# A STUDY TO DETERMINE FACTORS INFLUENCING INFECTION CONTROL AT THE UNIVERSITY TEACHING HOSPITAL BY THE HOSPITAL AUXILIARY WORKERS.

BY

# **KAWANJE BENJAMIN**

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THE UNIVERSITY OF ZAMBIA SCHOOL OF MEDICINE DEPARTMENT OF POST BASIC NURSING

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A STUDY TO DETERMINE FACTORS INFLUENCING INFECTION CONTROL AT UNIVERSITY TEACHING HOSPITAL BY THE HOSPITAL AUXILLARY WORKERS

A RESEARCH STUDY SUBMITTED TO THE SCHOOL OF MEDICINE, DEPARTMENT OF POST BASIC NURSING, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE IN NURSING.

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KAWANJE BENJAMIN ZAMBIA REGISTERED NURSE 1990 IN LUSAKA

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## LIST OF ABBREVIATIONS

- HIV Human Immuno Virus
- HBV Hepatitis B Virus
- ICT Infection Control Team
- UTH University Teaching Hospital
- HAW Hospital Auxillary Worker

## DECLARATION

I hereby declare that the work presented in this study for the degree of Bachelor of Science in Nursing has not been presented either wholly or in part for any other degree and is not being currently submitted for another degree.

SIGNED (candidate) APPROVED BY (Supervising Lecturer)

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### STATEMENT

I hereby certify that this study is entirely the result of my own independent investigation. The various sources to which Iam indebted are clearly indicated in the text and in the reference.

SIGNED\_\_\_\_\_

## DEDICATION

This work is dedicated to my beloved parents whose patience, love and prayer have made me who Iam today. And not forgetting my wife Nauluta who has been my source of inspiration.

## ACKNOWLEDGEMENTS

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## ABSTRACT

The study was aimed at determining the factors influencing infection control at the University Teaching Hospital by the hospital auxiliary workers. Focus was directed at knowledge, attitude, cleaning procedures, experience, supervision, resources, policies and guidelines influencing maintenance of cleanliness by the hospital auxiliary workers.

Literature shows that hospital acquired infections are one of the main causes of morbidity and mortality in hospitalized patients at he present time. Studies done in other places have shown that outbreaks of infections continue to occur despite advancement in science and technology.

The study was a descriptive type and was conducted at UTH. The study population included all the hospital auxillary workers involved in maintenance of cleanliness at UTH.

Study units were drawn from the A, B, C, E and G - Block. The sample size was composed of 60 hospital auxiliary workers.

Data was collected using a structured interview schedule. The study established the factors contributing to poor maintenance of cleanliness in the hospital.

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Findings revealed that the maintenance of cleanliness should be improved. Majority hospital auxiliary workers have only attained a primary school level of education and hence the need for adequate guidance and supervision. Guidelines should be prepared for the hospital auxiliary workers to help in the implementation of systematic and effective cleanliness. There is also need to economise the available resources. The necessity for in-service education cannot be over emphasized. There should be liaison between the departmental staff, administration and the infection control team if effective implementation of programmes can be achieved.

#### CHAPTER 1

### 1.1. BACKGROUND

Infection Control are activities undertaken by all workers to prevent and control spread of pathogenic organisms in the hospital environment.

The term infection means the entry, development and multiplication of an infectious agent in the body of man or an animal (Shooter, Garrod, Blowers and William 1960).

The science of control of infection can be said to be a little more than a century old, having its origin in the work of Louis Pasteur in 1850 but that break through was preceded by many centuries of speculations and investigations (Porter and Turk, 1969).

Generally various methods have been used to protect patients from acquiring infections while in hospital. These have ranged from education of both workers and patients to specific activities such as maintenance of hygiene and proper waste disposal.

Globally, hand washing has been placed amongst the universal precautions in the control of infection (Ian. G, 990).

Hospital auxillary health programmes have emphasized the importance of hand washing before and after each procedure

as a way of reducing infection (Pritchard. Y, 1988). Even today hand washing and other basic hygienic practices like wearing protective clothing, proper waste disposal remain important measures in the control of infection.

In a study carried out by Nobble W. C, in the United Kingdom in 1983 to determine the extent of spread of infection, it was found that a person can become a carrier of resistant staphylococcal infection as a result of normal visits to relatives in hospital and eventually spread the disease to the community outside the hospital. Among recommendations made was teaching of Maids and porters measures to prevent spread of infection so that this would contribute to reducing of infection outside the hospital (Nobble. W. C, 1983).

In United States of America, the Physician Record Company reported that Florence Nightingale almost single handedly reduced the mortality rate of wounded men from 40% to an unbelievable 20% through a sanitation policy (Anon. T, 1970).

In South Africa, it was reported that Humane Immune Virus (HIV) infection control measures are more or less similar to those of any other infection. Among recommendations made was proper handling and disposal of HIV infected specimen and equipment (AIDS information and guidelines, 1989).

In Zambia, there are District Health Management teams in all provinces. These constitute the District Medical Officers,

Information Education Communication, Pharmaceutical and Laboratory Services (Ministry of Health, Information Unit, 1995). The teams carry out inspections of health institutions in districts on matters related to hygiene and control of hospital infections. They also play a major role in times of epidemics by reinforcing eradication and control programmes.

The University Teaching Hospital has an infection control committee which was established in 1984 after an outbreak of pseudomonas infection in a paediatric neonatal unit. The objectives of this committee included;

- giving guidelines on maintenance of basic hygiene.
- giving guidance and advice on the purchasing of antimicrobial agents.

An investigation had been carried and they had found that the spread of infection was a result of poor disinfection of equipment used on neonates. It was not until 1987 that they decided that a qualified nurse be involved actively in the committee (UTH Infection Control Committee, 1995).

#### 1.2. STATEMENT OF THE PROBLEM

The University Teaching Hospital (UTH) has apparently a good number of hospital auxiliary workers operating in the hospital environment who play a significant role in the maintenance of high standards of cleanliness. Records from personnel office of the UTH indicated that the hospital has 320 auxiliary workers (UTH Establishment Register, 1995). The job description of this category of workers is to maintain the highest possible-levels of cleanliness in the hospital.

However, the Researcher observed that effective cleanliness is not maintained especially in the General Wards. Toilets, sluice rooms and bathrooms are inadequately cleaned. Floor surfaces are usually dirty with carelessly thrown papers, syringes and needles. Some patients and visitors complained that the standards of hygiene in most wards were low.

"It is emphasized that hygiene is the removal of infection. At the same time this practice also blocks routes of transfer and enhances resistance to infection" (Roper et al, 1985).

Microbiological monitoring of the University Teaching Hospital environment conducted this year (1995) revealed a wide spread distribution of pathogens as indicated in the table below.

PATHOGENS	A (%)	B (%)	C (%)	D (%)	E (%)	G (%)	TOTAL
E. Coli	34.4	22.5	13.7	3.7	23.1	17.5	533
Staphy Aureus	11.7	7.3	22.2	9.0	23.8	28.6	315
Klebsiella	35.5	14.9	5.7	15.9	27.2	8.8	228
Strep Pneumoniae	51.2	-	5.1	0.9	41.9	0.9	217
Cryptoco- ccus	0.5	1.1	12.2	-	86.2	-	189
N. Meningitis	43.8	-	4.5	-	51.7	-	176
Salmonella Sp	31.0	3.9	15.5	3.9	34.9	3.1	129
Shiggela	44.5	9.1	1.8	_	41.8	2.7	110
Sh. Dysentry	50.0	2.6	8.0	_	39.0	_	38
Salmonalla Typhi	-	16.0	22.2	-	55.6	5.5	18

## DISTRIBUTION OF COMMON PATHOGENS ISOLATED IN DIFFERENT DEPARTMENTS OF THE UTH IN 1995

E = Medical wards including C12/13/AFC/PHV/Clinic

G = Surgical wards including C23/22/21

(UTH Microbiology Laboratory Department, 1995).

This table is an illustration of the distribution of common pathogens isolated at UTH. It clearly shows that the problem of infection affects almost all the clinical areas of UTH and in severe proportions. Most of these have developed different degrees of resistance to the available chemotherapy which is making management of patients more difficult.

	E.Coli	Staphy aureus	Klebsi- ella	Staphy Pneumoni ae	Neisse- ria- Meningi ditis	Salmone -lla-SP	Shiggel lla- Dysentr Y	Enterob acter	Cholerae
Tetracy cl-ine	81%	74%	78%	39%		26%	100%	50%	-
Amoxyci llin	-	25%	-	-	-	-	-	-	-
Ampicil in	82%	74%	90%	-	-	63%	988	76%	-
Co- otrimox az-ole	82%	46%	80%	23%	35%	60	99%	70%	-
Gentamy cin	8.0%	188	55%	_	-	48	-	22%	-
Cloxaci llin	-	78	-			-	-	-	-
Floxaci 11in	-	-	-		-	-	-	-	-
Chloram ph- enicol	54%	-	64%	2%	28	10%	100%	50%	80% `
Peninci llin	-	-	-	-	-	-	-	-	-
Erythro my-cin	888	-	100%	-	_	100%	-	80%	1.0%

## Table of Resistance of Common Pathogens at UTH

5.0% Ξ 3% -<del>-</del> . 1.0% 28 0.4% Cefotax 63% -54% ine -60% -45% Augumen tine\_\_\_\_ -1.0% 0.05% -3% -. 60% -4% -Nalidix . ic

(UTH Microbiology Laboratory department 1995).

