Type of article: Study Protocol

ASSESSMENT OF SERVICES AT TERTIARY CARE HOSPITAL LOCATED IN CENTRAL INDIA, USING 'KAYAKALP INITIATIVE TOOL'.

Abstract:

Background: Kayakalp is an innovative initiatory started by the Health and Family Welfare Ministry through Swachh Bharat Abhiyan campaign on 15th May 2015. These instructions concentrate on advancement of desirable schemes for housekeeping facilities, pest control procedure, water sanitation, appointment & tutoring of manpower, advancement and accomplishment of appropriate cleansing procedure in terms of protocols/ Standard Operating Procedures (SOPs), powerful management and inspection by the employees and inherent Machinery in the treaties linked with an organizational framework which places a bonus on excellent cleaning services and sanitary facilities. This study aims to describe the experiences and knowledge based on assessment of Acharya Vinoba Bhave Rural Hospital, Sawangi (Meghe), Wardha District using this tool.

Objectives:. To assess and document hospital upkeep, Sanitation, Hygiene Practices, Hygiene Promotion and to study Handling of Biomedical Waste, Infection Control and Hospital Support Services.

Methodology: This cross sectional hospital based study ~~that~~ will be conducted at Acharya Vinoba Bhave Rural Hospital, Sawangi (Meghe), Wardha District.

Apart from observation of various practices and Processes, the participants to be interviewed will be Nursing staff in-charge in different wards along with Biomedical engineers, Administrative officers and beneficiary patients. For Quantitative data collection, a kayakalp checklist will be used. Data will be collected through observation, staff interview, record keeping, and patient interview forms as per Kayakalp Initiative Tool.

Results: This study would help to understand current hospital sanitation procedures, hospital hygiene, infection prevention, general maintenance, waste management, and support services, etc. and will help to improve services based on findings of the study so as to improve satisfaction of population catered by hospital and provide an ideal working environment for all stakeholders.

Conclusion: This work will assist in improving hospital/facility management and will aid in improvement of sanitation and hygiene practices, it will also improve overall satisfaction of all stakeholders after due implementation of changes suggested at the end of study.

Keywords: Kayakalp, Facilities Management, hospital hygiene, Swachh Bharat Abhiyaan.

Background:

Health ~~–~~ care institution is an organization where health services are utilized by people of diverse age, gender, socioeconomic status, and ethnicity. '*Kayakalp'* initiative, a component of *Swachh*

Bharat Abhiyan movement, was launched by the Ministry of Health and Family Welfare on 15th May 2015. These guidelines are categorised as follows into six separate themes: Healthcare facility maintenance, Sanitizing and cleanliness, Dumping of waste, Disease prevention, Hospital assist facilities, and Sanitary encouragement.

This initiative aims to boost the functioning of public health~~-~~care facilities. (1) Such regulations concentrate on reinforcing and streamlining certain areas like infrastructure management, improvement of appropriate rules for maintenance department, pest-controlling measurements, waste water purification, workforce distribution & training, improvement and application of proper cleaning process by means of rules/ Standard Operating Procedures, appropriate organizational supervision and control and in-built contract processes combined with an organizational framework that places a premium on good housekeeping and sanitation. (2)

'Regulations for the formulation of Kayakalp' have been introduced as a tool for implementation and as a document for seeking solutions to the problems found., These recommendations are intended to fulfil the Indian Public Health Standards (IPHS) guidelines for secondary health care facilities. However these can be used on the some discretion for primary healthcare centers and tertiary care facilities as well.

This instructions have been established following a thorough documentary research of the ongoing leading exercises into the field of medical centre sanitization, cleaning services, disease control, overall maintenance, management of waste, and supportive services etc.; and related excerpts from the similar was adjusted with appropriate amendments in accordance with the demands of government health facilities. These policy guidelines are universal in character and could be accepted by the medical institution wisely according to their extent of the services. (2) Kayakalp Yojana, if once implemented it causes effective infection control within the facility leading to better heath outcome.(3) Medical treatment related diseases or hospital acquired infections ~~surroundings~~ are the commonest side effect in delivery of health care globally. Several hundred millions of people ~~suffering~~ are impacted by hospital acquired infections globally year after year, resulting ~~to~~ in great fatality and economic harm for healthcare system.(4) In the developing nations, the extent of the difficulties remain undervalued or even unidentified mostly due to hospital acquired infection detection is complicated and monitoring activity to lead treatments needs skill and funding.(5)

