interview guide was used to help me seek answers to the research questions. Also nurses were observed during work and handovers to get firsthand information. Observations were later clarified further by interviews for better understanding of the issues.

Furthermore, a voice recorder was used during the interviews whenever, I was permitted to. In addition, still photographs were taken of interesting scenes, some of the wards and the departments of the Hospital.

4.2.1: Participant Observation

Participant observation was done in four (4) wards of the Volta Regional Hospital. They are the male and female surgical wards, the medical ward and the pediatric wards. The choice of the 4 different wards was to give me a wider insight into workflow under different situation. Even though, the care process is basically the same different diseases are involved which demands tailored approach to specific conditions, hence given me divergent prospective of the care process and its documentation.

During the observation, nurses were observed during handing over, workflow, ward rounds and the documentation process. The main focus was on how the nursing documentation was done, how it was used to communicate to patient information to other during handing over and during ward rounds among other health personnel. Emphasis was also on the role oral communication in the care process.

The observations were made mostly during the morning and afternoon shifts. Apart from the ward rounds that I followed throughout the ward, most of the observations were done from the nurses' station just by the patient's bed. This position gave me clear view of all the activities in the ward. Occasionally, interviews were made to clarify thing observed as noted by Robson, (2002, p, 310). Data collected during observation usually contradicts what people say during interviews or reports in questionnaires. Hence observation served as compliment to justify the interviews. Still photos of interesting scenes were taken. Important issues were noted down in a

note pad or directly onto a laptop computer. In total two (2) weeks participant observation was made in each of the four (4) wards with a total time 160 hours. Below is one of the nurses' stations I used for the observation.

4.2.2: Interviews

A total of 30 interviews were conducted, with the time ranging from 20-45 minutes. The respondents were from the various ranks in the nursing profession, 2 physicians and the Information Officer of the hospital (See table1 for details). The majority of the interviews were done through face-to-face interaction except for 3, which were through telephone and email prior to the fieldwork. Appointments to schedule interview time were made with some respondents and others availed themselves as and when they were free. Also most of the interviews were done in the nurses' rest room. However a few were done in respondent's offices (those with individual offices). I must admit that there were some interruptions here and there, usually with phone calls or the respondents being called to attend to a patient.

During the interviews, semi structured and unstructured open-ended questions were asked to get in -depth discussions about the issues in nursing documentation with emphasis on its usage, content and nature. Data collected from the interviews were exploited more during observation. Similarly, data from observations were further clarified by asking people about it using interviews. Tjora (2006) notes that interviews and observations interact, given that, interviews give clues to researchers on what to observe while observations propose what to be interviewed. As a participant observer I was in a better position to take part in the discussions and understood procedures better. This corresponds with the observations by (Walsham, 1995). Some respondents allowed me to do voice recording during the interview. Hand written notes were also taken of relevant information when respondents were not comfortable with the recorder. These were later transcribed and analyzed. Below is table 2 given the details of respondents interviewed.

Number of respondent	Rank/Position
2	Deputy Director of nursing services
3	Principal Nursing Officer
4	Senior Nursing Officer
5	Nursing Officers
5	Senior Staff Nurse
5	Staff nurses
1	Midwifery Superintendent
2	Superintendent enroll nurse
2	Physicians
1	Information officer
30	Total

Table 2: Detail of respondents

4.2.3: Literature Search and Document Review

Most of the relevant literatures related to the case were retrieved from the internet, particularly the "Ofelas" of the University of Tromsø web site. Also lecture notes were crucial in providing information and references. Then again published documents from the Ghana's Ministry of Health were used.

Besides, the various sources of nursing documentation at the VRH were studied to analyze their content. However it was difficult getting articles in the context of developing countries on nursing documentation.

4.3: Reflections on Method

In the words of Finlay and Gough (2003) reflexivity is "thoughtful self-aware analysis of the inter subjective dynamics between researcher and the researched" Also reflexivity according to Mays and Pope (2000) is the researcher's sensitivity or awareness of how the interaction between the researcher and the research process has shaped data collection, emphasizing on "prior assumptions" and "experienced" which is likely to influence the study. Consequently it is important that, "personal" and "intellectual biases" be made known on the onset of writing reports to enhance the credibility of the research findings. In light of the above, I acknowledge personal issues that influenced the data collection and subsequently the study. Accordingly they are discussed below.

4.3.1: The Researcher and Her Role

The Volta Regional Hospital, Ho, Ghana was chosen for the study because I am a former employee of the Hospital. During my three years' work as a nurse, I worked in two of the wards and worked with nursing documentation. Hence, I am familiar with the procedures, workflow and especially nursing documentation. Besides, as a tutor at the Nurses Training College, Ho, I followed up my students to the various wards for clinical supervision, and therefore, I am familiar with all the wards and staff of the Hospital.

The above therefore positioned me as an insider, and gives me the privilege to conduct the study as noted by Randal et al. (2007) that the insider can take advantage of his expertise and knowledge in the study domain. Also, Randal et al. (2007) see this position as important to get access to otherwise confidential and sensitive information. However, Forsythe (1999) maintain that an insider would not be an accurate observer as compared to an outsider with some amount of experience.

Also as a participant observer I was in a better position to take part in the discussions and understand procedures better, as posited by Walsham (1995) and Robson (2002, p. 310).

On the other hand, the third principle of Klein and Myers (1999) *Principle of Interaction between the Researchers and the Subject* requires that, the researcher reflects on how data should be socially constructed through the interaction between the researchers and participants. Hence, as an insider and a former tutor to some of the nurses (respondents), the situation may

appear to pose a threat to the relationship that existed between some of the respondents and me. However as a tutor I tried to create an atmosphere that brings most of my students closer to me so that they could approach me on both academic and social issues. My status as a class coordinator and one of the tutors in charge of the Students' Representative Council boosted this effort. In addition to my skills in counseling and psychology, I had the opportunity to interact more informally with most of my former students. On the field however I spent the first few days to interact on a more informal way with the staff, and made my role clear as a researcher to them. I also defined the relationship between us as that of collaboration. This helped to prevent any intimidation my presence may have caused. In fact by the end of the first week on the ward my presence was barely noted. This evidenced by statements such as " We have forgotten you are here". Or "We have forgotten there is a visitor with us …".

Furthermore as a person who has worked with nursing documentation for some time, I tried to go to the field without any preconceptions about what to find in the study regarding the issues in nursing documentation nurse. This observation corroborates what Robson, (2002, p, 535) notes, "insider will have a pre-existing knowledge and experience base about the situation and the people involved". This view is also shared by Thorne et al. (2004) who suggest that "theoretical knowledge ","clinical patterns ", "observation" and "scientific basis" forms the foundation of all studies in human health and illness, However, despite being an insider, I discovered new issues emerging in the nursing documentation other than what I previously knew. This I believe was as a result of the varying conceptions and the meanings the respondents made out of the nursing documentation, which usually changes with time and context. Besides, Forsythe (1999) argues that, ethnography is not about replicating the perspective of the insider but to combine that with the "outside view" that may be invisible to the insider since the inside knowledge may not be the same as the systemic and analytic views of the situation under study. Accordingly, I share the views of Randal et al (2007), which point out the need to approach a study without any preconception.

Even though, as an insider in the study field who knows most of the participants, there were times that some respondents didn't want to open up on some information for fear of the research exposing them to others. This is in line with what Walsham (1995) caution that, participants may perceive the insider as having a "direct personal stake in various views and activates" therefore may not open up on their views. But with proper understanding of the purpose and

implications of the studies, such fears were allayed and they were able to give the necessary information.

4.3.2: Getting Access to the Study Field

My position as an insider gave me a lot of advantages. As a former member of staff, accessibility to the hospital and the wards was easy. Most of the nurses were willing to grant me audience for the interview despite their busy schedule. In fact everyone was supportive. This is in accordance with Randal et al. (2007) who note that, there are two important things to consider when it comes to getting access to the study field. They are "getting permission for the research" and "getting accepted in the research field". This, I believe, was enhanced due to fact that I am an inside. Also preliminary contact with the Nurse Manager and the Medical Superintendent Officer in charge of the hospital on the research received positive responses. They pledged their support and told me I am accepted back home.

4.3.3: Reflections on the Validity of the Study

Based on the some of the concept on validity of interpretative research discussed earlier on in the proceeding text, the validity of the result of this study is reflected on below.

Golden-Biddle and Locke's (1993) three dimension of convincing and some of Klein and Myers (1999) seven principles of evaluation for interpretative field research were applied in this study to enhance its credibility.

In order to convince the reader of a study, according to Golden-Biddle and Locke (1993) it is important to persuade the readers to find the report worth reading. This according to them could be achieved through three dimension of convincing namely, "authenticity", "plausibility" and "criticality" which is presented earlier on in the text.

With regards to authenticity, a detail description of the research setting has been given earlier in the preceding chapter. Reasons for the choice of site, number of participants, their professional positions and the study duration is presented earlier on in the text. Also account of field experience was given on the interaction between the participants and myself to prove my presence at the study field.

Reflecting on plausibility, new dimensions of issues in nursing documentation and its communications abilities are critically examined in the final report of the study.

With reference to criticality, the study offers the reader the option to compare what is usually perceived about nursing documentation and the new findings that emerged out of the study. This will help reshape the reader's worldview about nursing documentation.

Again in terms of validity of the research, the fourth, fifth, sixth and seventh principles of Klein and Myers (1999) are reflected upon below.

The fourth *Principle of Abstraction and Generalization* require that, theoretical abstractions and general concepts need to be reflected in the interpretation of results and to show how the researcher came to the theoretical insights in describing human understanding and social action. Subsequently, this study dwells on the concept of information infrastructure by Hanseth and Monteiro (1998) and Actor-Network Theory presented by Monteiro (2000) during data interpretation.

The fifth Principle: *The Principle of Dialogical Reasoning* requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings. Accordingly having worked with nursing documentation for some time, I had some preconceptions about its use. However as stated earlier on, I tried as much as possible to approach the study field with a clear mind so that emerging new dimensions of nursing documentation could be captured.

The sixth *Principle of Multiply Interpretation*, implies the researcher should be aware of possible differences in interpretation among participants due to the fact that social context are involved with multiple agents. With regards to the above, participants in this study were made up of nurses of all ranks, physicians and others who are directly involved with nursing documentation. These actors have different interests, which influence their worldview about nursing documentation. Hence there was the need to critically examine their views to exclude any personal interests that were likely, due to the various positions they occupy in the occupational hierarchy. This was important to ensure valuable conclusions to enhance credibility of the study. For instance the ward managers were critical on nurses for not documenting well, whiles the junior nurse reveal issues with the documentation forms e.g. lack of structure and standards, and work overload.

Finally, the seventh Principle, *The Principle of Suspicion* requires that the researcher pay attention to possible biases and distortions in the narrative collected from the participants. Consequently, as stated above, data was collected from health professionals of different ranks who may have different interests; therefore the data was examined to exclude possible biases that reflect their interests.

4.3.4: Ethical considerations

Prior to data collection, a permission letter from the University of Tromsø was presented to the Hospital Administrator seeking the hospitals consent to conduct the research in their premises (refer to appendix E). Also ward managers were personally met and the purpose and research strategy was explained to them, especially my presence at the ward for observations, interviews and taking of still pictures. Consent was sought from the individual respondent for approval before interviews were initiated, and also with use of voice recorder during the interviews to prevent any intimidation. They were also assured of confidentiality of their shared views.

Summary

The main purpose of this study is to look at how nursing documentation was preforming its function as a communication tool in fostering collaboration among health professionals caring for the patient. In this regards both qualitative and quantitate research methods were reviewed. However, Qualitative research approach particularly interpretative approach focusing on case study was suitable to answer the research questions. Interpretative research method and its validity were looked at. 30 respondents were interviewed within 20-45minutes as well as 160 hours of participant observation in 4 of the ward of VRH with in a period of 2 months.

Employing participant observations, interviews with nurses of different ranks and work experience, some physicians and the hospital information officer as well as reviews of literature and nursing documentation, rich data was collected for the study. Finally issues from the field that may influence the study were reflected on.

Chapter 5: Case Study

This chapter begins with a brief overview of the workflow at the Volta Regional Hospital, Ho Ghana, followed by the state of information infrastructure at the hospital. Finally the chapter presents the results from data collected which are organized into various themes.

5.1: Workflow at the Wards (VRH)

VRH has eight (9) out of ten (15) wards in operation. The most senior nurse in the ward, usually a Principal Nursing Officer, heads each ward or Senior Nursing Officer who are usually called the "in-charge". The next senior nurse, i.e., a Senior Nursing Officer or a Nursing Officer, assists him or her. Three (3) main shifts are run by the Nurses; morning, afternoon and night. The ward "in-charge" sees to the day-to-day running of the wards in terms of work process and logistics. Even though the wards are of serving of medications including setting up intravenous line for medication, fluids and blood products, wound dressing, chart rounds, where the nurse in charge for the day goes round the ward and writes down patients' complains and what is to be done for the patients prior to general ward rounds with the medical team. Also nurses prepare patients physically, psychologically, and physiologically for surgery, invasive procedures, and investigations. The duties of the nurse include assisting or feeding weak patients, nasogastric tube feeding for unconscious patients. Again patients are assisted to bath or are given bed bath. Furthermore, they check vital signs and educate the patient's and family on disease condition and home care, when the need arises. In addition, nurses document patient information, care, assessment findings etc. in notebooks and patients' folders. This documentation and verbal instructions are usually communicated to the incoming nurses during handing over, to ensure continuity of care. However with the problem of shortage of nurses leading to excessive workload the above-mentioned duties are not efficient subsequently undermining effective nursing care and patients safety.

5.2: Information Infrastructure at the Volta Regional Hospital, Ho

Information infrastructure at VHR is basic, with most of the information captured with pen and paper. There is no computer network for data and information sharing among/between any of the units in the Hospital. However at the Medical records department patient's biographical data is recorded using the computer. This patient information is shared with only the finance department, for easy assessment of patient bill especially with regards to the National Health Insurance clients. This is actually a pilot implementation of the integrated hospital information system by the Ghana Health Service which is aimed at achieving paperless hospitals in Ghana in the near future, by capturing all information digitally including nursing documentation and ensuring that patient information is accessible in all the departments at a go. In addition, some of the laboratory results are digitally generated.

The hospital has an intercom system, which enables information flow among the various departments of the hospital. Computers can be found only at the laboratory, the medical information unit, some sections of the accounts department and the hospital administration. The computers in these units are meant for their respective functions. Also all the wards and the various departments are connected to the internet.

This is actually in response to Government's efforts to digitalize health information in the country, hence the introduction of the integrated hospital information system at the VRH. However, the rest of health information is paper-based. The Internet accessibility is not reliable; sometimes the hospital goes for weeks without access to the Internet mostly due to technical problems.