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With the introduction of the health reforms the government through the Ministry of Health has adopted an approach to the provision of health care which is more of preventive than curative oriented. It is also believed that the government has pumped in a lot of money to allow for buying of cleaning materials e.g, detergents, antiseptics, disinfectants and equipment. Sophisticated equipment like vacuum cleaners are now in use but the standards of hospital hygiene still remain low.

The following are the factors assumed to influence control of infection by the hospital auxiliary workers at UTH:-

- (1). Resources: Lack of cleaning materials and equipment required for cleaning may hinder achievement of high standards of hygiene. Sometimes the materials could be available but in inadequate quantities. This equally may not facilitate maintenance of cleanliness hence making it difficult to control infections in the hospital environment.
- (2). Knowledge: The hospital auxiliary workers do not undergo training required to prepare them to work in a hospital although later on they attend in-service courses. This lack of knowledge on how to control infection may influence the way they perceive their work.

- (3). Experience: Inadequate experience may also influence the way the hospital auxiliary workers carry out their work. Inexperienced hospital auxilary workers are perhaps irresponsible at work and therefore do not carry out infection control measures effectively.
- (4). Institution Policies: Lack of policies probably also hinder promotion of safe infection control practices. it is from these institution policies that work guidelines are derived. These guidelines are offered in the firm belief that hospital infections are tackled systematically and effectively. Without these guidelines it may be difficult to control infection.
- (5). Supervision: Supervision is the process by which guidance is given to the hospital auxiliary workers by experienced and knowledgeable staff. Lack or inadequate supervision may create a situation in which the code of practice, safety precautions or guidelines are not followed hence hindering effective infection control practices.
- (6). Attitudes: Negative attitudes may promote a sense of irresponsibility at work. Hospital auxiliary workers with negative attitudes towards work may not carry out infection control measures effectively.
- (7). Cleaning Procedures: Poor cleaning procedures may contribute to ineffective infection control. Cleaning procedures which are not recommended or standardized will be difficult to monitor and hence may influence infection control practice.

(8). Hospital/Ward Routines: Ward routines which are not well co-ordinated like untimely visitations, ward rounds may disturb the cleaning operations and consequently promote poor standards of hygiene.

Therefore the questions which need to be answered are:-

- (1). Are clinical areas adequately equipped with cleaning material resources ?
- (2). Are hospital auxiliary workers knowledgeable, experienced and skilful enough to carry out cleaning procedures effectively ?
- (3). Do hospital auxiliary workers have any working guidelines ?
- (4). Do hospital auxiliary workers receive adequate supervision ?
- (5). What are the attitudes of hospital auxiliary workers towards maintaining cleanliness in the hospital environment ?

At the moment no study has been done in Zambia over this problem hence the need to undertake this study. Results of the study will be used to make recommendations to the UTH Infection Control Committee, UTH Board of management, Ministry of Health and other Non Governmental Organizations who are committed to the provision of quality health care to mankind.

DIAGRAM OF FACTORS THAT MAY CONTRIBUTE TO CONTROL OF INFECTION BY THE AUXILIARY WORKERS.

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#### 1.3. LITERATURE REVIEW

The hospital acquired infections are one of the main causes of morbidity in hospitalized patients at the present time. Although some success has been achieved in controlling spread of infections in hospitals much remains to be done in order to attain the desired standards.

A number of research studies have been recently carried out world on ways of the in which hospital infections are transmitted but outbreaks continue to occur. In a recent National Survey of infections in Hospitals conducted by Meer P. D, Ayliffe G. A. et al, (1980) in Bristol, it showed that 60% of the infections were caused by aerobic gram negative rods, 30% by gram positive bacteria, 3% were anaerobic bacteria and 7% were fungi and viruses. It was recommended that a better understanding of the unique properties of individual organisms, factors favouring their prevalence. complexities and parasitic relationships would lead towards their better control in future.

According to Williamson D and Mc Keown (1992), they have indicated that infection control guidelines should be considered as an important safe practice in preventing

diseases like HIV and Hepatitis B in health care staff. The results on assessment of awareness and practice of health board guidelines in a psychiatric hospital in Copenhagen showed that there was no difference in practice between medical staff who read the guidelines and those who did not. He suggested that there was need for more active encouragement of safe practices in order to prevent spread of infection. This is a big challenge for the hospital auxiliary workers who are likely to emulate their seniors and therefore need for more in-service education.

Effective communication is vital with hospital maid and porters who should be informed when there is potential risk and also when there is a justifiable concern for infection control for example, when there is a patient admitted with an infectious disease like cholera, dysentery and Hepatitis. Another author Noble W. C (1993), acknowledges that education is the key in this case and time spent by the infection control nurse in this respect is worthwhile.

Non - professional workers such as the hospital auxiliary workers often enter the hospital service without any previous training on maintenance of hygienic standards in a hospital. Therefore the hospital infection control team must take the responsibility of remedying his situation. According to the Hospital Acquired Infections Guidelines (1978), of the United Kingdom, it is stated that basic rules of conduct should be drawn up, and these must be explained

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to all new recruits on entering the job. in addition simple courses of instructions specifically designed for respective groups should be conducted regularly. Most hospitals do have excellent and comprehensive quidelines on all aspects of infection control in the hospital. However these are often too detailed for most hospital workers like the hospital auxiliary workers to appreciate them. A simple guide is likely to be more acceptable for it enhances better understanding. According to the International Council of Nurses Association (1986), of the united Kingdom it was emphasized that the major part of the role of the infection control nurses is to communicate. The infection control nurses must communicate with one another in order to exchange knowledge, experiences and ideas. This must be extended to other workers as well so as to facilitate arriving at similar solution for same problems and come up with policies and guidelines which have taken the local needs into account. Without this kind of communication the infection control nurse may become isolated and find keeping abreast of the latest trends and. developments difficult.

It has been stated by Collins B. J et al (1982), that there seems to be much favour in National guidelines for infection control which are advisory and have been prepared by a wide cross section of people working in the field as is the case with the United States guidelines. These should be made available in every clinical area.

In addition Nobble W. C (1983), presents guidelines which are very common with other authors on prevention of infection. He draws attention to the need for consideration to be given not only to the hospital pharmacy and kitchen but to the wards and operating theatres as well. He further emphasizes that those to be included in the prevention of infection should not only include administrators but technicians, nurses, medical staff as well as the hospital auxiliary workers. It is made clear that rules of behaviour such as washing of hands, wearing of gowns and masks apply to all those who work in hospitals and not merely those at the bedside.

At the University Teaching Hospital, a sterilization and

disinfection policy was introduced in 1987 (UTH Infection Control Committee, 1995)). It divided various items in three (3) categories for sterilization and disinfection purposes were clearly stated.

According to Emmerson A. M, (1970) he postulates that lack of interest by medical staff may be due to inadequate teaching on infection control practices during medical training. This lack of interest may also be due to failure to appreciate that good clinical practice can substantially reduce hospital acquired infections. He justifies this by failure of most hospital workers to appreciate the value of such simple procedures like hand washing.

Negative attitudes towards work may influence the standard of practice. It is therefore important that hospital

auxiliary workers are instilled with positive attitudes towards work so as to promote good standards of practice. In a research study by Gould. A (1991), she established that workers in hospital are capable of transferring microorganisms from patient to another. This may not only be by contact but also through the process of cleaning. It is a standard requirement that infection control through maintaining cleanliness, ensuring good ventilation, keeping room doors closed, minimising the number of visitors be adhered to, otherwise patients would be exposed to infection.

It has been emphasized by Noble W. C (1983), that in addition to health workers specific jobs, they have communal jobs in hospitals, one of which it is to prevent and combat the spread of hospital infection. This cannot be done however without active co-operation of all staff working in the hospital. All the workers in the hospital need to put their efforts together to make the hospital a safe place for patients whom we are all responsible for.

Hospital auxiliary workers normally handle infected waste products. The nature of their work demands that precautions be taken against the possibilities of spreading the infections and from being infected. According to the central

Health Services Council (1968) in London, it was reported that rules must be explained by the supervisory staff and the infection control committee officers. These rules are:-

- (1). Wearing protective clothing when carrying out procedures that can lead to contamination,
- (2). Washing hands before and after each procedure.
- (3). No eating, drinking , smoking and applying cosmetics while at work.

