

### **DECLARATION**

**I MUNGOMA DERICK, Reg. No. DCM/0010/143/DU** certify that this dissertation on **“Assessment of infection control at Butiru Chrisco Hospital in Manafwa District.”** Is my own and declare that the work is original and has been done after my own study and observation in Butiru Chrisco Hospital and has not been submitted to any University or any institution of higher education whatsoever.

Signature ..... Date .....

### **SUPERVISOR’S APPROVAL**

This is to certify that this dissertation under the topic “**Assessment of infection control at Butiru Chrisco Hospital in Manafwa district.**” has been done by this student under my close supervision and I therefore recommend it to the school of allied health sciences for assessment leading to the award of a Diploma in clinical medicine and community health of Kampala International University-western campus.

Mr. Mwakio Warren lee

(BSc. Public Health, DCM & CH)

Signature ..... Date .....

## **DEDICATION**

This research is dedicated to my dear brothers, Mungoma Brian, Mungoma Joshua, and Nalela Allan and my dear friend Kawola Norah for their encouragement throughout the process of conducting this research.

## **ACKNOWLEDGEMENT**

I extend sincere thanks to the following people who contributed to the successful completion of this research. My supervisor Mr. Mwakio warren lee for his efforts and guidance, my sponsor Mrs. Peterson and her beloved family for financing my academics, my beloved grandmother and guardian Mrs. Mukulumu Anna, there is no one like her in my life, the director of Butiru Chrisco hospital, Mrs. Mwaka Elizabeth for allowing me carryout the study at Butiru Chrisco hospital, and lastly but not least, my family members for their help, directly or indirectly.

## **LIST OF ABBREVIATIONS**

|              |   |
|--------------|---|
| <b>CDC</b>   | Centre for Disease Control and prevention |
| <b>DHO</b>   | District Health Office                    |
| <b>HAIs</b>  | Hospital Acquired Infections              |
| <b>HBV</b>   | Hepatitis B virus                         |
| <b>HC</b>    | Hepatitis C virus                         |
| <b>HMIS</b>  | Health Management Information System      |
| <b>HIV</b>   | Human immunodeficiency Virus              |
| <b>KAP</b>   | Knowledge, Attitude and practice          |
| <b>MOH</b>   | Ministry Of Health                        |
| <b>OPD</b>   | Outpatient Department                     |
| <b>SPs</b>   | Standard Precautions                      |
| <b>TB</b>    | Tuberculosis                              |
| <b>W.H.O</b> | World Health Organization                 |

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## DEFINITION OF TERMS

**Attitude;** Away of behaving towards something that shows how you feel and think about it (Hornby, 2000).

**Hand hygiene;** term applies to hand washing with soap or alcohol based solution when risk of contamination with infectious agent is anticipated.

**Health care worker;** any medically trained person such as nurses , nursing assistants , medical Doctors , midwives, Clinical officers , and laboratory technicians whose activities involve contact with patient and / or their blood or other body fluids in a health care setting. This definition excludes cleaners and other support staff.

**Housekeeping;** general cleaning of baths, sinks, wash-basins, beds, tables, floor, walls, and other surfaces in the health unit

**Knowledge;** facts, information and skills acquired through experience or education, the theoretical and practical understanding of a subject, (Hornby, 2000).

**Medical waste;** a by-product of healthcare , which includes sharps, non-sharps, blood, body fluids, pharmaceuticals , medical devices and radioactive material,(WHO , 2000:p.1).

**Nosocomial infection;** an infection that is acquired while the patient is in the hospital which was not present or incubating at the time of admission, (Vlok, 2004).

**Infection control;** measures to ensure that recommended practices for the prevention of hospital acquired infections (HAIs). Such standard precaution are implemented and followed by healthcare providers in order to make the healthcare setting safe from cross-infections.

**Sharps;** any pointed instrument that may cause physical injury. This includes scalpels, needles, syringes, infusion sets, broken glasses, and lancets (Wasswa, 2009).

**Standard precautions;** those measures taken to prevent transmission of infection in the provision of healthcare services , including methods of handling waste products that apply to all patients , regardless of diagnosis or presumed infection status . The standard precautions are a combination and expansion of Universal precaution and body substance isolation (Wasswa, 2009)

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## ABSTRACT

**Introduction;** Infection prevention and control is important for the improvement of quality care in hospital. This study aimed to identify risk associated with infection control, and to determine which infection control measures are available at Butiru Chrisco hospital and how these measures are put to use by the staff working in the hospital. In this study, investigation was made among staff members assessing awareness of risks for hospital-acquired infections, available measures of infection control, how these measures are being applied and tried to strengthen these practices.

**Methodology:** This descriptive cross-sectional study was conducted at Butiru Chrisco hospital in Manafwa District. The study involved 100 respondents who were staff members employed by Butiru Chrisco hospital with different education standards among which awareness of infection control was assessed through a structured questionnaire that was administered to those who consented to participate. Random sampling was done on 10 staff members, this helped correct the questionnaire making it suitable for the study but the results were not included in this study. The study only included those staff members who were at work during data collection period.

**Results:** The study revealed that out of 100 respondents, 72(72%) were nurses, 60(60%) were females and 78(78%) had been employed by the hospital for less than four years. Half 50(50%) revealed that airborne infections are the commonest infections in the hospital. The study also reveals that more than 80% reported positive response to infection control tasks with 80(80%) agreeing that practice of infection control reduces likelihood of infection spread to patients.

**Conclusion:** From the study, it was concluded that, there is moderate awareness of infection control with more than half of the respondents having positive ideas about infection control and use of available measures like glove, Apron, and hand washing. However, practice and compliance with standard precautions was less than optimal. Because there is awareness of infection control, practice and compliance to standard precautions are being influenced by factors such as lack of appropriate supplies and lack of accessibility to essential equipment or facilities.

**Recommendations:** The researcher recommended Continuous health visits by ministry of health (MOH) of Uganda to the hospital and evaluation of the practices to ensure that the health workers practice infection control following the standard guidelines. He also encourage hand washing or use of hand sanitizers with alcohol or other antiseptics as measure of disinfection hands before or after handling a patient.

Government should ensure continuous supply of equipment and protective clothings such as aprons, eye masks, and gloves in adequate quantities and quality. This provides safety of workers from contact with infectious agents.

Hospital staff should emphasize waste management by providing bins for all types of waste produces and these may be placed in every ward to avoid scattering of waste.

## **CHAPTER ONE:**

### **INTRODUCTION**

#### **1.0 introduction**

This chapter discussed the background of the study, problem statement, study objectives, research questions and the justification of the study.

#### **1.1 Background**

Infection prevention and control refers to practices aiming at decreasing health care associated infections and nosocomial infections. Infection control is a very pertinent issue within clinical circles, public health, and among health service consumers, practiced within the confines of a particular health care delivery system rather than directed to society as a whole (Mmalahla, 2014). And these infections have been with us since time of antiquity and a number of reports on poor hospital hygiene have been published including reports about patient's fear concerning safety in hospital (Kamulegeya et al., 2013). A health care or hospital acquired infection also called nosocomial infection results from treatment procedures in hospital or health service unit, while as the patient acquires an infection that she/he did not have prior to being admitted to the hospital .

Duse (2010) reported that 25% or more of the hospitalized patients in developing countries acquire nosocomial infections. These infections are due to a variety of potential pathogens commonly found on hospital surfaces and anywhere in the hospital environment. Such pathogens include *Clostridium difficile*, vancomycin resistant enterococci (VRE), and methicillin resistant staphylococcus aureus all of which are less sensitive to most available antibiotics making hospital acquired infection more difficult to manage than community associated infections. Furthermore, these infections are the common cause of morbidity and leading cause of death in patients admitted in hospital with otherwise different medical conditions. In addition to increased morbidity and mortality rate associated with nosocomial infections, a significant loss of resources in health sectors has been realized as well (Wasswa, 2009). Infection control is critical in improving the quality of care given to patients and as part of management in health services

(Minnaar, 2008) in that it addresses factors related to spread of infections within a healthcare setting, whether patient to patient, from patient to staff, and from staff to patient or even among staff (Mmalahla, 2014).

