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An Image-Based Rapid Appraisal on Infection Prevention and Control Practices- the Call to Improvement at one Hospital in Eastern Province, Zambia

Jordan Tembo[1], Patricia Mambwe[2]

[1]*Chipata Central Hospital, P.O. Box 510119, Chipata, Zambia*
[2] D*epartment of Nursing, School of Health Sciences, Rusangu University, Monze, Zambia*
Email: jordantembo78@gmail.com[1]
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ABSTRACT

Health Care facilities are special environments where patients seek treatment but can also be potential sources of infection when adherence to standard guidelines for Infection Prevention and Control declines.. The objective of this study was to measure the level of adherence to Infection Prevention and Control guidelines at one of the largest hospital in Chipata District, Eastern Province, Zambia. Data was done using qualitative methods- interviews and photography. Data Collection was conducted during the month of June, 2023. A total of 11 care points within a single hospital were visited and staff on duty interviewed. The study found deplorable standards of Infection Prevention and Control at the hospital characterized by absence or incomplete set of handwashing facilities, mixing of clinical and domestic waste and improvisation of sharp boxes which could not be declared full even when syringes were jagging out. The study recommends radical change of staff attitude, training all new staff, re-training older staff, procurement of IPC materials, reinvigorating the IPC committee.

Key Words: *Infection Prevention, Hand washing, Sharps, Clinical Waste, Domestic Waste*

Key Words: *Volunteerism, hospital, employment, labour, motivation, opportunity*

I. INTRODUCTION

Health Facilities must be considered unique places compared to a 'normal' home environment (Mesfin, Worku & Gizaw 2014: 201). They can be a potential source of infection as such, health care facilities are expected to be safe and free from harmful microbes. Health facilities are under serious responsibility to adhere to strict Infection Prevention and Control approaches at all times no matter the situation. According to the World Health Organization (2022), Infection Prevention and Control (IPC) is defined as a 'clinical and public health specialty based on a practical, evidence-based approach that protects patients, health workers and visitors to health care facilities by preventing avoidable infections, including those caused by antimicrobial-resistant pathogens, acquired during the provision of health care services (World Health Organization' (2022). IPC occupies a unique position in the field of patient and health workers' safety and quality of care, as it is universally relevant to every health worker and patient, at every health care interaction (World Health Organization 2022: xi).

The Devon Partnership NHS (2018) observes that the 'implementation of best infection control practice is a key action in reducing avoidable healthcare associated infection to both service users, staff, patients and the community' (Devon Partnership 2018: 5).'Evidence-based infection prevention and control interventions have been shown to be effective in preventing up to 70% of health care-associated infections, and having an active infection prevention and control programme can reduce health care-associated infections considerably' (World Health Organization 2022:3). In most African countries, however, social and health-care system deficiencies, aggravated by economic problems and understaffing in hospitals result in inadequate infection control practices (Nejad et al. 2011:757). Lack of IPC knowledge, communication, dedication and management support, impedes the implementation of IPC measures (Mangadze et al. 2022: 7). Breaches in compliance with Standard Precautions, such as inadequate hand hygiene and environmental cleaning, lapses in disinfection and sterilization, and incorrect use of personal protective equipment, as well as inappropriately applied Transmission-Based Precautions, namely Contact, Droplet, and Airborne Precautions results in the spread of infection to and from patients (Curless et al., 2018:4; WHO, 2011). Scholars observe that Health Care Facilities in low-resource countries, strict adherence to IPC guidelines is usually a challenge for instance, the 'process of medical waste management is poor' (Manyele & Lyasenga, 2010: 317).

Eastern Province of Zambia has a population of 2,500,000 people. The province has a total of 403 health facilities- 2 Central Hospitals, 1 General Hospital, 12 District Hospitals, 15 Mini Hospitals, 190 Health Centres and 183 Health Posts. This study was conducted at one of the high volume health facilities in Eastern Province, Zambia. The rapid appraisal was conducted to gather, analyse and report critical information on levels of compliance to Infection and Prevention and Control guidelines. The information was significant to Heads of Departments and Ward In-charges co-ordinating vital service areas

in the hospital to enable them take radical action for improvement as Greene & Wilson assert, presence of poor IPC practices, demands an urgent drive to optimise performance IPC behaviour through staff collaboration for improvement (Greene & Wilson 2022). Health Care facility improvement in the Infection Prevention and Control practices, ensures safety and quality of the environment and overall care to patients. This particularly benefits patients with already 'weakened immune systems (WHO 2019:26) to be protected from acquiring Hospital Associated Infection.

