



(RESEARCH ARTICLE)



Costing models for hospital infection control program in healthcare set up: ABC our experience

KS Sarala, BS Nandakumar * and V Narendranath

Department of Hospital Administration and Department of Community Medicine, Ramaiah Medical college hospital, Bangalore.

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Abstract

Background: Activity based costing (ABC) model for health care associated infections is very much important for patients, health care providers, and payers to make a rational and informed decisions about the patient pertinent care and also for the allocation of resources. The objective of the present study is to develop a ABC model to determine the various cost factors involved in treating health care associated infected patient. The costs for individual health care associated infections will be based on calculating both the direct cost and the indirect cost which are associated with the disease.

Objectives: Assessing the various factors contributing to the development of ABC costing model for HAI and develop a costing model taking all the possible factors into consideration.

Methods: Defining of the activities and process of HAI for the given institution as per the standard regulatory / recommendatory guidelines. System analysis and costing of process for the various activities for implementation of the HAI system.

Results: Various parameters for HAI as per ABC model has been explained for health care associated infections.

Conclusion: ABC Costing model helps to identify the factors responsible for setting health care and the cost involved in it.

Keywords: Costing models; Activity Based Costing models; Model for health care associated infections

1. Introduction

Healthcare-associated infections (HAIs) are additional burdens on individual hospitals and healthcare systems. Excess costs of Health care associated infections are related to the additional diagnostic tests and treatment, additional hospital days, and post discharge complications, pharmacy charges, loss of man power days and mental stress related to more number of hospital stays. Hence the economic burden related to HAI still remains a challenging issue. Developing a ABC costing helps to control the cost and assess their various parameters involved in treating HAI.

1.1. Importance of ABC Models in Health Care Associated Infections

Development of costing models helps to set up HAI control and monitoring systems in tertiary care hospitals. Variables included for model generation are dependent and independent variables.

1.2. Activity based costing model

Activity-based costing (ABC) model is methodology which identifies the various activities in any organization and assigning the cost for each of the activity with the available resources, products and the various services. Activity

* Corresponding author: BS Nandakumar

Department of Hospital Administration and Department of Community Medicine, Ramaiah Medical college hospital, Bangalore.

costing model utilizes the cost drivers to attach activity costs to outputs. Money is spent on all activities indirectly. Activity based costing models has been widely used by the managerial team which serves as a base for planning and implementation. ABC also helps the managers to take mix decisions, calculation of product price, and profitability analyses Activity based costing model helps to identify the product output by using the various cost drivers . In study area, ABC method was used to determine costs of patient who had HAI, extra cost calculated for the price of services. Activity based costing has been found to be a superior method in evaluating the decisions. ABC when applied by the managers there is greater improvement and employee satisfaction.

2. Methodology

Various models are available to assess the cost related to the Activity based costing model helps to identify the organizational activities describing the components related to the system, helps to arrive at the optimized cost apportionment for HAI system. ABC model also helps us to monitor and to assign cost to the HAI.

ABC template developed considering the various parameters required for setting cost related to set up a health care organization related to HAI.

2.1. Study Area

Analysis of the various parameters were done in Ramaiah Medical College Hospital, which is super specialty territory care hospital. It has well planned 85 ICU beds, 13 operation theaters with well-equipped Radiology and Laboratory services

2.2. Main objectives of this research

- Describing the steps in ABC.
- Activity Based Costing Model for Health Care Associated Infections

3. Describing the steps in ABC

There are different ways of monitoring the process for health care associated infections in any organization. There will be a different monitoring implemented /adapted by every organization which is unique and different from other organizations. Polices and standard operating polices also vary with organization. Describing each component is necessary and it is at most important in any organization.