In a 20 month study conducted by Lowbury et al (1970), on potential sources of pseudomonas aeruginosa infection in patients with tracheostomies, it was concluded that the most likely mode of transmission was from patient to patient, or from environment to patient via hands of personnel especially nurses. An endemic strain "A" was isolated in sinks or other environmental sources but was involved in only four of the outbreaks and only once was the initial strain isolated from tracheostomies before being found in the environment. The use of respirators could not be epidemiologically related to infection pseudomonas. A variety of control measures were introduced but met with little success. This failure was attributed primarily to breaks in cleaning techniques. As a result cleaning has been acknowledged as a very useful method of reducing organisms.

Another author Burns. P (1988), postulates that the use of disinfectants in cleaning kills about 90% to 99% of the microbes while cleaning with water and detergents is about 80% effective.

According to the Health Safety Commission (1982), it has been stated that incorrect disposal of waste products receives a great deal of attention from the media while at the same time inducing fears in the public. This is further made worse by the ignorance of the members of the public about these matters. Improper waste disposal is aesthetically unacceptable and therefore segregation and safe handling of clinical waste is of paramount importance.

The United Kingdom department of Environment (1983), in its published "Waste Management Paper No. 25, Clinical Waste", hospitals were urged to adopt the segregation system set out in the Health and Safety Commission document so that a Nation Standard with a uniform colour code for disposal bags could be adopted. Yellow plastic bags for all clinical waste indicating that it must be incinerated and black plastic bags for domestic type of waste which can be collected by the local councils for disposal to appropriate sites. This could be adopted to Zambian hospitals such as the University Teaching Hospital. The system can prevent accidental injuries such as needle stick injuries which pose a great hazard to the hospital workers and the community at large. At UTH it has been revealed that accidental needle stick injuries are on the increase as shown in the table below.

TABLE SHOWING NUMBER OF ACCIDENTAL NEEDLE STICK INJURY CASES AT UNIVERSITY TEACHING HOSPITAL.

YEAR	NO. OF CASES
1992	3
1993	4
1994	6
1995	9

(UTH Medical Records, 1995).

It can be seen from the table that the number of cases seem to be increasing. This may be attributed to poor sanitation and disposal methods. Workers are bound to be accidentally injured by carelessly disposed needles as they perform their duties and may end up being infected in the process. Amongst the 9 who sustained needle pricks in 1995 one (1) hospital auxiliary worker ended up with early hand infection (Cellulitis). The knuckle of the right index finger is now restricted and still undergoing treatment at the orthopaedic clinic of the University teaching hospital. In addition, another hospital auxiliary worker sustained a needle stick injury under his left foot in 1988 and as a result had a disseminated infection in the leg. He eventually ended up with an amputation of the left leg in 1988 (staff clinic Medical Records, 1995).

The function of the Infection Control Team include day to day Surveillance, control of infection, monitoring of hygienic practices, advising other health workers on

matters of policy in relation to the prevention of infection. The Infection Control Team needs to provide informal and in-service education for all categories of staff including the hospital auxiliary workers.

According to Meers P.D et al, (1981) it was revealed from a survey in a London hospital that 9.2% of all patients admitted to hospital acquire some form of infection during their stay in hospital. It is therefore important that all staff involved with clinical care be continuously aware of this fact and make every effort to keep infection to a minimum. Problems from hospital acquired infections increase with each progressive step in Medicine, Surgery and nursing. Many groups of patients whose deaths were inevitable 20 years ago are now not only kept alive but are often given a good quality of life: for example patients with leukaemia, those receiving organ transplants. These patients have an improved prognosis but infection or its presence is often the deciding factor between life and death. One of the prime requirements of these immuno compromised patients is the provision of an infection free environment. It is of prime importance that highest levels of cleanliness be maintained. The safety needs can include activities of living for these patients in all their daily activities such as eating, drinking and this can be achieved by the contribution of the hospital auxiliary workers.

Another author Gould. A, (1991) in her research established that workers in hospitals are capable of transferring micro-organisms from one patient to another. This may not only be by direct contact but also through the process of cleaning. It is a standard requirement by all hospitals that infection control through maintaining cleanliness, ensuring good ventilation, keeping room doors closed and minimising the number of visitors be adhered to because patients would be exposed to infection. This task requires adequate supervision of the hospital auxiliary worker who are also responsible in the maintenance of cleanliness by basic practice of hygiene.

The cleaning of equipment, disinfection of instruments, storage of hospital supplies and proper disposal of waste products require close liaison between hospital management and infection control team so that standards of hygiene are maintain.

According to William et al, (1977) he postulates that transfer of Microbes is dependent on the direction of the air flow or the contact between items. The dispersal of organisms is closely associated with activity of skin scale shedding from body surfaces clothing, bed linen and the air currents limitation of the extent of microbial exchange is an essential part of disease control programme even for the hospital auxiliary worker for example when they are sorting, sluicing and binding linen for laundéring.

It has been emphasized by Divincent M, (1977) that there is need for continuous interest to be expressed in the welfare of patients and employees by developing adequate policies and programmes as a means to achieving a safe environment.Policy statements regarding safety should be available to personnel in the nursing service who provide much more direct supervision to the hospital auxiliary workers.

In a study done by Chiera and Bolzan, (1993) at Lincoln town hospital in Argentina on the prevalence of infection with Hepatitis B Virus and the serological pattern in old people of a nursing home, 38 people of both sexes older than 60 years were looked at with a control group of 91 people from the ambulatory clinic. In both groups anti HBC, anti HBS and Ag HBS were detected by ELIZA Method. It was finally observed that there was a high prevalence of infection with Hepatitis B virus (HBU) among nurses and Maids at the Elders home. This was related to the hospital practices by these two groups.

It is stated by William et al, (1960) that a well organised hospital has beneficial effect on staff and patients alike. Different areas have different problems regarding infection for example theatres, neonatal wards, burns unit and intensive care. This is because these areas have different routines which consequently influence the prevalence of infection.

According to Meers P D, Ayliffe GAJ, Emmerson A.M et al, (1980) it is reported that most countries are unaware of the incidence of infection in their hospitals, but studies are increasingly reporting high incidence of infection prevalence. A large prevalence study was carried out in England and Wales during 1980. The results showed that 19.1% of patients were infected at the time of the visit and 9.2% of infections were hospital acquired. It was concluded that the overall incidence is about 3% to 5% depending on the type of the hospital.

It has been emphasized by Reeves D.S and Geddes A.M, (1982) that there is need for experience in carrying out effective hygienic practice. Often Critical situation of maintenance of hygienic practice fall on the least inexperienced persons. Decision frequently made by these in experienced persons are based on enlightened guess work which is costly and predisposes the worker to infection.

It is postulated by Petersdorf R.D, (1964) that hospital environments present such particular hazards like infection. Infection can be initiated with much smaller numbers of organisms which can quickly multiply contaminating varied resources like patient bed clothes, floors, walls, furnishes toilets, wash basins, baths, eating utensils and instruments. Other susceptible objects are then liable to infections by contact with one or any of the following: Air currents, forced ventilation, Mops, Vacuum cleaners

and other Materials. Contamination may continue to increase until there is danger of an epidemic. Control Methods can be achieved by chemical or physical means and these require adequate resources in terms of financial, Material and human.

The same author further states that we are living in an era of infectious diseases many of which are of unknown origin. New antimicrobial drugs are constantly being discovered like the Cephalosporins, new vaccines new observations concerning fevers, non specific resistance and immunobiological response are adding much to our knowledge of host reaction to infectious stimuli. It is not surprising that along these advances, emphasis has shifted from Merely Curing infectious diseases to that of prevention. This is a task that can be achieved by the hospital auxiliary workers through their maintenance of hygienic standards in particular at U.T.H.

A cost benefit study was conducted by Fernendez. B et al, (1991) in a Venezuelan hospital for hepatitis B virus. It was carried out through a decision tree analysis Model and included the probabilities for different outcomes of hepatitis B virus infection. The study revealed that the Venezuelan government was spending about 1,759 dollars per patient. After implementing mass vaccination for the infection the cost was reduced by 51%. This confirmed that
adequate financial input in the prevention of occurrence of diseases like hepatitis could reduce the overall expenditure on patient care. The U.T.H. can also greatly reduce its total expenditure per patient by initiating such preventive programmes.

The literature reviews shows that spread of infection in hospitals is a result of a number of factors. It is indicated in most studies done in other countries that hospital auxiliary workers do not under go required training to prepare them to work in a hospital. they therefore lack knowledge on how to control the spread of infection. Secondly, lack of policies and guidelines, have been known to hinder promotion of safe infection control practices. It has been stated that negative attitudes promote a sense of irresponsibility at work and therefore the hospital auxiliary workers need to be instilled with positive attitudes. This can promote effectiveness in the control of infection. Poor cleaning procedures have also been attributed to ineffective infection control. Other authors have emphasized on the need for supervision so that the code of infection control practice can be adhered to.

In addition ward routine which are not well - coordinated like untimely visitations have been said to disturb cleaning operations and consequently promoting spread of infection Inadequate experience have been known to

influence the way hospital auxiliary workers carry out their work. It has also been revealed that lack of adequate cleaning materials and equipment hinder achievement of high standards of cleanliness.

