International Journal of Psychosocial Rehabilitation, Vol. 21, Issue 02, 2017
ISSN: 1475-7192

PALLIATIVE CARE UNIT IMPROVES THE QUALITY OF LIFE

Beaulah David[1], Palaniraja[2], K.ArunPatrick[3], Shreedharan M.D[4] and Jeganathan M[5]
[1,2&3]Assistant Professor, Department Of Computer Science and Engineering, Nehru Institute of Technology, Coimbatore, Tamilnadu, India
[4]Associate Professor, Excel College of Architecture & Planning, Komarapalayam, Tamil Nadu.
[5]Assistant Professor, Department of Environment and Herbal Sciences, Tamil University, Thanjavur, Tamil Nadu.
jegann1978@gmail.com

ABSTRACT

Palliative care is an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual. Despite its limited coverage, palliative care has been present in India for about 20 years. Obstacles in the growth of palliative care in India are too many and not only include factors like population density, poverty, geographical diversity, restrictive policies regarding opioid prescription, workforce development at base level, but also limited national palliative care policy and lack of institutional interest in palliative care. Nonetheless we have reasons to be proud in that we have overcome several hurdles and last two decades have seen palpable changes in the mindset of health care providers and policy makers with respect to need of palliative care in India. Systematic and continuous education for medical staff is mandatory, and a major break-through for achieving this purpose would be to increase the number of courses and faculties in palliative medicine at most universities.

Keywords: Challenges, Education, Hospice, India, Palliative care, Perspectives, Research

1. INTRODUCTION

1.1 PALLIATIVE CARE UNIT

Palliative care involves an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness (WHO). However, problems including fragmentation of services and late referrals to palliative care prevent many patients from receiving the palliative care they need at the right time and right place. Therefore, many patients have unmet palliative care needs, experience hospital admissions in the last weeks of life, or are not able to die at the preferred place. Following the working definition of InsupC, integrated palliative care involves “bringing together administrative, organisational, clinical and service aspects in order to realise continuity of care between all actors involved in the care network of patients receiving palliative care”. With the aging of the population and decrease in the length of hospitalizations, greater numbers of older adults are managing multiple chronic conditions in the community with increasing levels of disability.

1–3

They are particularly vulnerable because of strained caregiver systems, limited decisio nal capacity, and financial resources. Older adults with chronic progressive illnesses often lack coordination of care. Their utilization of the healthcare system may be episodic and unplanned with the emergency department (E D) being an important source of medical care. The physician’s evaluation in the ED, and acute care in general, is often time limited. Their evaluation focuses on individual diseases as opposed to a function-based assessment and often does not give a complete pictur e of the older patient. Older patients with progressive illnesses may be at greater risk of polypharmacy, falls, functional decline, and institutionalization as a consequence of uncoordinated care. Other consequences of chronic medical conditions such

as pain and other untreated symptoms may also result in utilization of the ED. 4–6 Case management is defined as a healthcare delivery process that provides quality healthcare, decreases fragmentation, enhances the client's quality of life, and contains costs. Case managers provide coordination of medical care and social services. Elders who receive case management services, including risk assessment and follow-up health education, experience fewer hospitalizations and have lower healthcare costs.
7–13