5.3: Sources of Nursing Documentation at the Volta Regional Hospital

The sources of nursing documentation at VRH like most hospitals in Ghana are fragmented, to the extent that one might even mistake the nurses' station for the procurement officer's table: there is a book for each item under his or her care.

Nurses document the patient's information on the nurse's paper inside the patient's folder. The nurses' paper usually is made up of assessment sheet, input and output chart, 4 hourly vital signs chart, medication sheet and nurses notes (see Fig 8).

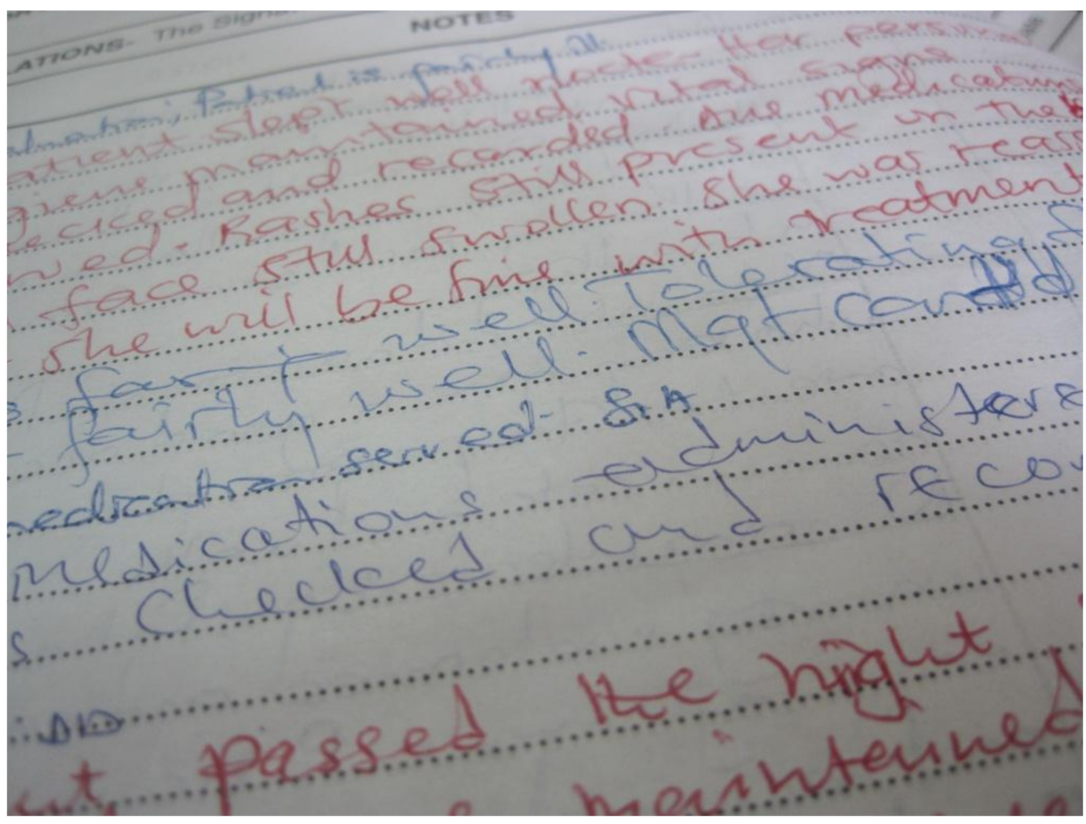

Figure 8: Nurses notes: red pen indicating night notes whiles blue pen indicating day notes

(Source: Picture by researcher, 2010)

The changes book forms a core source of nursing documentation because it captures the patient's diagnosis, treatments, new medication, and change of medication, information on pending procedure, investigation, discharge and usually verbal orders given by medical officers on ward rounds.

Furthermore, the day and night report book captures summary of the state of patients' condition, observations and assessments, nursing interventions, medication, staff strength, the number of nurses on duty and their various ranks and the number of patients on admission and those who are seriously ill. Attached to this report book is the ward state which is a single sheet paper that captures the number and name of admissions and discharges as well as patients who are trans-in and out of the ward.

More so, nurses at the VRH document in the admission and discharge book. This book consists of ruled columns which capture patients name, date of admission, diagnosis, in patients and out patients' number, date of discharge and number of days on admission.

There is also the trans in and trans out book in which information on patients who have been transferred from a different ward in to the ward and those transferred from the ward to a different ward or another hospital is recorded. Nursing documentation can be found in the operation book where booked day operation cases are documented. Again, there is also the property book in which information on patient's valuables on admission are recorded, mostly under emergency conditions such as road traffic accidents, but this book is rarely used. Nursing care plans are also an important source of nursing documentation. Unlike the developed countries where nursing care plans form a core of nursing documentation, in the VRH and majority of hospitals in Ghana, they are used only by student nurses during their practical examination to plan care.

Below are some sources of nursing documentation.

Figure 9: Sources nursing documentation

(Source: Picture by researcher, 2010)

Figure 10: Sources of nursing documentation

(Source: picture by researcher, 2010)

5.4: Structure of Nursing Documentation at the Volta Regional Hospital (VRH)

It is common knowledge that, a structure is a core fundamental to the sustenance of any given system. Imperative to this is the structure of the nursing documentation. Upon critical assessment of the nursing documentation and interviews with the various actors in nursing documentation, it was revealed that the nursing documentation does not have a definite structure and does not make provision for detailed documentation. In the bid to ensure efficient documentation one has to" work around" to get information documented; for example, stickers are used to create further space to record patient information and most often these are outside the ruled columns.

Unlike some developed countries where nursing documentation is governed by some guidelines, the Nurses and Midwives Council for Ghana does not have such guiding principles. This state of affairs has contributed to the inadequacy of nursing documentation at the VRH and Ghana as whole. A staff nurse of the hospital who said "We didn't meet any standard for nursing documentation; the current state of nursing documentation is making it difficult to do proper documentation" confirms this assertion.

The different sources of nursing documentation lead to some levels of duplication of information recorded. These further burden the nurses. For example, the same information found in the nurse's notes can also be found in the changes book. On the other hand, what is important to document is not explicitly stated, this has to be decided by the writer, based on his or her intuition and personal judgment from previous experience

5.5: Nursing Documentation at the Volta Regional Hospital (VRH)

Aside the practical nature of the nursing work there is also the "secretarial" duties (documentation). Documentation however is a core feature of nursing work, where the nurse is required to spend some time to write down important information mostly from the care he or she has rendered to the patient, out of care and assessment made on patient among others, especially ensuring that crucial information is captured. This documentation serves as a reference to others who were not around to have access to what transpired as far as the patient is concerned, as well as providing the necessary information needed for efficient care.

5.5.1: Admitting Patients to the Ward

The attending physician usually admits patients to the ward through the Out Patients Departments. Unlike the developed countries where each person has a personal physician and numerous health centers. Here patients are assigned to physician as to what their condition. After going through the medical procedures at the OPD patients who needs closing observation, surgery among others are sent to the ward in the company of an OPD nurse but before they set off to the ward the consulting room nurse calls the ward to inform the ward. Also patients are transferred from the accidents and emergency ward to the main wards.

At the ward the patient is provided with a bed, depending on their condition they are orientated to the ward as the facilities are mostly shared with other patient. The nurse collects and document data from the patient or the relatives if patient cannot communicate. These include patient's medical history, assessment findings, state of patient's condition on admission and any nursing intervention that was carried out in the patient's folder. Also the patient's name, gender, age, date of admission, diagnosis, in-patients and outpatient's number is recorded in the admission and discharge and the respective sheets.

"When patients come on admission, we write down their biographical data, their problems, interventions and patient assessment. Psychological and social problems also go into the documentation." Nurse B

Patient and relatives are informed about the ward routine including visiting hours, which is usually 4.6pm. The nurse writes the admission summary in the nurses' note. This includes the history of the patient's illness, the assessment findings, nursing interventions cared out as well as the patient's treatments. Report is also written on the new patient in the 24hour report book (day and night report book) by the afternoon ward in charge and is continued by the night nurses. Some of the admission summary written in the nurses' note is repeated in the report, whiles the night nurse writes about how the patient faired during the night as well as nursing interventions and assessment findings.

5.5.2: Documentation during the Day

As long as the patient remains in the ward some of the nursing procedures care carried out on the patient during the day are documented. For instance, wound dressing and the state of the wound, pre-operative care and medications served; including any observations made on the patient are noted. These are usually documented in the nurses' notes and respective flow chart. Also the nurse in charge for the morning shift makes a quick chart round by moving from bedside to bedside. During these rounds, complaints of patients are noted on a piece of paper or directly in the nurses' note. Patients complain that need urgent attention are attended to. Important information is also passed on to medical officers via the telephone or when he or she comes around, as well as other nurses on duty. Also some of this information gathered by the nurse in-charge is documented in the nurses' note and changes book. A nurse as captured in the following statement corroborates this fact:

“We document as nurses every care we render for our patients and vital information like vital signs, any assessment and observation that we carry out and wound dressing.”

During general ward rounds or any rounds by the medical officer, whatever transpires during the ward round concerning the patient that is necessary for continuity of care is documented in the changes book and something the nurses notes i.e. new treatments, change of treatment, and intended procedure. This is usually documented by any of the nurses on duty in the changes book or on prescription form, which is later transferred into the changes book. This includes verbal orders given by the medical officer on ward rounds.

Furthermore, at about 4pm, the nurse in charge for afternoon duty or any delegated nurse writes reports on new patients, those who are seriously ill, pre- and post-operative patients and any nurse or hospital worker on admission. This usually consists of the state of patient’s condition at the time of report, nursing intervention and procedures, assessment findings and mediations. This report is continued by the night nurse in-charge or delegated night nurse, who adds the condition of the patient throughout the night, nursing intervention and assessment carried out, medications, eliminations, input and output.

Documentation is also done during the handing over to insert omission in the respective documents.

“As nurses we write report on patients in our care especially those who are seriously ill so that in case of anything our interventions can be a prove.” confirms a respondent.

Also, admissions and discharges in the ward are documented in the admission and discharge book. This consists of the ruled columns that capture patients name, date of admission, diagnosis, in-patients and outpatients number, date of discharge and number of days on admission. I observed that, this book apart from keeping information on newly admitted and discharged patients also helps discharged patients who have misplaced their identity cards to retrieve their number so that they would be able to pick up their folder at the records department especially when they come for follow ups.

5.5.3: Discharging the Patients

Patients are discharged from the hospital when their condition is stable. Discharge can also be made on the request by patients, which should be backed by a written permission. The decision to discharge the patient is usually taken during ward rounds where the patients is assessed by the medical team and found improved. The attending medical officer or any member of the medical team writes the discharged summary in the patient's folder and signed. The patient's folder is then sent for assessment of bills. For non-insured patients the discharge process is however not complete until the patient pays the bills. When the patient is ready to leave the ward. The nurse gives health education depending on the condition. These usually comprises of instructions on wound care, medication etc. Routinely the patients are scheduled for two weeks follow up (review) at the OPD after discharge for assessment. Also the patient who needs continues wound dressing, removal of stitches and are from different town are given a note to the nearest health facility for that effect. Then again patients with chronic diseases such as diabetics are referred to the nearest diabetics clinic for continuity of care. This is followed by a referral note or verbal information. After the patient leaves the ward the nurse discharges the patients in the admission and discharge book and the ward state by writing the date and time the patient left the ward, the patient's condition at the time of leaving the ward, date of review and any referral made. On the ward state[3], the patients name and the inpatients number is entered in the discharged section.

5.6: Quality of Information

As indicated above, documentation of nursing interventions and observations forms a core of the nursing duty. Information gathered from interviews with various actors in nursing documentation at the Volta Regional Hospital indicated that, there is divided opinion as to whether nurses at the VRH are doing proper documentation or not. In fact this variation is seen among all levels of actors; both junior and the senior staff. A ward manager has this to say:

"Documentation is very poor in this ward. People don't document properly. It is agreed that identification of problems leads to care and subsequent documentation, but people fail to

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[3] A form that captures data on total number of patients and nursing staff per day

identify problems therefore could not do proper assessment and care hence inadequate information to convey to others. Here people dwell more on verbal information, e.g. most assessment are not documented: if they do they are inadequate and most do not have signatures."

Other observations are noted in the following responses:

"On the average, we nurses document our findings carefully, but due to shortage of staff and time constraints we turn not to put in our best. Just imagine the situation where you are alone in the ward with twenty patients: how much can you do alone? Sometimes one may forget to document due to pressure from workload."

As if to confirm the positions of respondents, random sampling of patients' folders showed that, most of the nursing interventions were not documented. Those that were documented did not capture vital information on the intervention or assessment findings. This obviously reduces the quality of the documentation because at the end of the day, it cannot serve its purpose well. One respondent confirmed this finding:

"Documentation is where we are poor. Sometimes we don't write what we are supposed to write, like what happened this morning. The nurse's note was written all right but this important information was not there. Doctor may ask why the drug was not given but because it was not documented and the nurse is not around to answer, you the person around may not know what to say, so it is good to write everything about the patient that you have observed. E.g. change of medication etc."

There is no standard policy on nursing documentation as to how it should be done, except for some guidelines for the 24-hour report, which a former Nurse Manager of the hospital came out with. The bottom line is that, nurses should document care, assessment finding and observations. What to include and exclude is left to the writer to decide. One respondent revealed that, this puts additional strain on the nurse, since they have to think of how to put into written their care, outcomes and findings:

"Generally, there is nothing guiding us on documentation. We write from experience and use our own judgment. This makes it a bit difficult to determine what to include and exclude since we have a lot to write."

Also, the documentations lack signatures. What are currently required are the initials of the writer. Signature is necessary to identify the writer, in case of further explanation of what has been written. It is easier to identify the author of a document by the signature alone.

The case for proper documentation is summed up in the following response:

"People do not know that nursing documentation is a legal document. Looking at the documentation procedure, it requires that we sign everything that we write. Should there be any case the documentation will save you or send you to the law court. For example, if a patient complains of headache and you don't intervene, or you don't document the complaint at all, you will be in trouble in case the patient dies .The nursing documentation also leads others in the care of the patient, since false documentation can mislead the medical team."

In seeking further clarification on the act of documentation at the VRH, I was told that not only work load and time constraints account for this situation but also lack of guidance on how to document.

It was also observed that, some of the information is inserted during handing over, especially, when the notes are read and someone remembers something important that was not documented, and also when the one taking over is very particular about the documentation. He or she insists that every detail is documented before she will take over.