Oosthuysen, *et al.*, (2010) emphasized that infection control is a very important policy due to increasing prevalence of infectious diseases in hospitals or other health care settings. Also infection control practice is an essential though often under recognized and under supported part of the infrastructure of health care (Mmalahla, 2014) and because of the rapidly changing health care environment makes it difficult to protect patients and health care workers from transmission of pathogens (Chan and Day, 2007). Harris and Samore (2000) supported the view that hospital acquired infections pose a threat to hospital workers, patients and community and represent a major cause of morbidity and mortality in hospitalized patients.

Steeds, *et al.* (2011) highlighted that hospitals should ensure that elimination of health care associated infections become a priority of hospital quality and patient safety program as nosocomial infection outbreaks have been associated with the healthcare staffs' poor compliance with and practice of standard precautions that include hand washing, safe injection practices and use of unsterilized surgical tools.

Hand washing has been recognized as the most important means of preventing the transmission of infection, and great emphasis has been placed on ways to improve hand hygiene compliance by health workers (Abdulraheem *et al.*, 2012). Other protective measures such as masks, gloves, vaccination and proper waste management are useful in ensuring that the healthcare personals do not get exposed unnecessarily to occupational related infections or pass them onto patients (Kamulegeya *et al.*, 2013).

Hospitals generate both medical and general wastes and waste generation depends on numerous factors such as, established waste management methods, hospital specialization and proportion of patients treated on a day care basis (Mmalahla, 2014). Hospital workers including support staff that is to say those cleaning and working in laundry section are at risk of exposure to potential life threatening infectious agents. For example, in US, more than 800,000 needle stick injuries occur each year despite continuing education and vigorous efforts aimed at preventing such accidents (Mmalahla, 2014).

The rate of such infections ranges from as low as 1% in some countries in Europe and North America to 40% or more in many regions of developing world (Wasswa, 2009). Most of these infections are preventable with readily available and inexpensive strategies like adhering to the recommended practice especially hand hygiene and wearing of gloves.

Also several studies have showed that the incidence of infections in pediatric and maternity specialty is on a rise despite the available resources and competent staff working in these respective sections of a hospital setting or any other health unit that renders these ventures. In developing countries, babies born in hospitals are at a greater risk of neonatal infection arising from poor intrapartum and postnatal infection control practices (Wasswa, 2009). Zaidi *et al* (2005) reported that rate of neonatal infections in developing countries were up to 20 times higher than rate reported for hospital borne babies in developed countries following a comparison of figures from both sets. It's estimated that up to 50% of the hospital acquired infections are associated with only five patients care practices which are, compliance with hand hygiene and standard precautions of infection control, use and care of urinary catheters, vascular access lines, therapy and support of pulmonary function and experienced with surgical procedures (Wasswa, 2009). Infection control and prevention is monitored by health care committee members who see to it that infection prevention and control guidelines are followed properly.

## **1.2 Problem statement.**

It is widely known that infection control is a priority in delivering health care to patients in a hospital or any other health care setting. However, there is no doubt that mistakes are made in this practice that pose a threat to patients and health care providers. Health care workers have several in-service training sessions about infection control in addition to what they were taught at their medical schools of study. Despite all these efforts, there are increasing incidences of hospital-acquired infections. This shows that infection is still an obstacle to providing quality health care to patients in hospitals. Hospital acquired infections are a worldwide problem cutting across developed and developing countries. However, some countries like US have come up with most sophisticated methods that have helped to reduce hospital acquired infections to as low as 1%, such policies , strategies and practices are not properly implemented and followed in most health facilities in Uganda which is the point of concern in this study. In addition, several studies have shown that infection of surgical wounds in invasive procedures is 2-5% of patients with

extra-abdominal surgeries, orthopedic surgeries and as high as 20% in patient undergoing intra-abdominal surgeries. Moreover, in Uganda, 10% of the procedures become septic with staphylococcus aureus as the most common pathogen isolated and of these, about 30% of infected cases end up in morbidity or mortality (Ojulong *et al.*, 2009) and yet this can be preventable. Therefore, in Butiru Chrisco hospital there has been to date no assessment of staffs' awareness of infection control and their adherence to standard precautions of infection control.

### **1.3.0 Study objectives**

#### **1.3.1 General objective**

To assess infection control at Butiru Chrisco hospital in Manafwa district.

#### **1.3.2 Specific objective**

- I. To determine the risks associated with infection control.
- II. To determine infection control measures available in Butiru Chrisco hospital and how they are being utilized.
- III. To determine health workers' practice on infection control with regard to standard precautions of infection control.

### **1.4 Research questions**

- I. What are the risks associated with infections control?
- II. What infection control measures are available and how are the health workers utilizing them?
- III. Are staff members employed at Butiru Chrisco hospital practicing infection control following standard precautions of infection control?

### **1.5 Justification.**

The burden of infectious diseases indicates that infection control should be a priority program in a health care setting. The non-medical hospital staff for example those working in the laundry section and cleaning work in areas where transmission of infections is common. Therefore, it is

crucial that they adopt certain principles of infection control when executing their duties. However, due to their level of education, they might be less considered when dealing with issues about infection control such as training, and monitoring compliance but assessing their ideas and practice regarding infection control will enable management to identify any gaps and this will help strengthen infection control practices.

The study will help generate information for practicing and training health care providers in proper management and promotion of health in patients under treatment in a hospital or any other health care setting to allow healing with minimal complications.

The research will identify gaps in infection control practices and hence, will be used for further research in order to address the factors contributing to morbidity and mortality in a hospital.

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

#### **2.0 Introduction:**

This chapter of literature review discussed risks associated with poor infection control, personal protective equipment, and compliance with standard precautions of infection control.

#### **2.1 Review on the risks associated with infection control.**

Hospital acquired infections appeared before the origination of hospitals and became a problem during the miraculous antibiotic era. In addition, because of these infections that the cost of treatment has increased due to increased use of antibiotics and extended hospitalization (WHO, 2015). These diseases are caused by a variety of microorganisms, including *Escherichia coli* which is an emerging nosocomial pathogen causing many health problems in healthcare settings (Lausch *et al.*, 2013). *E. coli* can be transmitted through person-to-person, environment or contaminated water and food (Lausch *et al.*, 2013). Urinary tract infection and wound infections consort to surgical procedures (Kaiser *et al.*, 2015). Several authors have reported a number of factors that increase risks to Hospital acquired infections. A review article by Kapil (2005) cited the excessive and inappropriate use of antibiotics that results in the emergence of antimicrobial resistant microorganisms. Patients who are in an immunocompromised state such as HIV/AIDs are susceptible to these infections compared to those patients with intact immune system. Conditions that create potential routes for infections such as surgical procedures and invasive techniques like catheterization, overcrowded health unit and non-compliance with infection control practice all increase incidences of hospital-acquired infections (Ducel *et al.* 2002). A meta-analytical study by WHO (2015) indicate that inappropriate hand hygiene is a major cause of transfer of infection to patients by health works. The most important mechanism of spread of these pathogens is via the contaminated hands of a health care giver or relatives/ friends of patients (Joseph *et al.*, 2010), Contaminated hospital environmental surfaces, drugs, intravenous solutions or by food stuffs are all potential sources of infection (Joseph *et al.*, 2010).



## **2.2 Review on infection control measures and how they are utilized.**

The prevention of contamination of surgical sites as well as the reduction in the risks of transmission of blood borne infections can partly be contributed to by wearing of gloves when handling patients. Well-fitting latex gloves should always be worn when contamination with patient's body fluids is anticipated. In addition, this should be observed when performing invasive procedures on patients, including venipuncture, administration of injection, cleaning of wounds and changing of dressing (WHO, 2014). Some pathogens such as *Escherichia Coli* can be transmitted through person to person, environment or contaminated water and food (Lausch *et al.*, 2013) therefore, regular cleaning of hospital surfaces with disinfectants and avoiding overcrowding in hospital wards plays a definitive role in eliminating such pathogens, *klebsheila pneumoniae* is reported to be transmitted through stool (77%), patients' hands (42%), and pharynx (Lin *et al.*, 2015) in this case proper human waste disposal and hand hygiene is emphasized. The surfaces of the hospital facility harbor millions of potentially infectious microorganisms and as it's known that bacteria can survive on these surfaces for days or weeks making these surfaces the source of contamination to health workers and the patients (Kaiser *et al.*, 2015). The health workers executing their services in their respective area of specialty have different protective wear depending on the kind of hazard the health care worker is potentially exposed to. For instance, laboratory coats, gowns and aprons are recommended to health workers exposed to blood since there are chances that infected blood can splash on them. Therefore, those providing direct service such as physicians and nurses should wear laboratory coats while support staff cleaning the facility are to wear gowns or plastic aprons (CDC, 2006).