For older adults who are within several months of death, hospice may offer an opportunity for coordination of care and homecare services that would otherwise be unavailable. This is because of decreased eligibility for homecare since the Balanced Budget Act. The Medicare hospice benefit, however, is markedly underutilized by low income and minority persons living in urban settings. Of patients who died at Montefiore Medical Center (MMC), for example, between 2000 and 2003, only 7.7% were identified in the Dartmouth Atlas project as having accessed hospice (www.Dartmouthatlas.org). The Palliative Care Service at MMC in collaboration with Jacob Perlow Hospice, with support from the Fan Fox and Samuels Foundation, set up a pilot palliative care program for elderly patients visiting the ED in 2005. The primary aims of this project were to identify chronically ill older patients in need of palliative care, homecare, and hospice services and to increase linkag e with these services. Secondary aims were twofold: achieve increased and earlier linkage with hospital-based palliative care resources and impact subsequent utilization of acute care and the ED by older adults who are at the end of life. The au thors are unaware of a ny other reports of ED-based palliative care programs in the lit erature. This paper will present the preliminary analysis and results of this project With the aging of the population and decrease in the length of hospitalizations, greater numbers of older adults are managing multiple chronic conditions in the community with increasing levels of disability. 1–3 They are particularly vulnerable because of strained caregiver systems, limited decisio nal capacity, and financial resources. Older adults with chronic progressive illnesses often lack coordination of care. Their utilization of the healthcare system may be episodic and unplanned with the emergency department (E D) being an important source of medical care. The physician's evaluation in the ED, and acute care in general, is often time limited. Their evaluation focuses on individual diseases as opposed to a function-based assessment and often does not give a complete pictur e of the older patient. Older patients with progressive illnesses may be at greater risk of polypharmacy, falls, functional decline, and institutionalization as a consequence of uncoordinated care. Other consequences of chronic medical conditions such as pain and other untreated symptoms may also result in utilization of the ED.
4–6

Case management is defined as a healthcare delivery process that provides quality healthcare, decreases fragmentation, enhances the client's quality of life, and contains costs. Case managers provide coordination of medical care and social services. Elders who receive case management services, including risk assessment and follow-up health education, experience fewer hospitalizations and have lower healthcare costs.
7–13

For older adults who are within several months of death, hospice may offer an opportunity for coordination of care and homecare services that would otherwise be unavailable. This is because of decreased eligibility for homecare since the Balanced Budget Act. The Medicare hospice benefit, however, is markedly underutilized by low income and minority persons living in urban settings. Of patients who died at Montefiore Medical Center (MMC), for example, between 2000 and 2003, only 7.7% were identified in the Dartmouth Atlas project as having accessed hospice (www.Dartmouthatlas.org). The Palliative Care Service at MMC in collaboration with Jacob Perlow Hospice, with support from the Fan Fox and Samuels Foundation, set up a pilot palliative care program for elderly patients visiting the ED in 2005. The primary aims of this project were to identify chronically ill older patients in

need of palliative care, homecare, and hospice services and to increase linkag e with these services.

Secondary aims were twofold: achieve increased and earlier linkage with hospital- based palliative care resources and impact subsequent utilization of acute care and the ED by older adults who are at the end of life. The au thors are unaware of a ny other reports of ED-based palliative care programs in the lit erature. This paper will present the preliminary analysis and results of this project Palliative care is a health care specialty that is both a philosophy of care and an organized, highly structured system for delivering care to persons with life-threatening or debilitating illness from diagnosis till death and then into bereavement care for the family. Palliative care improves health care quality in three domains: the relief of physical and emotional suffering; improvement and strengthening of the process of patient–physician communication and decision-making; and assurance of coordinated continuity of care across multiple healthcare settings—hospital, home, hospice, and long-term care. The WHO defined palliative care as "an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual. The goal of palliative care is, therefore, to improve the quality of life of both patients and families by responding to pain and other distressing physical symptoms, as well as to provide nursing care and psycho-social and spiritual support. This is why it is best administered by an interdisciplinary, multi-dimensional team, comprising doctors, nurses, counsellors, social workers, and volunteers. India is categorized as a developing country; however, over the past 20 years, increases in the aging population and prevalence of advanced cancer are common. Together with China, the country has the second largest population in the world. It is estimated that one million new cases of cancer occur each year in India, with over 80% presenting at stage III and IV. The need of palliative care in India is immense. (Vasanthy and Jeganathan 2007, Vasanthy et.al., 2008, Raajasubramanian et.al., 2011, Jeganathan et.al., 2012, 2014, Sridhar et.al., 2012, Gunaselvi et.al., 2014, Premalatha et.al., 2015, Seshadri et.al., 2015, Shakila et.al., 2015, Ashok et.al., 2016, Satheesh Kumar et.al., 2016).