## 1.4. OPERATIONAL DEFINITIONS

For the purpose of this study the following terms have been operationally defined.

- Pathogen: Any disease producing agent or Micro organisms.
- (2). Infection: A clinically apparent reaction to contamination with micro - organisms.
- (3). Hospital Auxiliary Worker: Maid
- (4). Knowledge: Fact, feeling or experience known by the maid about infection control.
- (5). Attitude: A feeling tone directed towards control of spread of infection.
- (6). Practice: Actual use or performance

#### CHAPTER 2

#### 2.2. GENERAL OBJECTIVES:

To determine factors influencing Infection Control by the Hospital Auxiliary Workers.

# 2.2. SPECIFIC OBJECTIVES:

- To determine the knowledge of hospital auxiliary workers towards infection control measures.
- (2). To asses the attitudes of hospital auxiliary workers towards infection control measures.
- (3). To establish whether the Institution has working guidelines for the hospital auxiliary workers in relation to infection control.
- (4). To assess the adequacy of supervision on the hospital auxiliary workers in relation to infection control.
- (5). To establish whether working experience of hospital auxiliary workers has an influence on infection control.
- (6). To establish the influence of ward routines on infection control.
- (7). To determine the adequacy and availability of equipment and material resources on the ward enabling hospital auxiliary workers to maintain high standards of cleanliness.

(8). To utilize the study results in making appropriate recommendations to UTH Infection Control Committee, UTH Board of Management, Ministry of Health and Non -Governmental Organizations who are committed to the provision of therapeutic environment.

#### CHAPTER 3

#### 3.1. RESEARCH DESIGN

The study was aimed at determining factors influencing infection control amongst Hospital Auxiliary Workers at University Teaching Hospital. This was a non experimental descriptive study.

According to Abdellah and Levine (1982) a descriptive study is defined as one that does not involve experiments, but is primarily concerned with obtaining accurate and meaningful description of the phenomenon under study and seeks to know how one or more characteristics are distributed in a population.

The independent variables looked at were; resources, institutional policy, knowledge, hospital/ward routines, supervision, attitudes, cleaning procedures, experience in relation to control of infection by the hospital auxiliary workers at the University Teaching Hospital.

## 3.2. NATURE AND SOURCE OF DATA

Primary data was collected by the use of an interview schedule. According to Bless and Achola, (1988) they define primary data as the data the researcher collects on his or her own for the purpose of their particular research.

#### 3.3. RESEARCH SETTING

The study was conducted at the University Teaching Hospital. The setting was chosen as it gave a cross section of hospital auxiliary workers from different educational, cultural and traditional background. These Auxiliary workers come from different areas of Lusaka. According to Abrahamson (1974), a Cross Sectional Survey provides information concerning the situation at a given time.

The reason for choosing this setting was due to the fact that it is convenient for the researcher given the logistic support allocated to him to conduct the study.

#### 3.4.) SAMPLE SIZE AND SELECTION APPROACH

According to Bless and Achola (1988), a sample is a subset of the whole population which is actually investigated, studied, observed or interviewed by a researcher whose findings are then generalized to the entire population.

The researcher used a proportionate stratified simple random sampling since he was looking at a population of hospital Auxiliary workers who are stratified according to block A,

B, C, E and G. These areas were conveniently chosen for they are highly populated with patients and infectious conditions are more prevalent. A uniform sampling fraction was used to draw or select sampling units from each stratum.

Hence = $n$	60	
	> <u></u>	0.1875
N	320	

Sampling Unit

A block had 72 Hospital Auxiliary workers . 0.188 x 72 =13.5 => 14 respondents B block had 56 Hospital Auxiliary workers . 0.188 x 50 =10.5 => 11 respondents C block has 52 Hospital Auxiliary workers . 0.188 x 52 =9.75 => 10 respondents E bock has 78 hospital auxiliary workers . 0.188 x 78 =14.625=>14 respondents G block has 62 hospital auxiliary workers . 0.188 x 62 = 1.625 => respondents

Thereafter names were arranged alphabetically according to each block (working area). Then using the sampling interval for each stratum the researcher randomly selected the 1st number and chose every in the number to select the required sampling units for each stratum.

The researcher lastly combined all the individuals of the of the five sub samples to form the desired sample of 60.

## 3.4.2. INDICATORS AND CUT-OFF POINTS

For the variables were not measurable, indicators were used for their assessment. The dependent variable was the infection control. Resources, institutional policy, knowledge, hospital/ward routines, experience cleaning procedures, supervision and attitudes were the independent variables.

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VARIABLE	INDICATORS AND CUT OFF POINTS
1. DEPENDENT VARIABLE	
a). Infection Control	Good Quality and poor quality
2. INDEPENDENT	
a). Knowledge	High, 3 points, Average, 2 points Low, 1 point
b). Attitudes	Negative, do not like her job Positive, likes her job.
c). Supervision	Adequate, Indequate
d). Cleaning Procedures	Effective, Ineffective.
e). Experience	< a year, inexperienced, > a year, Experienced.

# 3.5. DATA COLLECTION

The Researcher conducted interview schedule to a sample of 60 respondents. Before collecting information a brief explanation on the nature and purpose of the interview was given to the respondents. According to Polit and Hungler (1983) an interview schedule is a data collection technique that involves oral questions. The interviewer interacts with interviewee. The decision was arrived at because:-

(1). It gives chance even to the illiterate population.

- (2). It permits clarification of the Questions which may not be clear to the respondents.
- (3). It has a much higher response rate.
- (4). The data collected is consistent and uniform because it is collected by the same instrument containing the same questions.

This however may have had some disadvantages because:-

- The presence of the interviewer may influence the responses.
- (2). Reports in an interview may be less adequate.

The respondents were informed that the information they would provide would be treated with greatest confidentiality.

## 3.6. PILOT STUDY

A pilot study was done at the University Teaching Hospital's Filter Clinic. It involved 5 hospital Auxiliary workers who were chosen using a simple random sample. The pilot study was aimed at ascertaining;

(1). Reliability and validity of the data collection tool.

(2). Appropriateness and clarity of the language used.

## CHANGES MADE

- Some questions were rephrased for the wording was not clear.
- (2). Other questions which were too difficult for the respondents were simplified.
- (3). Some closed ended questions were changed to open ended questions.

#### 3.7. ETHICAL CONSIDERATIONS

Permission to do the study was obtained from the University Teaching hospital Board of Management. The researcher created a good rapport with the respondents. He assured the respondents of strict confidentiality and no names were obtained.

#### 3.8. CONSTRAINTS AND LIMITATION OF THE STUDY.

The major limitation of the study was that it was done along side other courses of the year. Thus it was difficult to devote the desired time and effort to the study. Other limitations included insufficient funds which compelled the researcher to have a small sample.

#### CHAPTER 4

#### DATA ANALYSIS AND PRESENTATION OF FINDINGS

AGE (YEARS)	SEX DESCRIPTI	TOTAL	
	FEMALE	MALE	
BELOW 20	23 (38%)	-	23 (38%)
21 - 30	1 ( 2왕)	_	2 (3%)
31 -40	23 (38%)		23 (38%)
41 - 50	11 (18%)	-	11 (18%)
ABOVE 50	2 (3%)		2 (3%)
TOTAL	60 (100%)	-	60 (100%)

TABLE 1. Age in Relation to Sex Distribution.

100% were females with majority 23 (38%) respondents were in the range of below 20 years and between 31 - 40 years.

TABLE 2. Sex in Relation to Educational Level.

SEX	EDUCATIO				
	NONE	PRIMARY	SECONDARY	COLLEGE	TOTAL
FEMALE	2 (3%)	50 (50%)	8 (13.3%)	0	60 (100%)
TOTAL	2 (3%)	50%(83.3%)	8 (13.3%)	0	60 (100%)

The majority 50 (83.3%) respondents attained a Primary School Level of Education, 8 (13.3%) respondents had attained a Secondary School Level of Education and 2 (3%) respondents had no formal Education.

	EDUCATIONAL LEVEL								
RELIGION	NONE	PRIMARY	SECONDAR Y	COLLEGE	TOTAL				
CHRISTIAN	0	48(80%)	8(13.3%)	0	56(93.3%)				
MOSLEM	0	0	0	0	0				
HINDU	0	0	0	0	0				
NONE	2 (3.3%)	2(3.3%)	0	0	4(6.6%)				
TOTAL	2 (3.3%)	50(83.3%)	8(13.3%)	0	60(100)				

TABLE 3. Religion in Relation to Educational Level.

The Majority 48 (80%) respondents who had attained a Primary School Level of Education were Christians and 2 (3.3%) respondents who did not have any formal Education did not belong to any Religion.

TABLE 4. Age in Relation to Educational Level.

