ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

IMPROVING COMPLIANCE IMPLEMENTATION OF INFECTION PREVENTION AND PATIENT SAFETY STANDARDS IN KUYU GENERAL HOSPITAL

A CAPSTONE PROJECT DONE FOR THE PARTIAL FULFILLMENT OF DEGREE OF MASTERS IN HEALTHCARE AND HOSPITAL ADMINISTRATION

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Declaration

I, the undersigned, declare that this capstone project is my original work and has not been presented for a degree in this or other University and all sources of materials have been fully acknowledged.

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Examiner…….

Signature……. Date……

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Acronyms

AAU:	Addis Ababa University
BSC:	Bachelor of Science
CASH:	Clean And Safe Health care facilities
CDC:	Communicable Disease Control
CEO:	Chief Executive Officer
EHSTG:	Ethiopian Hospital Service Transformation Guidelines
EOPD:	Emergency Out Patient Department
FMOH:	Federal Ministry of Health
GP:	General Practitioner
HE:	Health Education
HAI:	Hospital Acquired Infection
HP:	Health Professions
ORHB:	Oromia Regional Health Bureau
HIV:	Human Immune Deficiency
HRM:	Human Resource Management
IPD:	Inpatient Department
IP:	Infection Prevention
IPPS:	Infection Prevention and Patient Safety
PEP:	Post Exposure Prophylaxes
PPE:	Personal Protective Equipment
SMT:	Senior Management Team
WS:	Waste Sagrigation
WH O:	World Health Organization

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Abstract

Itruduction: A baseline assessment about compliance with Infection Prevention and patient safety standards at Kuyu General Hospital indicates low performance.

Objective: To increase the percentage of compliance to Infection Prevention and patient safety standards met from 37.5% to 75% at Kuyu General Hospital at the end of May 2019.

Methodology: Pre-post intervention study was used to evaluate the performance of IPPS standards. Pre-Intervention baseline data were collected in March 2019. In ordered to identify the root cause of the low compliance, the fish bone analysis was made and a decision matrix was used to have a comparative analysis of intervention strategies.After an intervention was conducted to improve the Ethiopian Hospitals Service Transformation Guideline, Infection Prevention and patient safety standards and follow-up data was collected in May 2019. The same indicator was used for the measurement such as perecentage, and frequency, the resuts are reported by Figure, and Tables.

Result: After Provision of training for staff based on national standards of infection prevention and patient safety, Compliance with Ethiopian Hospitals Service Transformation Guideline standards finfection prevention and patient safety standard increased from 37.5% to 75%, health Education from 18%to 86% and waste sagrigation from 56%to78%.

Conclusion: Provision of training for staff based on national standards of Ethiopian Hospitals Service Transformation Guideline, and policies resulted in improving stan finfection prevention and patient safety standards.

Recommendation: Full implementation of the Ethiopian Hospitals Service Transformation Guideline standards finfection prevention and patient safety strategies should be made and it is better to give better attention and continuous follow up of the overall performance of standardized finfection prevention and patient safety practices.

Key words. Infection prevention, Kuyu General hospital

CHAPTER ONE:- INTRODUCTION

1 .1 Organizationaldescription

Kuyu general hospital is located in the North Shoa Zone, Oromia region 156 km away from A.A city and 42 km from Fiche town to the North. It was established 2002 E.c as primary hospital and developed to the general hospital in 2009 e.c .currently it gives many services for respected customers. Senior Management Team (SMT) consists of Chief Executive Officer (CEO), Chief Clinical Officer (CCO), Chief Nursing Officer (CNO), Quality Head, Laboratory Head and etc. The SMT helps the chief clinical officer in developing strategic planning; Kuyu general hospital offers the following services. Such as NICU, Psychiatric clinic, Operation theater, Dental clinic, Emergency unit, TB/ART clinic, Laboratory unit, Pharmacy Unit, Labor Ward, Medical ward, surgical ward, Pediatrics ward and Obstetrics, and Gynecology ward.

Kuyu General Hospital plays a basic role to reduce morbidity, mortality, and disability and improve the health status of the people in the catchment area through providing a comprehensive package of preventive, advanced, rehabilitative and curative health services via integrated collaboration with all stakeholders. Now the hospital is giving health service for more than 302526 peoples and it has 122 clinical staff from this 1 gynecologist, 13 Gp, 14 midwives, 1 environmental health, 1 psychiatry, 3 IESO, 9 laboratories, 1 X-ray, 1 u/s, 78 nurses, and 82 supportive staff.The hospital has 54 beds, and the average length of stay is 4.57 days 82% bed occupancy rate from kuyu Hospital (CEO$HR)

Background

IPPS standards keep all hospital community safe, prevent, control and reduce Hospital Acquired Infections (HAIs), IPPS standards implementation is very much helpful.Which help health care facilities to follow the right IPPS practices in a standardized way so as in facilities with poor IPPS practices are expected to have a number of implications resulted due to the cause of poor implementation IPPS practices (2).

A hospital that adheres to standards of infection prevention is assured of protecting the right of a patient to a clean environment, especially when one is immuno-compromised. Moreover, hospitals must ensure that the safety of employees, patients, and visitors is upheld by preventing the acquisition and transmission of infections. With high standards for infection prevention, a health system is able to promote a high standard for patient care. EHSTG, IPPS standards are requirements which help health care facilities to follow the right IPPS practices in a standardized way. Poor IPPS practices can also produce financial and time loss for the people that acquire infections from health care facilities due to poor prevention practices, the EHSTG, IPPS standards are very essential standards and every hospital in Ethiopia is expected to implement them. IPPS Standard precautions are a set of recommendations to minimize the spread of infections in health care facilities and consider every person, patients and staff as a potentially infectious or susceptible to infection. And transmission-based precautions are a set of extra precautions that need to be employed with routes of transmission are not interrupted through standard precautions alone. Each of these precautions should be used in conjunction with standard precautions(8).