1.1 OBJECTIVE

Palliative care is the care of patients with active, progressive, far-advanced disease, for whom the focus of care is the relief and prevention of suffering and the quality of life.

The following should be noted:

active disease: this activity can be confirmed and measured objectively by clinical examination and investigations;

progressive disease: this too can be assessed clinically;

far-advanced disease: more difficult to define but examples are extensive metastatic disease in cancer, refractory cardiac, renal or respiratory failure and total dependency in neurodegenerative conditions or Alzheimer's Disease;

focus on the **quality of life** is the key feature of the definition

it is **person-oriented**, not disease-oriented;

it is **not primarily concerned with life prolongation** (nor with life shortening);

it is **not primarily concerned with producing long term disease remission;**

it is **holistic** in approach and aims to address all the patient's problems, both physical and psychosocial;

it uses a **multidisciplinary or inter professional approach** involving doctors, nurses and allied health personnel to cover all aspects of care;

it is dedicated to the **quality of whatever life remains for the patient**

palliative care is appropriate for **all patients** with active, progressive, far-advanced disease and not just patients with cancer;

palliative care is appropriate for patients receiving continuing "active" therapy for their underlying disease

2. LITERATURE REVIEW

Bajwah et al. (2015)[1] using mixed methods aimed to obtain preliminary information on the impact of a case conference intervention delivered in the home (Hospital2Home) on palliative care concerns of patients and their care givers and to evaluate programme feasibility and acceptability. The measurement was the palliative care outcome scale (POS). This study reported that community case conferences improved palliative-targeted symptoms and quality of life after 4 weeks of intervention with patients. The qualitative interview analysis found that nine categories characterized their intervention: support in the community, individual care plans and practical problems addressed, coordination of care and efficiency, crisis management, palliative care, psychological support, symptom control, empowering health professional and advance care planning. This intervention helped patients and care givers manage the uncertainty of illness by facilitating early discussions about disease progression, improving communication and addressing end-of-life planning needs.

Lindell et al. (2010)[2] aimed to test the ability of the Program to Reduce Idiopathic Pulmonary Fibrosis Symptoms and Improve Management (PRISIM) intervention to decrease symptom burden and decrease stress. The patient's education included advanced care planning and improving perceptions of Health Related Quality of Life (HRQOL). Quantitative measurements were the University of California San Diego Shortness of Breath Questionnaire (SOBQ), Beck Anxiety Inventory (BAI), Beck Depression Inventory-II (BDI-II), Perceived Stress Scale (PSS) and the physical and mental domains of the Short Form (SF)-36 (Version 2). Lindell et al. (2010) reported that the intervention group rated their HRQOL less positively ($p = 0.038$) and tended to report more anxiety ($p = 0.077$) compared with controls; however, the care partners rated their own stress at a lower level ($p = 0.018$) compared with controls. The themes from the analysis of qualitative data were “did not feel isolated when participating in a disease management program,” “able to put individual disease into perspective,” and “felt that it was important to participate in research to help other with the disease.”

Retrospective studies[3] were nine (Ahmadi et al., 2016; Arita et al., 2010; Kalluri et al., 2016, 2017; Liang et al., 2017; Lindell et al., 2015 Rajala et al., 2016; Rush et al., 2017; Sharp et al., 2017). Ahmadi et al. (2016) reported interstitial lung disease (ILD) was similar to IPF and end-of-life discussions with the patients were less common than for those with lung cancer (LC) (41% vs 59%). Moreover, patients with IPF had more unrelieved breathlessness, pain and anxiety compared with patients with LC and received poorer access to specialist end-of-life care services.

Arita et al. (2010) [4]studied 20 years (1990–2010) of palliative care research. Palliative care had been limited to patients in the terminal stage and families determined resuscitation when the patient had a sudden negative change of condition. The researchers identified points to be considered for the future in palliative care: advance care planning, so patients' wishes could be honoured when they experienced sudden life-threatening changes; daily communication between patients and doctors and the construction of a home support system.