II. Materials and Methods

Study Design: The study used qualitative research approach

Study Location: The study was conducted in Chipata District, Zambia.

Study Duration: It was conducted during the month of June, 2023

Sample size : 11 hospital service areas

Inclusion criteria

1. Only wards, Emergency Out-Patient Departments and dental department were included in the study

Exclusion criteria

1. Theatre, Eye Hospital, Mothers' shelter, Mortuary, laundry, Kitchen, Blood Bank and Pharmacy were not included in this first phase of the study.

III. Procedure Methodology

The study was conducted at one health facility in Chipata District, Zambia. A total of 11 facility service areas were visited and inspected. A total of staff divided into 5 males and 6 females with 4 Degree Holders and 7 Diplomas participated. Permission was obtained from Hospital Management at the time of visit by the research team to prevent staff from tempering with the natural setting of the areas of interest, therefore affect the findings and the feedback. Data was collected during the month of June, 2023. The study employed visual qualitative research methodology. As it is said that a picture is worth a thousand words, this study used photography to tell the story of the existing Infection Prevention and Control practices at play in the selected service areas. A camera phone was used to take pictures. Only inanimate objects were captured and not human beings for strict adherence to ethical demands. The photos-story of each service area was then distilled into a Power Point Presentation later shown to Heads of Departments and Ward in-charges in a meeting. The results acted as an eye-opener of what was going on at the hospital with regard to the level of compliance to Infection and Prevention and Control Practices. The meeting ended with a strong resolve to improve the way the Infection Prevention and Control Program was being handled.

Theory

The study was guided by the Theory of Planned Behaviour. The theory was developed by a Social Psychologist, Icek Ajzen (Ajzen, 1985). The theory was developed for behaviour prediction. According to Ajzen (1985), the central factor in the theory of Planned Behaviour is the individual's intention to perform a given behaviour. Intentions are assumed to capture the motivational factors that influence a behaviour; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour. As a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance (Ajzen 1985: 181). In relation to this study, it was assumed that real-world Infection Prevention and Control practices presented in pictures would hit Heads of Departments and Ward in-charges hard with reality thus motivating them strongly to engage in a behaviour that will fundamentally change how precautions against infection are implemented in the hospital setting.

IV. Results

This was a health facility-based study, conducted in the 11 service departments of one of the highest volume sites in Eastern Province of Zambia. The departments appraised were- Labour Ward, Maternity, Gyaen Ward, Paediatric Ward, Male and Female surgical wards, Male and Female Medical wards, Emergency Medical and Trauma as well as Dental. The results have been classified into Hand Washing practices, Waste segregation, Sharps and Sharp Boxes.

HAND WASHING PRACTICES

STANDARD: Availability of functional hand hygiene facilities at points of care (WHO, 2019)

Stand, basin and liquid soap for hand washing facilities available but bucket with tap not available- Gyaen Ward entrance

Empty bucket at Emergency Outpatient Department Meaning, clients and staff were not handwashing

Bucket with tap and basin available but no liquid soap. Water in the basin not changed

From the responses, it was clear that the departments lacked a daily monitoring system for Infection Prevention and Control program as can be noted from the following excerpts generated from interviews held with staff on duty.

'I can't count the number of times I have passed here but how I failed to observe that our handwashing facility is just a skeleton' (Staff, Gyaen Ward)

'I have been busy the whole time. I did not pause to check whether the bucket had water or not' (Staff, Emergency OPD).

WASTE SEGREGATION

STANDARD: Waste should be segregated accordingly – infectious waste from non-infectious waste (WHO, 2019)

Domestic and clinical waste mixed in Ward

Clinical and domestic waste mixed. waste bin found open- Paediatric Ante/Post-natal Ward

From the responses, it was clear that the two wards lacked basic understanding, commitment and dedication to Infection Prevention and Control program. Coupled with poor supervision and absence of daily monitoring system for Infection Prevention and Control, staff were content to work in a filthy environment that paused a huge risk to staff, patients and the community.

'That's what normally happens over the weekend. There is no one to empty the bins and mothers have no option but to throw their food remnants in the disposal bin for clinical waste' (Staff, Post Natal Ward).