Under the team KAYAKALP, the facilities for safe supply of water, cleanliness, medical care waste handling, sanitary and environment purifying substructure, are ensured in a hospital. 'Health care facilities' encompass total officially accredited institutions that delivers medical treatment, comprising primary (dispensaries and health centres), secondary, and tertiary (district or public-sector hospitals), general and independent (comprising faith-run), and provisional infrastructure built for urgent conditions (e.g., cholera treating facilities). They may be situated in metro cities or villages.(6)

Rationale:

Assessment using Kayakalp tool is first of its kind for holistic assessment of hospital and will provide valuable insights so as to improve the services of hospital in terms of health care management, sanitization and cleanliness, disposal of waste, disease prevention, health care services, and encouragement for cleanliness.(avoid repititions) as assessment using kayakalp initiative tool has not been conducted in our tertiary care hospital till date.

'Cleanliness and hygiene' in health care facilities not only plays an important role for disease prevention but also additionally promotes mouldable behavioural patterns amongst the patients and visitors regarding hygiene and sanitization at their own houses and workstation. Kayakalp is a powerful tool of unbiased evaluating and assisting the transition of entry/procedure with the anticipated results and effects with excellence finally verified by the patient experiences. Considering this, the proposed study is planned to assess services at tertiary care hospital, in central India.

Aim: To assess various services provided by tertiary care hospital using Kayakalp initiative tool.

Objectives:

1. To assess and document hospital upkeep & sanitation, hygiene practices and hygiene promotion.
2. To assess handling of biomedical waste & infection control and hospital support services.
3. To suggest the measures for improvement of services based on the study findings.

Methodology:

Study design: This study will be a hospital based cross sectional study.

Study Setting: The study will be conducted in Acharya Vinoba Bhave Rural Hospital (AVBRH), at Wardha district of Maharashtra state. The hospital is a 1525 bedded completely equipped tertiary health care hospital attached to a medical teaching institute and located in central India. It is supported by the advanced diagnostic , imaging and therapeutic, facilities such as Colour Doppler, Computerised Tomography scan, MRI, Central Clinical Laboratory, super speciality services like Knee Transplantation, Angioplasty, Test tube baby centre ,..etc. Moreover the hospital is resourced with a state-of-art operation theatre connected Intensive Care Unit , Intensive Critical Care Unit, Paediatrics Intensive Care Unit. The hospital has a hospital infection control committee and biomedical waste management board.

Study Participants: The study participants will be key administrative staff of hospital, in-charges of various facilities and other stakeholders as per Kayakalp initiative tool like staff nurse in charge of different wards along with biomedical engineers, administrative officers and patients in AVBRH , Sawangi (Meghe), Wardha District.

Study size: The study that will be conducted among sister in-charge in 49 different wards, 15 OPDs along with 2 biomedical engineers, 6 administrative officers, 1 sanitary inspector and patients. A total of around 140 stakeholders will be interviewed.

Variables:

1. Knowledge and attitude of infection control, hygiene promotion, support Services
2. Practice and compliance of hospital upkeep, waste management, hygiene Promotion

Study Duration: One year

Selection criteria for subjects under study:

Inclusion criteria:

- All concerned stake–holders like Chief Medical Superintendent, Nursing Incharges of respective wards, Biomedical Engineers, Sanitary Inspectors, Civil Engineers, Administrative incharge of the respective departments and patients randomly chosen from each wards will be included.
- Study participants who will give consent for participation in study will be included in this study.

Data collection tools and procedure: For quantitative data collection, a pre-designed and pre-structured questionnaire of Kayakalp initiative tool will be used. This data collection tool will be translated into vernacular language (Marathi) and after retranslation it will be validated with the help of language experts. Data collection tool consists of the various heads like Healthcare facility maintenance, Sanitization and cleanliness, Dumping of waste, Disease prevention, Hospital assist facilities, Sanitary Encouragement

Data sources/ measurement:

The approval has been obtained from the Institutional Ethical Committee, followed by the permission of Chief Medical Superintendent. Later the respective heads/incharges of hospital, wards, ICUs, biomedical waste management unit, etc will be approached for assessment based on Kayakalp tool. Four assessment modalities will be used as follows:

1. Direct Observation (DB): – This information is gathered through observation. Various parameters that will be assessed by the principal investigator through observation are level of cleanliness, display of protocols, landscaping, signage etc.