Kalluri et al. (2016)[5] reported on the impact of their multidisciplinary and collaborative ILD clinic (MDC), which included a pulmonary rehabilitation/palliative respiratory care specialist and collaboration with the patient's primary care provider (MD or NP) and their provincial home care team including a respiratory therapist. They examined the impact on acute care use (frequency of emergency room visits for dyspnoea and

hospitalizations) and place of death of patients with IPF. Of the MDC group, 33% had two or more hospitalizations. There was a significant association between ER visits for dyspnoea ($p = 0.005$) and the number of hospitalizations ($p = 0.023$) in the MDC group, and 78% died at home or in hospice while 22% died in the hospital. In the non-MDC group, 80% were hospitalized more than twice, 40% had ER visits for dyspnoea, 40% died at home or in hospice and 60% in hospital. (Manikandan et.al., 2016, Sethuraman et.al., 2016, Senthil Thambi et.al., 2016, Ashok et.al., 2018, Senthilkumar et.al., 2018).

3.1 EXISTING SYSTEM

Continued efforts are needed to overcome the barriers to successful implementation of palliative care. Ways to integrate current palliative care knowledge into care of patients include multidisciplinary educational initiatives, research endeavors, and clinician resources. Still, a lot needs to be done for creating awareness and training in Palliative Care. At present such palliative clubs using local windows based software to integrate and manage campus palliative activities. Few are running without even automation software and using manual paper works.

3.2 PROPOSED SYSTEM

The proposed project is to develop a complete web application which can manage the existing campus based palliative clubs and its activities in an efficient manner. The web application can provide alerts using the Timeline window, Communication system between the club activists and other users by online. Also can conduct campaign to find new interested students in campus using some functions in the web application. The benefit is we can conduct meeting and training programs easily by timely informing system. SMS based invitation is added to make the application easier to the users. Patient tracking system can be implemented so that the patients can utilize the best palliative care unit. Anyone can be given the membership to use this application

3.3 DESIGN MODULES

System analysis work with the users to identify goals and build systems to achieve them. System development revolves around a life cycle that begins with the recognition of user needs. Following a feasibility study the key stages of the cycle are evaluation of the present system, information gathering cost/benefit analysis, detailed design and implementation of the candidate system. The life cycle is not a procedure that deals with hardware and software. It is building computer based system to help user to operate a business or make decision effectively and manage an enterprise successfully. This is the base for learning system analysis. System development includes the makeup of the system development life cycle, what promotes the user to request change the factors to consider in a candidate system, how to plan and control for success access.

4. SYSTEM DESIGN

4.1 INPUT DESIGN

Input design is the primary step in system design. Input is the process of converting a user oriented description of the input to a computer based system. It is a part of overall system design which requires very careful attention. The objective of input design is to create an input layout that is easy to follow and does not include operating errors. Input design is the link that ties the information system into the world of its users. An experiment is a method to get an answer to problem, which is obtained from proper interpretation of a set of observations. For entering these observations appropriate message will be displayed on the screen. According to this message the user can enter the data for this suitable data entry screen

are used. In the proposed system, the validity of checking inputs is available. If not valid, a message will be displayed on the screen and the user can again key for correct input so that only the valid data will be displayed by the system. Objective during inputs design are as follows:

Produce cost effective method input.

Achieve high-level accuracy.

Ensure that inputs are free of ambiguity.

The screens are designed in such a way that the user can find the needed components like options, actions etc. with ease of use. The input design is the link between the information system and the user. It comprises developing specification and procedures for data preparation and those steps that are necessary to put input data into a usable form for processing data entry. The design of input focuses on controlling the amount of input required, controlling errors, avoiding delay, avoiding extra steps and keeping the process simple.