## **2.3 Review on practice and compliance with standard precautions of infection control.**

According to the study by Ramesh *et al.*(2014) in south India, it was concluded that adherence to standard precautions among health workers is the most effective way of preventing blood borne infections from patients and health workers. Other studies have shown that failure to comply with precaution measures is associated with the professional's knowledge, attitude, and mostly lack of knowledge in this area (Adriana *et al.*, 2009). Even though overall compliance rates are very low, there is significant variation among individual health workers with several factors influencing this situation. A study by Malekmakan *et al.* (2012) about hand hygiene showed that among the health

staff, the nurses' knowledge about standard precautions was insufficient, as many believed that wearing of gloves there is no need for washing hands.

Standard precautions are intended to protect the patient by ensuring that health care personals do not transmit the infectious agents to patients through their hands and tools during patient care (Wang *et al.*, 2010). In many developing countries, knowledge of standard precautions is grossly low, and standard precautions are not only insufficiently established and inappropriately applied, but also selectively adhered to (Okechukwu and Modreshi, 2012). A number of studies have concluded that knowledge, understanding and interpretation of standard precautions of infection control among health care givers are not adequate. This as a result has adversely affected the implementation of precautions (Wasswa, 2009). While as knowledge of standard precautions may improve adherence to practice, there are other influencing factors such as improved design and access to equipments. Also according to WHO (2014) due to existing gaps in the knowledge on standard precautions out of 35 million health care workers, 3 million receive percutaneous exposure to blood borne pathogens each year ; two million of these are exposed to Hepatitis B virus , 0.9 million to Hepatitis C virus and 170,000 to Human Immunodeficiency Virus (HIV).

## **CHAPTER THREE:**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter presents the methodology that was used in carrying out the study. It included research design, study area, study population, sample size determination, sampling method, methods of data collection, data analysis, study limitations, data quality control and ethical consideration.

#### **3.1 Study design**

A descriptive cross-sectional study was used to assess infection control in Butiru Chrisco hospital.

#### **3.2 study area.**

The study research was carried out in Butiru Chrisco hospital in Manafwa district, eastern Uganda. It is a non-governmental, Christian founded health facility by the German missionaries through Elizabeth Mwaka as the pivot and coordinator. It was founded in 2000 and offers preventive, educative and internal medicine among other health care services to persons residing in Butiru and its environs. It is along Mbale-Iwakhakha road, 12km from Manafwa head offices a 15minute drive and 21km from Tororo District, an 18minutes drive. The geographical coordinates are latitudes 0°49' 11 43", and longitudes 34° 17' 42 38". The hospital is neighbored by a number of villages and trading center's namely, Balaki, Nandelema, Makhakhala, Nakhupa, Nemba, Bugobero, Mahala, Busumbu, and Khamitsaru.

Manafwa is a district in eastern Uganda region, its located 245km from kamala and it covers an area of 602.1km<sup>2</sup>(232.5 sq. mi) of land with a population of 367,000 people as estimated by 2012 population census, with a population density of 610.4/km<sup>2</sup>. Manafwa is bordered by Bududa District to the north, the Republic of Kenya to the east and south, Tororo District to the southwest and Mbale to the west. The District is inhabited by Lumasaba speaking people. Butiru sub-county has two health centers which are Butiru Chrisco hospital and Butiru health Centre III.

### **3.3 study population**

The study was carried out among Butiru Chrisco hospital staff including the healthcare givers as well as the support staff irrespective of their levels of education or special training.

### **3.4 Inclusion criteria**

Only the staff members who were present at the time the research was carried out were included in this study.

### **3.5 Exclusion criteria**

Respondents who were away at the time the research was carried out were exempted from the study. Non-residents in the hospital were not included in the study.

Staff members who were having work leaves were not included in the study.

### **3.6 Sampling method**

A research questionnaire with both structured questions distributed randomly among 10 staff members in the hospital irrespective whether they were part of the medical team or the hospital support staff.

### **3.7 Sample size determination**

The number of participants was determined using the Fischer's formula.

The formula  $n = Z^2 pq / d^2$

Where,

n= required sample size,

Z= value corresponding to 95% confidence interval for a standard normal distribution of 1.96,

P= proportion of target population assumed to have similar characteristic, which was estimated to be 90 % ( 0.9),

q= 1-p which is 0.1,

d= maximum accepted error = 0.05,

Substituting the values,  $n = (1.96)^2 \times 0.9 \times 0.1 / (0.05)^2 = 138$  respondents.

But due to financial constraints and limited time resource, a sample size of 100 respondents was used.

### **3.8.0 Data collection**

#### **3.8.1 Data collection method**

A questionnaire with structured questions addressing the research objectives was issued to the respondents who met the qualification and had consented. All respondent were given ample time to fill the questions completely. Assistance was given to respondents who found difficulty in interpretation of scientific terminologies.

#### **3.8.2 Data quality control**

The researcher ensured that only participants who meet the inclusion criteria were allowed to fill the questionnaire and made sure all consented.

Assistance was sought from the researcher's supervisor at every stage of development of this study where necessary.

The researcher pretested the questionnaire before it was used in the study,

And also the researcher offered assistance to the participants where it needed.

#### **3.8.3 Data analysis method**

Data was analyzed manually using scientific calculator in predesigned tables, relevant frequencies were attained by tally method and then the figures manipulated to derive percentages and other derivations relevant in this study interpretation of the raw data. Microsoft excel was used to compute the obtained data.

#### **3.8.4 Data presentation methods**

The data was presented in form of graphs, charts, percentiles, tables depending on the data that the researcher analyzed.

### **3.9 Ethical consideration**

- Research proposal was submitted to Kampala International University Ethics and research committee and it was approved.
- The permission was sought from Kampala International University ethic and research office that introduced the researcher to Butiru Chrisco hospital administration.
- Participants were informed of their freedom to withdraw from the study without any penalty.
- Participants were given enough information on which they based their decision to participate in the study.
- Participants were assured of their confidentiality by not using their name for the study.
- No promise of reward for the participant either in cash or kind

### **3.10 Study limitations**

The results of compliance to standard precautions was self-reported data rather than researcher's observation. This might have influenced the results obtained in assessment of compliance to standard precautions of infection control. However, the data collection was done by one individual and therefore, the asking of the questions and interpretation of the answers was consistent.

The researcher is a member of the community where the research was carried out, a fact that the participants would know. This may influence the findings since the interview was face to face.

The study did not facilitate those who worked at night, these are however unlikely to be different from those who worked during the day as these also do rotations in different stations.

## CHAPTER FOUR; RESULTS

**4.0 Introduction:** This chapter outlines results of the research and is divided in the following sections; Demographic profile of the participants, risks associated with poor infection control, infection control measures, and compliance to standard precautions of infection control. All staff members who were available in the period of data collection (100), agreed to participate in the study and completed the interview.

### 4.1 Findings on the demographic profile of the participants.

**Table 4.1** show that the majority 46 (46 %) of the respondents were of age between 18-25 years and females made 60 (60% ) and the rest 40 (40%) were males, most of these 78 (78%) had worked at the hospital for 0-4 years, 14 (14%) had worked for 5-9 years, none of the respondents had worked for 10-14 years and the rest 8 ( 08% ) of the respondents had 15 years and above of service at Butiru Chrisco hospital. Most of the respondents who participated in the study 72 (72%) were nurses, 6 (06%) were clinical officers, none of the doctors participated in the study and the rest 22 (22%) were in the category of others.