The main purpose of infection prevention & patient safety (IPPS) is to demonstrate a hospital's commitment to the well-being of patients and staff. This commitment demonstrates the desire to provide a quality standard of care and cleanliness within the clinical setting, assuring that every patient and staff member within each hospital is afforded his/her right to a clean and safe environment (16).

1.2. Statement of the Problem

Infection prevention and patient safety standards implementation was low according to EHRIG, IPPS standards. IPPS has eight standards expected to be met by hospitals in order to minimize the spread of pathogenic microbes among patients, caregivers and otherwise the professionals (1). Healthcare-acquired infections are common in developed and developing countries even though there is a huge disparity. High prevalence of healthcare-acquired infections was reported from many African countries like Mali, Tanzania, and Algeria with the prevalence rate of 18.9%, 14.8% and 9.8% respectively (2).

A study in Ethiopia revealed that healthcare providers in hospitals to be at high risk of exposures to hazards like blood and body fluids. It also found suboptimal practices and behavior that put both patients and health workers at significant risk of acquiring occupational infections (2).

Hospitalization for an acute illness, trauma, chronic care, or other health care conditions is a common occurrence. There were 39.2 million hospital discharges in 2005, with an average length of stay of 4-6 Days (3). Hospitalization brings associated risks, including the risk of Infection. Nosocomial infections, or hospital-associated infections, are estimated to occur in 5 percent of all acute care hospitalizations, or 2 million cases per year (4). Hospital-associated infections have been identified as one of the most serious patient safety issues in healthcare (5). Ensuring infection prevention and control and patient safety with the aim of preventing the transmission of infectious agents is the only way to reduce the occurrence of HAIs, and demonstrate a hospital's commitment to the well-being of patients and staff by minimizing the likelihood of HAIs (6).

Infection prevention and control is not only a response-specific intervention but also a vital component in the recovery phase of the health system (7).The purpose of this study was to improve infection prevention and patient safety standards in a hospital's for the well-beings of patients and staff. This to provide a quality standard of IPPS care and cleanliness within the clinical setting, assuring that every patient and staff member within each hospital is afforded his/her right to a clean and safe environment(8).

1.3: Significance of the Study

First of all, it will generate data that could be used by the IPPS committee of the hospital will use the study findings to develop and strengthen the IPPS programmers.

Secondly, it will hope that the Ministry of Health will use the study to allocate financial and material resources towards the implementation of IPPS programmers. These may include the provision of drugs for post-exposure prophylaxis, provision of policies and guidelines

Thirdly, stakeholders in infection prevention and patient safety will use the study findings to design training programs aimed at updating the staff on infection prevention and patient safety.

Finally, the project will be expected to add to the existing knowledge on infection prevention and patient safety in Kuyu general hospital. It will expect to generate knowledge that could be used to design the structure, process and outcome framework in infection prevention andpatient safety to be more effective and efficient. The project wills also a source of information for other hospitals in the country and likely to inform them about similar problems and challenges as well as on ways to address them.

CHAPTER TWO

OBJECTIVE

2.1General objective

To increase the percentage of compliancewith the Ethiopian Hospitals service transformation Guideline IPPSstandards at Kuyu General Hospital from 37.5% to 75% by the end of May 2019.

2.2 Specific objectives

To Improving health education about IPPS inpatient and outpatient department from the current 18% to 90% by the end of May 2019.

To increase the percentage of waste segregation influences infection prevention and control practices from 56% to 89% by end may 2019.

CHAPTER THREE

ROOT CAUSE

3.1 Root cause analysis

In generally there are22 different reasons when the first discussion with SMT and IPPS committee of kuyu hospital as contributors to the existence of low IPPS standards, such Poor facility management, Lack of enforcement committee, lack of staff commitment,Lack of awareness about IPPS, shortage of IPPS supplies,No regular supportive supervision ,etc. Of these with further discussion 16 of them were dropped out within a short period of time at that discussion and six of them were enrolled in the root cause analysis using fish bone tool.