I also observed that, the sources of nursing documentation is fragmented, therefore the nurses at times have to make many entries at the same time. There is also some level of duplication; for example, at a point in time what is written in the nurses' note can be found in the changes book

5.7: Handing Over

Information gathered from observations and interviews reveal that, nursing documentation is used mostly during handing over even though reference is made to it during routine work and ward rounds. Handing over varies a little depending on the ward, shift and number of nurses coming on duty. The outgoing and incoming nurses move from patient to patient, the outgoing nurse in charge go through the nursing documentation mostly the nurses' notes, medication chart, temperature and observation chart. The outgoing nurse uses the documentation to inform

the incoming nurses about patient condition, new medication given and any necessary intervention. After the handing over, the incoming nurse in charge checks the Admission and Discharge book to cross check the ward state to ensure that the ward state corresponds to the number of patients on admission. I witnessed an instance when a patient was on admission but his particulars were not documented in the Admission and Discharge book. If it is mornings shift the nurse in – charge then reads through the day and night report book, signs and sends it to the nurse Manager. The handing over is done at the nurses' station where the incoming nurses together with outgoing nurses go through the various nursing documentation. As stated earlier on, the handing over varies from ward to ward. Mostly the nurse in-charge of the morning shift reads the 24hour report to get information on patients who are ill and those for special procedures, but when student nurses are around, the report is read by the morning staff to the hearing of all those present. During this period some of the wards use only the changes book for handing over. Others use the patient folder and some both the changes book and the patients folder.

During the afternoon handing over where the morning staff hands over to incoming afternoon staff, the incoming nurse reads the nurses' notes, changes book and patient's folder to have a fair idea about the patient's condition. Usually this is done for patients who are seriously ill and those who need special attention. When the incoming nurses are satisfied with the documentation, the outgoing nurse, usually the nurse in charge, depending on the ward reads the change book or the nurses' note to tell the incoming nurses about each patient on the ward, their condition, treatments, pending investigations and pre-operative preparation.

The evening handing over takes the same turn with the exception of the use of day and night report book. In short nursing documentation is used mostly during handing over. More so, throughout the shift, nurses refer to the documentation for clarification when the need arises.

Also during general ward rounds or when any medical officer comes on rounds to attend to a patient, the medical officer flips though the temperature and medication sheet and at times the nurses notes to read about what has been done for the patient and what has been written about the patient. Doctors use it to make decisions; e.g. reading the flow chart will give the doctor a clue about the patient's vital signs. Other health personnel like the pharmacist during ward rounds flips through the medication sheet of the patient. Also the nurse in charge makes

reference to the documentation to support verbal information about the patient to the medical officer during ward rounds.

In some of the wards, when doctors are called to review a patient, they read through the nurses' notes to see what has been done for the patient or the event of things before proceeding to the patient. In some situations, physicians read the nursing documentation to assess nursing management of patients and also to verify the documentation of their orders.

Apart from helping to pass on information to other health personnel, nursing documentation at the Volta Regional Hospital servers as reference for clarification.

"We document in simple language and encourage others to read especially during handing over. We read out what we have written again to nurses that are taking up. Later the incoming nurses read the notes if he or she have any problem and also to get the information clearer."

Also, nursing documentation helps to plan care for patient. In this instance, one reads what is done for the patient to determine what to do for the patient. Also patient's response to previous intervention helps nurses to plan better care for the patient. Incomplete documentation, therefore, does not make for effective patient management. As one nurse noted:

"Nursing documentation helps to give us adequate information about the patient. This helps you to know what needs to be done for the patient only if the information is accurately documented."

Day and night report book is sent to the nurse manager every morning during weekdays. She reads through to familiarize herself with the happenings at each of the wards, and follows up to the wards when the need arises.

"With regards to the day and night report, it is sent to the nurse manager who reads through to have a fair idea about the ward state and what is happening in the ward."

Nurses at the VRH use the nursing documentation, especially the admission and discharge book, to prepare monthly statistics on admissions, discharges, and the number of operations done, segregating them into major, minor and day cases, This is submitted to the hospital statistician and are used at the hospital mortality meetings.

Finally students of Ho Nurses Training College, during their clinical placement or at their leisure time, go through some of the nursing documentation to learn about nursing management. Below is a scene from handing over at the male surgical ward.

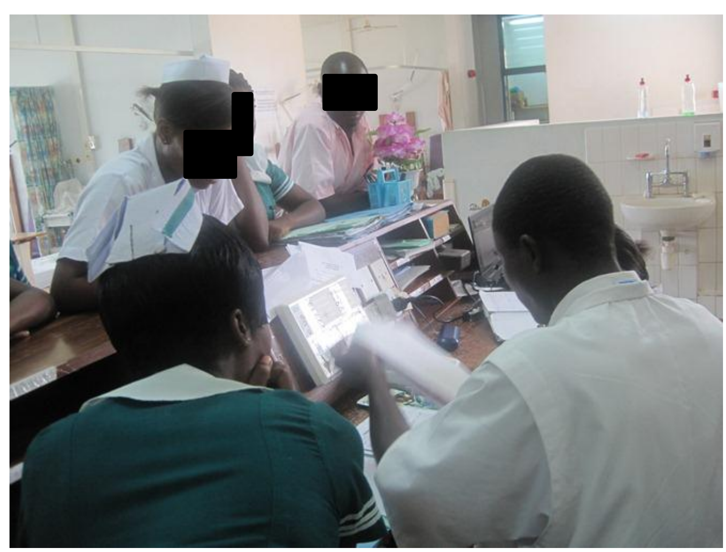

Figure 11: Nurses and student nurses looking on during handing over.

(Source; researcher 2010)

5.8: Drawbacks on Nursing Documentation at the Volta Regional Hospital, Ho

Information gathered from observation and interviews, shows that nurses were well vested in the nursing process and care plans during training but are practicing a different form of documentation. Hence, the difficulty in determining which of the four aspects of the nursing care plan to include in for example the nurses note. The following response attests to this:

"To ensure effectiveness of nursing documentation, it should be taught in the training schools and also in- service training should be organized for the nurse. I am saying this because of what I have seen in the ward, especially to document in a simple language."

Time constrain was also noted to hinder nursing documentation. Due to shortage of nurses leading to work overload, there are only 110 nurses instead of 237. Nurses find it difficult to make enough time for documentation. One respondent had this to say:

“We mostly forget to document because we do not have enough time. You have to do a lot of work at the same time so at the end of the day you don’t remember to document. When we forget to document something we do it during handing over but I think if we are many and the work is evenly distributed among us we will make better documentation since it is important for our existence as nurses.”

According to documentation norms the nurse who gave the care is supposed to document and append his or her signature. But due to work overload, it was observed that in most cases the nurse in charge for the shift make all the entries in the various documents, most especially the nurses note regardless of whether she was the one who perform the procedure or not.

Another significant draw back on nursing documentation was noted to be unavailability of in-service training for the nurses on documentation. Some of the respondents express their concern on the need for workshops to help them on how to deal with documentation in the middle of the pressure from work load, especially how exactly they should document and how to achieve efficiency.

The nurses notes were as well seen to consist of similar phases running through them e.g. dressing done, vitals checked, medication served etc. indicating that nurses are able to document only routine care and not specific care regarding to individual patients needs/care. Some of these could be found in the various charts. Meaning new information for patient care is most of the time missing from the notes.

5.9: The Nurses’ Expectations for a Computerized Documentation System

The nurses at the Volta Regional Hospital do not want to be left out in modern nursing, with regards to the use of computers in nursing. Interviews with various actors in nursing showed a strong desire for this. Most nurses would like digitalization of nursing documentation, which they belief would save time, reduce inefficiency, especially if it can be designed in such a way that they can just tick and write only a few lines. The following responses attest to this:

“We would like the nursing documentation to be computerized so that all documentation will be at one place for easy documentation and reference.”

“Looking at the paper work, a lot of people handle the folders. Some time ago, our Admission and Discharge book got missing and we lost five (5) months documentation. We should be encouraged to become computer literate so that documentation could be made into the computer for easy accessibility. Sometimes you cannot find patients folders at the Records Department. When a folder gets missing, it is difficult to continue with care. If we should have computers, patients’ information could be traced easily.”

The anticipated problem with digitalization of nursing documentation is the high computer illiteracy among nurses as well as the unwillingness of the old hands to learn. This is further compounded by the workload. The good news is that computer studies forms part of the curriculum of nurses training programme. Even though the computer laboratory at the Ho Nurses Training College is not adequately equipped, the school started to equip student nurses with computer skills since 2003. Consequently some young nurses are computer literate, but with the absence of computers at the hospital and privately owned computers, their skills may wane over time. Some key respondents expressed this concern:

”I think when we computerize the nursing documentation, it will make it easier to document, but the challenge will be the high computer illiteracy rate among we the nurses.”

“Computerization of nursing documentation would be the ideal for our over-burdened ward, but most of us in the ward cannot use the computer. It will be difficult for me to learn it now because I get so tired after work.”

“The documents are fragmented. If we can have it in one form, it will help: for example, putting everything on the computer so that you just tick and type something small when the need arises.”

Others would also want to have the sources of documentation reduced to a single source with less documentation time. They suggested a paper-based checklist with few spaces to write.

“Some of the documentation could be structured in a way so that we can just tick or fill in, for example questions and answers or structured interviews.” Nurse H

“Due to lack of staff, it will help a lot if the nursing documentation will be structured in way that we will just tick and write only little remarks.” Nurse B

5.10: The Perspectives of Oral Information at the VRH

The tradition of oral communication or account has been with nursing ever since, and some nurses think it is the ultimate, in the sense that, it allows them some freedom to give detailed account of patients’ status. Also the major reason given by some of the nurses for preference of oral communication is the fact that, documentation takes time and requires a lot of thinking. Coupled with shortage of nurses it is difficult to make enough time for adequate documentation but it is easier to give oral account of what has been done for the patient. Besides, the sensitive nature of some patient information cannot be written down for fear of future implications.

“I prefer verbal communication because the written ones do not cover everything, for example details of wounds are not captured in the documentation but this can be given orally. Besides I feel free to say than to write.” Nurse G

“We cannot do away with verbal communication: it is very important because things that are not documented are said verbally especially during handing over. With this workload, we tend not to write much but we can say whatever we were supposed to write well.” Nurse R

Other views focused on the fact that oral information is a necessary compliment for written information, as neither of them could exist without the other. However concerns were raised about the need to give concise oral account since it has the tendency to encourage unnecessary deviation from the main issues. These are some of the concerns expressed by the respondents.

“Here people dwell on verbal information. For example most assessment are not documented. If they do, they are inadequate and most do not have signatures so at times you have to listen to the verbal information to figure things out.”

“Verbal communication supplements the written documentation. Some of the things that were not documented are said orally during handing over, then we insert immediately, so it is helping us to capture information in our notes.” Nurse S

“Since we cannot do away completely with our verbal account, we need to examine how we go about it. It means we should reduce it to the minimum and document more, because during handing over, we at times talk too much and bring in irrelevant topics which also waste time.”

Summary

The study was conducted at the Volta Regional Hospital, Ho, Ghana. Empirical data was collected from observations in four of the wards as well as from interviewed conducted for thirty respondents. To start with, the state of information infrastructure at the VRH was reviewed. In order to achieve the purpose of the study, in depth analysis of all the aspect of nursing documentation were done. This included workflow at the wards the various sources of nursing documentation, the structure of the documentation and quality of the nursing documentation. Also, routine duties where nursing documentation is produce and used were looked at. They included report writing, Admissions and Discharges, handing overs. Finally, Challenges present in the Nursing Documentation, perspective of oral information nurses.

Expectations of computerized documentation systems were identified.

Chapter 6: Discussions

This chapter will discuss the key issues identified from the data collected; it is divided into five main sections. The first section, in the light of Actor network theory looks at various interests in the nursing documentation that needs to be harmonize to achieve the main aim of quality care and patients safety through effective communication. The second section highlights on some challenges associated with nursing documentation at the practice setting. This is followed by a look at the quality of nursing documentation at the VRH. The fourth section looks at the effectiveness of nursing documentation as a communication tool at the VRH. Finally, nursing documentation is looked at as an information infrastructure focusing on some characteristics of IIs and how nursing documentation as an information infrastructure could be developed into an efficient tool for continuity of care. The chapter ended in a summary of the various sections.

6.1: Tension between Vision and Practice

Like most countries, the Ghana government /Ghana health service has made pragmatic efforts to improve the quality of services offered by its members. Of late, quality care has remained a recurring theme for health professional groups and policy makers in all the sectors of the economy. This is partly as a result of motivation and sensitization from the international quality assurance society in the early nineties. Accordingly, series of studies have taken place among patients and health staffs; these studies were aimed at identifying measures to improve quality of health care in the country. In effect, quality assurance plans were drawn by the Ghana health service, the latest being "Quality Assurance strategic Plan for Ghana Health Service 2007-2011" (GHS, 2007). The primary focus of this plan is to address the issue of quality and safety of health care delivery in the country (GHS, 2007).

One of the intermittent objectives to improve clinical service is to" improve recording/documentation of patients' information by health workers". To achieve this, the following were put forward.

"Develop guidelines/standards on documentation of patients' records

Disseminate and orientate health workers on guidelines/standards

Supervise and monitor adherence to guidelines/standards" (GHS, 2007).

Judging from the above, efficient documentation forms the bases for communication, subsequently, key player in achieving quality care. Unfortunately the above-mentioned measures appear to remain only on paper or are at very initial phase of implementation because its impact is not seen in practice. Present nursing documentation, which is also part of patient's record, has not seen any standardizing. The decision as to what is appropriate to include in the documentation is left to the discretion of the nurse. As one respondent lamented:
"*As at now, we don't have any standard from the NMC to follow, we have to struggle to come out with something appreciable... Unlike the nursing care plans that we can't use, the nurses' note is just a plane sheet for you to write".* Hence there is an urgent need for standards in nursing documentation, because the nurses are the only group of profession that spends twenty-four hours with the patients and therefore have a lot to document from observations that will inform other health profession on decision-making about the patient. Therefore improving nursing information may go a long way to improve the quality of care that patient receives.

Under the Ghana health service (GHS) Job description, the staff nurse is expected to "undertake assessment, planning and implementation of intervention for addressing patient care problem" and also be able to "communicate effectively both orally and written " and "evaluations and modify plans as needed" (GHS, 2005). As indicated earlier on, assessment, planning, implementation and evaluation of care is related to the nursing process, which the current documentation forms, do not support. One may ask that without the use of nursing care plan the above mentioned crucial care couldn't be documented? Most of the documentations reviewed contained routine nursing duties without much of the above. Respondents blame this on lack of standards coupled with time and heavy workload.

On the other hand, development of standards for health information systems in developing countries has proved to be problematic. It was noted that developing countries have fragmented information systems; each department, programs and facilities have its own data collection strategies and interests (Braa et al., 2007). A similar situation was identified in Ghana. In Ghana, the health data collection tools (forms) were developed and used by the public sector. These forms are not tailored along the needs of the health sector. Consequently they do not

support data collection for planning and decision-making at the lower levels. The resultant is poor integration of data from the various data collection systems. Leading to significant duplication and omission of key data sets for assessing performance (MOH, 2008).