**Table 1 Personal data of the respondents**

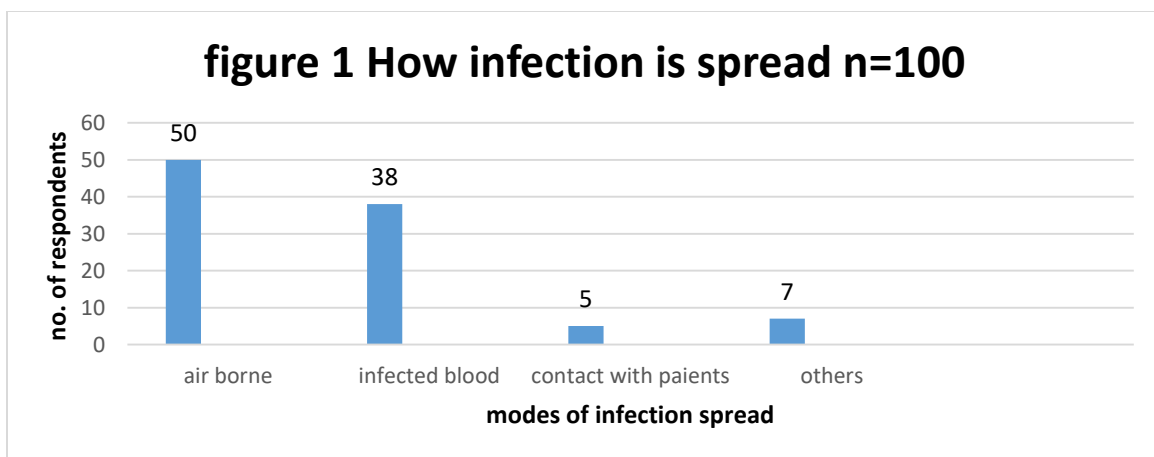
| PERSONAL DATA       | FREQUENCY(F) | PERCENTAGE (%) |
|---------------------|--------------|----------------|
| AGE OF RESPONDENTS  |              |                |
| 18-25               | 46           | 46.0           |
| 26-35               | 38           | 38.0           |
| 36-45               | 16           | 16.0           |
| Total               | 100          | 100.0          |
| GENDER DISTRIBUTION |              |                |
| Male                | 40           | 40.0           |
| Female              | 60           | 60.0           |
| Total               | 100          | 100.0          |
| YEARS OF EMPLOYMENT |              |                |
| 0-4                 | 78           | 78.0           |
| 5-9                 | 14           | 14.0           |

|                            |     |       |
|----------------------------|-----|-------|
| 10-14                      | -   | -     |
| 15 and over                | 8   | 8.0   |
| Total                      | 100 | 100.0 |
| <b>EDUCATION STANDARDS</b> |     |       |
| Nurse                      | 72  | 72.0  |
| Clinical officer           | 6   | 6.0   |
| Doctor                     | -   | -     |
| Others                     | 22  | 22.0  |
| Total                      | 100 | 100.0 |

#### 4.2 Findings on risks associated with infection control.

**Figure 1 showing how infections are spread in the hospital setting.**

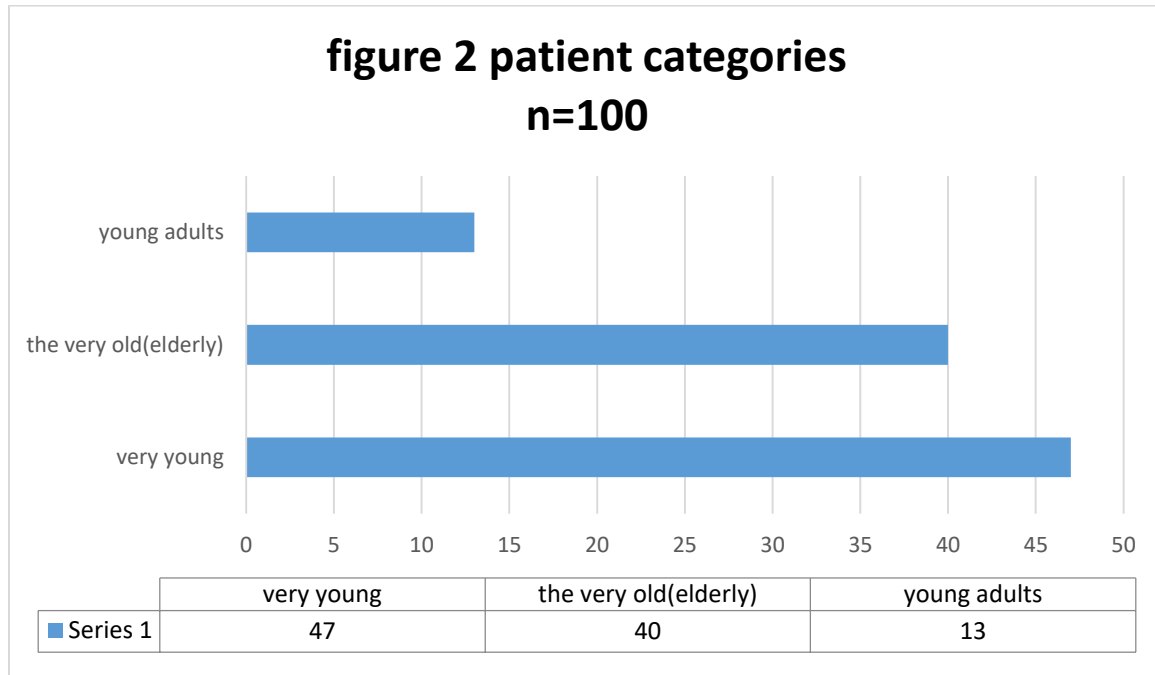
Outlines that most 50 (50%) of the respondents established that airborne mode is the most commonest way infections spread, 38 (38%) established that infected body fluids, 05 (05%) also established that contact with the infected patients is the most common mode and the rest 07 (07%) established that there are others modes of infection spread other than the ones mention above.



**Figure 2** Shows that from this study, majority of the respondents 47 (47%) established that the very young children are more susceptible group of patients to hospital acquired infections, followed by the very old (elderly) 40 (40%) and the young adults 13 (13%) are the least susceptible group of patients to hospital acquired infection.



**Figure 2 Showing individual groups of patients that easily acquire infection.**



**Table 2** Shows that 98(98%) established that overcrowding facilitates infection spread and only 02(02%) were not aware.

**Table 2 shows effect of overcrowding on infection spread.**

| Statement                                   | Response     |              |           |
|---|--------------|--------------|-----------|
|   | Positive (%) | Negative (%) | Total (%) |
| Effect of overcrowding on infection spread. | 98.0         | 02.0         | 100.0     |

**Table 3** Outlines that the most common disadvantage of hospital acquired infections to the patient 30(30%) is increased antibiotic use, followed by prolonged hospital stay 29(29%), then increased hospital charges 23(23%) and lastly association with compromised patient health18(18%).

**Table 3. The common effects of hospital acquired infections on a patient.**

| Effect of hospital acquired infections to patients | frequency | Percentage (%) |
|--|-----------|----------------|
| Prolonged hospital stay                            | 29        | 29.0           |

|                             |     |       |
|-----------------------------|-----|-------|
| Increased hospital charges  | 23  | 23.0  |
| Increased antibiotics use   | 30  | 30.0  |
| Compromise patient's health | 18  | 18.0  |
| <b>Total</b>                | 100 | 100.0 |

#### 4.3 Findings on infection control measures and how staffs are utilizing them.

**Table 4.** Shows that majority 48 (48%) emptied bins when full, 46% emptied the bins on daily basis, and only 6 (06%) emptied bins on weekly basis, most of the respondents 74 (74%) used apron for other reasons, 26 (26%) used aprons when cleaning and none of the respondents wore the apron every time or when handling body fluids. None of the respondents acknowledged wearing of a mask every time they worked, all 100 (100%) supported the view that hand washing with soap reduces infections and also knew that gloves do not protect from needle pricks.