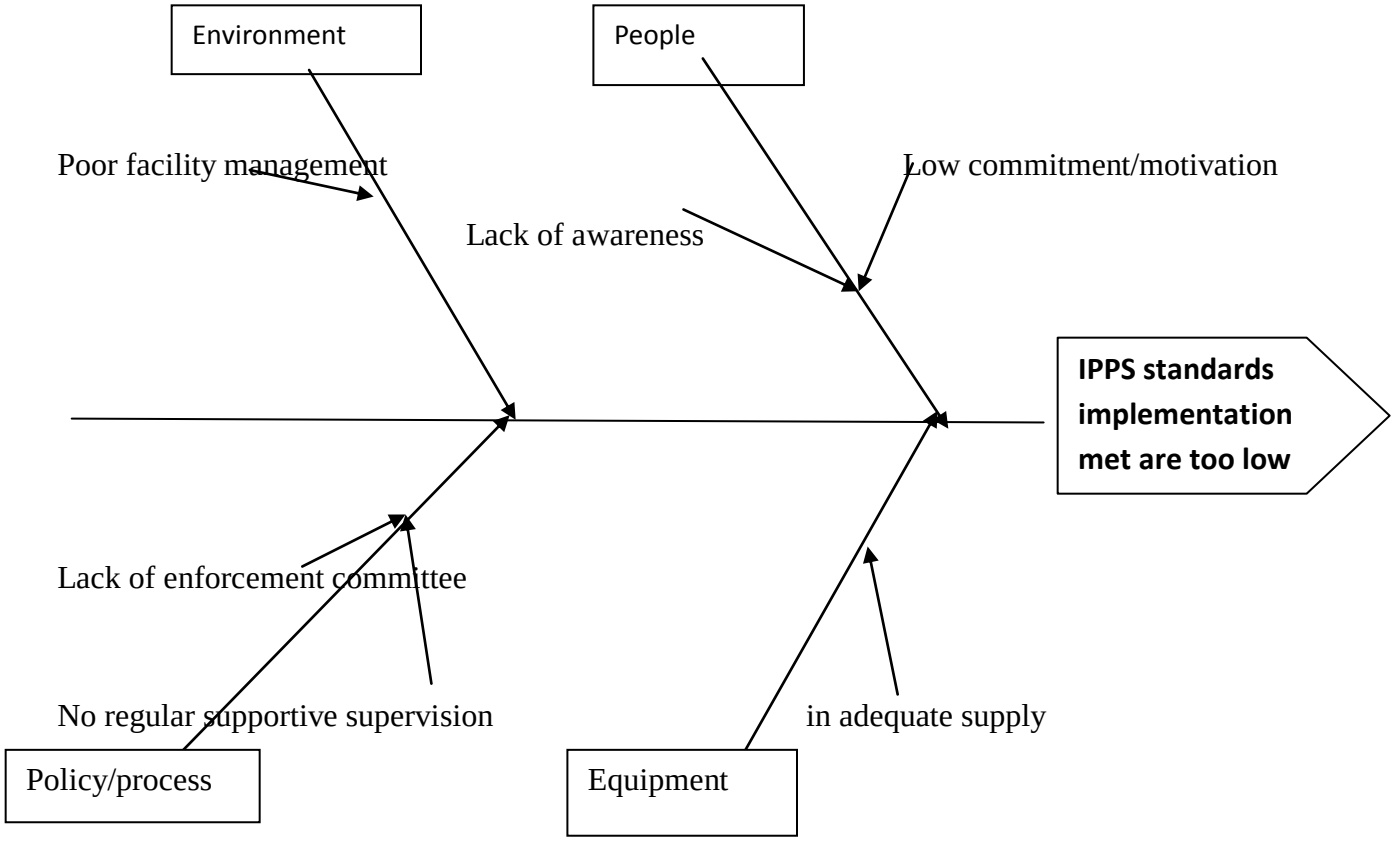

Figure 1: Fisgh bone diagram

3.2 Verification of possible root causes the problem

It is well documented that fishbone does not tell the real cause of the problem so it needs further analysis in order to know the real cause of the problem. Therefore, through discussion were conducted with key stakeholders at kuyu hospital according to which: data were collected through key informative interview, focused group discussion and checklist.Key informative Interviews and focused group participants were selected using purposive sampling technique and they were selected purposively because they were found to be familiar with and responsible to the IPPS standards under the project. The interview was conducted with SMT and all department heads. Focus group discussion was carried out with the IPPS committee to further brainstorm during the identification of the root causes.

1. **Lack of awareness**: This is proved to be real root causes of the problem most of the staff are newly employedfrom university, have no detail information about IPPSworking environment and Training has never been given to most of the staffs who were working in Kuyu Hospital, related to IPPS as key performance indicator and EHSTG.
2. **Lack of commitment/motivation:** This is contributing to be a real cause of the problem because even the material of IPPS present they were not used and no sign of learning from each other, even there is lack of motivation if the staff had enough knowledge they done well About IPPS so it is not real cause the problem.
3. **Shortage of Supplies:** On rare occasions, a shortage of Supplies IPPS Equipments, but cannot cause poor IPPS, unless not use proper, so these are not the real root cause of the problem.
4. **No regular supportive supervision/Lack of monitoring system:** This contributes to beingthe real cause of the problem because there was no assigned personnel who should check whether each of the components of infection prevention and patient safety.And no evidence that shows whether regular supportive supervision conducted like written feedback
5. **Lack of enforcement committee:**The hospital has no established an IPPS committee. There was no clear operational plan which was evaluated and approved by the committee and the SMT. So this contributed to the the real root cause of the problem.
6. **Poor facility management**: this is not the real root cause even there is no running water and shortage of rooms but there are spaces for hand washing and pump water in the hospital.

3.3 After verification these are identified as real root causes

Then we agreed up the root cause as follow:-

No regular supportive supervision

Lack of awarenessaboutinfection prevention and patient safety

Lack of commitment/motivation

Lack of enforcement committee

CHAPTER FOUR

LITERATURE REVIEW

In American hospitals alone, healthcare-acquired infections account for an estimated 1.7 million infections and 99,000 associated deaths each year. Around 32 % are urinary tract infections, 22 % are surgical site infections, 15 % are pneumonia (lung infections) and 14 % are bloodstream infections (8). In Africa, the hospital-wide prevalence of nosocomial infections varied between 2.5% and 14.8%. In surgical wards, the cumulative incidence ranged from 5.7% to 45.8% showing the need to focus on infection prevention and control strategies (9).

These problems are pretty fueled in the absence of proper infection prevention practice and shortage of infection prevention supplies. In Eastern Ethiopia, a study revealed a high prevalence of exposures healthcare workers to blood and other body fluids and frequent shortage of supplies (2).

High prevalence of surgical site infection was reported in many African countries. A Cross-sectional prospective study in Tanzania showed around 26.0% surgical site infection rate among those underwent major surgeries in Uganda Medical Centre. One independent predictor was poor infection prevention practice during the surgical intervention period (10).

The surgical site infection rate in a Kenyan University hospital was found to 7.0%. The risk factors associated with this prevalence were the high length of hospital stay and poor wound management stemmed from poor infection prevention practice (11). The hospital-acquired outbreak was reported from a South African hospital and found to have been controlled by intensive infection control measures (12). Injection ion is one of the most common health care procedures. Each year at least 16 billion injections are administered in developing and transitional countries. The vast majority, around 95%, are given in curative care. Immunization accounts for around 3% of all injections, with the remainder for other indications, including use of injections for transfusion of blood and blood products and contraceptives. The main hazards of a sharps injury are blood-borne viruses such as hepatitis B, hepatitis C, and HIV. It is not uncommon for staff to be injured by the unsafe or poor practice of others; for example, cleaners who sustain injuries as a result of sharps being placed in waste bins. Sharps injuries are preventable and learning following incidents should be put in place to avoid repeat accidents. To reduce the risk of injury and exposure to blood-borne viruses, it is vital that sharps are used safely and disposed of carefully, following your workplace‘s agreed policies on use of sharps (7).

