

# Dubai Medical Center Assisted Living Facility



Written By

4/17/2016

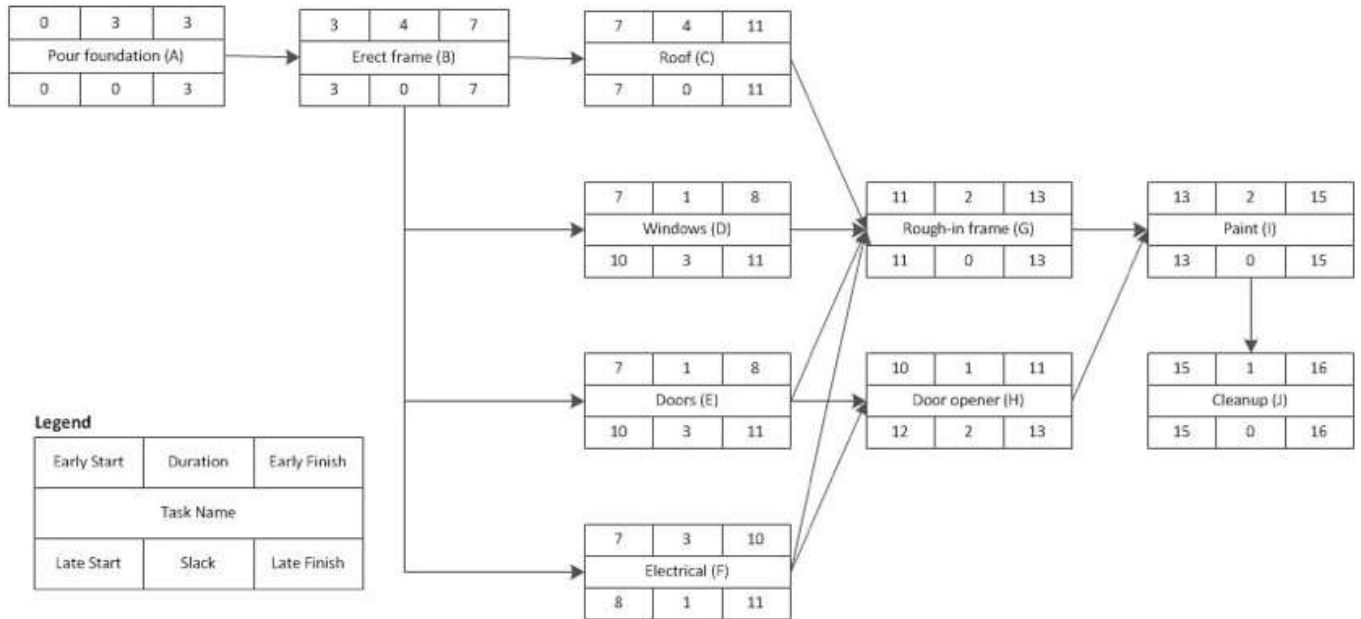
**Task/activities for project implementation****1. What advice would you provide the PM in determining the Early Start/Free Slack (ES/FS) for an activity with two predecessors?**

The earliest start time of the activities having two predecessors is equal to the earliest finish time of 2 predecessors, as it's required by project manager that both the predecessors should be completed for the task to start. The later finish time of the activities having two successors is equal to the smallest latest start time of the 2 successors. It is advisable to project manager that if the larger is used, and then in that case, the preceding task could be permitted for finishing after the latest start time of all the other successors.

**2. What advice will you provide the PM in order to manage the critical path tasks differently than non-critical path tasks?**

As per the definition, critical tasks are the ones that if they get delayed then the completion of complete project might also get delayed. Therefore, these tasks need to be properly managed as compared to non-critical tasks. In case, where the time of activity are not defined with certainty, then in that case that task is assumed to be critical in the starting of the project, and it might turn out not to be very critical. Therefore, in case when the task time is not certain, then in that case, all tasks that might be reasonably delay the completion of project should be managed with extra care.