**Table 4. Assessment of infection control measures and how they are utilized.**

| Subject   | frequency | Percentage (%) |
|---|-----------|----------------|
| <b>Frequency of emptying the bins.</b>                |           |                |
| Daily   | 46        | 46.0           |
| Weekly  | 06        | 06.0           |
| Whenever full   | 48        | 48.0           |
| Total   | 100       | 100.0          |
| <b>Use of apron.</b>                                  |           |                |
| When cleaning   | 26        | 26.0           |
| Others  | 74        | 74.0           |
| Total   | 100       | 100.0          |
| <b>Do you wear a mask every time you work?</b>        |           |                |
| No  | 100       | 100.0          |
| Total   | 100       | 100.0          |
| <b>Does hand washing with soap reduce infections?</b> |           |                |
| Yes   | 100       | 100.0          |

|  |     |       |
|--|-----|-------|
| Total  | 100 | 100.0 |
| <b>Do gloves protect healthcare givers from needle pricks?</b> |     |       |
| No   | 100 | 100.0 |
| Total  | 100 | 100.0 |

#### 4.4. Findings on practice of infection control following standard precautions of infection control.

**Table 5.** Shows that all, 100 (100%) of the respondents declared they had a role in infection control, of these 92 (92%) had a good attitude of extending infection control to their homes, 86(86%) agreed that hand washing is necessary every time one touched a patient. And 94(94%) showed that it's important to line the bins after they have been emptied.

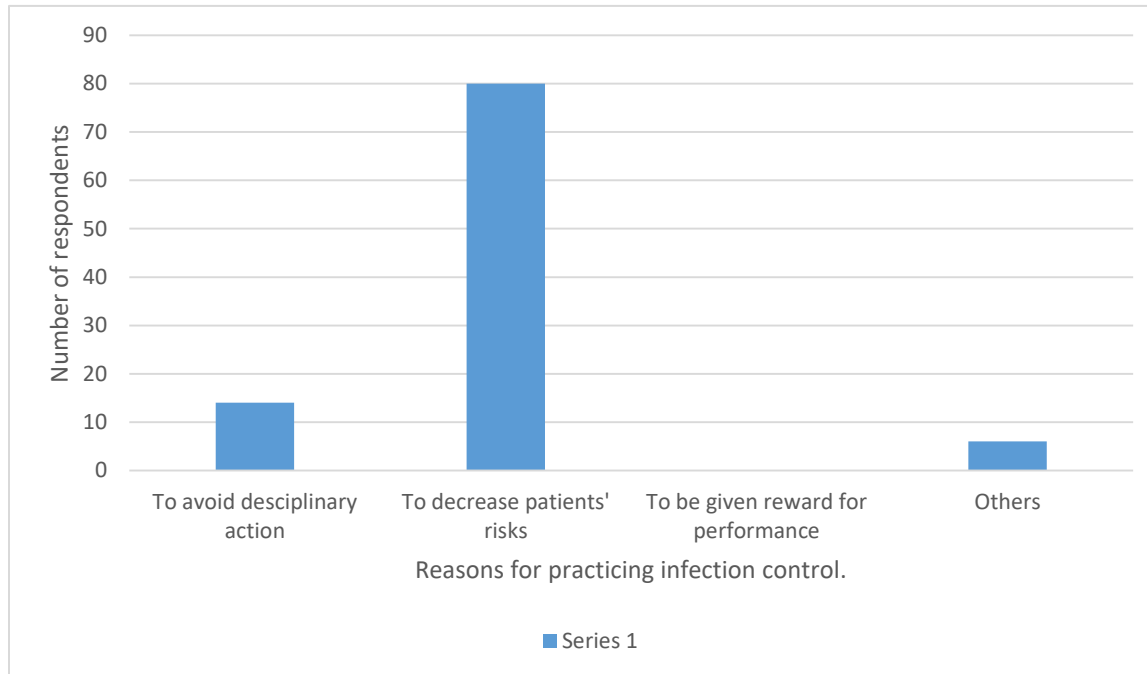
**Table 5. Assessment of practice infection control and compliance to standard precautions.**

| Subject  | frequency | Percentage (%) |
|--|-----------|----------------|
| <b>Do you have a role in infection control?</b>  |           |                |
| Yes  | 100       | 100.0          |
| Total  | 100       | 100.0          |
| <b>Do you think lining the bins after they have been emptied is your responsibility?</b> |           |                |
| Yes  | 94        | 94.0           |
| No   | 06        | 06.0           |
| <b>Total</b>   | 100       | 100.0          |
| <b>Hand washing is necessary every time one touches a patient.</b>                       |           |                |
| Agree  | 86        | 86.0           |
| Disagree   | 14        | 14.0           |
| Total  | 100       | 100.0          |

**Figure 4.** Highlights that majority of the respondents 80(80%) practiced infection control to decrease risks of transmission of disease to patients, it was also established that 14(14%) practiced infection control to avoid disciplinary action against them, 06(06%) of the respondents

had other reasons and none of the respondents was driven by an award for his/her performance in infection control.

**Figure 3. Reasons why the respondents practiced infection control.**



**Table 6.** Outlines that almost all over 80% of the responses pertaining infection control tasks were positive. That is, the majority 95%, 82%, and 87% giving positive responses for preventing infection spread.

**Table 6. Response to statements on infection control tasks.**

| Statement on infection control tasks.    | Response     |              |           |
|--|--------------|--------------|-----------|
|  | Positive (%) | Negative (%) | Total (%) |
| Feeling about role in infection control. | 95.0         | 05.0         | 100.0     |
| Feeling about wearing of a mask.         | 82.0         | 18.0         | 100.0     |
| Suggestions about segregation of wastes. | 87.0         | 13.0         | 100.0     |

**Table 7.** Shows that when the respondents were asked to make suggestions on infection control, 64 (64%) suggested that there should be provision of adequate supply in terms of protective clothings and more cleaning material, while the rest 36(36%) suggested that training and close

supervision of staff members in the area of infection control would make infection control practice a success.

**Table 7. Suggestions of staff regarding infection control.**

| Suggestions   | Frequency | Percentage (%) |
|---|-----------|----------------|
| <b>Provision of more protective clothing and cleaning materials.</b>  | 64        | 64.0           |
| <b>Provision of training and close supervision of staff members in infection control and related disciplines.</b> | 36        | 36.0           |
| <b>Total</b>  | 100       | 100.0          |

## **CHAPTER FIVE**

### **DISCUSSION OF RESULTS, CONCLUSIONS AND RECOMMENDATIONS.**

#### **5.0 Introduction**

This chapter presents the discussion, conclusions, and recommendations pertaining the analyzed data about assessment of infection control at Butiru Chrisco hospital. The study findings are in the respective study objectives.

#### **5.1 Discussion**

The study explored mainly; the risks associated with infection control, measures of infection control employed and how they are being utilized, and the compliance to standard precautions of infection control among staff members. The findings of the study gave a wide perspective on how infection control is practices at Butiru Chrisco hospital.

##### **5.1.1 Risks associated with infection control.**

The study results show that half 50(50%) of the respondents chose airborne infections as the most frequently experienced illnesses acquired by hospitalized patients possibly due to the fact that these diseases are very contagious and if combined with other factors such as overcrowding, efficiency of their spread is enhance. For instance considering a patient with an active infectious respiratory disease like tuberculosis placed on the same ward with other patients due to lack of enough facilities, the pathogenic organisms are spread into the air once he/she coughs or sneezes and these organisms are easily accessible by everyone sharing the room with the patient hence increasing the likelihood of acquiring the disease by individuals. In a similar study by Duse (2010) it was documented that among all patients that need hospitalization in developing countries, 25% or more develops a nosocomial infection irrespective of age and route of infection transfer. However other potentially dangerous and equally effective modes of infection spread include infected body fluids, contact with infected persons, needle stick injuries, nursing procedures such as catheterization and support ventilation equipment and they should not be under looked.

Majority 47(47%) revealed that the very young children are the most prone category of hospitalized patients to infections probably because the individual category has a weak immunity and are unable to withstand even minor infections. This study found out as did Zaidi *et al.* (2005) in a study about neonatal infection among hospital born babies in developing countries in comparison with their counterparts in developed countries which reported that the rate of neonatal infections in hospitals found in developing countries was up to twenty times higher than the rate reported for hospital babies in developed countries. However, the elderly are also a special group that indeed requires attention as their immunity tends to deteriorate markedly at extremes of age. The immunosuppressed young adults for example, those with HIV/AIDs, patients on cancer chemotherapy and those receiving immunosuppressive medication after organ transplant are as well less resistant to microorganisms that that would otherwise not cause disease in normal healthy individuals.