Healthcare-acquired infections are more serious and difficult to treat as most are drug-resistant strains. The prevalence of drug-resistant pathogens has been reported from 12 different corners of Africa (12-13). A similar finding was reported from Northwest Ethiopia, Gondar University Hospital (14). As the study conducted in Tukur Ambessa referral hospital showed, the first infection prevention standard surveillance was done at October 2009 in which the score obtained was 33% and there was two other surveillance in Tukur Ambessa done in February 2010. The score was 37% which was before implementation. After implementation was started surveillance was done in September 2010, December 2010 and March 2011 the results were 57%, 69%, 89% respectively. (15) A study done by FMOH on IPPS guidelines for health care facilities indicated although the spread of infectious diseases in hospital has been recognized for many years, understanding how to prevent nosocomial infections and implementing policies, standards and practices that are successful have been more difficult. Standard precautions which apply to all clients and patients attending health care facilities and transmission-based precautions which applied primarily to hospitalized patients. (16) In waste disposal method which was indicated in checking up of possible cause six of this project and the study was done in London hospitals indicated health care wastes must be segregated immediately by the person generating the waste to appropriate color-coded waste bins, defined as with current national and local policies. (17) A study in South Africa showed nosocomial infection rate is 15% and associated attributable mortality of 5%, it could that healthcare-associated infection rank, either directly or indirectly among the most important causes of death. (18). In the case of Suhul general hospital, segregation of waste was a headache before the problem was investigated and the intervention was taken. But after the implementation of the intervention, there is a great improvement in waste segregation practices. In the case of Suhul hospital the first infection prevention score was 25% before implementation was taken and after implementation was taken the score was 25% in June 2013, 50% in July 2013 and 75% in August 2013. The result at June was without improvement because of fewer acceptances of intervention by the staff. The result was showed us a after the intervention was taken fast change was achieved. (19) Potentially hazardous waste materials arising from healthcare-related activities usually referred to as healthcare risk waste require special management and the use of costly handling and disposal arrangements to avoid causing infection or injury to those who come in contact with it and to minimize negative impacts on the environment. Because of the scale and nature of the services they provide.

Hospitals also produce large volumes of non-risk waste. This includes waste from domestic, cleaning and catering operations within hospitals, packaging from medical supplies and equipment, material that must be treated as confidential (such as copies of old patient medical records), and non-infectious medical and other equipment. Typically, waste is segregated into appropriate streams for handling and disposal — risk waste is sent for disinfection or incineration; non-risk waste is usually disposed of in landfill sites, or where suitable, may be recycled. Care has to be taken to avoid mixing risk and non-risk waste. Active management of waste in all hospitals, but particularly in those that deal with large numbers of patients and procedures, will help to ensure that costs and environmental damage related to healthcare waste are minimized and that patients, staff and local communities are protected from harm (20). Potentially infectious waste such as; sharps, cultures from medical laboratories or infected blood, carry a higher risk for infection and injury than any other type of waste. Other wastes of significant importance include; body fluids, all body parts, human tissues, placenta, and radioactive waste among others. Furthermore, improper treatment or disposal of HCW such as open-air burning can constitute a significant source of pollution to the environment through the release of substances such as dioxins, furans or mercury. Safe management of HCW is key in controlling and reducing nosocomial infections inside a hospital and ensure that the environment outside is well protected. It is possible that segregation can be achieved through training, and designing of clear standards to be followed by all players in waste generation in hospitals. Segregation consists of separating the different waste streams based on the hazardous properties of the waste, the type of treatment, and disposal methods that are applied to each. The current waste management practices observed was fair segregation posted from some hospitals (55%) that were observing good segregation practices in some departments and in some cases waste mixing was observed in some waste receptacles within the same hospitals and this needs to be captured as an attempt towards best practice. Poor segregation and poor choice of technology for treatment and disposal of waste are two problems identified that are due in part to inadequate management practices or simply because of the absence of adequate provision of waste receptacles. The results analyzed showed that Kenya was still way below the WHO recommended standards, where 80% of waste should be non-infectious and can be recommended to join the municipal waste stream, while 20% is the infectious wastes that require special waste treatment methods.The benefits of waste segregation can be realized when secure internal and external transport system for waste is provided and the segregation practice is appreciated by the technical staff and waste collector (21).

CHAPTER FIVE

METHODS AND MATERIALS

5.1. Project area and period

The project was conducted at Kuyu General Hospital found in Oromia Regional state North Shea Zone, kuyu Woreda Gabra Guracha town, from March 2019 to May 2019.

5.2 Project design

Pre-post intervention project was used to evaluate the performance of IPPS standards. Pre-Intervention baseline data were collected in March 2019. Based on the baseline, it was found out that the EHSTG, IPPS standards met were low. Therefore, an intervention was conducted to improve the EHSTG, IPPS standards and a follow- up data was collected in May 2019. The same indicator was used for the assessment of performance.

5.3 Population

5.3.1 Source population

All staffs working at Kuyu general Hospital.

5.3.2 Study population

The same health workers, clinical (17) and supportive (7) staff, before and after the intervention

5.4 sample size determination and Sampling technique

5.4.1 Sample size determination

The sample sizes of the surveyed IPPS were taken from the HPMI manual according to this Manual Sample size are Depends on the number function (5wards, OR, Nicu, 2special clinic, HR, Finance, Laundry, Laboratory, Cleaner, runner, card room, Guard, Pharmacy and 6OPDs)it takes one Participant fromeach, Which are 24 staff, the sample size determination and calculation mechanism were done based on the Ethiopian Hospital Performance Monitoring and Improvement Manual.

5.4.2 Data collection procedure

Half of a day orientation was taken from experienced masters' graduate of MHA data was collected through key informal interview, SMT discussions, focus group discussion of the IPPS committee and checklists. Key informal Interview was conducted with 24 staff of Kuyu General Hospital from different departments (17 technical staff, knew 53% about IPPS standard and 7 of them did not knew about IPPS standard from supportive staff), observation and a focused group discussion was done with IPPS committee of Kuyu General Hospital

5.5. Inclusion and exclusion criteria

Inclusion criteria: - All staff in kuyu General Hospital.