**3. Draw a Project Network given the information for the construction project**



There are six activity paths in this project:

1. ABCGIJ path, and its duration is 16, so the sum of the activity duration is  $(3+4+4+2+2+1=16)$
2. ABDGIJ path, and its duration is 13, so the sum of activity duration is  $(3+4+1+2+2+1=13)$
3. ABEGIJ path, and its duration is 13, so the sum of activity duration is  $(3+4+1+2+2+1=13)$
4. ABEHIJ path, and its duration is 12, so the sum of activity duration is  $(3+4+1+1+2+1=12)$
5. ABFGIJ path, and its duration is 15, so the sum of activity duration is  $(3+4+3+2+2+1=15)$
6. ABFHIJ path, and its duration is 14, so the sum of activity duration is  $(3+4+3+1+2+1=14)$

The critical path is explained as the path having longest duration; therefore, critical path of this diagram is ABCGIJ with the duration of 16.

**4. Complete the forward and backward pass, compute the activity slack and identify the critical path of the project**

For **Forward pass**, Early Start date (ES) and Early Finish date (EF) is calculated for every task.

Starting with Activity A from left to right

As Activity A was the first activity; therefore, it has no predecessor

$$ES (A) = 0 \text{ and } EF (A) = \text{Duration (A)} + ES (A) = 3 + 0 = 3.$$

As Activity A was the sole predecessor for Activity B, it's calculated as,

$$ES (B) = EF (A) = 3$$

$$EF (B) = \text{Duration (B)} + ES (B) = 4 + 3 = 7$$

Since Activity B was the sole predecessor for Activity C, it's calculated as,

$$ES (C) = EF (B) = 7$$

$$EF (C) = \text{Duration (C)} + ES (C) = 4 + 7 = 11$$

Since, Activity B is Activity D sole predecessor; therefore,

$$ES (D) = EF (B) = 7$$

$$EF (D) = \text{Duration (D)} + ES (D) = 1 + 7 = 8$$

Since Activity B is the Activity E sole predecessor; therefore,

$$ES (E) = EF (B) = 7$$

$$EF (E) = \text{Duration (E)} + ES (E) = 1+7=8.$$

Since Activity B is the Activity F sole predecessor; therefore,

$$ES (F) = EF (B) = 7$$

$$EF (F) = \text{Duration (F)} + ES (F) = 3+7=10$$

Since Activity H holds two predecessor, which are E and F; therefore, its Early Start date will be the largest of predecessors Early Finish dates; therefore,

$$ES (H) = EF (F) = 10$$

$$EF (H) = \text{Duration (H)} + ES (H) = 1+10=11.$$

As, Activity G holds 4 predecessors, such as C, D, E,F; therefore, its early start date will be the largest of Early Finish dates of predecessors; therefore,

$$ES (G) = EF (C) = 11$$

$$EF (G) = \text{Duration (G)} + ES (G) = 2+11=13.$$

As Activity I holds 2 predecessor, such as G and H; therefore, its early start date will be the largest of Early Finish dates of predecessors; therefore,

$$ES (I) = EF (G) = 13$$

$$EF (I) = \text{Duration (I)} + ES (I) = 2+13=15.$$

As Activity I is the Activity J sole predecessor; therefore,

$$ES (J) = EF (I) = 15$$

$$EF (J) = \text{Duration} (J) + ES (J) = 1+15=16.$$

For **Backward pass**, we will compute Late Start date (LS) and Late Finish date (LF) for every task.

Starting with Activity J from last activity and move towards left.

As Activity J is the last activity; therefore,  $LF (J) = EF (J) = 16$

$$LS (J) = LF (J) - \text{Duration} (J) = 16 - 1 = 15$$

As Activity I is Activity J sole predecessor; therefore,

$$LF (I) = LS (J) = 15$$

$$LS (I) = LF (I) - \text{Duration} = 15 - 2 = 13.$$

As Activity I has 2 predecessor that is, G and H; therefore,

$$LF (G) = LF (H) = LS (I) = 13, \text{ and}$$

$$LS (G) = LF (G) - \text{Duration} (G) = 13 - 2 = 11$$

$$LS (H) = LF (H) - \text{Duration} (H) = 13 - 1 = 12.$$

Since Activity E and Activity F had similar predecessor for Activity H and G; therefore, their Late Finish date is the smallest of Late Start dates of activities H and G, thus,

$$LF (E) = LF (F) = LS (G) = 11$$

$$LS (E) = LF (E) - \text{Duration} (E) = 11 - 1 = 10, \text{ and}$$

$$LS (F) = LF (F) - \text{Duration} (F) = 11 - 3 = 8.$$

Since Activity C and Activity D are Activity G predecessor,

$$LF (C) = LF (D) = LS (G) = 11$$

$$LS (C) = LF (C) - \text{Duration (C)} = 11 - 4 = 7, \text{ and}$$

$$LS (D) = LF (D) - \text{Duration (D)} = 11 - 1 = 10.$$

As, Activity B is Activity C, D, E, and F predecessor; therefore, in that case Late Finish date will be the smallest of Late Start Date of activities C, D, E, and F, therefore,