Figure 1 Steps in Activity Based Costing Model for HAI

Different steps are explained below in detail

3.1. Step 1 Describing the components of HAI system

- HICC committee
- Infection control nurse
- Link nurses or surveillances
- Ward in charges
- Quality managers

- Nurse educators
- Isolation ward nurses
- Housekeeping
- Housekeeping – Supervisors
- Dietician
- Food handlers

3.2. Step 2 Arriving at optimized cost apportionment for HAI system

3.2.1. Personnel

- Microbiologist
- Surgeons
- ICU consultant
- Nodal officer

3.2.2. Systems for the control of HAI

- CSSD
- Other related activities

3.3. Step 3 Monitoring of HAI

- Air sampling
- Water sampling
- HEPA filters (replacement /yr.)

3.4. Step 4 Developing Regression model for estimating the average cost

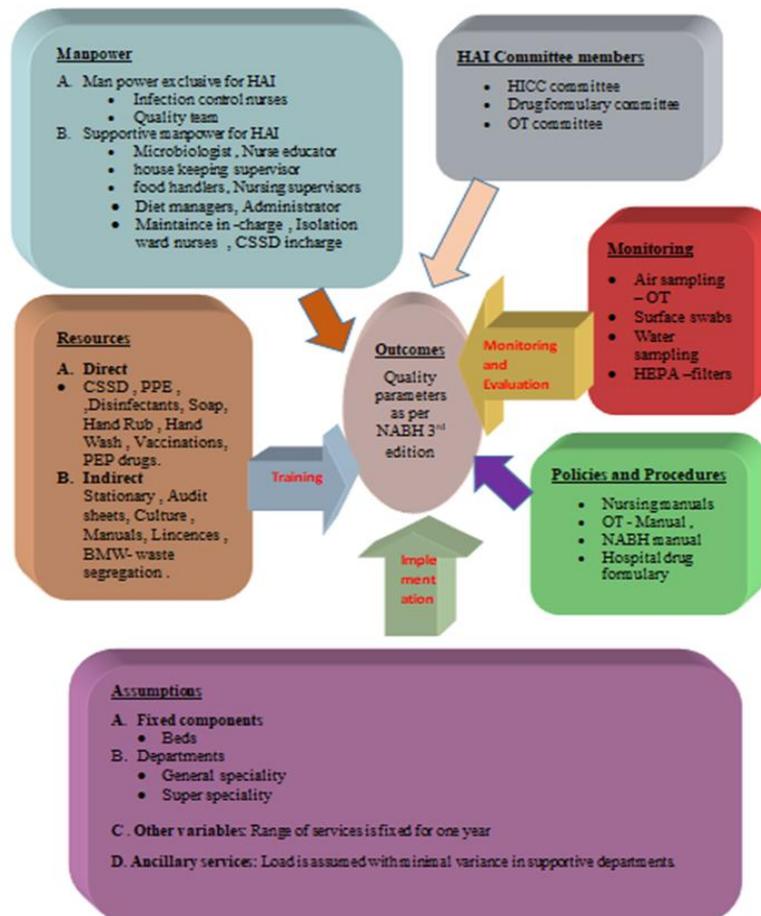


Figure 2 Activity Based Costing Model for Health Care Associated Infections

3.5. Various Disinfectants /PPE used to reduce HAI

- CSSD
- Gloves
- Betadine
- Spirit
- Lysol
- Harpic
- Hand rub
- Hand wash
- Action plus
- Floor cleaner
- Glass cleaner
- Hypo chloride solution
- Isopropyl alcohol
- Bleaching powder
- Black phenyl
- Vim powder
- Spirit
- Wokadine
- Beta dine scrub
- Mask

4. Discussion

ABC model can be applied in health care setting where the resources are minimal and these models can be used for appropriate training and teaching methods. ABC approach provides useful information with diverse applications. A study conducted Duffy (2008) suggested that ABC method is very suitable method and applicable model for decision-making by many of the management people.

5. Conclusion

Activity based costing model has been used to arrive at the cost for health care providers for calculating the average cost / day / bed. Various variable factors will be arrived at the costing model to determine the cost / day.

Compliance with ethical standards

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