Exclusion criteria: - staffs who had less than 9 months working the Experience at Kuyu General Hospital during the time of the interview.

5.6 Study variable

5.6.1 Dependent variables

IPPS standard

5.6.2 in pendent variables

Socio-demographic variables: Age, sex, educational status, working unit, working position, working experience.

Organizational factors: on the job training, supportive supervision, adequate nurses /midwives, evaluation, working load, working environment & challenges,

Staff related factors: knowledge & Attitude

5.7Operational definition

Hand washing	Means cleaning hands with soap and running water
Waste segregation	Categorizing clinical waste
Injection Safety	Putting used sharps and needles in a biohazard box immediately after the procedure
Provision of policy and guidelines	Active IPPs, availability of policies in departments in easy to read and understand the language
Infection prevention and control practices	Hand washing, waste segregation, injection safety and provision of policies and guidelines
Government policy	Means the National Infection Prevention and Control guidelines
Staff attitudes	Negative or positive staff regard to infection prevention and control practices
Infection	Multiplication of micro-organisms in the body leading to disease
Healthcare Associated Infections	Any infection that arises as a result of healthcare, regardless of the care setting

5.8 Data analysis procedure

Descriptive method of analyzed IPPS standard at facility level, Data was analyzed using Micro Softy Excel,calculater, and Manual technique and the result was displays in Table and Graph.

5.9 Data quality management

The data collection teams were Health profession HO and Bsc Nurse worked in Fitche General Hospital (leading Hospital) was oriented on the checklist that used for data collection then supervisor was interview data collector to understand, if they were understanding about IPPS standard or not and pre-test was done before data was collected and the data quality(completeness and consistency) was checked during the data collection process by supervisor.

5.10 Ethical Considerations

Ethical approval for the capstone project was obtained from the Institutional Review Board and Research Committee of Addis Ababa University.Permission was also obtained from Kuyu General Hospital administrative offices and this was communicated to the respective Departments of the Hospital. Moreover, the objective of the project was explained to the project subjects and written informed consent was obtained from each project subjects prior to data collection. The confidentiality of the obtained data was kept in a very careful manner.

5.11 Dissemination plan

The findings of this project will be disseminated to local and external partners includingKuyu Woreda Health Office,Kuyu General Hospital, A.A UniversitySchool of Public Health, and other concerned bodies

CHAPTER SIX

INTERVENTIONS

6.1Alternative interventions/ strategies

After discussion with SMT and IPPS committees, comparative analysis of alternatives was carried out to select the best interventions for the root cause of the problem. The followings were a comparative analysis of alternatives

1. Creating awareness on IPPS- providing on the job training on IPPS for staff's to tackle the attitudinal problems by requesting a budget from the hospital.
2. Establishing a supportive supervision schedule co-operating with established IPPS committee, senior management team, IPPS focal person and all department heads.
3. Establishing the IPPS committee co-operating with the senior management team and IPPS focal person.
4. Incentivize good performer staff by materials and financial

Table 1: Alternative interventions at kuyu Hospital, Gabra Guracha, March 2019

Root cause	**Intervention**
Lack of awareness of infection prevention and patient safety	Creating awareness of IPPS
	Establishing a supportive supervision schedule
	Establishing the IPPS committee
	Incentivize good performer 'staff by materials and financial

Alternative intervention analysis

A, Creating awareness on IPPS- providing on the job training on IPPS for all staff's to tackle the attitudinal problems by requesting a budget from the hospital.

Impact: an in-service training wasless expensive to have a sustainable knowledge-based change and attaining the final standard of the 8 standards of infection prevention practices. Furthermore, that was intended to get financial help from partners which have the initiative of infection prevention practices in health care facilities. So, that was impactful I intervening this problem

Feasibility: Onsite training is found to be feasible as the training was provided for the staff at their own premises which did not require much time and money. In addition, the training was given by an inside staff member which minimized the time and financial costs of bringing outsiders for the training.

Cost: The cost of this intervention was small and could be afforded by the hospital.

Time: this intervention needed three days and was implemented with the planned implementation period.

B forming IPPS committee

Impact

Several investigations have shown the importance of creating multidisciplinary teams to plan quality improvement interventions. One of the advantages of a multidisciplinary team is that members will bring different perspectives and knowledge about problems, their core causes, and potential solutions. Members may also be able to offer different resources and encourage buy-in for the solutions among their peers. For all these reasons, identifying the right individuals to participate in implementing the IPPS improvement strategies was vital to the success of our effort. Once formed, the team has been meeting on a regular basis. If staffs have no knowledge about IPPS, forming the committee has no more impact.

Feasibility: this intervention proved to be feasible technically as there were capable and motivated staffs who were willing to be members of the committee.

Cost: The intervention was also feasible in terms of cost but less impact on the problem.

Time: Though committee work is an additional burden for the Hospital staff, the staffs Member were willing to commit their time for this activity due to the benefit it brings about.

In addition committee work is also part of their job.

C Incentivize good performed

Impact: Improved staff satisfaction, as a result, quality of service delivery will be increased that ultimately increase infection prevention and patient safetybut it is not including all staff so staff who are not motivateddo not participate.

Feasibility

In terms of feasibilityas the cost for the incentivizing head,the staff is not much but it'sless feasible.

Cost: The expected or needed cost of staff Incentivize is incomparable with that of the impact both in terms of IPPS.

Time: staff Incentivize can be implemented immediately as far as it is accepted, believed and confirmed budget availability though it is not as such significant cost.

Based on the result of comparativeanalysis alternatives strategic were

- Onsite training
- Forming IPPS committee
- Incentivize the goodperformer staff by materials and financial
- Providing Regular supportive supervision

Providing Onsitetraining: in order to approvethe different type of protocols according to the content of EHSTG Health care institution need to improve IPPS to plan quality improvementinterventions. One of the benefits of onsite training is that staff will improve their skill and knowledge about problems, their underlying causes, and potential solutions. Therefore,Kuyu general hospital has planned to give onsite training for staff.