$$LF (B) = LS (C) = 7$$

$$LS (B) = LF (B) - \text{Duration (B)} = 7 - 4 = 3.$$

Since Activity A is activity B sole predecessor of activities, thus

$$LF (A) = LS (B) = 3$$

$$LS (A) = LF (A) - \text{Duration (A)} = 3 - 3 = 0.$$

Total slack (TS) of every activity is considered as the difference between LF and EF or either LS and ES; therefore,

$$TS (A) = LF (A) - EF (A) = LS (A) - ES (A) = 3 - 3 = 0 - 0 = 0.$$

$$TS (B) = LF (B) - EF (B) = LS (B) - ES (B) = 7 - 7 = 3 - 3 = 0.$$

$$TS (C) = LF (C) - EF (C) = LS (C) - ES (C) = 11 - 11 = 7 - 7 = 0.$$

$$TS (D) = LF (D) - EF (D) = LS (D) - ES (D) = 11 - 8 = 10 - 7 = 3.$$

$$TS (E) = LF (E) - EF (E) = LS (E) - ES (E) = 11 - 8 = 10 - 7 = 3$$

$$TS (F) = LF (F) - EF (F) = LS (F) - ES (F) = 11 - 10 = 8 - 7 = 1$$

$$TS (G) = LF (G) - EF (G) = LS (G) - ES (G) = 13 - 13 = 11 - 11 = 0$$

$$TS (H) = LF (H) - EF (H) = LS (H) - ES (H) = 13 - 11 = 12 - 10 = 2$$

$$TS (I) = LF (I) - EF (I) = LS (I) - ES (I) = 15 - 15 = 13 - 13 = 0$$

$$TS (J) = LF (J) - EF (J) = LS (J) - ES (J) = 16 - 16 = 15 - 15 = 0$$

**Free Slack (FS)** of every activity is considered as the difference between earliest Early start date of their successors along with Early Finish date; therefore,

$$FS (A) = ES (B) - EF (A) = 3 - 3 = 0$$

$$FS (B) = ES(C) - EF (B) = 7 - 7 = 0.$$

$$FS (C) = ES (G) - EF (C) = 11 - 11 = 0.$$

$$FS (D) = ES (G) - EF (D) = 11 - 8 = 3.$$

$$FS (E) = ES (H) - EF (E) = 10 - 8 = 2.$$

$$FS (F) = ES (H) - EF (F) = 10 - 10 = 0.$$

$$FS (G) = ES (I) - EF (G) = 13 - 13 = 0.$$

$$FS (H) = ES (I) - EF (H) = 13 - 11 = 2.$$

$$FS (I) = ES (J) - EF (I) = 15 - 15 = 0.$$

$$FS (J) = LF (J) - EF (J) = 16 - 16 = 0.$$

**5. Draw a Gantt chart for the project and superimpose the slack on the chart**

Task Name	Duration	Start	Finish	Cost	5-Aug-12							12-Aug-12			19-Aug-12			
					F	S	T	T	S	M	W	F	S	T	T	W	F	
Case	16 days	Fri	Fri 8/24/12	\$0.00														





**6. What is the next step the team members must take in order to complete their project**

Every member of the project team is required to prepare the final action plan that should include details about dates and resources. It is required that team should determine the predecessors from the outside the particular plan, which could link to their plans. For instance, if a step failed to get complete on the project marketing phase, until the legal steps has finished the steps in project plan. This should be noted in the action plan (Aud and Rantz 2005). This will also enable the project manager to complete overall integrated action plan of project that should be tied with budget, monitoring, and controlling of project.



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## Case Study Analysis

### Introduction

#### *Goals and objectives of analysis*

This case is based on Dubai Medical Center Assisted Living Facility. The goal of this research is to determine how the medical center is offering supportive services to the aging population. As Dubai Medical Center Assisted Living Facility differ in size, configuration, amenities, care philosophy, and staffing level, how their characteristics impact the supportive service provision. The question that arises is that how Dubai Medical Center Assisted Living Facility interprets their medical care philosophy related to aging in place (Barton 1997). It also stress over approaches and how the same could interpret their role for offering assistance is the significant topic mainly in Dubai aging society. It also aims towards exploring the factors that create influence on the capacity of Dubai Medical Center Assisted Living Facility managers to permit the residents to age in that place. The case also aims to explore the questions through examining the meals, personal services, facility policies, social interaction as well as physical characteristics of the Medical center (Barton 1997).