	EDUCATIONAL LEVEL								
AGE	NONE	PRIMARY	SECONDARY	TOTAL					
21-30	0	16(26.6%)	7(11.6%)	23(38.3%)					
31-40	0	23 (38.3%)	1(1.6%)	24(40%)					
41-50	1(1.6%)	10(16.6%)	0	11(18.3%)					
OVER-50	1(1.6%)	1(1.6%)	0	2(3.3%)					
TOTAL	2(3.3%)	50(83.3%)	8(13.3%)	60(100%)					

Out of the 60 respondents aged over 50 years none had attained a Secondary School Level of Education. Of those aged 21-30 years 7 (11.6%) respondents had attained Secondary School Level of Education. The 23 (38.%) majority respondents were those who had attained Primary School Level of Education and were in the age range of 31 - 40 years.

TABLE 5. Educational Level in Relation to Knowing why Infection Control is Important.

EDUCATI	IMPORTANCE OF INFECTION							
ONAL LEVEL	DONT KNOW	PREVENTS SPREAD OF INFECTION TO PATIENTS	PREVENTS INFECTION TO THYSELF	PREVENTS INFECTIO N TO FELLOW WORKERS	TOTAL			
NONE	0	0	0	1(2.1%)	1(2.1%)			
PRIMARY	8 (17.3%)	7(15.2%)	13(28.2%)	12(26%)	40(86.9%)			
SECONDA RY	1 (2.1%)	0	2(4.3%)	2(4.3%)	5(10.8%)			
COLLEGE	0	0	0	0				
TOTAL	9 (19.5%)	7(15.2%)	15(32.6%)	15(3.6%)	46(100%)			

Only 1 (2.1%) respondents who had no formal education knew some importance of infection control. 32 (69%) respondents of those who had attained a Primary School Education knew some importance of infection control. None of those who had attended Secondary School Education knew that the importance of infection control was prevention of spread of infection to patients.

## TABLE 6. Whether Respondents had suffered from any Infection in Relation as to how She knew it was because of Her own work.

WHETHER BEEN ILL BECAUSE OF WORK	HOW RESPONDENTS KNEW IT WAS BECAUSE OF HER WORK						
	WARD HAD PATIENT WITH ILLNESS	VARD HAD DONT KNOW PATIENT WITH CLINESS					
+ (yes)	1 (1.7%)	0	1(1.7%)				
- (no)	-	60	59(98.3%)				
TOTAL	1 (1.7%)						

1 (1.7%) Respondents knew they were ill because of their work in that there were patients suffering from the same disease in the ward.

BLE 7.	Educational	Level in	n Relation	to	having	been	i11	because
	of Responde	nts Work	د.					

EDUCATIONAL	WHETHER ILL BECAUSE OF RESPONDENTS WORK				
LEVEL	+ (yes)	- (no)	Total		
NONE	0	2(3.3%)	1(3.3%)		
PRIMARY	1 (1.6%)	49(81.6%)	50(83.3%)		
SECONDARY	0	8(13.3%)	8(13.3%)		
TOTAL	1 (1.6%)	59(98.3%)	60(100%)		

f the 60 (00%) Respondents 1 (1.6%) respondent who had attained Primary School Level of Education had been ill because of her ork.

ABLE	8.	Illness	suffered	from	in	Relation	to	how	one	knew	it	was
		from wo	rk.									

WHAT SUFFERED	HOW RESPONDENTS KNEW IT WAS FROM WORK				
FROM	WARD HAD PATIENT WITH COUGH	INJURED AT WORK	TOTAL		
Coughing	1(1.7%)	0	1(1.7%)		
Needle Prick	0	3(5%)	3 (5%)		
None	56 (93%)	0	56(93.3%)		
Total	57 (95%)	3(5%)	60(100%)		

3 (5%) Respondents sustained needle pricks whilst on duty. 1.7% respondents said suffered from Coughs because of the ward they worked in had patients with coughs.

TABLE 9. Knowledge of Infection Control in Relation to length of Service.

KNOWLEDGE	LENGTH OF SERVICE					
	3 - 4 years	5 - 6 years	7 - 8 years	9 & ABOVE years	TOTAL	
Elimination of Infection	0	1	1(2.3%)	0	12(20%)	
Prevention of Infection	1(2.3%)	15( 25%)	3(5%)	3(5%)	27(36.6 %)	
Reducing of Infection	0	3(5%)	2(3.3%)	1(2.3%)	6(10%)	
Others	0	2(3.3%)	1(2.3%)	0	3 (5%)	
Total	1(2.3%)	31(51.6% )	7(11.6%)	4(6.6)	3(100)	

31 (51.6%) Respondents of those who had worked for 5 - 6 years had some had idea of infection control. 4 (6.6%) respondents who had worked for 9 years and above had a little knowledge of infection control. Only 2.3% of those who had worked for 3 - 4 years knew what an infection control meant.

TABLE	10.	Whether	res	ponder	its w	rear	Protective	clothing	in
		Relation	to	what	kind	of	Protective	Clothing.	

WHETHER RESPONDENT WEARS	KIND OF PROTECTIVE CLOTHING							
PROTECTIVE	COTTON APRON	PLASTI C APRON	DISPOS -ABLE GLOVES	HEAVY DUTY GLOVE S	MAS K	GOW N	TOT AL	
+	2 (3.3%)	2 (3.3%)	2 (3.3%)	2 (3.3% )	12( 20% )	35 (58 %)	53 91. 7%	
-	0	0	0	0	2(3 .3% )	3(5 %)	5(8 .3% )	
Total	2(3.3%	2(3.3%	2(3.3%	2(3.3 %)	14( 23. 3%)	38( 63. 考)	60( 100 왕)	

5 (8.3%) Respondents do not use any of the above protective clothing. 55 (91.7%) respondents at least use some of the above protective clothing.

TABLE 11. Reasons for becoming a Hospital Auxiliary Worker in Relation to preference of job.

	PREFERENCE OF JOB				
	+ (Yes)	- (No)	Total		
Personal Interest	20(33.3% )	4(6.7%)	24(40%)		
Lack of Employment	35(58.3% )	0	35(58.3% )		
Wanted to help caring for patient	1(1.6%)	0	1(1.6%)		
Total	56(93.3% )	4(6.7%)	60		

The majority 35(58.3%) respondents who became Auxiliary Workers because of lack of Employment did not like their job and out of 24(40%) respondents who had joined because of personal interest only. 4% liked their job.

TABLE 12. Educational Level in Relation to whether Respondents likes her Job.

EDUCATIONAL	WHETHER RESPONDENT LIKES HER JOB				
1EVEL	+ (Yes)	- (No)	Total		
None	2(3.3%)	0	2(3.3%)		
Primary	46(76.7%)	4(6:7%)	50(83.3%)		
Secondary	8 (13.3%)	0	8(13.3%)		
College	0	0	0		
Total	56 (93.3%)	4(6.7%)	60(100%)		

Out of 50 respondents who had attended a Primary School Level of Education 4 (6.7%) respondents did not like their job and out of 2 (3.3%) respondent who had no kind of formal education 100% liked their job.

CABLE 13. Orientation to the Job in Relation to degree of supervision.

Whether	DEGREE OF SUPERVISION				
to Job	Adequate	Not Adequate	Total		
+ (Yes)	35(58.3%)	5(8.3%)	40(66.7%)		
- (No)	13(21.7%)	7(11.7%)	20(33.3%)		
Total	48(80%)	11(18%)	60(100%)		

Majority 35 (58.3%) respondents who were Orientated to the job received adequate supervision.

TABLE 14. Adequacy of cleaning Material in Relation to routine, affecting Maintenance of Cleanliness of Clinical care.

ADEQUACY OF	ROUTINE AFFECTING CLEANLINESS					
CLEANING MATERIAL	VISITOR TRAFFIC	DOCTORS ROUND	NURSE ROUND	OTHERS TOTAL		
Adequate	9 (15%)	0	0	3 (5%)	12(20%)	
Not Adequate Total	16(26.6 %)	0	0	32(53.3 %)	48(80%)	
Total	25(41.7 %)	0	0	35(58.3 %)	60(100% )	

Only 9 (15%) respondents said visitors traffic affected the maintenance of cleanliness and that cleaning materials were adequate. 16 (26.6%) respondents said visitors traffic affected maintenance of cleanliness and that cleaning materials were inadequate.

TABLE 15. Whether Head of Infection Control in Relation to where learnt about Infection Control.

WHETHER	WHERE LEARNT ABOUT INFECTION CONTROL					
HEARD OF INFECTION	INSERVI CE DPT.	WARD STAFF	FRIENDS	BOOK	TOTAL	
+ (Yes)	21(51.2 %)	15(25%)	4(9.8%)	0	40(97.6 왕)	
- (No)	1(2.4%)	0	0	0	1(2.4%)	
Total	22(53.6 %)	15(25%)	4	0	41(100)	

Of the 40 respondents who had heard of infection control 15(25%) got from ward staff, 4(9.8%) respondents from friends and 21(51.2%) respondents got it from in-service department.

TABLE 16. Whether Respondent heard of infection control in Relation to whether respondent had been for in service course.