'Yaa! Clinical and domestic waste are mixed but this is wrong' (Staff, Paediatric Ward).

SHARPS AND SHARP BOXES

STANDARD: Sharps to be disposed in puncture-resistant container, declared full and ready for disposal at three-quarters (WHO Module, undated).

Sharps not disposed in the sharp box

An improvised sharp box looking full – Gyaen Ward

Emergency Trauma Out Patient

Sharp box available in Dental clinic but clearly looks full and has not yet been emptied while waste bin is left open

Sharp boxes available in Post Natal but very full

The emerging theme from staff responses was a clear lack of understanding about basic Infection Prevention and Control practices due to lack of training/orientation.

'I am sure it could be students who were throwing needles and syringes here not in the sharp box' (Staff, Emergency Trauma Out Patient)

'I don't know whether the original sharp boxes were ordered or not otherwise when I reported for duty, I found this improvised sharp box' (Staff, Gyaen Ward).

'We didn't check for the status of our waste bins, sharp boxes no wonder you have found the syringe jagging out'(Staff Dental Clinic).

V. DISCUSSION

The objective of this study was to conduct an audit of 11 wards and departments in order to have a snap shot of the overall status of the institutional's adherence to Infection Prevention and Control guidelines. A rapid appraisal using interviews with staff on duty and photography of critical objects were the methods used to collect data. The study was conducted during the month of June, 2023. This study found that all the sampled wards and departments did not adhere to Infection Prevention and Control guidelines. This study's finding is supported by Greene & Wilson (2022) who argue, 'despite many IPC activities being supported by evidence-based guidelines, they are not always complied' (Greene & Wilson 2022: 108). This study found that in some wards/departments, handwashing facilities were either absent, present but in an incomplete set because the bucket with tap, soap, water or a combination were missing. It is clearly evident that staff, patients and members of the community caring for their sick lacked wash facilities to perform the most basic standard precaution- wash their hands. This finding resonates with the findings of the World Health Organization WASH in health care facilities; Global Report of 2019 where it is reported that some health care facilities did not have wash facilities as such people 'face an increased risk of infection by seeking care in health facilities that lack basic necessities, including water, sanitation, hygiene, health care waste management and cleaning (WASH) services. Not only does the lack of WASH services in health care facilities compromise patient safety and dignity, it also has the potential to exacerbate the spread of antimicrobial-resistant infections' (WHO 2019:IV).

This study found that segregation of waste was heavily compromised at the institution. Ante/Post-natal ward was the worst as food remnants, paper, soiled gloves, cotton wool were sprawled on the floor obviously because the waste bin was excessively full. The environment was visibly messy and unsightly. In addition to the unpleasant smell, cockroaches, rodents, ants and mosquitos can find a breeding space. A similar study conducted at one of the university hospitals in Ethiopia found that Health Care Workers' segregation of health care waste practice was poor, characterized by some departments mixing biological and domestic waste (Mesfin, Worku & Gizaw, 2014). A Tanzanian study by Manyele & Lyasenga (2010) in some Health Care facilities, waste segregation was not conducted according to standard despite availability of specific containers for waste collection. In most facilities, sharps were found mixed with general waste during incineration' (Manyele & Lyasenga 2010: 312).

VI. CONCLUSION

Health Care facilities are special environments where patients seeking treatment come for help. This means that they bring harmful micro-organisms to points of care. Without adherence to standard guidelines of Infection Prevention and Control, a health care facility can become a source of infection to patients, staff and the community. The objective of this study was to measure the level of adherence to Infection Prevention and Control guidelines at one

of the largest hospital in Chipata District, Eastern Province. Data Collection was conducted during the month of June, 2023. The study found deplorable standard of Infection Prevention and Control at the hospital.

VII. RECOMMENDATION

The recommendations made to Heads of Department and Ward in-charges including Senior Management following the study were that Heads of Departments and Ward in-charges to develop a Daily Infection Prevention and Control Monitoring system which all staff should strictly follow. Secondly, Training in Infection Prevention and Control was required urgently for all new staff as well as old staff. Revival of Infection Prevention and Control Committee whose focus shall be to conduct inspections, identify standard and sub-standard practices followed in all care points, recommend for rewards for performing as expected and mentor those who require improvement. Procure Infection Prevention materials- sharp boxes, waste bins, bind liners, hand washing facilities, Personal Protective Equipment, and supplies thereof.

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