#### *Objectives*

1. To explore how Dubai Medical Center Assisted Living Facility provides care to patients
2. To examine various factors that promotes Dubai Medical Center Assisted Living Facility ability to accommodate the residents to age in that place
3. To inform about the present policies that look for low cost options in order to assist old people in housing and care requirements

4. To enhance the basic knowledge related to assisted living communities of Dubai.

Research questions

### **Research Problem**

Giving the aging population in Dubai, and the requirement for increasing support services like the one offered in an assisted living communities, there are many old age people who will continue to depend on assisted living communities in the old years. In the context of increasing demand, it is quite imperative that Dubai Medical Center Assisted Living Facility should be designed for promoting and maintaining physical, mental, as well as social health of residents (Babbie 1998). The purpose of this analysis is to assess the need to build an environment and social capital for promoting and maintaining the positive health for assisting the aging residents in Dubai.

### **Literature review**

#### **Evolution of the industry in which the enterprise operates**

In the last few years, hospital strategies have started emphasizing on changes and the same was brought in the year 2001. In the mid of 90's, hospitals basically compete over the prices by adopting wholesale strategy, which includes offering services that are attractive in managing care plan, which contracted for huge number of enrolls (Burge and Street 2009). In the year 2001, non-price competition started becoming more significant and hospitals used to revive on the retail strategy, by which they offer attractive services to an individual physicians and patients, which they were serving. With the increasing demand of the customers, medical industry has evaluated and has even adopted latest technologies for serving customers. Dubai Medical Center Assisted Living Facility is one such organization that works with latest

technology and is expanding to give better medical facilities to old age people (Burge and Street 2009).

In the past few years there had been few major shifts in strategies, such as freeing up of resources in hospitals that devote towards vertical and horizontal integration strategies; anticipative chosen contract and arrangements of capital payment, and emergence as well as growth of hospital competitors in terms of both inpatient and outpatient (Burge and Street 2009). The present focus is placed on retail and non-price competition strategies which could support in emergence of new medical race.

### **Evolution of strategy – business, technology, and market – of the enterprise**

The strategic hospital used to compete, as it offers an important insight in the huge developments in healthcare market, as hospital strategy is largely shaped through various external forces (Calkins 1995). Few of the key external forces tries to shape the hospital strategy that includes, demographic and economic trends, buyers behaviors in both public and private, regulations, hospital market characteristics and plans, methods of payment, along with labor supply and medical technology (Calkins 1995). Hospital strategies also hold significant implications related to health policies. In Dubai, hospitals are the key element in healthcare delivery system and it mainly accounts for the increasing portion of the complete expenditure of healthcare. Consequently, the strategies developed by medical assistance centers and implemented for competing to have an important impact on the quality, cost and access to healthcare (Carder 2002).

### **Evolution of technology (including manufacturing), product platforms, and product lines of the enterprise**

Rapid emergence of innovation in the area of medical technology and increase in expectations in market in context of patient care services has significantly tried to alter the landscape of healthcare industry. This has made it important for all the medical devices, pharmaceutical manufacturing as well as diagnostics equipment companies to offer clinically effective as well as viable as per economy (Carder 2002). Dubai Medical Center Assisted Living Facility has emerged as the key player in Dubai medical industry in offering medical device specialties like, infection control, clinical diagnostics, patient healthcare, surgical equipment, oncology, orthopedics as well as cardiology.

Through innovation, Dubai Medical Center Assisted Living Facility is planning to set up a for-profit subsidiary of its medical center, in order to generate more profits and not adhere with the strict hospitals guidelines that accredited the healthcare agencies. Being a subsidiary company, the board holds the control on all services and technological advancement in centers (Chapin and Dobbs-Kepper 2001). The selected facility design at Dubai Medical Center is freestanding apartment for the old age people, which include the facility of sheltered connection with the hospitals in order to have easy access to hospital and kitchen services. This facility will include around 100 units, in which around 15-30 units will be categorized under the heavy assisted and it will be constructed to code to house for both medical and physical disability (Chapin and Dobbs-Kepper 2001). The other units will be mainly lightly assisted in the huge apartment. The population of this facility will be around 110-150 residents, in which most of the residents will be single occupants, instead of any couples.