Table 2: Comparative analysis of the strategies on IPPS standard compliance improvement Kuyu Hospital March 2019.

Create decision matrix qualitative

No.	Strategies	Impact	Time	feasibility	Cost	Total
1	Providing Onsite training	High	3Days	V. good	V. Low	
2	Incentivize the good performer	V. Good	3months	Good	Low	
3	Regular supportive supervision	Good	3Month	Good	Good	
4	Forming IPPS committee	V. Good	2Days	V. Good	Low	

Create decision matrix quantitatively: Evaluation criteria(high=5, V.Good=4, Good=3, Low=2, V.Low=1)

No.	Strategies	Impact	Time	feasibility	Cost	Total
1	Providing Onsite training	5	5	4	4	18
2	Incentivize the good performer	4	4	3	3	14
3	Regular supportive supervision	3	4	3	2	12
4	Forming IPPS committee	4	5		3	16

6.2The Best Strategy

Providing IPPS training to enhance their knowledge on the standards

CHAPTER SEVEN:-Implementations of the interventions

As part of the project

IPPS training for the staff and orienting case team heads were given based on EHSTG,The actions were established to ensure efficient organizational administration support, infection prevention committee activities, the practice of standard and transmission-based precautions, provision of health education for all patients and hospital communities. Nurses and other health care workers are part of the discussion. All the staff in Kuyu hospital was networked 1 to 5 in which one of the five is a good performer and the leader of the network and weekly network meeting are conducted. IPPS was one discussion area after it was identified as a problem and everyone was believed the problem would never be solved by an individual and/or a few staff. The other good initiation started and now in continuation was staff' weekly session in which infection prevention and patient safety standard are the main discussion points.

CHAPTER EIGHT:-RESULTS

To evaluate compliances of EHSTG, IPPS standards and determine improvement progress8 standards were used in this capstone project both in the pre and post intervention study periods.To evaluate compliances of EHSTG, IPPS standards and determine improvement progress During the intervention period the improvement of IPPS standards were less vary in April and in May three standards were met and standards improved from 37.5% to 50% as a result of intervention taken in standards 1(standard on IPPS committee and its activities) and 2(standard on training based operational plan) were met. At the end of project duration, the improvements have been achieved from 50% to 75% as a result of the standards 3(standard on standard precaution) and 3(standard on transmission-based precaution) were met. The data was collected (3x) from 24 Health workers and summarized below the table. According to EHSTG, IPPS standard was met if it was greater than or equal to 85% and Unmet if it was less than 85%.tothe analysis of data from the baseline regarding the number of met standards changed from 37.5% to 75%. The hospital provides health education to patients, caregivers, and visitors as appropriate on IPPS practices and Improving health education about IPPS inpatient and outpatient department. At the end of project duration the Health Education improvements has been achieved from18% to 86% as a result of the standards no 8 was met and the waste segregation was increase from 56% to 78% by end may 2019.

Generally, the change in the number of infection prevention and patient safety standards in Kuyu general hospital ranged from 37.5% in pre-intervention to 75% in the post-intervention(at Facility level).

Table 3: The result of the compliance of E HSTG, IPPS standards in Kuyu general hospital, March to May 2019.

Accomplishments	Time accomplished	HE		WS		IPPS	
		No. of standards met	% of standard met	No. of standards met	% of standard met	No. of standards met	% of standard met
Pre intervention	March	4/22	18%	5/9	56%	3/8	37.5%
Follow up	April	12/22	54.5%	6/9	67%	4/8	50%
Post intervention	May	19/22	86%	7/9	78%	6/8	75%
Difference between post and pre-intervention	At May	15	68.%	2	22%	3	37.5%

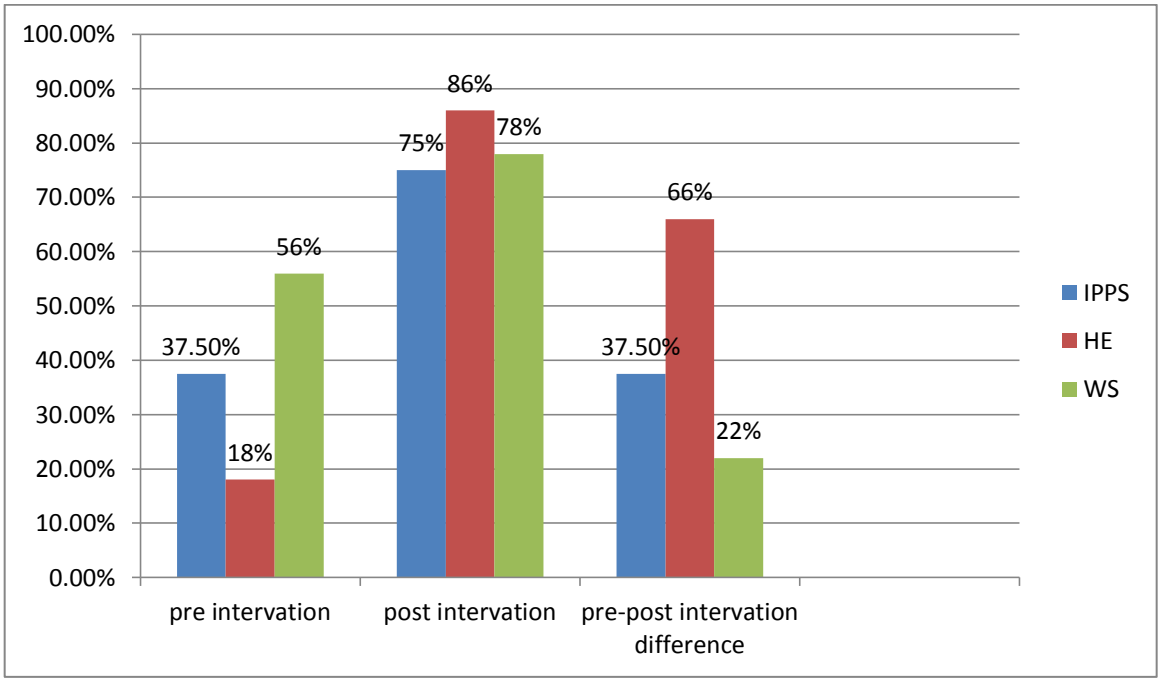

Figure 2: Compliance of Ethiopian hospital reform implementation IPPS guideline pre-post intervention in Kuyu general hospital, May 2019