More than 90% knew that overcrowding eases the spread of infections on hospital wards, and this could be because overcrowding reduces patients'. In a related study by Lin *et al.*, (2015) found out that 77% of Klebsheila pneumonia pathogens are transmitted through patients' stool which implies that if patients are overcrowded, there is increased incidence of illnesses caused by such virulent organism. These results also reveal that spread of most airborne diseases such as tuberculosis to patients neighboring a patient with an active disease.

Most respondents 30(30%) revealed that hospital acquired infections are difficult to manage and hence cause increased uses of antibiotics. In a related study in a reviewed article by Kapil(2005) suggested that due to excessive use of antibiotic, there has emerged resistant strains of microorganism some of which are believed to cause most hospital infections . And for this reason hospital acquired infection are hard to treat. Another study by W.H.O (2015) suggested that due to these resistant microorganisms, a patient tends to have an extended hospital stay. Such organisms like methicillin resistant staphylococcus aureus , vancomycin resistant enterococci among others that are less sensitive to most antibiotics which with time have developed resistance due to prolonged use of drugs. Treatment of such illnesses may need a prolonged hospital stay and in turn hospital bills are raised.

### **5.1.3 Infection control measures and how they are being utilized.**

More than half of the respondents 74(74%) used apron only when potential of getting infected is anticipated, that is when visiting theatre, attending to a mother giving birth in delivery room and other procedures that may involve getting into contact with the patient's body fluids that may be infectious rather than wearing an apron all the time. This study found out the relatively the same results as did the study conducted in South Africa by Rebecca Peta (2014) that revealed that 75% of the respondents knew the correct use of aprons.

When an apron is worn all the time it may turn out a potential source of infection since a health worker may rotate in various units of the hospital a day hence causing infection to the patients he or she sees after visiting isolation rooms. Many studies have documented the potential of disease transmission through protective clothings of health workers.

All respondents 100(100%) knew how to use the masks correctly and in clinically reasonable situations such as attending to a tuberculosis patient with active disease or a sick health personnel with a respiratory illness may put on a mask to protect his or her patient from contracting the illness. A similar study by Mmalahla (2014) among general assistants showed that 35% of them knew the correct use of masks. The deviation from these results could be inclined to the fact that the respondents in this study were interviewed by the researcher himself and the interaction was face to face this could have influenced the results since the asking of questions and interpretation of answers was consistent since it was the same interviewer.

All respondents 100(100%) agreed that gloves do not protect health workers from needle stick injuries. This study found similar results as did Dodds *et al.* (2010) that wearing gloves alone does not protect one from injury with sharp instruments like needles. Dodds *et al.* (2010) reported that the rate of occurrence of glove puncture during usual surgical procedures was 11.5% to 53%.

Majority of respondents emptied bins whenever they got full and one of the reasons for this practice was to avoid spillage or scattering of the wastes as most hospital wastes are potentially infectious. There are publications about waste management but a document that was specifically about frequency of emptying bins in a hospital setting was not accessed.



#### **5.1.4 Practice of infection control following standard precautions of infection control.**

From the results, it is noted that all 100(100%) respondents knew they have a role in infection control. A similar study by Mmalahla (2014) in South Africa revealed that 84% reported to have a role in infection control. This shows that in any healthcare setting, the majority of the staff are aware that they have a role to play as pertains infection control.

More than three quarters of respondents 80(80%) in this study practiced infection control to reduce patients' chances of acquiring disease as many knew that this is one of the ways of providing quality healthcare without patients' worry about their safety in the hospital. In a similar study by Okhiai *et al.* (2014) among 30 theatre personals in Irrua, specialist teaching hospital it was also revealed that 80% agreed that infection control applies to all patients regardless of presumed health status.

Above three thirds of respondents 90(90%) agreed that they are responsible for lining the bins after they have been emptied, this should be that it makes the hospital environment tidy and reduces chances of disease spread due to scattering of wastes after spilling or falling off the full bins. In a similar study conducted by Okhiai *et al.*, (2014), it was found that 90% knew proper handling of wastes through observation of standard precautions and guidelines.

Majority 86(86%) agreed that hand washing is necessary every time the health worker touches a patient and before touching the next patient. In a similar study by Dhyana *et al.*, (2014) about hand washing also inferred that majority 94.7% of the staff strongly agreed that they follow hand washing before and after treating patients and also similarly a study by Malekmakan *et al.*, (2012) about hand hygiene showed that among health staff, Nurse's knowledge about standard precautions is insufficient as many believed that by wearing gloves, there is no need for washing hands. This could be one of the reasons why the rest of the respondents 14(14%) did not agree. 80(80%) gave positive response to infection control tasks. In a similar study by Okhiai *et al.*, (2014) revealed that 83.3% of the respondents had positive attitudes towards standard precautions of infection control.

More than half 64(64%) of respondents recommended provision of adequate supplies in terms of protective clothings and more cleaning materials. In a similar study conducted by (Gershon *et al.*, 1995; Oliveira *et al.*, 2010) revealed that lack of self-protection and inability to access necessary equipment or facility are one of the factors that negatively influence compliance.

## **5.2 Conclusions.**

Based on the findings, the following conclusions were made;-

All the respondents 100(100%) knew that they have a role in infection control; however, there is lag in practice and compliance to standard precautions of infection control leading to poor infection control.

Although hand-washing campaign has been on going from years back, the practice is less observed in clinical practice and has become one of the major pit falls health workers make and it contributed to a spread of many diseases.

Due to limited supplies, and inadequate knowledge about most medical instruments like cleaning and sterilization machines, infection spread is still ongoing in hospitals or any other health facility without these measures.

There is need for education on importance of hospital waste management,

Overcrowding on patient wards is the leading cause of transmission of airborne infections due to closeness of the patients and attendants.

The very old and the very young hospitalized individuals are more likely to develop illness in hospitals due to low or reduced immunity at extremes of age as compared to the adult youths.

## **5.3 Recommendations**

In view of the above conclusions, the researcher recommends the following;-

Continuous health visits by ministry of health (MOH) of Uganda to the hospital and evaluation of the practices to ensure compliance to ensure that the health workers practice infection control following the standard guidelines.

Encourage hand washing or use of alcohol hand sanitizers with alcohol or other antiseptics as measure of disinfection hands before or after handling a patient.

Government should ensure continuous supply of equipment and protective clothings such as aprons eye masks, gloves in adequate quantities and quality, this provides safety of workers from contact with infectious agents.

Hospital staff should emphasize waste management by providing bins for all types of waste produces and these may be placed in every ward to avoid scattering of waste.

Hospital should develop an isolation unit for patients with active infectious diseases such as TB to avoid spread to other patients on the same ward. Overcrowding should be dealt with promptly by building enough room to accommodate the patients.

When managing individuals at extreme age, i.e. the newborns and the very old patients, one should bear in mind that these are special categories of patient and a lot of care and attention should be employed in their management.