2. Staff Interview (SI): - Information will be obtained by interaction with concerned staff to assess their knowledge and current practices being followed by them, their competencies regarding various essential skills (like wearing gloves, hand-washing, following aseptic precautions,..etc) by direct interview method. In addition, self-administered Kayakalp assessment tool will also be provided to them.

3. Review of records and documentation (RRD): - Where information can be obtained from the records available at the facility. Ex: Availability of housekeeping checklist, BMW management registers, culture report for microbial surveillance, and meetings of Infection Control Committee (ICC) will be ascertained from appropriate authorities.

4. Patient Interview (PI): - Interaction / discussion / interview with either patients or their attendees will be carried out to determine their satisfaction on quality of health care services rendered and overall hygiene at hospital.

Analysis plan:

An assessment protocol and scoring system for kayakalp includes 3 categories i.e. thematic area, Criteria and Checkpoint.

The thematic area includes broader aspect of Swachhata, called as pillars of Kayakalp namely,

A- Healthcare facility maintenance

B- Sanitizing and cleanliness
C- Dumping of waste
D- Disease prevention
E- Hospital assist facilities
F- Sanitary encouragement

Criteria- There are fixed number of criteria that have specific attributes in respect to individual themes.

Checkpoint – It in the lowest and most tangible unit of assessment. A score is awarded by assessors on checkpoints into specific requirements in the facility. Each checkpoint has a unique criteria.

After check list tool is completed it will be assessed by using following parameters.
Complete adherence = 2 points , Incomplete adherence =1 point ; No adherence = 0 point

Bias:

1. Kayakalp assessment tool will be a self-administered questionnaire to be provided to concerned stakeholders working in hospital. For many questions/parameters the respondent might need to recall leading to a chance of recall bias.
2. In an interview based data collection amongst the hospital staff and patients, there may be a chance of Interviewer/variance bias which results from holding preconceived judgement about interviewee, consciously or unconsciously.

Statistical methods: The quantitative data will be entered in spreadsheet. Frequency distribution, percentage, total score will be calculated and inference will be derived as per Kayakalp checklist tool. The qualitative data will be transcribed, coded, categorised into themes and analysed.

Expected Outcomes/Results:

This study will help to get an insight about existing practices in the field of hospital sanitation, hospital up–keep, infection control, general maintenance, waste management, and support services etc. It will also help to improve services based on findings of the study, increase satisfaction of population catered by hospital and provide an ideal working environment for all stakeholders.

Discussion:

A number of research studies related to health centre or hospital assessment were reviewed. Mahendra Chouksey et al (2019) in a study assessed the sanitation & hygiene on the basis of Kayakalp tools in tertiary care hospital of G. R. Medical College, Gwalior, MP **and f**ound that

the sanitation and hygiene Practices in the hospital were not satisfactory. As the first health care idea is '*to do no harm'*, it is crucial that our health-care institutions are safe for the hospital staff and patients and it guarantee compliance with infection prevention standards.(3) Study conducted by Omair Anwar et al (2013), assessed of Control of Patients Waste in Hospitals for the public and private sector of Faisalabad City, Pakistan (Allied hospital, DHQ hospital, National security hospital, Aziz Fatima hospital, Main trust hospital, Gulam-Abad hospital, Cardiology centres, Faisal hospital.) found that 71.5% of the Participants had no experience of garbage recycle . In Pakistan, Environmental Protection Agency (EPA) developed their own laws for the correct biomedical waste management. EPA Sent their regulations and noted their laws and regulations to every hospital. But the data above showed that Respondents were unaware of the environmental protection act, it demonstrates that such a condition may be detrimental to the environment.(7) An Observational Study conducted on 2016 by Parvathy T Somaiah, Shivaraj B Mallappa on A Report on needs assessment of Procedures to manage infections at a district hospital in southern India, using Kayakalp tool (Approaches in the District Hospital using the Kayakalp Tool for Evaluation.) Found that Workers in the hospitals were not sufficiently aware of the management and control of spills. Separation and barrier nursing were well established in the atmosphere of the facility. The infection control program was implemented in the facility, but the same surveillance was not appropriate. There were no Hospital Acquired monitoring works or programs in the hospital(8,9). Few of the related studies addressed the burden (10-12) and the needs of appropriate management tools(13-15) in healthcare sector(16-20).

Limitations: Since the study is planned to be conducted only at one tertiary care hospital findings shall be applicable to this institute only with limited external validity/ generalizability for findings.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors

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