However the creating of a common standard calls for the integration of all the various sources of information. Ghana as a developing country may share some of the situation identified in Mozambique by Braa and Humberto (2007) as the major setback in achieving a national standards for data collection. "Conflicting interests between health programs; difficult to reach a "final" agreement; Changes the only constant; new needs keep popping up (e.g. HIV/AIDS); multiple software and paper tools are difficult to coordinate and change; standards are "cast in" (Braa and Humberto, 2007).

Besides, human resource for data collection and analysis has been identified to hinder data management in Africa that subsequently results in redundancy of information (Braa and Humberto, 2007). It has also been noted in Ghana that there is lack of requisite skills for data collection especially at the lower levels of the health system. This situation is worsened by the perception of non-usefulness of information collected among the health workers at the lower levels (MOH, 2008). Apart from the human resource situation, there is also unequal distribution of information infrastructure with less concentration at the district and sub district levels than the regional and national levels (WHO, 2005).

Equally important is policy framework that guides data collection and management in Ghana. It was discovered that the health sector in Ghana does not have adequate legal instruments guiding data collection and information management as well as incentives or sanctions in ensuring compliance to health reporting (MOH, 2008). Also patient's right to privacy and its protection was identified as a challenge to the development of health information system (WHO, 2005). In response to the above, Legal and policy framework for health information and health data reporting was drafted in 2008 but has still not materialized. Hence plans for achieving a standard for data collection in our clinical areas still remains on paper. In effect, the vision of the GHS to improve documentation of patient information as well as the ascribed role of the nurse to this effect is not realized at the clinical setting. Thus inefficiencies continue to exist in the documentation process and its use. This is because nurses have to manage and produce some form of evidence of care.

6.2: The Need for Taking into Account Different Interests

The actor- network Theory (ANT) is concerned with the alignment of interests, needs of actors who are usually involved in the social negations in a social network (Monteiro, 2000). Accordingly, ANT helps us to map out actors in the information network with common interest and how these interests are aligned or negotiated to achieve a common goal. In the light of this theory, the actors in nursing information are nurses of various ranks, medical officers, physiotherapists, and laboratory technicians, paper notes, note books and work routine. For instance, the nurses are trained and vested in the nursing process approach to documentation. But this interest has to be negotiated at the work situation since they have to adopt and adjust to the free-text type of documentation. Accordingly these two different work situations have to be negotiated so that smooth transition from what is learnt and what is to be practiced is achieved. This process is important so as to achieve the optimum goal of efficient care and patient's safety. These actors with different interests are connected in the network with the optimum aim of providing continuity of care to ensure efficient care and patient safety. However these divergent interests at the different level needs to be harmonized to achieve results.

These diverse interests of the various actors are mapped out. The consequences of nonaligned interests and the needs to be negotiated are discussed below.

6.2.1: Gap between Training and Practice

Nursing training education in Ghana has seen many reforms since its establishment 1899 (Opare & Mills, 2000). Formal nursing education was however started in 1945, Ghana being the first West African country to establish nursing training school. Even then, the nursing training curriculum was based on the General Nursing Council of England and Wales (Kisseih, 1968). This was necessary to ensure that, the standards of the Graduates from the school meets those of Britain, so that they can take post basic courses in Britain to prepare them to take up nursing positions from the colonial masters (Kisseih, 1968).

Currently, curriculum of nursing training education in Ghana both at the university and the training colleges' emphasizes on the concept of nursing process in providing nursing care .The nursing process is a tool that provides the nurse with a systematic problem solving technique, it

is presented in five (5) phases, namely Assessment, diagnosis, planning, implementation and evaluation (Carpenito-Moyet, 2007). The planning phase of the nursing process is characterized by documentation in a nursing care plan, which provides structured forms for documentation and a good medium for evaluating outcome of care. The nursing process consequently facilities individualized care which is more appropriate in a setting of one-one nurse patient relationship.

Assessment	Nursing Diagnosis	Planning	Intervention	Rationale	Evaluation
Subjective: "Hindi ko na magawang maligo at mag ayos pa ng katawan dahil tinatamad ako" as verbalized by the patient. **Objective:** Discomfort Unpleasant odor Unfixed hair Dry skin Presence of dandruffs	Self – care deficit related to lack of motivation in performing good hygiene.	After 1 hour of nursing intervention, the patient will perform good hygiene and she will cooperate in the procedure of bathing and proper grooming	Establish rapport on the client Monitor the vital signs. Provide health teaching on the client regarding the proper way of effective oral hygiene. Explain the procedure of proper bathing and hair brushing on the patient. Guide and support the patient and let her perform the procedure. Encourage her to take a bath everyday and be responsible mother to her physical appearance. Explain the essence of the mother as a clean and a presentable mother to her baby. Inform the relatives to help the patient in doing her duty everyday regarding her proper hygiene.	To establish trust and cooperation on the client To obtain the baseline data. To provide adequate knowledge on the client. To provide correct pattern of performing the procedure. To avoid accident and for the patient to practice the procedure. To inform the patient of her responsibility as an individual. To help the patient to protect her baby while on contact with her. To have cooperation and guidance coming from the relatives.	After 1 hour of nursing intervention, goal met, the patient was able to perform good hygiene and she was able to cooperate in the procedure of bathing and proper grooming. TND

www.nursingdepartment.blogspot.com

Figure 12 Sample of nursing care plan

(Source http://nursingdepartment.blogspot.com/2008/11/nursing-care-plan)

However, nursing process and its associated nursing care plans are not used in the hospital due to shortage of health profession (nurses) coupled with heavy workload. The irony is that, student nurses' only use the care plan during clinical placement and practical examination, hence the use of nursing care plan ends when the student completes the nursing course. This finding reflects a study done in a medical ward of the Korle- bu teaching hospital, Ghana which revealed the disappointment of student nurses, because they cannot practice what they are though at school, including the use of nursing care plans (Böhmig, 2010). After being trained with the nursing care plan, the nurses completes and have to adapt fully to traditional "freehand" or unstructured type of nursing documentation that basically lacks the planning and evaluation steps in the nurses process.

In addition, the nursing care plan seeks to enhance individualized care but with multiple patient assessments that exists in the wards (Allen, 1998). The nursing process cannot be functional in

our type of work setting. However, the nursing documentation at the end of the day must be accurate, efficient to achieve results and even make the nursing profession visible among others.

The question worth asking is that, when will the problem of shortage of nurses end, so that what is thought in the training schools will be implemented? What happens to the knowledge acquired in the nursing process? It is significant to note that, nursing education in Ghana, since its insertion is tailored along foreign practice and setting, particularly Britain. This coupled with the desire of NMC to maintain the standard of nursing in Ghana to conform to international standards shows a long-standing desire for international standards. The Resultant is the adoption of the "universal" nursing process. Though proved to be an important tool in nursing practice, Local constrains such as shortage of nurses to cater for increasing numbers of patients in the Ghanaian hospital setting makes it redundant. Hence its use is relegated to the background when the students graduate. As discovered by Manfredi (1993), PAHO (1999) in the Latin America and the Caribbean. Different classification system for nursing documentation that originated from different country mostly did not fit into the local work settings.

It is important that Ghanaian nurses meet international standards. This may also accounts for the preference of the Ghanaian nurses aboard, especially United Kingdom. Subsequently draining the nation of its skilled nurses.

There is therefore the need for the Nurses and midwives council of Ghana to re-examine the present nursing documentation to ensure that all the different interests of the various actors are harmonized so as to achieve efficiency in the documentation process.

6.2.2: Time Constrain verses Documentation

Unlike the developed countries where the average, nurse – patient ratio is appreciable. Volta Regional Hospital for that matter Ghana, has about 1:100 ratio of nurse to patient[4]. Giving efficient care to patient is however the prime objective of every nurse. Subsequently, accurate nursing documentation is proven to ensure continuity of care that is a necessary facilitator for efficient care as well as a guarantee for patient's safety. However the over whelming work load in our hospitals does not make possible for the nurse to achieve this objective holistically, given that, the nurse has a lot of patients to attend to within a short time. For instance it is common to

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[4] VRH statistics 2010

find two nurses on duty with one health assistant to cater for as much as 25 patients. Coupled with emergencies, at the end of the day the nurse forget to document, but fortunately what is forgotten may be inserted during handing over when the one taking over is particular about documentation. Similarly increased number of patient as against fewer nurses is said to account for lack of time for documentation in the Caribbean and Latin America (Bakken, 2007). Also similar situation was revealed by (Boston & Vestal, 1994, Mills & Tibury, 1995).

More so, as part of the nurses' duty, patient information needs to be documented to ensure continuity and evidence of care. Looking at the above mention ratio of nurse to patient, the nurses at the Volta Regional Hospital do not have much time to deliver efficient care as well as to document appropriately. Due to time constrain, the nurse in- charge for a shift may have to document patients care on behave of the other nurse (s) regardless of whether she performed the procedure or not. In this situation all the folders are entered at the same time, mostly getting to the close of the shift. This means that, documentation is done after hours of procedure. The reason behind this is that, the few nurses on duty are busy with other procedure, but something must be presented on paper after all. Although there seems to be consultation between the caregiver and the writer, there is no guarantee of accuracy. We should not forget, however, the fifth themes of essential of quality nursing documentation by Jefferies et al. (2010), which states, "*Nursing documentation should be written as events occur".* So that accurate sequent of event is documented. In this regards, the quality of the documentation is not guarantee and subsequently may not have adequate information to communicate to health personnel in charge of the patient.

Due to time constrain, nurses at the Volta Regional Hospital are not able to put in their best in document. Most of the documentation reviewed are shallow and mostly the same phrase" or chorus" runs through all the patients notes, regardless of their disease condition or needs. This indicates that the documentation did not capture Individual patient's needs, assessment and outcome of care, because as the saying goes "what is not documented is not done". Frank-Stomborg et al. (2001) point out that when nurses concentrate on recording only routine care and observations, the possibility to missed vital information for patient care is very high. Consequently missing out the quality of documentation that requires that "*Nursing documentation should be patient centered"* (Jefferies et al., 2010).

Even though there are no studies in this area in developing countries, some studies done elsewhere have shown this concern. For example a study by Moody & Snyder (1995) reveals that nurses spend approximately 15-20% of their time on documentation of assessment findings and care. This means that documentation needs some appreciable amount of time, but in the case of Ghana, heavy workload with its resultant time constrain is a major factor that hinders quality documentation. To sum up, work overload seriously affects documentation by nurses at the Volta regional hospital thereby undermining its quality and its communications ability. There is therefore the need to reconcile workload and documentation of patients care through re defining the scope of workflow. In light of ANT, translation is needed, so that all these interests could be negotiated to provide the necessary course in achieving the common goal of efficient documentation.

6.2.3: Interplay between Oral and Written Communication

Oral communication is a long tradition in the nursing profession, which forms an important aspect of nursing communication. Some researchers think that, it accounts for the nurses' poor attitude towards documentation and seriously influences documentation. It is argue that, the hospital unit is designed to achieve close working relationship that facilitates frequent discussions among nurses given that they interact with patients, visitors and colleagues verbally (O'Brien & Pearson, 1993). Consequently, O'Brien and Pearson (1993) find that verbal accounts of patient care situations were far richer than the recorded data.

At the Volta Regional Hospital oral communication is at its peak during handing over, when the care process and patients' progress is discussed as well as what is written about the patient in the patients folder. During this time questions are asked for clarification on oral and written information and the necessary inputs are made towards effective patients care. In fact, it is a forum for discussing patient care. Most at times experience nurses gives suggestions on how to deal with certain cases. In addition oral practice is seen during admission of patients to the ward. As part of the admission procedure the nurse assesses the patient to get base line information for his care. This is evidence in conversations between the nurse and the patients. Information gathered from this interaction is subsequently documented in the appropriate document.

Oral communication in nursing is further seen during patient's education, which is usually given

during patient's admission on the ward or on the day of discharge. It is also common to see nurses given health education to the out patients at the general OPD, or specialist OPD i.e. at child health, Obstetric clinics among others. During ward rounds nurses, medical officers and the paramedics engage in discussions about the patient's condition and treatments.
Judging from above this long tradition of oral communication among nurses' forms a necessary core of continuity of care and complements written document. However reconciling the two form of communication would enhance continuity of care.

On the other hand, written communication in nursing is seen as fundamental to competency and professionalism. It is said to reflect professionalism through the nurse's application of nursing knowledge, skills and professional standards in the clinical setting (CRNBC, 2007). More so, documentation provides on daily bases valid and reliable evidence of care (Karkkaninen & Eriksson, 2003), which facilitates efficient communication and cooperation among health professionals (Ammenwerth et al., 2003).

At the Volta Regional Hospital, the nurse managers expects that nurses give priority to written documentation due to the above mentioned inevitable benefits However the nurses seem to be comfortable with oral communication even though they verbalized that written communication is the best. Information gathered from interviews and observations clearly indicated that, nurses at the Volta Regional Hospital cannot completely do away with oral communication. Oral communication is a key to continuity of care, especially looking at the role it plays during handing over. The written communication is said to be the "ultimate" in terms of professionalism and legality. As much as possible most nurses at the Volta Regional Hospital are more comfortable with and rely on oral communication vis-a-vis written communication. This situation is accounted for by the following reasons:

- Inadequate number of nurses as compared to increased number of patients, therefore making it difficult for nurses to make time for documentation.
- Most written documentation does not contain all the needed information required for continuity of care, and is mostly inadequate .At the end of the day the documentation is not able to communicate to others.
- Most nurses find it easier and confident to orally communicate patient's care.
- Certain social issues concerning the patient that are needed for his or her care cannot be written down, hence they are best communicated verbally, and

- Oral information always supplements the written information during handing over.

On the other hand, as much as oral communication seems suitable for most nurses at the Volta Regional Hospital, the layout of the wards does not guarantee patients' confidentiality as other patients may hear what is being said. This is because six (6) patients share each cubicle in the ward (this number increases when there is shortage of beds). The average cubicle per ward is three (3) with at least two (2) private rooms).

One of the respondents shares this concern:

"If we are able to document much the verbal handing over may not be much because sometimes the patient may hear what we are saying. For example, in my ward we move from bed to bed to hand over. It is likely that other patients may over hear what we are saying, and may also interpret it in another way. Because of privacy issues the verbal handing over should not be much so that we don't expose others. If you write and the person reads, nobody will hear what you are saying."

Then again, nurses deviate and digress from the subject matter during handing over, hence wasting time on other issues.

I also observed that, there was always confusion over information when the person directly involved with the patient did not document and is not around to clarify issues during handing over.

Of late nurses in Ghana are being sent to court over negligence of duties. Relying on oral communication without efficient documentation puts the nurse in a critical situation when he/she is involved in a lawsuit.