Table 4: Ethiopian hospital reform implementation guideline IPPS standards in kuyu, march to May 2019

No	Standards	Pre inter		Post inter	
		Met	unmet	Met	Unmet
1	Hospital mgt to support improvement efforts in infection prevention by ensuring that operational and technical capacity financial and human resources required to adhere to IPPS guidelines are available		X	✓	
2	Designated group and/or individual(s) are in place to implement and monitor infection prevention activities	✓		✓	
3	The hospital has an operational plan for the implementation of IPPS activities. The plan follows national guidelines and includes guidance on IPPS practice and procedures and materials.		X	✓	
4	Standard practices that prevent, control and reduce risk of hospital-acquired infection are in place	✓		✓	
5	The hospital has an adequate plan to address transmission-based precautions for staff, patient, caregivers, and visitors.	✓		✓	
6	The hospital ensures that equipment, supplies, and facilities/infrastructure necessary for IPPS are available		X		X
7	All hospital staff are trained using standard IPPS training materials		X		X
8	The hospital provides health education to patients, caregivers, and visitors as appropriate on IPPS practices		X	✓	
	Total infection prevention	3	5	6	2

Table 5: Ethiopian hospital reform implementation guideline WS standards in kuyu, march to May 2019.

S.No	health care **waste management** following the national IPPS guidelines	Pre int		Post int	
		mer	Un met	met	Un met
1	Presence of color coded bins and utilization for ideally segregated waste	✓		✓	
2	practice of waste segregation,	✓		✓	
3	Presence of primary waste storage area	✓		✓	
4	Presence of well-designed functional incinerator with ash pit and proper use		X		X
5	Presence of fenced and ventilated placenta pit with tight fitting cover(if applicable)		X		X
6	Check /interview if safety boxes are disposed safely (quantified, properly stored and observed) during the incineration.	✓		✓	
7	Proper disposal of liquid wastes check presence of septic tank/ absence of leakage of the sewerage system (waste should not be discharged without treatment)	✓		✓	
8	If treatment plant is available the quality of discharge should be acceptable and checked periodically.		X	✓	
9	Presence of Signage and notification of hazardous at infection threatening service areas		X	✓	
	Total Waste Sagrigation	5	4	7	2

CHAPTER NINE

Discussions

The current experience of Ethiopian hospitals lends itself to a high risk of infection for both patient, patient families, and hospital staff alike. The essential problems that exist include: Lack of consistent running water for use in patient care and hospital sanitation, Lack of basic essential items needed for infection prevention,and Lack of a surveillance and monitoring system for infections(16).consequences of not meeting IPPS in Ethiopia was:Lack of management commitment, "Not My Job" attitude among staff, No formal leadership, Lack of funding for supplies and other resources, Lack of labor resources, No training, Lack of motivation, and Poor understanding of benefits of IPPS.Train all Staff Successful implementation of IPPS policies requires that training must be directed to all health professionals, not just limited to nursing staff or medical technicians(16).

The main purpose of infection prevention and patient safety (IPPS) training was to demonstrate a hospital's commitment to the well-being of patients, patient families, and staff. This commitment demonstrates the desired to provide a quality standard of care and cleanliness within the clinical setting, assuring that every patient and staff member within the hospital was afforded his/her right to a clean and safe environment.

The capstone project done in kuyu General Hospital was found out that the number of met and unmet infection prevention and patient safety standards. The main finding of this project is in compliance with Ethiopian hospital Service Transformation guideline standards for infection prevention and patient safety increased from 37.5% to 75 %.. At the end of project duration the Health Education improvements has been achieved from18% to 86% as a result of the standards no 8 was met and the waste segregation was increase from 56% to 78% by end may 2019.

This showed Successful infection prevention and patient safety intervention programs. Successful IPPS programs require a knowledgeable hospital staff that recognizesthe importance it holds in providing quality patient care.

Training for hospital staff should both educated staff about IPPS policies and motivated them to practice the guidelines. That means: Immediate and initial actions needed to be taken before training occurs, Clarify IPPS policies, improve the quality of patient care, promoted a safe environment for patients and staff, educated hospital-staff through interactive training, Demonstrated proper IPPS practices in training, Active staff participation, Distributed IPPS guidelines throughout hospital, Promoting ownership and Staff motivation. The hospital-acquired out break was reported from a South African hospital and found to have been controlled by intensive infection control measures (12) such an outbreak had never seen in kuyu hospital before and after an intervention takes. As the study conducted in Tukur Anbessa showed, the first infection prevention standard surveillance was done at October 2009 in which the score obtained was 33% and there was two other surveillance in Tukur Anbessa done in February 2010. The score was 37% which was before achievement. After implementation was started surveillance was done in September 2010, December 2010 and March 2011 the results were 57%, 69%, 89% respectively. In the case of kuyu General hospital the first infection prevention and patient safety score was 37.5% before implementation was taken and after implementation was taken the score was 37.5% in March 2019, 50% in April 2019 and 75% in May 2019. The result at March was without improvement because of fewer acceptances of intervention by the staff. The result was showed us a after the intervention was taken fast change was achieved and better than that of Tukur Anbessa. The intervention taken was also more significant than that of taking in Tukur Anbessa. Because the change obtained in Tukur Anbessa referral hospital was, take more money, more HR and in three-year duration whereas the project duration in kuyu general hospital was three months, less money and less HR (15). the study conducted in suhul General Hospital showed the first infection prevention standard surveillance was done in June 2013, July 2013, August 2013 the result was 25 %, 50% 75% respectively. This study was all most similar with Kuyu general hospital (19).