WHETHER HEARD OF	WHETHER RE	SPONDENT HAD B FOR IN	I-SERVICE COURSE
INFECTION CONTROL	+ (YES)	- (NO)	TOTAL
+ (Yes)	1(1.7%)	41(68.3%)	42(70%)
- (No)	0	18(30%)	18(30%)
Total	1(1.7%)	59(98.3%)	60(100%)

The majority 41 (68.3%) respondent who had heard of infection control had never had any in-service and 1 (1.7%) who had heard of infection control had been for in-service course.

LENGTH OF	WHETHER RESPONDENTS HAD ANY IN-SERVICE COURSE				
SERVICE	+ (Yes)	- (No)	Total		
Below 2yrs	0	1(1.7%)	1(1.7%)		
3-4yrs	0	1(1.7%)	1(1.7%)		
5-6yrs	22(36.6%)	19(31.6%)	41(68.3%)		
7-8yrs	5(5%)	10(16.6%)	13(21.6%)		
9 & above	1(1.7%)	3(5%)	4(6.7%)		
Total	26(43%)	34%(56.6%)	60(100%)		

## TABLE 17. Length of Service in Relation to whether Responded had any Service Course.

Out of 60 respondents only 26(43%) respondents had attended an in-service course and the majority 34(56.6%) respondents had not attended an in-service course. 10(16.6%) respondents had worked for about 7-8 years had not attended in-service course.

## TABLE 18. Whether Respondent has Guidelines.

WHETHER	RESPONDENT				
RESPONDENT HAS WORK GUIDELINES	RESPONSE	Total			
+ (Yes) - (No) Total	0 60(100%) 60(100%)	0 60(100%) 60(100%)			

60(100%) respondents do not have work guidelines.

TABLE 19. Having Medical examination in Relation to frequency of having these Medical Examination.

Whether had regular	Frequency of Medical Examinations				
medical examination	Once	Twice	Thrice in Mine	Total	
+ (Yes)	9 (15%)	18 30%	0	9 (15%)	
- (No)	33 (55%)	0	0	33 (55%)	
Total	42 (70%)	18 (30%)	0	60 (100%)	

The Majority 33 (55%) respondents had never had any regular Medical Examinations and only 18 (30%) respondents had regular Medical Examinations.

#### CHAPTER 5

In this chapter the findings of the research study will be discussed and appropriate health care implications will be made. From the findings the researcher will draw up some relevant recommendations.

The sample consisted of 60 hospital auxiliary workers from the University Teaching Hospitals A, B, C, E and G block. The research study was aimed at determining the factors influencing infection control at UTH by the hospital auxiliary workers.

The age distribution of the hospital auxiliary worker was from below 20 years to above 50 years of age. Table 1 shows that majority of the hospital auxiliary workers 23 (38%) respondents are in the age range of below 20 and 23 (38%) are also in the age range of 31 - 40 years. This indicates that majority of hospital auxiliary workers lack experience required on the job.

The findings from the study revealed that majority 50 (8.3%) respondents had only attained a primary school level of education and that only 8 (13.3%) respondents had attained a secondary school level of education (Table 2). It is evident from the study that all the respondents 60 (100%) had no formal training though they later attend inservice courses. These findings are in line with the

postulation of the Hospital Acquired Infection Guidelines to Laboratory Methods of the United Kingdom, (1978) to athave stated that simple courses of instructions specifically oriented to the work of hospital auxiliary workers should be provided to give them some basic knowledge on prevention of spread of infection.

The findings of the study also revealed that 48 (80%) respondents who had attained primary school level of education are of christian religion and 2 (3.3%) who did not have any formal education did not belong to any religious group (Table 3).

Moreover out of the 60 respondents aged 50 years non had attained a secondary school level of education. The majority 23 ((38.3%) respondents were those who had attained a primary school level of education in the age range of 31 -40 years (Table 4). It is therefore imperative that in-service education be provided to these hospital auxiliary workers to enable them have basic understanding to their role of maintaining high standards of cleanliness in the hospital. These findings are in line with Noble W. C (1983) who acknowledges that education is the key in this case and time spent by the infection Control Worker in this respect is worthwhile.

The study further revealed that 9 (19.5%) respondents who had primary and secondary school level of education still lacked some basic understanding of the importance of

infection control. Table 5 shows that out of 46 respondents, 1 (2.1%) respondents who had not had any formal education only knew that the importance of infection control was prevention of infection to fellow workers and 32 (69%) of those respondents who had a primary education at least had some basic understanding of the importance of infection control.

The study further revealed that hospital auxiliary workers do acquire infections at work. The findings showed that 1 (1.7%) respondents knew that she had been ill because of her work. Hospital auxiliary workers are at risk of contracting infections whilst at work because of the nature of their job (Table 6.) This finding is highlighted by Wilson P. A (1990) who advocates use of gowns and aprons to prevent spread of infection. In another finding, it was revealed that hospital auxiliary workers do fall sick because of their work. Out of 50 respondents who had a primary school level of education 1 (1.6%) respondents do fall ill because of their work (Tablet 7). This could also be attributed to nonutilization of protective clothing whilst on duty. The findings are in line with Meer P. D et al, (1981) who revealed from his Survey in a London hospital that 9.2% of all patients admitted to hospital acquire some form of infection. Hospital auxiliary workers can similarly contract diseases whilst they carry out their procedures especially if they are not guided in putting on correct protective clothing.

The findings also revealed that out of 4 (6.7%) respondents who had answered "Yes" to the question, "Have you been ill because of your work? 1 (1.7%) respondents knew it was because of work in that the ward they worked in had patients admitted with coughs. 3 (5%) respondents said it was because they sustained needle pricks whilst on duty (Table 8) This is in line with William Blowers et al, (1960) who states that hospital environment presents a hazard of infection. It is therefore of importance that specific measures regarding the prevention and control of infection be strengthened and also focused at the hospital auxiliary workers who are highly at risk.

It is also worthwhile to note that out of 43 respondents only 4 (6.6%) respondents who had worked for 9 years and above had some basic understanding of prevention of spread of infection in the hospital. 31 (51%). had some understanding of prevention of infection in hospital (Table 9). It is therefore vital that in-service orientation course be targeted even on the hospital auxiliary workers, that have worked for a long time.

The study also revealed that 5 (8.3%) respondents do not use any kind of protective clothing when performing their procedures (Table 10). The reasons for this being non availability or erratic supply of these facilities. Respondents expressed great concern for the inadequate 47 supply of these materials which are only supplied at certain times. The available facilities were mostly used by Doctors and Nurses. This finding is supported by Noble W. C, (1983) who explained that rules and behaviour regarding prevention and control of infection e.g, wearing gloves, masks and gowns apply to all who work in hospital and not merely those at the bedside.

The study revealed that the majority 35 (58.3%) respondents did become hospital auxiliary workers because of lack of employment. Out of 24 (40.3%) respondents who had joined because of personal interest only 4 (6.7%) respondents liked their job (Table 11). However, most of them said this was because of lack of Motivational Support and guidance on the job. The study also revealed that educational level had an influence towards liking the job. Out of 50 (83.3%) respondents who had a primary school level of education, 4 (6.7%) respondents did not like their job and out of 2 (3.3%) respondents of those who had no kind of formal education all the respondents 2 (100%) liked their job. This may be attributed to lack of proper motivation by the supervising staff. This is supported by William D and McKeown, (1992) who have indicated that non professional workers like the hospital auxiliary workers need active support and respect to instill a sense of self esteem in them.

It was surprising to note that some hospital auxiliary workers are not even oriented to their job when they first join the Institution. The study revealed that 7 (11.7%) 48 respondents who had not been oriented to their work did not even receive adequate supervision (Table 13). Instead the hospital auxiliary workers have been left on their own or to other hospital auxiliary workers, for informal orientation and supervision. This state of affairs is contrary to the vital requirements for the practice of non professional workers as stated by Meers P. D, et al (1991) that orientation and supervision of hospital auxiliary workers should be continuous and an integral part of the hospital auxiliary workers practice.

The study also revealed that the hospital auxiliary workers need adequate cleaning materials to achieve high standards of cleanliness. However, these are often lacking and maintenance of cleanliness become difficult. 48 (80%) respondents said they did not have adequate cleaning materials. Sometimes they literary have to clean with plain water hence not adequately cleaning the hospital environment The practice of using plain water is frightening for it promotes multiplication and spread of infection. Moreover the majority wards are general wards where there are different infectious condition. Further more 25 (41.7%) respondents said visitors traffic disturb cleaning operations which also promotes spread of infection (Table 14). This is line with Parker and Stuckle, (1992) who state that the traffic into the ward can lead to high concentration of microbes in that environment. This

consequently presents an environment which can experience an outbreak of infection e.g, pseudomonas.

In another finding it was revealed that only 21 (51.2%) respondents had learnt about infection control at in service department. 15 (25%) respondents had obtained it from ward staff and 4 (9.8%) had learnt about infection control from friends, Table 15. This shows some hospital auxiliary workers still lack basic information on prevention of infection in the hospital. Their practice is based on information obtained from unofficial sources. The Department of Health and Social Security of Scotland, (1978) recommend that since most non professional workers such as hospital auxiliary workers often enter the hospital service without any previous training on hygiene. The Infection Control Committee should take responsibility of remedying this situation.