## REFERENCES

- Adriana Cristina oliveiria, Helena Palucci Marziale, Maria *et al*, (2014); Knowledge and attitude regarding standard precautions in Brazilian Public Emergency service.
- Abdulraheem IS, Amodu MO, Saka MJ, Bolarinwa OA, Uthman MMB, (2012); Knowledge, awareness and compliance with standard precautions among health workers in North-Eastern Nigeria; *Journal of community medical health education*. Vol.2, No.131 doi: 10:4172/scmhe.1000131.
- Centre for disease control and prevention. (2006). Influenza vaccination of healthcare professional: Recommendations of healthcare infection control practices Advisory committee (HICPAC) and the Advisory committee immunization practices (ACIP). *Morbidity and mortality weekly report*; Vol. 55 .pp-2.
- Chan, M.F., HO, A. and Day, M.C. (2007). Investigating the knowledge, attitudes and practice patterns of operating room staff towards standards and transmission –based precautions: Results of a cluster analysis. *Journal of Clinical Nursing*, Vol. 17, No. 8, pp. 51-62.  
<http://www.ncbi.nlm.nih.gov/pubmed/18179532> [Accessed 18 May 2010]
- Dhyana Sharon Rose, Dr. Vasantha *et al*. (2014). A study on hospital acquired infections (HAIs), control and management. *International Journal of Innovative Research in science, Engineering and Technology*: Vol. 3 ISSN: 2319-8753.
- Dodds RDA *et al*. (2010). Surgical glove perforation; *Brit J surg*. 75: 166-168.
- Duse, A.G (2010). Infection control in developing countries with particular emphasis on South Africa. *The South African journal of Epidemiology and infection 2010*. Vol. 20, No. 2, pp. 37-39.
- Gershon, R.R., Vlahov, D., Felknor, S.A., Vesley, D., Johnson, P.C., Delclos, G.L. and Murphy, L.R. (1995). Compliance with universal precautions among health care workers at three regional hospitals. *Am J Infect Control*;23(4):225-236.
- Harris, A.D., Samore, M.H., Nafziger, R., DiRosario, K., Roghmanns, M.C., and Carmeli, (2000). A survey on hand washing practices and opinion of healthcare workers. *Journal of hospital infection*;Vol.45, No.4, pp318-321.

- Hornby, A.S, (2000). Oxford advanced learners dictionary. New York; *oxford university press*.
- Joseph NM, Sistla S., Dutta, T.K., Badhe. A.S Rasitha, D, Panja, SC. (2010); Role of intensive care unit environment and healthcare workers in transmission of ventilator associated pneumonia. *Journal of infection development*. PP.283-291
- K.R. lausch, K., Fuursted, and C.S Larsen, M.Stogaard, (2013); colonization with multi-resistant enterobacteriaceae in hospitalized Danish patients with history of resent travel.
- Kamulegeya, kizito and Balidawa, 2013: Post- exposure prophylaxis among Ugandan nurses; *j infect dev.*; 7(10); 726-733
- Minnaar, A. (2008). Infection control made easy; *hospital guide for health professionals*. Pretoria, Juta.
- Mmalahla Rebecca peta, (2014). Knowledge, attitude and practice of general assistants toward infection control at Letaba Hospital.
- Ojulong, Galukande *et al.*, (2009). The neglect of the global surgical workforce: *Experience and evidence from Uganda*. *World j surg* 32:1208-1215.
- Okechukwu EF, Modreshi C. (2012); knowledge and practice of standard precautions in public health facilities in Abuja, Nigeria. *Medical journal of Nigeria*. Vol. 8, No.3, pp. 10-33.
- Okhiai, O., Nwaopara, A.O., Omoregbe. F.I.; Izefua. E., Nwadike. G.I.; *et al.* (2014). Knowledge, attitude and practice of standard precautions among theatre Personnels in Irrua specialist teaching hospital. *International journal of Basic, Applied and Innovative Research*. **IJBAR**;3(4): 147-153.
- Oliveira, A.C., Cardoso, C.S. and Mascarenhas, D. (2010). Contact precautions in intensive care units: facilitating and inhibiting factors for professionals' adherence. *Rev Esc Enferm USP*; 44(1):161-165.
- Oosthuysen, J., Potgieter, E. and Blignaut, E., (2010). Compliance with infection control recommendations in South Africa dental practice: A review of studies published between 1990 and 2007. *International Dental Journal*, Vol. 60, No.3, pp. 181-189.
- [http://onlinelibrary.wiley.com/doi/10.1922/IDJ\\_2371Oosthuysen09/abstract](http://onlinelibrary.wiley.com/doi/10.1922/IDJ_2371Oosthuysen09/abstract)

[Accessed 27 March 2011]

Pittet D, Sax, and H.Hugonnet, S. Habarth (2004): Cost implication of successful hand hygiene promotion. *Infection control hospital epidemics*; Vol.25, No. 3. Pp. 264-266.

Ramesh holla, TanujKandan, Nathan Kumar, *et al*, (2014); Perception and practice of standard precautions among healthcare professionals at tertiary care hospital in coastal south India.

Steed, C.J., Kelly, J.W., Blackhurst, D., Boeker, S., Alper, P, and Larson, E. (2011). Hospital hand hygiene opportunities: where and when (HOW2). *BMC Proceedings*, Vol. 5, Supp. 6, p112.

<http://www.biomedcentral.com/1753-6561/5/S6/P112> [Accessed 20 February 2012]

S. Kaiser, k.lendar, A.C Chen, (2015). Should we continue to isolate patients with Vancomycin-Resistant Enterococci in hospitals? , Vol. 202, No. 5, pp234-236.

S. Krishna, Prakash, (2014); Nosocomial infections;

Vlok, M.E, (2004). Manual of Nursing; Volume 1 Basic Nursing; Juta and company limited.

Wang H, Finnie K, Burgess L, William AB, (2010). Training program for prevention of occupation behavior and incidence of needle stick injuries among student Nurses in Changsha People's Republic of China. *Journal of Advanced Nursing*. Vol.41, No. 2, pp187-1194.

Wasswa Peter Kityaba, (2009). Factors influencing infection control measures in health units in Arua district, Uganda.

World Health Organization, (2000). Safe management of wastes; *policy paper*, Geneva; WHO.

World Health organization, (2014). Healthcare worker safety.

## APPENDIX A: WORK PLAN

| Time                                 | March | April | May | June | July |
|--------------------------------------|-------|-------|-----|------|------|
| Activity                             |       |       |     |      |      |
| Handing in a draft research proposal |       |       |     |      |      |
| Handing in a final research proposal |       |       |     |      |      |
| Data collection                      |       |       |     |      |      |
| Data analysis                        |       |       |     |      |      |
| Handing in of the research report    |       |       |     |      |      |

## APPENDIX B: BUDGET

| Items         | Amount in Ugandan shillings |
|---------------|-----------------------------|
| Transport     | 100,000/=                   |
| Stationary    | 50,000/=                    |
| Internet      | 20,000/=                    |
| Lunch         | 45,000/=                    |
| Miscellaneous | 30,000/=                    |
| <b>Total</b>  | <b>245,000/=</b>            |



## APPENDIX C: PARTICIPANT'S CONSENT FORM

Hello, my name is **MUNGOMA DERICK** a 3<sup>rd</sup> year Diploma in clinical medicine and community health student, registration number **DCM/0010/143/DU**. I am conducting a research study on infection control and would appreciate your participation. I would like you to please answer these questions in regards to infection control procedure, care and support in this health facility. This information will help the policy makers to plan health services and assess whether it's meeting its goals to improve the health of the patient undergoing hospital management.

The questionnaire will usually take less than 30 minutes to complete; whatever information provided will be kept strictly confidential and will not be shown to another person. Participation in this study is voluntary; you can choose not to answer any individual question or all of the questions. However, I hope that you will participate in this study since your view are important.

Questionnaire number .....

## APPENDIX D: QUESTIONNAIRE

To administer a questionnaire on **assessment of infection control** among staff members working at Butiru Chrisco hospital.

Results from the responses will be serving as a basis to describe the awareness and practice of infection control among staffs working in Butiru Chrisco hospital.

If any of the questions have different choices, I will give you the list and please tell me, which one you think is correct by ticking against your answer in the box provided.

### SECTION 1: Demographic profile.

1. Age (years): how old are you?

18-25 ☐

26-35 ☐

36-45 ☐

46-above ☐

2. Gender.

male ☐ female ☐

3. Years of employment; how long have you worked at Butiru Chrisco hospital?

0-4 ☐ 5-9 ☐ 10-14 ☐ 15and-over. ☐

4. Education standard; what standard did you finish at school?

Nurse ☐ clinical officer ☐ Doctor ☐ others ☐

### SECTION 2 : Assessing risks associated with infection control.

5. What is the commonest way diseases are spread in the hospital?

Air borne ☐

Infected body fluids ☐

Contact with sick person ☐

Others ☐

6. Which of the following groups of individuals is more susceptible to infections?

The very young ☐

The very old ☐

Young adults ☐

Give your reason

.....  
.....