A study done by FMOH on IP guidelines for health care facilities indicated although the spread of infectious diseases in hospital has been recognized for many years, understanding how to prevent nosocomial infections and implementing policies, standards and practices that are successful have been more difficult. Standard precautions which apply to all clients and patients attending health care facilities and transmission-based precautions which applied primarily to hospitalized patients (10). Kuyu general hospital, then, is applied isolation precaution entailing the three precautions. These are; Air born precaution, Droplet precaution and Contact precaution.

The above precautions were not implemented before infection prevention and patient safety was not identified as a problem. But after the intervention has been taken these precautions are practiced and nosocomial infections have been expected to reduce. So the practices of isolation precaution based on Federal Ministry of Health was practiced well (16).

In waste disposal method which was indicated in checking up of possible cause six of this project and the study done Tukur Anbessa hospitals indicated health care wastes was difficult to appropriate color-coded waste bins, defined as with current national and local policies. And in the case of Kuyu general hospital, segregation of waste was a headache before the problem was investigated and the intervention was taken. But after the implementation of the intervention, there is a great improvementin waste segregation practices (19). A study in South Africa showed nosocomial infection rate is 15% and associated attributable mortality of 5%, it could that healthcare-associated infection rank, either directly orindirectly among the most important causes of death. Although the study in our hospital as a hospital in developing countries, has not been done before intervened the prevalence of nosocomial infections may occur in a similar or more than a study in South Africa (18). This study was different from the other due to: Low cost, short duration of time and with small number HR and type the intervention.

CHAPTER TEN

6.1 Conclusion

The fulfillment of IPPS standards were improved using Provision of training for staff based on national standards of IPPS intervention. The hospital provides health education to patients, caregivers, and visitors as appropriate on IPPS practices and Improving health education about IPPS inpatient and outpatient department and the waste segregation management was increase after the intervation. The intervention in general reveals that adherence to the Ethiopian hospital service Transformation guideline (EHSTG) can improve quality care in health facilities.

6.2 Recommendation

- The hospital has to strengthen the further follow-up and sustainability of the project.
- The hospital has to plan to be able to equip the shortage of IPPS equipment by itself from its revenues so far.
- Regular assessment and supportive supervision about IPPS by SMT and ORHB.
- The hospital has o training for all staff according to EHSTG.

10.3 Strengths and Limitations

10.3.1 Strengths

- Detailed and rich data can be gathered in a relatively easy and unexpensive way
- Allows interviewer to establish rapport with the respondent and clarify questions
- Can raise awareness, interest, and enthusiasm around an issue
- No need for large sample size

10.3.2 Limitation

- Selecting the right key informants may be difficult so they represent diverse backgrounds and viewpoints
- May be challenging to reach and schedule interviews with busy and/or hard-to-reach respondents
- There was no way of controlling the Health worker applied IPPS if data collator was not presented.

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ANNEX

Annexa:Ethiopian hospital reform implementation guideline infection prevention and patient safety standardsat Garba Guracha from March to May 2011

No	Standards	Met	Unmet
1	Hospital mgt to support improvement efforts in infection prevention by ensuring that operational and technical capacity financial and human resources required to adhere to IPPS guidelines are available		
2	Designated group and/or individual(s) are in place to implement and monitor infection prevention activities		
3	The hospital has an operational plan for the implementation of IPPS activities. The plan follows national guidelines and includes guidance on IPPS practice and procedures and materials.		
4	Standard practices that prevent, control and reduce risk of hospital-acquired infection are in place		
5	The hospital has an adequate plan to address transmission-based precautions for staff, patient, caregivers, and visitors.		
6	The hospital ensures that equipment, supplies, and facilities/infrastructure necessary for IPPS are available		
7	All hospital staff are trained using standard IPPS training materials		
8	The hospital provides health education to patients, caregivers, and visitors as appropriate on IPPS practices		
	Total infection prevention		

Annex: b

Check-list developed by the investigator Infection prevention committee is lead IPPS activities kuyu Gabra Gurach, March toMay 2019

	Interview question	Response	Comment
101	Has infection prevention committee existed? Based on the EHSTG standards	Yes No	
102	The committee has a clear and achievable operational plan	Yes No	
103	The regular monthly meeting was conducted by the committee. Checked in the minute	Yes No	
104	Monitoring of IPPS activities is conducted and reported to SMT.	Yes No	
105	By the checklists at the end of chapter 7 of ESHTG standards	Yes No	
106	The action plan was developed to fix identified gaps	Yes No	
It was due to less attention given by the administration			
201	There is enough budget allocated to IPPS activities	Yes No	
202	Approved and declared budget issued for IPPS practices	Yes No	
203	There is regular IPPS assessment conducted by the hospital administration	Yes No	
204	Feedback was given to IPPS committee from SMT /QIT	Yes	

		No	
205	IPPS focal person is a member of SMT to discuss and give a response when IPPS issues are raised in the team	Yes No	
206	There is a clear and regular schedule for sanitation campaign decided by SMT and all staff participates	Yes No	
207	There is a training plan to support IPPS and the plan is implemented as of its time table (check annual plan and training profile at HRM)	Yes No	
208	There are sufficient PPE and PEP corner for staff safety	Yes No	
Unavailability of clear and achievable operational plan for infection prevention			
301	Is there an operational plan and policy prepared by the IPPS committee?	Yes No	
302	Is the plan and policy national guideline based?	Yes No	
303	Is the plan commented and approved by the senior management team?	Yes No	
Lack of commitment and negligence of clinical staff			
401	There werethe strict provision of health care information about IPPS to patients, visitors, and caregivers in the IPPS by health care workers	Yes No	
402	Standard precautions are defined and are implemented by the health care worker	Yes No	

403	Transmission-based precautions are defined and are implemented by health care workers	Yes No	
404	Existed IPPS resources /equipment are used wisely to prevent health care injuries	Yes No	
405	Proper health education is provided based on the program set in the service area	Yes No	
406	Heads and other health care workers practice proper hand washing practices	Yes No	