In fact the significance of written communication is seen in continuous improvement of nursing documentation from development of guidelines for writing to digitalization of nursing documentation in developed countries. In Ghana even though there are no known guidelines for present documentation at the wards, Nurse managers, ward -in- charges and other nurses acknowledge the essence of nursing documentation. Some respondents confirmed this as follows:

"*Nursing documentation helps your colleagues to read about the patients before the oral handing over and also serves as a document that can be referred to at any given time*."

"Nursing documentation helps us to give adequate information about the patient: what has been done and what is to be done for the patient."

"It is very good when we document. Even when you are not around, others can read it to know the information about the patient. For example the patient's condition may change in the absence of your colleagues. Writing it down and them reading it may inform them about it. But if you did not write it down and you happen to be absent at the handing over, how do you account for this?"

Nursing documentation at the Volta Regional Hospital is not at its best. Sometimes the documentation is inefficient for the purpose of continuity of care. As indicated earlier on, most essential information is not captured, consequently defeating the purpose of continuity of care. However, information written helps or guides other nurses who were not around in patients care.

To sum up the interplay between oral and written communication in nursing is necessary to achieve continuity of care. Sexton et al. (2004) in their studies find out that the majority of the oral communication during handing over could be recorded into some of the existing structure of the nursing documentation. Also a study by Munkvold et al. (2006) notes that, in the bid to reduce oral (informational communication) during handing over, the handing over process was factor into the electronic patient records (EPR) but the nurses managed to revisit this informal communication in other new ways. In a way " Playing the new game by the old rules". This shows how difficult to it is to do away with the orally communication in nursing amidst the emphasis on written communication. But it is equally important is to maintain accurate documentation so as to fulfill legal and professional requirement as well as making nursing documentation acceptable to other professionals in the patients care.

6.2.4: Sources of Nursing Documentation and their Structure.

At the Volta regional hospital for that matter Ghana, nurses' document in several books and sheets. All these information are important for patient care. Information gathered from the Volta regional hospital points to the fact that, time constrain as a result of work overload is making it difficult to work with all these information sources. To some extent, some of these information sources are duplicated. For example the changes book and the nurses' note at a point in time have the same information. If we should consider the scarce time available for the nurse, several information sources are not the best to work with. In spite of the existing numerous sources,

provision is not made for some kind of information. Consequently stickers are used to provide additional information outside the books. Based on these, most nurses at the Volta regional hospital show a strong desire for a single source of information; some advocated for a single paper base information source and others a digitalized information source. However looking at the various information sources except for some few duplicates, each source seems to play a unique role. Merging all the various source into one may not go down well. It means some information may have to be cut off completely. It is important to learn a lesson from Norway, where the provision of fewer information source (EPR) lead to the creation of several informal information sources needed for workflow, since the newly created source did not make flexible for those information (Munkvold et al., 2006). Hence one information may not be the ultimate, at times duplication is necessary so that information omitted in one source could be find in the other. As noted by one respondent "*I think the way the nursing documentation is ok, because it is fragmented and some repeated one can easily get an information from other sources of information".*

However most of these information sources do not have a definite structure. For example the nurses notes does not have outline as to what to go into it. It becomes difficult for the nurse who has to make use of experience and sense of judgment to determine what to include and what not to. According to some respondents, they have to struggle to figure out what needs to be documented, they expressed the view that, a define structure of the nurses notes would make documentation more pleasant and less time consuming.

"Even though we know we have to document care, you have to struggle to come out with what is appropriate to put down because you cannot write everything, in this case if we can get some form of structured form like questions and answer, so that we can tick... Of course we may have to write something but not much and i belief it will enhance our documentation."

However, it is noted that, what to include and not to include in nursing documentation has raised some form of controversy in the nursing field; therefore all clinical areas through professional judgment should determine individual issues that must be included in the nursing documentation (Jefferies et al., 2010).

A review paper on nursing documentation indicates that, though structured text (flow charts) in some cases improved the documentation, free text was also found to be necessary in giving detailed account of care (Urquhart & Currel, 2005). It was also noted that, although free text

seems to be time consuming (and require critical thinking) it was perceived as better and more effective. However with regards to electronic based nursing documentation, documentation that did not make provision for free text has the potential of making assessments and care planning too easy that, less attention is paid to monitoring and evaluation of care (Urquhart & Currel, 2005). Looking at the above-mentioned developments free text and structured text need to co-exist so as to complement each other. In this way all needed information may be captured.

6.3: Quality of Nursing Documentation

In this regard quality of the nursing documentation is looked at in terms of the content and mode of documentation. With regards to the content of documentation, it is difficult to come out with a quality nursing documentation due to different factors that need to be taken into account. However it is necessary that the content conform to an approved standard or tool. The main aspects of quality nursing documentation are; accurate, concise, and relevant (Jefferies et al., 2010). On the other hand, a study by Considine et al. (2006) find out that exposure of nurses to nursing practice standards improved their documentation of patient's assessments. However standards and guidelines in our present nursing documentation seem invisible, hence what constitute relevant content is difficult to be determined, because existing standards are in relation to the nursing process which the nurses are being trained with but do not exist in practice.

On the other hand, a lot of studies have showed that digitalization of nursing documentation is necessary factor for the improvement of quality in documentation and nursing documentation as a whole. In Ghana, plans are underway to implement electronic health records; Volta Regional Hospital for example is piloting the integrated health information system by the Ghana Health Service, which is said to include electronic patient information. Currently information is only shared between the records and the finance departments basically for easy assessments of bills for national health insurance clients. Even that, unreliable Internet access and frequent power cuts prevent the running of this application. Consequently, the implementation of electronic patient information in the health institution is still basic. In search for what the nurses in the study could consider as quality documentation, most respondents advocated for the digitalization of nursing documentation. Which they believe apart from ensuring accurate and

more accessible data, would enable them to be at breast with new demands and expectation in the nursing profession. They also perceived that digitalized nursing documentation would reduce their documentation time as well as making documentation attractive. One respondent try to look at the advantages that would come with electronic nursing documentation, she recollected the missing of a patients folder and admission and discharge book which stores three (3) months information. Like the others she thinks electronic documentations would preserve information and enable easy access. However the implementation of electronic nursing documentation may have to "swim" through a lot of challenges. The biggest problem will be the high computer illiteracy rate among the nurses especially the older nurses who form the majority. As we can see from the operation of the existing integrated health information system (IHIS) power supply and undoubtedly huge set up cost would be an impediment to the implementation of electronic nursing documentation at VRH. It is also significant to note that the electronic nursing documentation may reflect the internationally adopted nursing care plan and its associated individualized care, because the Nursing Body in Ghana will not settle for anything less international. Therefore shortage of staff to give individualized care may subsequently affect the use of electronic nursing documentation.

Getting a standard for electronic nursing documentation to meet local needs in Ghana is envisaged to be problematic. In this regards, NMC as a member of the international council of nurses and the bid to conform to professional standards would have to adopt international nursing documentation standards, which is obviously the nursing process and its associated North American Nursing Diagnosis Association (NANDA) Classifications etc. However this may encounter the same problems as the nursing care plans in the clinical area. Consequently locally designed ones to fit current documentation patterns may reduce our documentation value in the eyes of international standards. Hence standard for nursing documentation remains questionable.

Change from paper base to electric nursing documentation is likely to cause distortions in the workflow. People may resist the charge and as well have to grapple with the nostalgia that comes with the change. This is because most nurses have worked with paper documentation for over twenty years (20) hence there may be the need for total change of attitude to ensure acceptance. As noted by Hanseth and Monteiro (1998) information infrastructure cannot work without the support or acceptance of the end users. The sustainability and maintenance of such

system would be a major setback for the implementation of electronic nursing documentation. This is because for the past years most equipment at the hospital has never seen maintenance. They are attended to as and when they break down and at times go beyond repairs. Another major issue anticipated is the protection of patents right to privacy as there is not much legal instrument in this area.

However, locally designed nursing documentation to suit our local sitting and needs would be the ultimate to achieve efficacy. Also it is likely that electronic nursing documentation may inherit some of the problems with paper-based documentation.

6.4: Drawbacks on Nursing Documentation

Nursing documentation at the Volta Regional Hospital, for that matter in Ghana, is not at its best. First of all, the country's loss of health personnel to the western countries in search of greener pastures has and is jeopardizing health care delivery in the country. This situation poses a serious threat to quality and safe health care. To curb the outflow of health professionals (Nurses) popularly called "rapture" the government put in pragmatic measures. Some of these measures include paying of overtime for nurses and medical officers and later improvement in the salary of health professionals in the country. There is also tax waiver on imported vehicle by Health personnel among others. These Measures has to an extent, reduced the number of outflow of nurses. However these incentives do not measure up to the benefits they get working outside the country and there is still the temptation to leave the country. There is still serious shortage of health personnel including nurses more especially in the rural areas. The Volta Regional Hospital is not an exception in this situation. Looking at the current number of health personnel: 10 medical officers and 101 nurses, instead of the ideal of 30 and 237 respectively. (See appendix C & D for the overview of the distribution of health nurses and medical Doctors in Ghana) Information gathered from observation and interviews, shows that the inadequate number of nurses per patient has led to overwork of the nurse who has to care for more than enough patient. This situation undermines the efficiency of nursing documentation at the Volta Regional Hospital, since the nurse has too many patients to care for, and at the end she may even forgets to document. One respondent had this to say:

"We mostly forget to document because we do not have enough time. You have to do a lot of

work at the same time so at the end of the day you don't remember to document. When we forget to document something we do it during handing over but I think if we are many and the work is evenly distributed among us we will make better documentation since it is important for our existence as nurses."

Furthermore, as indicated earlier on in the text, there are no guidelines on nursing documentation to explicitly outline what to include and not to include in nursing documentation. However the overburdened nurse has to decide what to include in the writing in order to come out with good quality documentation. To make matters worse, nursing training curriculum only lays emphasis on the nursing processes and care plans, which are barely used at the wards except for practical exams by students.

Besides, the numerous sources of nursing documentation is de-motivation for documentation, as one has to make numerous entries on almost the same information, looking at the time constraints.

"I think we have too much documentation to do. Take admission of patients, for example. After writing the admission notes, and the drugs and various observations, you then go to document in the Admission and Discharge book, ward state and changes book, all taking over 30 minutes." This was the frustration expressed by one of the nurses.

"To ensure effectiveness of nursing documentation, it should be taught in the training schools instead of the care plan and also in- service training should be organized for the nurses. I am saying this because of what I have seen in the ward, especially to document in a simple language."

Other views focus on the fact that, verbal information is more accurate than (written) documentation, because they are able to give detailed account than putting the information into writing. It appears therefore that verbal information is more reliable than the written word, which unfortunately does not provide details.

Furthermore, at the time of the study respondents showed concern for the absence of workshops or seminars, orientations and in-service training on nursing documentation. A staff nurse who has worked at the hospital for the last five (5) lamented that she has not seen any form of work on documentation ever since she started work at the hospital. The only thing she hears occasionally is that the nurse manager stresses on documenting care and appending their signatures to everything they write but remain silent on what to include.

"To improve upon documentation people have to be educated on the need for documentation. There should be a monitoring team for documentation to put us on the right path" observed another nurse.

Some even blame their shortcomings in documentation on this, since they believe such orientations may guide them very much on especially the content of the nursing documentation. Constant orientation of the nurses to nursing documentation is important to enhance improvement. This is because, as indicated previously in the test, what the newly qualified nurse is versed in during training is not exactly what she practices. Hence during this adaptation period there is the need for re-orientation in nursing documentation.

6.5: Nursing Documentation as a Communication Tool

Nursing documentation, when done effectively is noted to enhance collaboration among the different health personnel who are directly involved in the care of the patient (Ammenwerth et al., 2003), thereby ensuring continuity of care. Most respondents acknowledged that nursing documentation is needed for dissemination of patient's information among health workers as well as serving as a reference for the nurses. In this regard, accurate documentation of patient assessment, care process as well as outcome of care provide a strong bases for decision making for both the nurses and other health personnel. The study found out that, nursing documentation is not reliable in informing health professionals on patients care and care outcomes. This is evidence by the fact that, the content of the documentation does not always provide the important information that others may rely on, for instance most notes were observed to be a repetitive of routine task such as "*vital signs checked, medication served, patient sleep well at night*" etc. These do not provide much information on the status of the patient and his response to care. In relative terms, the quality of the nursing documentation does not form a strong base for information shearing among the health personnel. However it is obvious that the nursing care plan provides a sort of guidelines as to what to document in each section. But with the existing documentation the nursing body or even the nurse managers of the hospital could not spell what to include in relation to the nurses process.

During handing over much of patient information is provided verbally, though reference is made to the written information or the written information serve as a starting point for the oral

discussions. This is also seen during ward rounds where the nurse in charge gives oral information about the patient's condition or explains some of the written information to the medical officer. In fact most of the respondents indicated their preference for oral information with the explanation that they get accurate patient information than the written one especially when the one directly responsible for the patient is around to give details.

Furthermore, it was observed that, inconsistency exit to some extent between what is written and what is said verbally. There were instances where most of what was said about the patient was written; the notes were found to be full of routine care. Lack of time to write everything was attributed to this. Accordingly oral communication carries more weight and preferred by most nurses. This situation is similar to what Parker and Gardner (1992) find out, they posited that, due to dissatisfaction with nursing documentation within the confines of empirical data, nurses give preference to, or values the oral communication during handing over the written word.

It was observed that other health professionals occasionally read or make reference to the nursing documentation; however, it was still not considered as a concrete source of information, since its contents are most of the time not accurate. Sometimes the medical officers confront the nurses when they fail to document some important information they have given about the patient in the folder.

Although to some extent the nursing documentation informs others on patients, it is not effective due to the above-mentioned factors. It was also observed that, the nursing documentation is used more among the nurses as compared to other health professionals. Hence the goal of collaborative work in care for the patient is undermined. Looking at the benefits of electronic patient records lauded by researches, digitalization of the nursing documentation in our Ghanaian hospitals will go a long way to enhance collaboration through efficient communication.

6.6: Nursing Documentation and Information Infrastructure

Infrastructure is defined by Webster's dictionary as

"The underlying foundation or basic framework (as of a system or organization)"

Infrastructure is not necessarily complicated technology. From the above it can be the basic installations on which renovation or expansion can be made. Accordingly nursing documentation is considered an infrastructure that can be expanded.

According to Hanseth and Monteiro (1998) information infrastructure has unique characteristic that differentiate it from information systems. They are enabling, shareable, openness and heterogeneous and has an installed base. Nursing documentation have the above features in common with information infrastructure.

