**SOFTWARE QUALITY MANAGEMENT**

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# Introduction

Hospital management and quality practices are some of the crucial practices that are looked at in healthcare and are evaluated for better services. The assignment is associated with software quality management in healthcare services and implementing an effective structure.

# Part 1

## Requirement specification

The basic requirements in the hospital in the sterile services department consist of tools and medical equipment. Apart from these, every tool has a unique identification number and regarding the identification, a scanner is needed to place them in the inventory. The used trays are sometimes changed or disposed of and that depends on the medical scenarios and in these cases, active log books need to be maintained (Alharbe, 2020). The major requirement in managing the sterile services consists of keeping account of instruments, activities along with types of sterilization needed in the equipment used. While keeping the details of all the equipment and maintaining them in the inventory, a system is needed to keep track of all the activities, user names, and ids along with the details of machines used in the sterilization process.

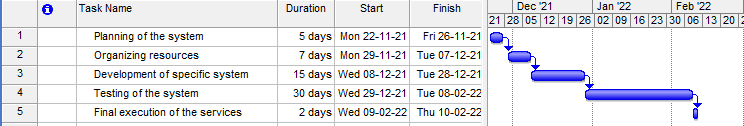
These records can be maintained with the use of software platforms such as the RMS cloud system and this allows the hospital authority to keep track of all details regarding the sterilization process (Ghasemi *et al.* 2017). Equipment can be managed with the use of this platform as this allows managing all the equipment seamlessly along with maintaining the workflow of reservation. The platform even provides a section to estimate the charges of the equipment used in the hospital authority wants to apply charges.

## Designing

Designing the table to maintain the logs can be created in the RMS software platforms and the table will look like

| **Hospital Management System**   | **Dashboard** | **Property management** | **Reservation flowchart** | **User ID** | **Equipment Disposal** | **Rates and pricing** | | --- | --- | --- | --- | --- | --- | | The dashboard will be showing the details of the activity in a graphical manner in the RMS interface | Managing the property is associated with managing the resources of the hospital. This can be used in keeping records of usage of equipment | The reservation flowchart shows the allotment of the medical equipment along with the details of the patient for whom the equipment is taken from the inventory. | User Id is for all as the worker or hospital staff that is issuing the item, the patient for whom it has been issued, and the Id of the worker who has taken the equipment for sterilization. | Sometimes equipment is disposed of regarding the cleaning process and the logs can be maintained with details of the maintenance staff along with the issue date and time. | Rates and pricing details are for the hospital authority and it will be helping the authority in getting the final rate automatically. | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

## Planning

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**Figure: Gantt chart for planning and Execution process**

(Source: Created by the learner)

## CoCoMo model

CoCoMo model is created based on the development and time details. In this case, it is considered to have a size of 400 KLOC.

Hence, it is

E =

D =

In Organic, E = 2.4 = 1295.31 PM

D = 2.8 = 38.07 PM

Semi-embedded, E= 3.0 = 2462.29 PM

D = 2.5 (2462.79) = 38.45PM

Embedded, E= 3.6 = 4772.81 PM

D = 2.5 (4772.81) = 38.45 PM

## Social, ethical, and Logical review

The planning process is carried out based on social standards so that every segment of society can access the services. Regarding the legal procedure, the implemented services should be certified. Logical reviews need to be collected from the user as all the implemented services are done to make the process effective and convenient.

# Part 2

## Process description and quality control

Quality management and control process in case of a sterilization process of a hospital is to be created based on the activities along with the involved factors (Swetha *et al.* 2019). Quality of the services is managed in multiple steps and that includes:

* ***Identification of goal*** - the goal here is to provide good and sterilized medical services to the patients and that will ensure security regarding the transmission of diseases.
* ***Identification of success factors* -** critical success factors are associated with the activities consisting of providing equipment at need and maintaining them for further uses.
* ***Feedback and rectification*** - Feedback from the patients is to be collected as they can provide the details of the scenario and based on the provided feedback, services need to be improved.
* ***Implementation of improvements*** - Improvements such as better cleaning and sterilization, a proper hospital management system along with the implementation of quality management software.
* ***Implementation of Quality management software*** - Quality management software acts like a logbook that holds all the details regarding the provided services (Amini Zadeh *et al.* 2019). Good quality management and assurance software platforms are to be implemented such as TRACKMEDIUM, as this is an ISO 9001 certified platform.

## Review on quality assurance procedures

The quality management procedures consist of the activities that are being conducted in order to maintain the service quality provided in medical practices. This process is executed in several steps and it includes:

* ***Big data testing*** - Healthcare services are comprehensive and data-centric as details of the patient can be required at any moment (Bahadori *et al.* 2018). Organizing the patient's data should be done with the implementation of Big data solutions.
* ***Application security*** - Confidentiality of the data is to be maintained as these are sensitive details and may cause harm to the patient if not handled carefully.
* ***The functionality of the used software*** - Use of IoT software and platforms are needed and the operation and its functionality are to be examined as this should be flexible as well as versatile in nature in storing all details.
* ***Interoperability of devices*** - Modern healthcare services are carried out with accessing different devices in multiple gadgets and their interoperability is to be looked for smoother services.
* ***Testing for usability*** - The usability of the applied platforms is to be checked as based on these records, the patients will be treated.

# Conclusion

A brief discussion on the quality management system in healthcare is studied in the assignments along with the addition of implementation of software. The details, as well as planning for software and monitoring process, have been described in brief in the task.

# References

Alharbe, N., 2020. ‘A fuzzy-Delphi based decision-making process for measuring usable-security of Web based smart hospital management system. *ICIC Express Lett*, *14*(1), pp.15-21.

Aminizadeh, M., Farrokhi, M., Ebadi, A., Masoumi, G.R., Kolivand, P. and Khankeh, H.R., 2019. Hospital management preparedness tools in biological events: a scoping review. Journal of education and health promotion, 8.

Bahadori, M., Teymourzadeh, E., Faizy Bagejan, F., Ravangard, R., Raadabadi, M. and Hosseini, S.M., 2018. Factors affecting the effectiveness of quality control circles in a hospital using a combination of fuzzy VIKOR and Grey Relational Analysis. *Proceedings of Singapore Healthcare*, *27*(3), pp.180-186.

Ghasemi, M., Nejad, M.G. and Bagzibagli, K., 2017. Knowledge management orientation: an innovative perspective to hospital management. *Iranian journal of public health*, *46*(12), p.1639.

Swetha, K.N., Sathish Raju, N., Doddamani, P. and Suma, N.M., 2019. Quality assurance program in clinical biochemistry laboratory at a multispeciality teaching hospital, with special reference to quality indicators. *Natl J Lab Med*, *8*.