**The technology, product, and process development process within the enterprise**

Dubai Medical Center emphasizes on developing and offering assisted living services at all its unit facility. By complying with department of health for taking licensing for initiating the assisted living facilities it will offer twenty four hours access to the healthcare personnel. It will also offer registered nurses as well as other medically trained employees who will be available for 24 hours in the day if any emergency occurs and they will also offer medication management for supervising the day to day living activities (Cox 2005). Nursing employees will be made round and they will also be made aware about the general whereabouts of the residents living in medical centers (Ball, Perkins, Whittington, Hollingsworth, King and Combs 2005).

The number of employees in medical centers will be set proportional to the level of occupancy facilities. Staff included at Dubai Medical Center will include certified nurse assistants, health and wellness director, nurse-administrator, attendants of personal care, maintenance personnel, food service manager, cook, as well as activity director. Assistance as required at Dubai medical center will include activities like dressing, medication, bathing and eating. The Dubai Medical Center will also try to incorporate the exercise and health programs in relation with physical therapy center that are located at next door (Davis and Gerrard 1993).

In the supportive environment, aging is not considered as the only option for many people. The limit at which the physical limitations impact the life quality is link with the adaptive technology that will be available to that individual. It is believed by Dubai Medical Center that poor physical environment might exacerbate all the physical disabilities through limiting the access in the nearby communities. Dubai Medical Center has initiated to focus on technological developments by including access to medical center, bus lines, handrails, shopping and sidewalks for old age people (Eckert, Roth, Carder, Morgan and Frankowski 2009).

**Growth (or decline) of the enterprise with respect to of market share, revenues, costs, and profits**

Dubai revenue for the Medical Center Assisted Living Facility is expected to increase by 6.3% each year that comes to around \$400 billion by the year 2018. The healthcare services for the old age people will remain as second highest segment and is the fastest growing segment. It is noted that skilled nursing facilities will most likely to view the slowest profits. There will be growth in the nonprofit providers along with outpace in the dominant segment for-profit. There will be growth in the Medical Center Assisted Living Facility, as it is analyzed that Dubai elder care industry will gain \$294 billion (Eckert, Zimmerman and Morgan 2001). It presents the data of historical demand in the area of skilled nursing care facilities, social services, assisted living facilities, home healthcare services, along with continuing communities of care retirement. It is expected that medical industry will get various sources of payment like, private insurance, Medicaid, out-of-pocket, and Medicare.

**Organizational structure of the enterprise**

Dubai Medical Center Assisted Living Facility has its own organizational structure. In which the duties of the administrators has mirror towards small facilities, where else the administrators role include delegation of the direct participants, mainly for huge facilities. The higher residents involve the necessitates for complex staffing structure, who could be involved in the distribution of managerial workload as well as free the administration from all types of responsibilities. In every 50% of the medium facility administrators, they delegate the scheduling of staff to the next level, in command with various levels like, resident care supervisor, shift supervisor, personnel manager, lead caregiver, director of resident care, healthcare coordinator,



as well as assistant executive director (Feingold and Werby 1990). Further, more than 70% of the medium facility administrator tries to share the personnel hiring as well as firing duties with second to command (Feingold and Werby 1990).