4.2 OUTPUT DESIGN

The output is the most important and direct source of information to the user. The output should be provided in a most efficient formatted way. The output design has been done so that the results of processing should be communicated to the user. Effective output design will improve the clarity and performance of outputs. Output is the main reason for developing the system and the basis on which they will evaluate the usefulness of the application. Output design phase of the system is concerned with the convergence of the information to the end user-friendly manner. The output design should be efficient, intelligible so that system relationship with the end user is improved and thereby enhancing the process of decision making. The various types of outputs required by most systems are:

External output:

Whose destination is outside the organization and which require special attention?

Internal output:

Whose destination is within the organization and which require careful design because they are user's main interface with the computer?

Operational output:

Whose use is purely within the computer department?

Interactive output:

Which involve the user in communicating with the computer?

4.3 ARCHITECTURAL DESIGN

3-TIER ARCHITECTURE

In 3-tier architecture an application is broken into separate logical layers, each with a well-defined set of interfaces. The first tier referred as the presentation layer and typically consists of graphical user's interface of some kind. The middle tier, or business layer, consist of application or business layer and the third layer-the data layer contains the data that is needed for the application the middle tier is basically the code that the user calls upon the retrieve the desired data. The presentation layer then receives the data and formats it for display. This separation of application logic from the user interface adds enormous flexibility to the design of application. The third tier contains the data that is needed for the application

Fig :1 **3-TIER ARCHITECTURE**

4.4 DATA FLOW DIAGRAM

A data flow diagram is a graphical technique that depicts data flow and transforms that are applied as data move from input to output. The DFD is used to represent increasing information flow and functional details. A Level 0 DFD also called a fundamental system model or context model represents the entire software elements as a single bubble with input and output indicated by incoming and outgoing arrows respectively. Additional process and information flow parts are represented in next level 1 DFD. Each of the processes represented at level 1 are sub functions of overall system depicted in the context model.

4.5 E R DIAGRAM

IEEE defines ENTITY RELATIONSHIP DIAGRAM as a diagram that depicts a set of real world entities and the logical relationship among them. Simply E-R diagram can express the overall logical structure of a database graphically.

4.6 DATA BASE DESIGN

Database design is one of the most important parts of the system design phase. In a database environment common data are available and are used by several users. Instead of each program managing its own data, authorized users share data across application with the database software managing the data as an entity. The primary objective of a database design is fast response time to enquiries, more information at low cost, control of redundancy, clarity and ease of use, date and program independence, accuracy and integrity of the system, fast recovery and availability of powerful end-user languages. The theme behind a database is to handle information as an integrated whole thus the main objective is to make information as access easy, quick, inexpensive and flexible for the users.

Data directory specifies the major element in the system, and care should be taken while designing, in order to avoid unnecessary duplication of data. The entire package depends on how the data are maintained in the system. Several tables are maintained in the system to store data that are required for the processing of various data as well as storing intermediate or final processed results.

Database design mainly aims at handling large volumes of information, involving the definitions for the structure of storage and provisions for the manipulation of information, providing safety of information despite of system crashes due to unauthorized access. Some conditions are satisfied in database design stage:

Control redundancy

Ease of use

Data independency

Accuracy and integrity

Recovery from failures

Security and privacy

Performance

5.TABLE DESIGN

1. **Name: adminlog**
   Primary key :id

COLUMN NAME	**DATA TYPE**	**KEY**
Id	INT	PRIMARY KEY
User name	VARCHAR	NOTNULL
Password	VARCHAR	NOTNULL

2. **Name: ambulance**

   Primary key: id

COLUMN NAME	**DATATYPE**	**KEY**
Id	**INT**	PRIMARY KEY
Phone number	**INT**	NOTNULL
Driver name	VARCHAR	NOTNULL
Vehicle number	VARCHAR	NOTNULL
Place	VARCHAR	NOTNULL
Available time	VARCHAR	NOTNULL
Capacity	VARCHAR	NOTNULL
Details	VARCHAR	NOTNULL