In the light of information infrastructure, nursing documentation is ***sharable***; in this sense the nursing documentation has multiple uses, physicians, physiotherapies, pharmacist, hospital administrator and nurses who use it for decision-making and communication purposes. Student nurses as well as Nurse Researchers also uses it as a knowledge base for learning purposed Personnel from the health insurance scheme use it calculate clams. Specifically the admission and discharge books are uses for this purpose. The list of users can continue on and on. As pointed out by Hanseth and Monteiro (1998) that IIS are irreducible, nursing documentation as information infrastructure with its multiple uses do not split. The information captured and used remains the same at the end of the day to achieve efficient care. Cheevakasemsook et al. (2006) identify the uses of nursing documentation as; providing evidence for research, financial and ethical quality-assurance purposes, providing the database infrastructure supporting development of nursing knowledge among others.

Another feature of information infrastructure that is shared by nursing documentation is an ***installed base***, meaning it serves an infrastructure that could be developed over time. Accordingly as a paper-based documents, new versions can be added to it, whilst it still maintains its content. For example, electronic based nursing documentation can be developed based on this paper base documentation. More so as an installed based, other versions of documentation can be added to it, to improve the quality of the documentation to make it more efficient in the data collecting and communication process. One respondent puts it this way: " *Looking at the paper work, a lot of people handle the folders ... documentation could be made into the electronic base for easy accessibility".* As an installed base, nursing documentation ***enables*** the open and support for new range of activities. As indicated by researches done in the area of quality documentation, the shift from paper based nursing documentation to electronic nursing documentation has contributed remarkably to the quality of nursing

documentation produced as well as enhancing communication to other health professions aside nurses.

In addition, as an information infrastructure, nursing documentation is ***opened*** to many users. As indicated earlier on, nurses, doctors, student nurses, Hospital administrator, physiotherapists, and pharmacist are all category of people who share the information from the nursing documentation uses it to achieve a common goal. Also it is used to provide health statistics for the Ministry of Health.

Nursing documentation as a ***heterogeneous network*** is made up of the nurses of various ranks, medical officers, physiotherapists, and pharmacist, the paper notes and books, pens and work routine. However these actors who have different interests are connected in this network with the optimum aim of providing continuity of care to ensure efficient care and patient safety through effective communication.

In the light of the above mentioned qualities of information infrastructure shared by nursing documentation, as a communication tool, nursing documentation stands a great chance to enhance collaboration among all the health professionals involved in the patient care so that patients receive quality care as well as the guarantee of their safely as they pass through the care institutions. In this regard the paper-based documentation could be digitalized to enhance quality as well as make it easily accessible to all those involved in the care process, and also for research and academic purposes.

However, It is also likely that new versions of infrastructure may inherit both strength and limitation from it installs based. Oversight from these limitations may jeopardize new developments (Star & Ruhleder, 1996). Accordingly as an install base, there is the tendency that, problems associated with the paper base nursing may be inherited by new versions of the documentation as noted by Bakken (2007). Equally important is the issue of confidentiality of patient's information and privacy. As indicated earlier there are no adequate laws protecting the patient's safety. This may delay and prevent smooth running of implementation of electronic based nursing documentation.

As indicated earlier transformation of paper based nursing documentation to electronic in our part of the world would pose a lot of challenges. Hence the following need to be considered when implementing any form of information infrastructure especially nursing documentation.

First of all there is the need to consider the actors in the network, organizational process like workflow, human resources and the changes that may occur due to the introduction of new technology. In the light of ANT, Berg (1999) notes that for instance the transition from paper based recording to electronic recording might make work practices visible, subsequently affecting the inter professional relations that blends work effectively towards achieving common in the network. This may call for renegotiation of roles of the various actors involved in the network. This is because each person´s work is dependent on the other; hence the introduction of new element in the network distorts workflow (Berg, 1999). For instance people working with nursing documentation for over twenty years may resist the change that comes with working with electronic nursing documentation. Aside this, the new technology (EPR) must be accepted and used by the various actors. As indicated by Hanseth and Monteiro (1998), the success of IIs is dependent on the support of the end users and their ability to use it properly (Hanseth & Monteiro, 1998). In effect both the ANT and IIS theory would be a curial tool in guiding the transition of nursing documentation from paper based to electronic.

As noted earlier on Infrastructure like computers, human resources, finances, and substantiality of the information infrastructure and the issues of ensuring patients privacy may pose as treat to the introduction and sustainability of any form of electronic patients records in our part of the world.

Summary

The data collected, reveals some tensions that exist in the nursing documentation process that affects its quality. Through the lens of ANT these issues were mapped out. They are incompatibilities that exist between training in practice, lack of standards to guide the documentation process as well as the overwhelming workloads that exist in our wards. On the other hand digitalization of the nursing documentation was identified to be crucial to help solve the problem of quality and efficiency. However as an information infrastructure, the nursing documentation scaling up to electronic nursing documentation may be faced with a lot of challenges such as human resource, sustainability and maintenance as well as legal framework to back it, among others. In addition it also have the possibilities of inheriting some problems associated with the paper-based documentation. Also some challenges that play down on the quality of nursing documentation were noted to be time constrains as a result of work overload, lack of in-service training. Finally the communication function of nursing documentation is

seen to be ineffective due some of the above-mentioned challenges. Another fact is that poor quality of documentation produced makes it unreliable. This situation is rather unfortunate looking at the role effective communication play in continuity of care and patient´s safety.

Chapter 7: Conclusion

Quality patient's record is crucial in ensuring collaboration in patients´ care through communicating it to all those involved in patient care. Consequently efficient communication of patient care does not only enhance collaboration, but also provide the atmosphere for effective care and the guarantee of patient´s safety through identifying and noting down changes in patients condition. It also provides a strong base for decision-making concerning patients treatment. Quality care and patients safety of late has been the focus of most health sectors in the developing counties. Nursing documentation being part of patient's record is crucial in achieving this aim; this is because Nurses form the majority of the health care team. They are also the only health care professionals who spend twenty hours with the patients, therefore generate a lot of information from the care process, which decision making for patients care is depended on.

However, this valuable tool for the nursing profession seems not to be at its best in Ghana. One can imagine the effect of this on quality care and patient's safety because quality is proved to be care enhanced by accurate patient's information that can be communicated to the members of the health team.

The study found out issues that undermine the quality and communicability of the nursing documentation at VRH. However, it was also noted when reviewing the literature related to the study that, similar issues identified in this study have been discovered in other parts of the world but they seem to be unsolved, as they still exist. Some issues in the nursing documentation identified in the study are discussed below.

With regards to the content of the nursing documentation, there were neither standards nor guidelines in place to guide documentation. Therefore what to document is left to the discretion of the nurse. This subsequently affects the content of the nursing documentation in that, patient's information captured are basically routine work that runs through all the nurses notes, that is found in other sources of the nursing documentation. A typical example is the popular "vital signs checked" whereas the vital signs details are already documented in the vital signs sheet. Whereas the documentation did not reflect individual needs. Obviously when important information needed for decision making is not captured, there is nothing to be communicated.

The forms and books for data capturing first of all were noted to be numerous; aside some levels of duplicated information were noted. Equally important is the fact that, these information sources do not have any definite structure; hence free text is usually employed to capture information. These resulted in spending much time spent on documentation.

In addition, the human resource in developing countries is depleted. Equally severe is that of the nursing professionals. Though a lot of nurses are trained yearly, the increasing growth of the population and their health care need outstretched the Nurses available to provide care. This is worsening in the rural Ghana where most nurses refuse postings. The study found out that, there is an acute scarcity of nurses at the wards leading to heavy workload. For this reason the demand for "hands on" care is so great that it is difficult to make adequate time for documentation. The nurse is therefore faced with which aspect of care to document and having only a little time to figure out what to put down. On the other hand the study find out that most Nurses in Ghana are trained with the nursing care plans that are structured to capture patients information but have to adopt free text in practice. Coupled with that is the absence of in-service training and workshops needed to give insight into the new tool at the practical setting.

Communication of the nursing documentation at the VRH even though was found to communicate to physicians on a few occasions; it was seen to be centered mainly among the nurses. Also it was found out that even the nurse themselves did not always rely on their documentation to communicate care with the reason of being inadequate with regards to the content. The irony is that most respondents lauded the role of nursing documentation in communicating patient's care but in fact, oral communication was mostly used in communicating care. The question is what if the person who was is involved with the patients is not around to give the oral account? To sum up, the study found out that even though nursing documentation helps to communicate care to some extent, a lot of issues are at play that makes it less adequate to communicate patients care to all the team members in the patients care. However in searching for what makes the nursing documentation a quality tool for communicating care, it was discovered that moving from paper based nursing documentation to electronic nursing documentation will not only improve the quality of the nursing documentation but may reduce time spent on documentation and also make it more accessible to other health professionals in the patients care.

The study´s Implications on nursing practice is that, the nursing documentation in our hospitals are inadequate to communicate patient´s care hence there is the need to look at the issues in nursing documentation in general and developing standards for information capturing for adequate information in the wards.

This study will also contribute to the knowledge base in nursing documentation especially in the developing countries where research in this area is scanty.

Based on the findings from the study the following recommendations are made.

The NMC, Ghana needs to review the nursing documentation in the curriculum of the nursing school, to ensure that the newly qualified nurse is better equipped for the practical settings.

In addition, the health sector of Ghana is preparing to deploy IT in health information. The findings of this study therefore identified some factors that could be considered when developing information system. Consequently, the concept of IIs and ANT were outlined to guide both the development of health information systems and to address issues that may arise in the human resources due to change in workflow caused by the new technology. However with the development of electronic nursing documentation, local stakeholders in nursing should be involved, so that specific needs of the end users (nurses) could be factored into it in order to enhance performance.

Also NMC, Ghana needs to design structure for nursing documentation to suit local needs if quality-nursing documentation is to be achieved. Equally important is a locally tailored structure for electronic nursing documentation.

The Ghana Registered Nurses Association on the hand needs to organize workshops and in-service training for its members on the importance of nursing documentation in providing information for decision-making in the care process as well as on emerging issues in nursing documentation to ensure efficiency.

Finally the study revealed poor quality of the nursing documentation. However further research is needed on the content of nursing documentation in Ghana to exploit the appropriate content of the documentation that is needed to provide worthy information for collaborative care

References

Akrich, M. (1992). The description of technical objects. In W. E. Bijker, and J. Law (Eds.), *Shaping technology/building society: studies in sociotechnical change* (pp. 205-224). Cambridge, MA: MIT Press.

Allen, D. (1998). Record-keeping and routine nursing practice: the view from the wards. *Journal of Advanced Nursing, 27,* 1223–1230.

Ammenwerth, E., Mansmann, M., Iller, C., & Eichstädter, R. (2003). Factors affecting and affected by user acceptance of computer-based nursing documentation: results of a two-year study. *Journal of the American Medical Informatics Association, 10*(1), 69-84.

Baath, C., Hall-Lord, M. L., Johansson, I., & Larsson, B. W. (2007). Nursing assessment documentation and care of hip fracture patients. *Journal of Orthopaedic Nursing, 11*(1), 4-14.

Bakken, S. (2007). *Building standard-based nursing information systems.* Washington, DC: Pan American Health Organization.

Berg, M. (1999). Patient care information systems and health care work: a sociotechnical approach. *International Journal of Medical Information*, *55*, 87 -101.

Bjorvell, C., Thorell-Ekstrand, I., Wredling, R. (2003). Prerequisites and consequences of patient records as perceived by a group of registered nurses. *Journal Of Clinical Nursing, 12,* 206-214.

Borgma, C. L. (2007). *Scholarship in the digital age: information: infrastructure and the Internet.* Cambridge, MA: MIT Press.

Boston, C., & Vestal, K. (1994). Work transformation: why the new health-care imperative must focus both on people and process. *Hospitals and Health Networks, 68,* 50–55.

Bowker, G. C., & Star, S. L. (1999). *Sorting things out: classification and its consequences.* Cambridge, MA: MIT Press.

Böhmig, C. (2010). Ghanaian nurses at a crossroads. Managing expectations on a medical ward. Retrieved November 23, 2010, from http://www.researchgate.net/publication/41676284_Ghanaian_nurses_at_a_crossroads._Managing_expectations_on_a_medical_ward.

Braa, J., Monteiro, E & Sahay, S. (2004). Networks of action: sustainable health information systems across developing countries, *MIS Quarterly*, 28(3), 337-362.

Braa, J., Hanseth, O., Mohammed, W., Heywood, A., & Shaw, V. (2007). Developing health information systems in developing countries: the flexible standards strategy. *MIS Quarterly, 31,* 1-22.

Braa, J., & Humberto, M. (2007). Building collaborative networks in Africa on health information systems and open source software development – experiences from the HISP/BEANISH network. *IST Africa.*

Callon, M., Courtial, J. P., Turner, W. A., & Bauin, S. (1983). From translations to problematic networks: an introduction to co-word analysis, *Social Science Information, 22*(2), 191-235.

Carpenito-Moyet, L. J. (2007). *Understanding the nursing process: concept mapping and care planning for students.* Philadelphia: Lippincott, Williams & Wilkins.

Cheevakasemsook, A., Chapman, Y., Francis, K., & Davies, C. (2006). The study of nursing documentation complexities. *International Journal of Nursing Practice, 12,* 366-374.

CRNBC (2007). Nursing Documentation. *Crnbc, 151*, 1-24.

Considine, J., Potter, R., & Jenkins, J. (2006) Can written nursing practice standards improve documentation of initial assessment of ED patients? *Australasian Emergency Nursing Journal*, *9,*11–18

Creswell, J. W. (2002). *Research design: qualitative, quantitative and mixed method approach* (2nd ed.). Thousand Oaks. CA: Sage.

Dzenowagis, J. (2005). *Connecting for health: global vision, local insight*. Geneva: WHO.

Ehnfors, M. (1993). Nursing documentation practice on 153 hospital wards in Sweden as described by nurses. *Scandinavian Journal of Caring Sciences, 7,* 201–207.

Ehnfore, M., & Smedby, B. (1993). Nursing care as documented inpatient records. *Scandinavian Journal of Caring Science 7,* 209–220.

Ellingsen, G., Monteiro, E., Munkvold, G. (2007). Standardization of work: co-constructed practice. *Information Society, 23*(5), 309-326.

Ellingsen, G., & Munkvold, G. (2007). Infrastructural arrangements for integrated care: implementing an electronic nursing plan in a psychogeriatic ward. *International Journal of Integrated Care, 7*, 1-11.

Eriksson, K. (2001). *Vårdvetenskap som akademisk disciplin [Caring science as an academic discipline]*. Åbo Akademi, Institutionen för vårdvetenskap (Multiprint). Tredje omarbetade upplaga, Vasa.

Erickson, K., Karkkainen O., (2005). Recording The Content Of The Caring Process. *Journal of Nursing Management.*13 (1), 202-208.

Finlay, L., & Gough, B. (2003). *Reflexivity: a practical guide for researchers in health and social science.* Blackwell Publishing: Oxford.

Forsythe, D. E. (1999). It's just a matter of common sense: ethnography as invisible work. *Computer Supported Cooperative Work, 8,* 127-145.