### **Key decisions made at different stages in the life of enterprise and the drivers for these decisions**

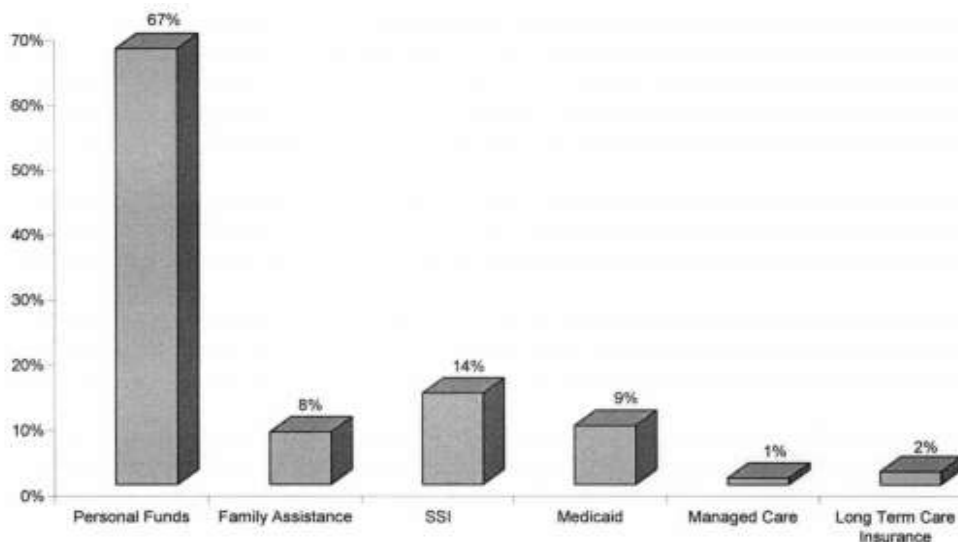
Dubai Medical Center Assisted Living Facility took many decisions at the different stages of the enterprise. They took the decision to focus on its efforts that move around two major strategic initiatives. The first was the short run initiative that will be more cost effective while delivering the inpatient care. The next decision was related to long run strategy and it relates with developing the new programs and services, which could support in capitalizing the existence, along with highly competitive rehabilitation therapy employees and excellent reputation of Dubai Medical Center Assisted Living Facility in the regions of Gulf Corporation (Frank 2002). In the next stage of the enterprise it took the decision with its team to explore the options for facilitating the construction and its related cost (Glaser and Strauss 1967). The team is initiated to conduct competitive analysis and to examine various options related to service and to offer potential population base and catchment area at Dubai Medical Center Assisted Living Facility. It also took decision related to project deliverable that could enable Dubai Medical Center Assisted Living Facility in strengthening their focus over the reimbursable preventive as well as wellness programs for having the healthy geriatric population (Frank 2002).

### **Analysis of revenues or costs associated with different design options**

Relying over the exact apartment size, equipments as well as original ratio of the assisted heavy to light units, it is estimated in the Dubai medical center project that cost will be between

AED 80 million to around AED 110 million for the construction of facilities. This estimation covers up cost of furnishing, cost of land, as well as sheltered link with the hospital. While up and run, it is calculated that the net income will most likely to range from AED 9 million to around AED 12 million per unit in every year (Gilderbloom and Mullins 1995). The team calculates the net cash flow for the complete project that is around AED 20 million in every year. The calculated cost of the Dubai medical center project will range from 40% to around 60% of the cost associated with nursing home. Cost related with assisted living residents might vary and relies over the units, offered services as well as location (Gilderbloom 2008). Other considerations impacting the cost will be room that will be private and shared along with frequency of services offered. Despite of the popularity and growth of Dubai medical center, it will most likely to remain out of the reach for both low and moderate income old age people, as most of their programs are developed and marketed to affluent the old age people. It will also include the cost of communities market to the upper income seniors that hold enough income and assets to fulfill the cost (Gilderbloom 2008).

#### Source of Funding for Medical Care centers



## **Analysis**

In this case study, the data is collected through secondary method that is literature review method. This method helped in analyzing the various roles of project manager while undertaking the project. It also analyzes the requirements of medical care center while initiating the project. The data collected from various sources include books and journal articles (Gillespie and Sloan 1990).

## **Discussion and findings**

It is discussed that technological advancement is important in the medical area, as there is a need to offer better medical facilities to the patients and old age people. In Dubai, the medical facilities are advancing and in order to be competitive in market, it is expected that medical center should construct new assistance facilities for the patients (Assisted Living Workgroup Steering Committee 2003).

## **Conclusion**

It can be concluded that residents in the Dubai assistance facility community participate in this case and holds the high attention level along with personalized care as the fact through various employees. Information collected through the functional need assessment and feedback from the managers. However, it is noted from the quality of care that the assisted living community would require further evaluation. This is mainly in the case of regulations, a sit fail to have qualification needs while recruiting the direct caregivers other than the mangers who should hold the diploma. The quality of care within the Dubai medical center seems to look satisfactory for both the families and residents, who try to maintain the occupancy in these medical

communities. But the review is required for evaluating the quality results for determining the better ways of offering care to Dubai old age people.

### **Recommendations**

It is recommended that the project managers should project manager of Dubai medical center should work on two tradeoffs among the schedule, scot and performance of the project. It is again recommended that project manager should even set other tradeoffs that they can deal with later on. While managing the project they should take feedback from old age people about the facility to really require and work on it by estimating the process and cost and resources.



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