The study also revealed that it is necessary that hospital auxiliary workers receive in-service education. The findings of this study revealed that about 59 (98.3&) respondents had not received in-service education on prevention of infection (Table 16). The majority 19 (31.6%) respondents had served for 5-6 years without any in-service education (Table 17). In this regard it sums up by saying safe practice can be achieved by providing in-service education to hospital auxiliary workers.

It is worth noting that the findings revealed that the hospital auxiliary workers do not have working guidelines. 60 (100%) respondents said they did not have working guidelines. This creates a situation where there no set standards of carrying out procedures. The guidelines also serve as a reminder to ones routine and for reference when one is in doubt. There is thus need to have infection control guidelines for the hospital auxiliary workers.

The study also revealed that most of the hospital auxiliary workers do not have regular medical examination. The majority 33 (53%) respondent said they did not have regular medical examinations (Table 17). Medical examination help to determine fitness or unfitness of individuals. Abnormalities detected are treated promptly and this helps to improve work performance of a worker such as a hospital auxiliary workers.

## IMPLICATIONS ON HEALTH CARE SYSTEM

The study revealed that hospital auxiliary workers are very significant in the maintenance of cleanliness in the hospital environment. Therefore it is vital that they should be adequately supervised and guided in order to achieve high standards of cleanliness which are desirable.

Although most of the respondents had a primary education level they lacked basic understanding of infection control in the hospital environment. The study also revealed that

while a number of respondents knew that some procedures they carry out are dangerous to themselves, they did not adequately wear protective clothing. This may be due to the fact that these facilities are not adequate and that they lacked basic understanding of the methods of spread of infection. This is a serious finding which requires immediate attention. Considering the high rate at which the infection conditions like HIV/AIDS, hepatitis, ebola virus are spreading. This then requires that there is great need to provide in-service courses basically in order to prevent spread of infection in the hospital environment.

However, the study also revealed poor attitude of hospital auxiliary workers towards work. This may mean that there is need to provide supervising support and motivation. The nursing staff should show interest in this significant role that the hospital auxiliary workers occupy by establishing a good working relationship.

The study also revealed that visitors traffic was amongst the hospital routines that hinder maintenance of cleanliness in the hospital. The Nursing staff can control this state of affairs by limiting visitations to the recommended visiting times to enable the hospital auxiliary workers accomplish their work effectively.

Further more the study revealed that hospital auxiliary workers do not undergo regular medical examination hence they can harbour infection and consequently spread it to others. The hospital auxiliary workers do not attend regular in-service education. Without this orientation they may be doing wrong procedures which in turn may lead to spread of infection to patients and ward staff.

The study also revealed that the hospital still experience shortage of cleaning materials. This implies that there is need to work out better strategies to ensure that available resources are properly utilized in right amount at all times. Supervising staff can assist by ensuring that available cleaning materials are economised.

The study also revealed lack of hospital auxiliary workers working guidelines. This implies that maintenance of cleanliness is not tackled in the firm systematic and effective way hence making it difficult to prevent spread ofinfection. The Nursing staff should work hand in hand with the infection control team and hospital management to prepare these guidelines for the hospital auxiliary worker.

#### CHAPTER 6

#### CONCLUSION

This study was aimed at determining the factors influencing infection control by the hospital auxiliary workers at the University Teaching Hospital.

Data was collected using a structured interview schedule. The sample consisted of 60 hospital auxiliary workers who were randomly selected from the A, B, C, E and G blocks of the University Teaching Hospital. The study revealed that all the respondents had no formal  $\pm x_{0}$  in  $n_{0}$  and majority had only attained primary school level of education hence the need for adequate guidance and supervision. However, most of the respondents had poor attitudes towards control and prevention of spread of hospital acquired infections. On the other hand most of the respondents had poor practice in relation to control of spread of infection and this was attributed to lack of knowledge, poor supervision, erratic and inadequate supply of cleaning materials and also lack of support and guidance from the supervising health team.

#### RECOMMENDATIONS

have been the following recommendations made as a result of the findings of the study.

- There is urgent need to prepare appropriate working guidelines specifically for the hospital auxiliary workers.
- It is necessary to reinforce in-service educational programmes on prevention of spread of infection for the hospital auxiliary worker.
- Intensify all the possible infection control strategies in view of the inadequate resources.
- 4. There is need to provide adequate protective clothing like gloves, gowns for the hospital auxiliary workers.
- 5. There is need to introduce some allowance for the hospital auxiliary workers considering the risk involved in the performance of the job by the hospital auxiliary workers.
- Involvement of the hospital auxiliary workers in the infection control team.
- Support and supervision be reinforced so that the hospital auxiliary workers do not undertake responsibilities beyond their competence.

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# SCHOOL OF MEDICINE UNIVERSITY OF ZAMBIA

P.O. GOX 50110, LUSAKA, ZAMBIA

Tolephones: 252641 (Dena's Office) 211440 (University Teaching Hospital) 216767 (Pre-Clinical) Telegruns: Ball, Luszka.

DEPARTMENT OF POST BASIC NURSING

12th July, 1995

The Executive Director University Teaching Hospital P.O. Box 50001 <u>LUSAKA</u>

# u.f.s. Course Coordinator - P.B.N.

Dear Sir,

# re: PERMISSION TO CARRY OUT RESEARCH SPUDIES IN U.T.H.

I write to ask for your kind permission to allow 8 PEN students to carry out Research studies in your Institution. The names of the students and titles of their studies are attached.

The findings from these Research Studies will be made available to your Institution for possible implementation.

We shall be most grateful for your assistance and support.

Yours faithfully,

Patricía Ndele (Mrs) RESEARCH CUCRDINATOR - P.B.N.

o.c. Head - Plr: Director of Nursing Services

NAME OF STUDENT		STUDY TITIF
1,	Kawanje Benjamin	A study to Determine Factors Influencing Control at University Teaching Hospital by Hospital Auxilliary Workers.
2.	Mercy Mumba Somwe	A Study to Determine Factors Influencing Qualified Nurses Participation in Continuing Nursing Education at UTH.
3.	Likando Likando	A study to Determine Factors Influrncing Qualified Nurses Participation in Teaching and Supervision of Student Nurses' on Medical and Surgical Wards at UTH.
4.	Bernadatte Mwamba	A Study to Assess the Physical Preparation of Patients Undergoing General Surgery at UTH.
5.	Christine Mutati	A Study to Determine the Quality of Nurse Patient Communication at UYH. /
6.	Mwangala Grace	A Study to Determine Contributing Factors to Knowledge and Attitudes of Nurses Towards Medical Examination at UTH.
7.	Wamulume Clara	A Study to Determine Support Given to Patient's Relatives Prior to Surgery at DTH.
8.	Simuchembu Juyce	A Study to Assess the Supervisory Skills of Nurse Managers in the Provision of Quality Nursing Care at UTH.

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## University Teaching Hospital (Board of Management)

OFFICE OF THE DIRECTOR - NURSING SERVICES

P/Bag RW 1 Lusaka, Zambia Tel: 227709-21 Fax: 250305 Telex: ZA 40299

UTHB/NSM/11/2

25th July, 1995

Mr. Kawanje Benjamin P.B.N. Student School of Post Basic Nursing P.O. Box 50110 LUSAKA.

Dear Sir,

RE: <u>STUDY TO DETERMINE FACTORS INFLUENCING CONTROL AT</u> UNIVERSITY TEACHING HOSPITAL BY HOSPITAL AUXILLIARY WORKERS

Reference is made to the letter from your Research Co-ordinator dated 12th July, 1995 seeking permission to collect data.

I am pleased to inform you that permission has been granted. It is our sincere hope that the findings will be disseminated to us as well.

Wishing you the best.

Yours faithfully,

Denting

Or M.M. Mbewe (Mrs) <u>A/DIRECTOR - NURSING SERVICES</u> <u>PP/EXECUTIVE DIRECTOR</u>

MMM/al

c.c. Research Co-ordinator - PBN

## INTERVIEW SCHEDULE

NO....

10 1

THE INTERVIEW SCHEDULE FOR COLLECTION OF DATA ON FACTORS INFLUENCING INFECTION CONTROL AT U.T.H. BY THE HOSPITAL AUXILIARY WORKERS

- 1. Introduce your self to the respondent
- 2. Explain purpose of collecting data
- 3. Ensure that all questions are answered and indicated correctly by ticking or writing down the answers in the boxes provided
- 4. Information given will be kept strictly confidential.

DATE:....