Frank-Stromborg, M., Christensen, A., & Do, D. E. (2001) Nurse documentation: Not done or worse, done the wrong way—part I. *Oncology Nursing Forum*, *28,* 697–702.

GHS. (2002). *Patients charter.* Retrieved September 10, 2009, from http:/ www.ghanahealthservice.org/aboutus.php?...Patients%20Charter

GHS. (2005). *Job descriptions for clinical, nursing & midwifery and pharmacy staff.* Accra, Ghana.

GHS. (2007). *Quality Assurance Strategic Plan.* Retrieved September 10, 2010, from http://www.ghanaqhp.org/fileadmin/user_upload/QHP/GHS_Quality_Assurance_Strategicplan_FINAL.pdf

Golden-Biddle, K., & Locke, K. (1993). Appealing work: an investigation of how ethnographic texts convince. *Organization Science, 4*(4), 595-616. doi: 10.1287/orsc.4.4.595

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin, and Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.

Hale, C., Thomas, L., Bond, S., & Todd, C. (1997). The nursing record as a research tool to identify nursing interventions. *Journal of Clinical Nursing, 6*(3), 207–214.

Hansebo, G., Kihlgren, M., & Ljunggren, G. (1999). Review of nursing documentation in nursing home wards-changes after intervention for individualized care. *Journal of Advanced Nursing, 29,* 1462-1473.

Hanseth, O. (2002). From systems and tools to networks and infrastructures-from design to cultivation. Towards a theory of ICT solutions and its design methodology implications. Retrieved January 10, 2011, from http://heim.ifi.uio.no/~oleha/Publications/ib_ISR_3rd_resubm2.html

Hanseth, O., & Monteiro. E. (1998). Defining information infrastructures. *Understanding information infrastructures.* Retrieved November 24, 2010, from http://heim.ifi.uio.no/~oleha/Publications/bok.3.html#pgfId=988163

Hanseth, O., Monteiro, E., & Hatling, M. (1996). Developing information infrastructure standards: the tension between standardisation and flexibility. *Science, Technology & Human Values,* 21(4), 407-426.

Hardiker, N. R., Hoy, D., & Casey, A. (2000). Standards for nursing terminology. *Journal of the American Medical Informatics Association, 7,* 523-528.

Hearthfield M. Nursing documentation and nursing practice: a discourse analysis. *Journal of Advanced Nursing* 1996; 24, 98–103.

Heeks, R. (2002). Information systems and developing countries: failure, success, and local improvisations. *The Information Society, 18*(2), 101-112.

Herrero, T., Cabrero, A. I., Burgos, M. R., Garcia, M., & Fermandez, A. I. (1998). Quality control in nursing records. *Enferm intensive, 9*(1), 10-15.

Irving, K.V., Treacy, M., Scott, A., Hyde, A., Butler, M., & MacNeela, P. (2006). Discursive practices in the documentation of patient assessments. *Journal of Advanced Nursing, 53*(2), 151-159.

Iyer, P., & Camp, N. H. (1999). *Nursing documentation: a nursing process approach.* (3rd ed.). Mosby, St Luis Missouri.

Jefferies, D., Johnson, M., & Griffiths, R. (2010). A meta-study of the essentials of quality nursing documentation. *International Journal of Nursing Practice, 16*(2), 112-124. doi: 10.1111/j.1440-172X.2009.01815

Jordan, K. S. (2009). *SBAR: A communication formula for patient safety.* Retrieved September 15, 2010, from http://www.boston.com/jobs/healthcare/oncall/articles/2009/02/17/perspective/

Kaplan, B. & Maxwell, J. A. (1994). *Qualitative Research Methods for Evaluating Computer Information Systems*, in *Evaluating Health Care Information Systems: Methods and Applications,* Anderson, J. G. Aydin, C. E. & Jay, S. J. (eds.), Sage, Thousand Oaks, CA.

Kaplan, B., & Maxwell, J. A. (1994). Qualitative research methods for evaluating computer information systems. In J. G. Anderson, C. E. Aydin, and S. J. Jay (Eds.), *Evaluating health care information systems: methods and applications* (pp. 45-68). Sage, Thousand Oaks, CA.

Karkkainen, O., & Eriksson, K. (2003). Evaluation of patient records as part of developing a nursing classification. *Journal of Clinical Nursing,* 12(2), 198-205.

Karkkainen, O., & Eriksson, K. (2004). Structuring the documentation of nursing care on the basis of a theoretical process model. *Scandinavian Journal of Caring Sciences, 18*(2), 229-236.

Kirrane, C. (2001). An audit of care planning on a neurology unit. *Nursing Standard, 15*(19), 36-39.

Kisseih, D.A.N. (1968). Development in nursing in Ghana. *International Journal of Nursing Studies 5,* 205-219.

Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretative field studies in information systems. *MIS Quarterly*, *23*(1), 67-94.

Kossi, E. K., Sæbo, J. I., Titlestad, O. H., Tohouri, R. R., & Braa, J. (2009). *Integrating health information systems in Sierra Leone*. Retrieved February 2, 2011, from http://www.ifi.uio.no/research/groups/gi/wp/052009.pdf

Kuper, A., Reeves, S., & Levinson, W. (2008). An introduction to reading and appraising qualitative research. *British Medical Journal, 337,* a288. doi:10.1136/bmj.a288

Latour, B. (1991). Technology is society made durable. In J. Law (Ed.), *A sociology of monsters. Essays on power, technology, domination* (pp. 103-131). London: Routledge.

Lutjen L. R. (1993). The nature and use of nursing diagnosis in hospitals. *Nursing Diagnosis,4,* 107-113.

Manfredi, M. (1993). The development of nursing in Latin America: a strategic view. *Revista Latino-Americana de Enfermagem, 1*(1), 23-25.

Manuel, P., & Alster, K. (1994). Unlicensed personnel no cure for an ailing health-care system. *Nursing and Health Care, 15,* 18-21.

Mays, N., & Pope, C. (2000). Qualitative research in health care: assessing quality in qualitative research. *British Medical Journal, 320,* 50-52. doi:10.1136/bmj.320.7226.50
Mbabazi, P and Cassimjee, R. (2006) The quality of nursing documentation in a hospital in Rwanda. *Africa Journal of Nursing and Midwifery*, 8, 31–42.

Mills, M. E., & Tibury, M. S. (1995). Restructuring: safety, quality and cost nursing administrations perspective. *Nursing Policy Forum, 1,* 17-19.

MOH. (2008). *Legal and policy framework for health information and health data reporting.* Ministry of Health, Accra-Ghana.

Ministry Of Health. (2008b). *Vision and mission statement.* Retrieved October 12, 2010, from http://www.moh-ghana.org/moh/research/default.asp

MOH. (2009). *Independent review, health sector programme of work 2008.* Ministry of Health, Accra-Ghana.

Moahi, K. H. (2009). ICT and health information in Botswana: towards the millennium development goals. *Information Development, 25*(3), 198-206. doi: 10.1177/0266666909340790

Monteiro, E. (2000). Actor-network theory and information infrastructures. In C. U. Ciborra, and Associates (Eds.), *From control to drift: the dynamics of corporate information infrastructures* (pp. 71-83). Oxford: Oxford University Press.

Monteiro, E., & Hanseth, O. (1995). Social shaping of information infrastructure: on being specific about the technology. In Orlikowski, J. Wanda, G. Walsham, M. R. Jones, and J. I. DeGross (Eds.), *Information Technology and Changes in Organizational Work* (pp. 325-343). Chapman & Hall.

Moody, L., & Snyder, P. (1995). Hospital provider satisfaction with a new documentation system. *Nursing Economics*, *13,* 24-31.

Munkvold, G., Ellingsen, G. & Koksvik, H. (2006). *Formalising work – reallocating redundancy* (pp. 59-68). Proceedings of the Conference on Computer-Supported Cooperative Work 2006, ACM.

Myers, M. D. (2009). *Qualitative research in business & management*. Sage Publications, London. Retrieved March 14, 2010, from http://www.qual.auckland.ac.nz/#

Nilsson, U-B., & Willman, A. (2000). Evaluation of nursing documentation. *Scandinavian Journal of Caring Science, 14,* 199-206.

Nyonator, F. (2010). *GHS half year performance health sector interagency review*. Accra. Ghana.

O'Brien, D. & Pearson, A. (1993). Unwritten knowledge in nursing: Consider the spoken as well as the written word. Scholarly Inquiry for Nursing Practice: *An International Journal*, *7*(2), 111-124.

Okuonzi, S. A., & Macrae, J. (1995). Whose policy is it anyway? International and national influences on health policy development in Uganda. *Health Policy and Planning, 10,* 122-132.

Opare, M. & Mills, J. (2000). The evolution of nursing education in a post independence context-Ghana from 1957 to 1970. *Western Journal of Nursing Research, 22*(8), 936-944.

Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information Systems Research, 2*(1), 1-28.

PAHO. (1999). *Nursing in the Region of the Americas.* Washington, DC.

Papathanassiou, I., Kotrotsiou, S., & Bletsa, V. (2007). Nursing documentation and recording systems of nursing care. *ICUS and Nursing Web Journal*, 30-31. Retrieved November 16, 2010, from http:/ www.nursing.gr/documentation(r).pdf

Parker, J., & Gardner, G. (1992). The silence and the silencing of the nurse's voice a reading of patient progress notes. *Australian Journal of Advanced Nursing, 9*(2), 3-9.

Parsley, K., & Corrigan, P. (1994). *Quality improvement in nursing and health.* London: Chapman & Hall.

Pearson, A. (2003). The role of documentation in making nursing work visible. *International Journal of Nursing Practice, 9,* 271.

Pope, C., & Mays, N. (1995). Qualitative research: reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *British Medical Journal, 311,* 42-45.

Potikosoom, K. (1999). Practice development in nursing notes. *Journal of Songkha Nakarinth Nursing,19,* 1-19.

Randal, D., Harper, R., & Rouncefield, M. (2007). Ethnography and how to do it. *Fieldwork for design: theory and practice* (pp. 169-197). London: Springer-Verlag London Limited.

Robson, C. (2002). *Real world research* (2nd ed.). UK: Blackwell Publisher.

Seinaruck, W. (1999). *Nursing Diagnosis* (2nd ed.). Khonkeon, Thailand: Khonkeon Karnpim.

Sexton, A., Chan, C., Elliot, M., Stuart, J., Jayasuriya, R., & Crookes, P. (2004) Nursing handovers: do we really need them? *Journal of Nursing Management*, *12,* 37–42.

Star, S., & Ruhleder, K. (1996). Steps toward an ecology of infrastructure: design and access for large information spaces. *Information Systems Research*, *7*(1), 111-134. doi: 10.1287/isre.7.1.111

Stoop, A. P., & Berg, M. (2003). Integrating quantitative and qualitative methods in patient care information system evaluation: guidance for the organizational decision maker. *Methods of Information in Medicine, 42*(4), 458-462.

Street, A. (1992). *Inside Nursing*. State University of New York Press, Albany.

Thorne, S., Reimer Kirkham, R., & O'Flynn-Magee, K. (2004). The analytic challenge in interpretive description. *International Journal of Qualitative Methods, 3*(1), 1-21. Retrieved April 13, 2011, from http://www.ualberta.ca/~iiqm/backissues/3_1/pdf/thorneetal.pdf

Timmermans, S. & Berg, M. (2003). *The gold standard: the challenge of evidence-based medicine and standardization in health care*. Temple University Press, Philadelphia.

Tjora, A. H. (2006). Writing small discoveries: an exploration of fresh observers observations. *Qualitative Research*, *6*(4), 429-451.

Urquhart, C., & Currell, R. (2005). Reviewing the evidence on nursing record systems. *Health Informatics Journal 11,* 33–44.

Walsham, G. (1993). *Interpreting information systems in organizations.* Chichester, UK: Wiley.

Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems, 4*(2), 74-81.

Walsham, G. (1997). Actor-network theory and IS research: current status and future prospects. *In Proceedings from IFIP WG 8.2 International Conference* (pp. 467-480). Philadelphia, USA.

Webb, C., & Pontin, D. (1997). Evaluating the introduction of primary nursing: the use of a care plan audit. *Journal of Clinical Nursing, 6*(5), 395-401.

World Factbook. (2010). *Africa: Ghana.* Retrieved November 10, 2010, from https://www.cia.gov/library/publications/the-world-factbook/geos/cm.html

WHO. (2006). Country *health system fact sheet 2006, Ghana: The world health report 2006.* World Health Organization.

WHO-SEARO coding workshop. (2007), Guidelines for medical records and clinical documentation Retrieved September 2009, from http://www.searo.who.int/LinkFiles/2007_Guidelines_for_Clinical_Doc.pdf.

Winthereik, B. R., & Vikkelsø, S. (2005). ICT and integrated care: some dilemmas of standardising inter-organisational communication. *Computer Supported Cooperative Work, 14*(1), 43-67.

WHO. (2005). Ghana Health Information System: Profile and Summary Preliminary Assessment. Retrieved November 7, 2010, from http://www.moh-ghana.org/moh/docs/hmn_act/Health%20Information%20System%20Profile%20Ghana_summary_2%5B1%5D.doc

World Health Organization. (2006). *Framework and standards for the development of country health information systems*. Geneva: Health matrix network.

World Factbook. (2010). *Africa: Ghana.* Retrieved February 15, 2011, from https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html

Yin, R. (1994). *Case study research: Design and methods* (2nd Ed.). Beverly Hills, CA: Sage Publishing.

Appendices

Appendix A: Core Themes of Quality Nursing Documentation

1. Nursing documentation should be patient centered

2. Nursing documentation must contain the actual work of nurses including education and psychosocial support

3. Nursing documentation is written to reflect the objective clinical judgment of the nurse

4. Nursing documentation must be presented in a logical and sequential manner

5. Nursing documentation should be written as events occur

6. Nursing documentation should record variances in care

7. Nursing documentation should fulfill legal requirements (Jefferies et al., 2010).

Appendix B: WHO 2006 Health Statistics of Ghana

Country Health System Fact Sheet 2006
Ghana

Largest urban agglomeration or Capital city : ACCRA
Official language: ENGLISH
Surface area (square kms) : 238533
Population density (per square km): 93

DEMOGRAPHIC AND SOCIOECONOMICS STATISTICS [a]				YEARS	GHANA	WHO AFRICAN REGION
Population	number		(000)	2005	22 113	738 083
	annual growth rate		(%)	1995–2004	2.0	2.2
	in urban		(%)	2005	46	38
Total fertility rate (per woman)				2004	4.2	5.3
Adolescent fertility proportion			(%)	2002	8.3	11.7
Adult literacy rate			(%)	2000–2004	54.1	60.1
Net primary school enrolment ratio		Males	(%)	1998–2004	64	70
		Females	(%)		62	63
Gross national income per capita			(PPP Int.$)	2004	2280	2 074
Population living below the poverty line			(% with <$1a day)	1998-1999	44.8	44

… Data not available or not applicable.