6. Does overcrowding increase spread of infections in a hospital ward?.....

If yes, explain

.....  
.....

7. What is the effect of hospital acquired infections to the patient and his/her family?

Prolonged hospital stay ☐

Increased treatment charges ☐

Increased antibiotic use ☐

Compromise patient's health status ☐

### **SECTION 3: Assessing different measures of infection control used.**

8. How often do you empty the bins ?

Daily ☐ Weekly ☐ Whenever full ☐

9. When do you use an aprone as a measure of infection control?

Every time ☐ when handling body fluids ☐ when cleaning ☐

10. Do you wear masks all the time you work?

Yes ☐ No ☐

11. Does hand washing with soap reduce infection?

Yes ☐ No ☐ Don't know ☐

12. Do gloves protect healthcare givers from needle pricks ?

Yes ☐ No ☐ don't know ☐

**SECTION 4: Assessing practice and compliance to standard precautions of infection control.**

13. Do you have a role in infection control?

Yes ☐ No ☐

If the answer above is yes, how do you feel about your role in infection control?

.....

.....

.....

14. Do you think lining the bin after it is emptied is your responsibility?

Yes ☐ No ☐

15. What do you think about practising infection control at home?

Good ☐ Not necessary ☐ don't know ☐

16. What is your feeling about wearing of a mask?

.....

.....

.....

17. Do you think washing hand is necessary every time you touch a patient?

Yes ☐ No ☐

18. Do you think segregation of wastes is necessary even when all waste is to be disposed?

Give your reason.

.....

.....

.....

19. Why do you practise infection control?

To avoid disciplinary action against me ☐

To decrease risks to patients ☐

To be given award for my performance ☐

Other reason, give ;

.....

.....

.....

20. Is there anything else you would like to tell me about or any suggestions about infection control at Butiru Chrisco hospital or is there anything you would like to learn about?

.....

.....

.....

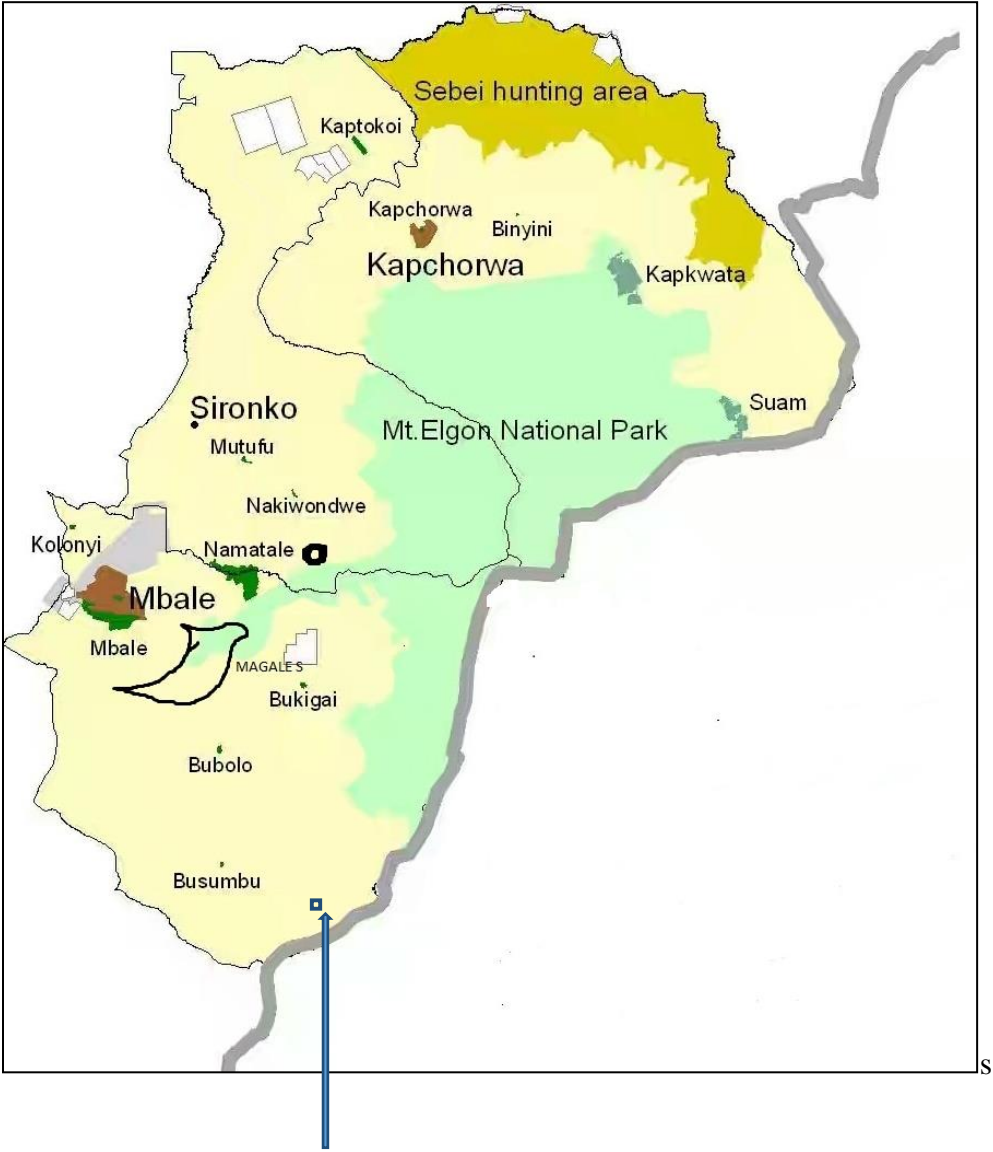
.....

.....

Thank you for your assistance, when my research is finished, I shall come back to butiru chrisco hospital to tell you what I found out.

[illegible]

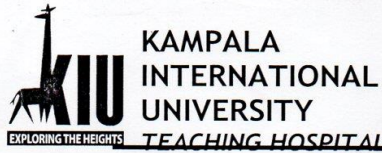
**APPENDIX D: MAP SHOWING LOCATION OF BUTIRU CHRISCO HOSPITAL.**



Butiru Chrisco Hospital



## APPENDIX E: LETTER OF APPROVAL.



School of Allied Health Sciences (SAHS) Ishaka,  
P.O.BOX 71 Bushenyi,  
Tel: 0703786082/0773786082  
Email:christinekyobuhaire@gmail.com

### OFFICE OF THE ADMINISTRATOR –SAHS

19<sup>th</sup> April 2017

The Hospital Director Butiru Chrisco Hospital  
MANAFWA DISTRICT

Dear Sir/Madam,

**SUBJECT: DATA COLLECTION**

Academic research project is an Academic requirement of every student pursuing a 3 year Diploma in Clinical Medicine & Community Health (DCM) of Kampala International University- Western Campus (KIU-WC). DCM program is housed in the School of Allied Health Sciences (SAHS).

The students have so far obtained skills in Proposal writing especially chapter one, Three & Questionnaire design. The student's topic has been approved by SAHS Research Unit and is therefore permitted to go for data collection alongside full proposal & dissertation writing. As you may discover the student is in the process of full proposal development. However, the student MUST present to you his questionnaire and his research specific objectives that he wishes to address. We as academic staff of Allied Health Sciences are extremely grateful for your support in training the young generation of Health Professionals. I therefore humbly request you to receive and allow the student **MUNGOMA DERICK** Reg.No. **DCM/0010/143/DU** in your hospital to carry out his research. His topic is hereby attached. Again we are very grateful for your matchless support and cooperation.

Topic: **ASSESSMENT OF INFECTION CONTROL AT BUTIRU CHRISCO HOSPITAL IN MANAFWA DISTRICT**

Sincerely yours,

  
**Christine Kyobuhaire, Administrator- SAHS**

CC: Dean SAHS  
CC: Associate Dean SAHS  
CC: Coordinator, Research Unit- SAHS  
CC: H.O.D Dept. Public Health  
CC: H.O.D Laboratory Sciences  
CC: Coordinators; TLC & DEC



*Permitted to conduct research  
27/5/17*



*"Exploring the Heights"*