SEX			יין אין אין אין אין אין אין אין אין אין	OR OFFICIAL SE ONLY
1.	Male	· · ·	× اا	
2.	Female		لـــــا رم	
AGE		•	L	
1.	Below 20 years			
2.	21-30 years			
3.	31-40 years			
4.	41-50 years			
5.	Over 50 years			
What	is your marital status?			
1.	Single		, 	
2.	Married			
з.	Separated			
4.	Widow/widower			
WHAT	IS YOUR RELIGION?		<u> </u>	}
1.	Christian			}
2.	Moslem	,		
3.	Hindu			
4.	None			}
5.	Any other, specify			}
	••••••••••			}
WHAT	IS YOUR EDUCATION LEVEL?			
1.	Never been to school			
2.	Primary			
3.	Secondary			}
4.	College			

	2	and the second
۰.	QUESTIONS ON KNOWLEDGE	
6.	HAVE YOU EVER HEARD OF INFECTION CONTROL ?	FOR OFFICIAL USE ONLY
	1. Yes	
	2. No	
	If answer is YES to-question 6, answer 7 and 8	
7.	WHAT IS INFECTION CONTROL ?	
	1. Elimination of infection	
	2. Reducing of infection	
	3. Prevention of infection	
	4. Any other, specify	
8.	WHERE DID YOU LEARN ABOUT INFECTION CONTROL?	
	1. In-service education department	
	2. Ward staff	
	3. Friends	
	4. Books	
	5. Any other, specify	
9.	WHY DO YOU THINK INFECTION CONTROL IS IMPORTANT IN THE HOSPITAL	
	1. I do not know	
	<ol><li>It prevents the spread of infection to patients</li></ol>	
	<ol> <li>It prevents the spread of infection to myself</li> </ol>	
	4. It prevents the spread of infection my fellow workers	$\Box$
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		an a		a se se constante e a que a aquera de se	
10.	HAVE OF Y	YOU BEEN ILL BECAUSE OUR WORK?	म	FOR OFFICIAL USE ONLY	
	1. 2.	Yes No			
	3.	I do not know If answer is YES to question 10, answer 11 and 12			
11.	WHAT	HAVE YOU SUFFERED FROM?	}		
	1. 2.	Diarrhoea Fevers			
	3. 4.	Coughing Any other, specify			
12.	HOW ILLN WORK	DID YOU KNOW THAT YOUR ESS WAS BECAUSE OF YOUR ?			
	••••	• • • • • • • • • • • • • • • • • • • •			
	• • • •				
13,	WHO OF I	IS RESPONSIBLE FOR CONTROL NFECTION IN THE HOSPITAL?			
	1.	Executive Director	<b> </b>		
	2.	Nurses			
	3.	Doctors			
	4.	Cleaners			
	5.	I do not know			

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· · · · · ·				
4. WHA PRE	AT METHODS DO YOU USE TO EVENT THE SPREAD OF INFECTION?			
.1.	Washing hands before and after a procedure		FOR OFFICIA	L USE ONLY
2.	Wearing of gloves	· · · · · · · · · · · · · · · · · · ·		•
3.	Throwing sharp instrument into sharp boxes			
4.	Not spitting any where			
5.	Any other, specify			
• •	* * * * * * * * * * * * * * * * * * * *			
	QUESTIONS ON ATTITUDE	{		
. WHY AUXI	DID YOU BECOME A HOSPITAL LIARY WORKER?	{		. *
1.	Personal interest			
2.	Influenced by friends		·	
3.	Lack of other forms of employment		L)	
4.	Any other, specify			
	• • • • • • • • • • • • • • • • • • • •			
DO YO	OU LIKE YOUR JOB?	}		
1.	Yes		<b>[]</b>	
2.	No			
If an not	swer to 16 is NO why			
• • • • •	* * * * * * * * * * * * * * * * * * * *			, i
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Linina (Luzia)	nn e sann ne sann a shear an	t of all defined that is not all		

18.	FOR WORK	QUESTIONS ON EXPERIENCE HOW LONG HAVE YOUR BEEN ING AT THIS HOSPITAL?		FOR OFFICIAL USE ONLY
	1. 2.	Below 2 years 3-4 years		
	3.	5-6 years		
-	÷. 5.	9 and above.		
19.	HAVE COUR INFE	YOU HAD ANY IN-SERVICE SE IN RELATION TO CTION CONTROL?		la∎ ⊂
	1. 2	Yes		
20.	IF Y( 19 I: TAUGI	OUR ANSWER TO QUESTION S YES WHAT WERE YOU HT ON?		
`	1.	Prevention of spread of infection		
	2. 3.	Sources of infection Any other, specify		
		•••••••••••••••••••••••••••••••••••••••		
<b>!1</b> .	IF YO IS NO	DUR ANSWER TO QUESTION 19 D, GIVE REASON?		
	1. 2.	Not selected to attend Did not know about it		
	3.	Shortage of staff in the ward		
	4.	Not interested.		
	5.	Any other, specify		
		••••••	 i !	· ·

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21.	WHER	QUESTIONS ON SUPERVISION RE YOU ORIENTED TO YOUR JOB I YOU JOINED THE HOSPITAL?		FOR OFFICIAL USE ONLY
i	1.	Yes		
ļ	2.	No		
23.	IF Y	ES, BY WHOM?		
i	1.	Matron		i.
	2.	Nurses		
	3.	Supervisor		
	4.	Fellow hospital auxiliary workers		
	5.	Any other, specify		
		••••••		
24.	HOW SUPE Your	DO YOU DESCRIBE THE RVISION IN RELATION TO WORK?		
	1.	Adequate		
	2.	Not adequate		
		QUESTIONS ON CLEANING PROCEDU	RBS	
:5.	ARE CARR DANG	THERE ANY PROCEDURES YOU Y OUT WHICH CONSIDER EROUS TO YOURSELF?		
	1.	Yes		
	2.	No		
6.	IF Y	OUR ANSWER TO 25 IS YES WHICH	ONES?	
	• • • •		• • • •	
		• • • • • • • • • • • • • • • • • • • •	• • • •	
	• •.• •	• • • • • • • • • • • • • • • • • • • •		
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27.	DO YOU WEAR PROTECTIVE CLOTHING?		- 1: 1	
	1. Yes			
	2. No		<b>I</b>	
28.	IF YOUR ANSWER TO 27 IS YES, WHA KIND OF PROTECTIVE CLOTHING ARE YOU PROVIDED WITH?	T		
	1. Plastic apron			
	2. Heavy duty gloves			
	3. Masks			
	4. Any other, specify		1	
	• • • • • • • • • • • • • • • • • • • •		, ,	
29.	IF YOUR ANSWER TO 27 IS NO WHY NO	OT?	· .	
	1. Not available			
	2. Not given sister			
	3. Any other, specify		1	
	•••••••••••••••••••••••••••••••••••••••			
	QUESTIONS ON RESOURCES, POLI	ICIES/GUIDELINE	s	
30.	HOW MUCH CLEANING MATERIALS DO YO THE AREA THAT YOU CLEAN?	OU HAVE FOR		
	1. Adequate	[ <del></del> ]	[]	
	2. Not adequate			
31.	WHAT WARD ROUTINES AFFECT YOUR AN TO KEEP CLEANLINESS OF YOUR AREA	BILITY ?		
	1. Nurses rounds			
	2. Doctors rounds		<del>_</del>	
	3. Visitors traffic			
	4. Any other, specify			
	· · · · · · · · · · · · · · · · · · ·	· · ·	•	

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**...** 

FOR OFFICIAL USE ONLY

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			FOR OFFICIAL USE ONLY
18.	IF Y	ES, WHERE DID YOU LEARN ABOUT IT?	
	1.	Co-workers	
	2.	In-service	
	3.	Infection Control nurse	
	4.	Any other, specify	
39.	IN Y INFE EFFE	OUR OWN OPINION, DO YOU THINK THE CTION CONTROL TEAM IN U.T.H. IS CTIVE?	
	1.	Yes	
	2.	No	
10.	WHAT The	DO YOU THINK SHOULD BE DONE TO IMPROVE CLEANLINESS OF THE HOSPITAL?	
	• • • •	······	4
	· · • •	· · · · · · · · · · · · · · · · · · ·	
	• • • •		
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THAN	K YOU		

## END OF QUESTIONNAIRE

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		8		
32.	DO CON	YOU HAVE ANY WORKING GUIDELIN. CERNING INFECTION CONTROL?	ES 	FOR OFFICIAL USE ONLY
	1.	Yes		
	2. TP V	NO		
5	1F 1	Cistor in stores		
	1.	Sister-in-charge		
	2.	Supervisor		
	З.	Fellow workers		
34.	DO Y EXAM	OU RECEIVE REGULAR MEDICAL AINATIONS?		
	1.	Yes		
	2.	No	[]	
5.	IF Y MANY TION	OUR ANSWER TO QUESTION 34 IS TIMES IN A YEAR ARE MEDICAL IS DONE?	YES, HOW EXAMINA-	
	1.	Once	<b></b> ]	
	2.	Twice		
	3.	Three times or more	 	}
<b>k</b> .	IF Y	OUR ANSWER IS NO WHY NOT ?	J	
			••••	
			• • • • • • • •	
		· • • • • • • • • • • • • • • • • • • •	• • • • • • • •	}
	DO Y TEAM	OU KNOW ABOUT THE INFECTION O	CONTROL	
	1.	Yes		
	2.	No		

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) OF QUESTIONNAIRE

INK YOU