[a] *WORLD HEALTH STATISTICS 2006 http://www.who.int/whosis/en/*

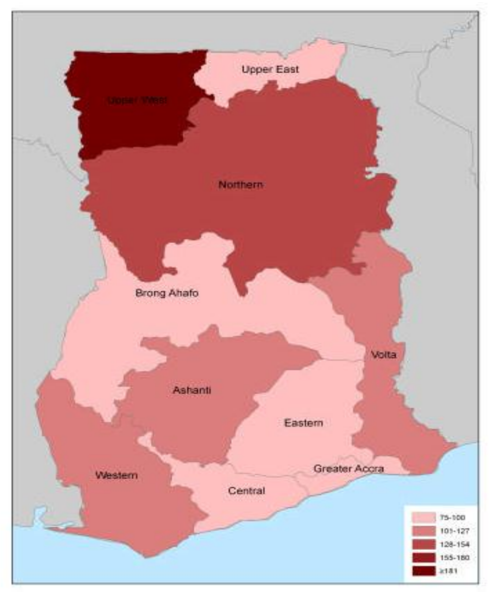
HEALTH STATUS STATISTICS MORTALITY [a]		YEARS	GHANA	WHO AFRICAN REGION
Life expectancy at birth (years)	Males	2004	56	47
Life expectancy at birth (years)	Females	2004	58	49
Healthy life expectancy (HALE) at birth (years)	Males	2002	49	40
Healthy life expectancy (HALE) at birth (years)	Females	2002	50	42
Probability of dying per 1 000 population between 15 and 60 years (adult mortality rate)	Males	2004	349	519
	Females	2004	319	465
Probability of dying per 1 000 live births under 5 years (under-5 mortality rate)	Both sexes	2004	112	167
Infant mortality rate (per 1 000 live births)	Both sexes	2004	68	100
Neonatal mortality rate (per 1 000 live births)	Both sexes	2000	27	43
Maternal mortality ratio (per 100 000 live births)	Females	2000	540	910
Cause-specific mortality rate (per 100 000 population) (Both sexes)	HIV/AIDS	2003	141	313
	TB among HIV-negative peop	2004	40	53
	TB among HIV-positive peopl	2004	10	28
Age-standardized mortality rate by cause (per 100 000 population) (Both sexes)	Non-communicable diseases	2002	786	800
	Cardio-vascular diseases	2002	404	404
	Cancer	2002	138	144
	Injuries	2002	97	133
Years of life lost by broader causes (%) (Both sexes)	Communicable diseases	2002	74	59
	Non-communicable diseases	2002	16	10
	Injuries	2002	10	8
Causes of death among children under 5 years of age (%) (Both sexes)	Neonatal causes	2000	28.5	26.2
	HIV/AIDS	2000	5.7	6.8
	Diarrhoeal diseases	2000	12.2	16.6
	Measles	2000	2.9	4.3
	Malaria	2000	33.0	17.5
	Pneumonia	2000	14.6	21.1
	Injuries	2000	3.0	1.9
	Other	2000	0.0	5.6

… Data not available or not applicable.

[a] *WORLD HEALTH STATISTICS 2006 http://www.who.int/whosis/en/*

Mortality Country Fact Sheet 2006

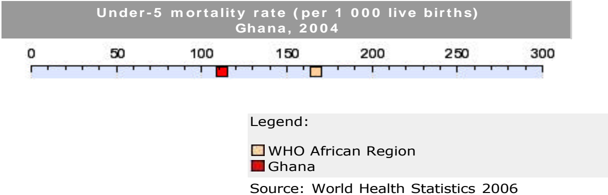
Under-5 mortality rates per 1 000 live births by sub-national region Ghana, 2003



Summary	Year	Males	Females	Both sexes
Population (millions)	2005	11.2	10.9	22.1
Life expectancy (years)	2004	56	58	57
Under-5 mortality (per 1 000 live births)	2004	113	111	112
Adult mortality (per 1 000)	2004	349	319	
Maternal mortality (per 100 000 live births)	2000		540	

Source: World Health Statistics 2006

Under-5 mortality rate (per 1 000 live births) Ghana, 2004



Legend:

WHO African Region
Ghana

Source: World Health Statistics 2006

About the map

Note:

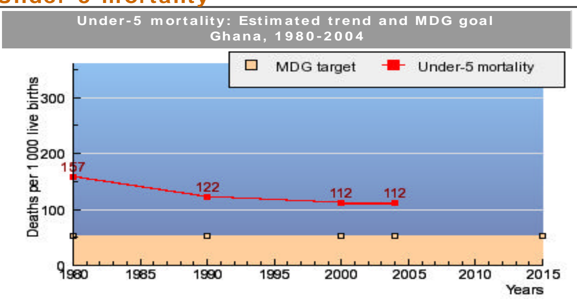
a. The interval of each of the categories have been derived by taking the difference between the minimum and maximum among the regional rates and dividing it equally into 5. The formula is: (maximum of regional rate - minimum of regional rate)/5

b. Rate for 5 years preceding the survey

Source: DHS Ghana 2003

Under-5 mortality

Under-5 mortality: Estimated trend and MDG goal Ghana, 1980-2004



Source: i) WHO mortality database ii) World Health Statistics 2006

Under-5 mortality: Age-specific mortality rates Ghana , DHS 1988, DHS 1993, DHS 1998

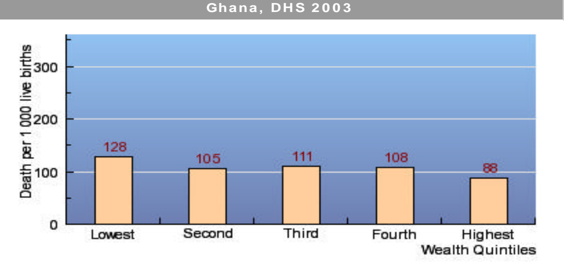
Note: rate for 5 years preceding the survey
Source: DHS 1988 , DHS 1993 DHS 1998

Under-5 mortality: for highest and lowest quintiles Ghana, DHS 2003

Wealth/assets quintiles	Lowest	Highest	Ratio
	128	88	1.5
Sex	Males	Females	Ratio
	111	108	1.0
Urban/Rural	Rural	Urban	Ratio
	118	93	1.3
Mother's education quintiles	None	Higher	Ratio
	125	85	1.5

Note: rate per 1 000 live births for 10-year period preceding the survey
Source: DHS 2003

Under-5 mortality rates by wealth quintile Ghana, DHS 2003



Note: rate for 10-year period preceding the survey
Source: DHS 2003

Mortality Country Fact Sheet 2006

Causes of death in children under-5

Distribution of causes of death among children under 5 years of age Ghana, 2000-2003		
Causes	Deaths[b] (%)	Regional average (%)
Total neonatal deaths	100	100
Neonatal causes[a]	28	26
HIV/AIDS	6	7
Diarrhoeal diseases	12	17
Measles	3	4
Malaria	33	17
Pneumonia	15	21
Injuries	3	2
Others	0	6

a. Includes diarrhoea during neonatal period
b. Sum of individual proportions may not add up to 100% due to rounding.

Annual estimated proportions of death by cause for neonates Ghana, 2000		
Causes	Deaths[c] (%)	Regional average[c] (%)
Total neonatal deaths	100	100
Neonatal tetanus	2	9
Severe infection[a]	29	27
Birth asphyxia	26	24
Diarrhoeal diseases	2	3
Congenital anomalies	8	6
Preterm birth[b]	25	23
Others	8	7

a. Includes deaths from pneumonia, meningitis, sepsis/septicaemia and other infections during the neonatal period.
b. Includes only deaths directly attributed to prematurity and to specific complications of preterm birth such as surfactant deficiency, but not all deaths in preterm infants.
c. Sum of individual proportions may not equal 100% due to rounding.

Causes of Death

Top ten causes of death, all ages Ghana, 2002			
Causes	Deaths (000)	Deaths (%)	Years of Life Lost (%)
All causes	207	100	100
HIV/AIDS	30	15	17
Malaria	23	11	16
Lower respiratory infections	16	8	10
Perinatal conditions	16	8	12
Cerebrovascular disease	11	6	2
Ischaemic heart disease	10	5	2
Diarrhoeal diseases	9	5	6
Tuberculosis	8	4	4
Road traffic accidents	5	3	3
Chronic obstructive pulmonary disease	3	2	1

Source: Death and DALY estimates by cause, 2002
http://www.who.int/entity/healthinfo/statistics/bodgbddeathdalyestimates.xls

Life expectancy at birth among males (years)
Ghana, 2004

30 40 50 60 70 80 90 100

Life expectancy at birth among females (years)
Ghana, 2004

30 40 50 60 70 80 90 100

Maternal mortality ratio (per 100 000 live births)
Ghana, 2000

0 500 1000 1500 2000

Legend:
WHO African Region
Ghana

Source: World Health Statistics 2006

HEALTH STATUS STATISTICS MORBIDITY [a]		YEARS	GHANA	WHO AFRICAN REGION
HIV prevalence amond adults (15 - 49) (%)	Both sexes	2003	3.1	7.1
TB prevalence (per 100 000 population)	Both sexes	2004	376	518
TB incidence (per 100 000 population)	Both sexes	2004	206	356
Number of comfirmed polio cases	Both sexes	2005	0	854

… Data not available or not applicable.

[a] *WORLD HEALTH STATISTICS 2006 http://www.who.int/whosis/en/*

BEHAVIOUR AND ENVIRONMENTAL RISK FACTORS [a]		YEARS	GHANA	WHO AFRICAN REGION
Non-communicable diseases - Infobase for the country	See ---> http://www.afro.who.int/dnc/infobase/Ghana.pdf			
Chilfren under-5 stunted for age (Both sexes) (%)		2003	29.9	…
Children under-5 underweight for age(Both sexes) (%)		2003	22.1	…
Children under-5 overweight for age(Both sexes) (%)		2003	2.9	…
Newborns with low birth weight(Both sexes) (%)		2000-2002	11	14
Adults (≥15) who are obese (%)	Males	2003	...	…
	Females	2003	8.1	…
Access to improved water sources(%)	Urban	2002	93	84
	Rural	2002	68	45
Access to improved sanitation(%)	Urban	2002	74	58
	Rural	2002	46	28
Population using solid fuels(%)	Urban	2003	75	…
	Rural	2003	96	…
Prevalence of current tobacco use (%)Adolescents (13 - 15)	Both sexes	2006	11.7	…
Prevalence of current tobacco use (%) Adults (≥15)	Males	2003	9.9	…
	Females	2003	1.3	…
Condom use by young people (15 - 24) at higher risk sex (%)	Males	2003	52	…
	Females	2003	33	…

… Data not available or not applicable.

[a] *WORLD HEALTH STATISTICS 2006 http://www.who.int/whosis/en/*

Appendix C: Doctor to Population Ratio

REGION	2008		2007		2006	
	Number of Doctors	Doctor Population Ratio	Number of Doctors	Doctor Population Ratio	Number of Doctors	Doctor Population Ratio
Ashanti	495	9861	428	10667	378	11681
Brong Ahafo	103	22012	96	22479	83	25365
Central	72	26689	63	29260	57	31675
Eastern	134	17817	128	18141	104	22019
Greater Accra	827	5177	755	5202	669	5624
Northern	33	70744	24	92046	32	67154
Upper East	30	33843	30	33111	34	28897
Upper West	15	44736	15	43253	14	45568
Volta	68	28490	66	28269	72	25430
Western	78	32761	71	33794	71	32746
National	**1855**	**13074**	**1676**	**13683**	**1,514**	**14,732**

REGION	2005		2004		2003	
	Number of Doctors	Doctor Population Ratio	Number of Doctors	Doctor Population Ratio	Number of Doctors	Doctor Population Ratio
Ashanti	323	13221	312	13,237	296	13,494
Brong Ahafo	61	33672	56	35,783	48	40,729
Central	47	37625	49	35,347	46	36,877
Eastern	86	26260	76	29,305	66	33,279
Greater Accra	495	7280	527	6,550	590	5,604
Northern	28	74657	25	81,338	27	73,262
Upper East	32	30369	29	33,146	29	32,786
Upper West	11	57026	9	68,534	12	50,541
Volta	62	28981	49	35,986	51	33,930
Western	67	33625	58	37,638	60	35,255
National	**1,212**	**17,899**	**1,190**	**17,733**	**1,225**	**16,759**

Source: CHIM/HRD-GHS

Appendix D: Nurse to Population Ratio

4.5 Nurse to Population Ratio

REGION	2008		2007		2006	
	Number of Nurses	Nurse Population Ratio	Number of Nurses	Nurse Population Ratio	Number of Nurses	Nurse Population Ratio
Ashanti	3533	1382	2251	2024	2067	2136
Brong Ahafo	1940	1169	1099	1099	1034	2036
Central	2104	913	1249	1476	1145	1577
Eastern	2454	973	1977	1173	1831	1251
Greater Accra	4656	919	4011	979	3789	993
Northern	1480	1577	1131	1868	1011	2126
Upper East	1051	966	798	1243	757	1298
Upper West	758	885	537	1266	485	1315
Volta	2132	909	1474	1266	1406	1302
Western	1753	1458	1197	1993	982	2368
National	**21861**	**1109**	**15724**	**1454**	**14,507**	**1,537**

REGION	2005		2004		2003	
	Number of Nurses	Nurse Population Ratio	Number of Nurses	Nurse Population Ratio	Number of Nurses	Nurse Population Ratio
Ashanti	2019	2115	1,947	2,121	1,781	2,243
Brong Ahafo	1020	2014	985	2,034	679	2,879
Central	1144	1546	1,101	1,573	990	1,713
Eastern	1878	1203	1,851	1,203	1,650	1,331
Greater Accra	3693	976	3,564	969	3,605	917
Northern	1044	2002	978	2,079	831	2,380
Upper East	711	1367	689	1,395	469	2,027
Upper West	464	1352	451	1,368	326	1,860
Volta	1421	1264	1,431	1,232	1,202	1,440
Western	990	2276	974	2,241	916	2,309
National	**14,384**	**1,508**	**13,971**	**1,510**	**12,449**	**1,649**

Source: CHIM/HRD-GHS

Appendix E: Introductory letter

To whom it may concern 10 June 2010

LETER OF INTRODUCTION

Dear sir/madam,

Miss Beatrice Bella Johnson is currently a student of the master's programme in Telemedicine and E -health at the University of Tromsø, Norway.

She is from Ghana and had her first degree in Nursing at the University of Ghana in 2006

In connection with her master's thesis, she will be conducting research into nursing documentation. As part of the research she would need to observe nurses and other health personnel during work as well as interviewing some staff of the hospital.

I hope you would give her the necessary support in her research endeavours.

Yours sincerely,

Gunnar Ellingsen

Professor and supervisor

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