3. **Name: contact**
   Primary key: id

COLUMN NAME	**DATATYPE**	**KEY**
Id	**INT**	PRIMARY KEY
Username	VARCHAR	NOTNULL

Password	VARCHAR	NOTNULL
Name	VARCHAR	NOTNULL
Dob	VARCHAR	NOTNULL
Address	VARCHAR	NOTNULL
Phone number	**INT**	NOTNULL
Email	VARCHAR	NOTNULL
Gender	VARCHAR	NOTNULL
Qualification	VARCHAR	NOTNULL
Experience	VARCHAR	NOTNULL

4. **Name: drchat**

   Primary key: id

COLUMN NAME	**DATATYPE**	**KEY**
Id	**INT**	PRIMARY KEY
Fromid	VARCHAR	NOTNULL
Recipient	VARCHAR	NOTNULL
Messages	VARCHAR	NOTNULL
Reply	VARCHAR	NOTNULL
Status	VARCHAR	NOTNULL

5. **Name: feedback**

   Primary key: id

COLUMN NAME	**DATATYPE**	**KEY**
Id	INT	PRIMARY KEY
Name	VARCHAR	NOTNULL
Message	VARCHAR	NOTNULL

6.SYSTEM TESTING

Testing is the vital to the success of the system. It makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved. It is the stage of implementation, which ensures that system works accurately and effectively before the live operation commences. It is a confirmation that all are correct ad opportunity to show users that the system must be tested and show that the system will operate successfully and produce

expected result under expected conditions. Software testing is a crucial element of software quality assurance and represents the unlimited review of specification, design and coding. Testing represents an interesting anomaly for the software. During the earlier definition and development phase, it was attempted to build the software from an abstract concept to implement.

System testing is designed to uncover weaknesses that are not found in the earlier tests. This includes forced system fail' Nure and validation of the total system, as its users in the operational environment will implement it. Generally, it begins with low volume of transactions based on live data. The volume is increased until the maximum level for each transactions type is reached. The total system is tested for recovery and fallback after various major failures to ensure that no data are lost during the emergency. All this is done with the old system still in operation. After the candidate system passes the test, the old system is discontinued.

System testing involves unit testing, integration testing, acceptance testing. Careful planning and scheduling are required to ensure that modules will be available for integration into the evolving software product when needed. A test plan has the following step:

Prepare test plan

Specify conditions for user acceptance testing

Prepare test data for program testing

Prepare test data for transaction path testing
Plan user training

Compile/assemble programs

Prepare job performance aids

System testing is the stage of implementation that is aimed at ensuring that the system works accurately and efficiently before live operation commences. The system on a whole was tested for the following:

Validation of inputs

Referential integrity test

Sequential tests

Consistency of the application

System testing, asks a logical assumption that if all the parts of the system are correct, the system will be successfully achieved. The objective of testing is to discover errors. To fulfill these objectives a series of test were planned and executed.

The logical design and the physical design should be thoroughly and continually examined on paper to ensure that they will work when implementation should be a confirmation that all is correct and an opportunity to show users that the system works.

7. SYSTEM IMPLEMENTATION

Implementation is the stage in the project where the theoretical design is turned into a working system and is giving confidence on the new system for the users that it will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, an evaluation, of change over methods. Apart from planning major task of

preparing the implementation are education and training of users.

There are three types of implementation:

Implementation of a computer system to replace a manual system.

Implementation of a new computer system to replace an existing one.

Implementation of a modified application to replace an existing one, using the same computer.

The implementation plan includes a description of all the activities that must occur to implement the new system and to put it into operation. It identifies the personnel responsibility for the activities and prepares a time chart for implementing the system. The implementation plan consists of the following steps.

List all files required for implementation.

Identify all data required to build new files during the implementation.

List all new documents and procedures that go into the new system.

The implementation plan should anticipate possible problems and must be able to deal with them. The usual problem may be missing documents; mixed data formats between current and files, errors in data translation, missing data etc... System implementation is the final phase i.e., putting the utility into action. Implementation is the state in the project where theoretical design turned into working system. The most crucial stage is achieving a new successful system and giving confidence in new system that it will work efficiently and effectively. The system is implemented only after thorough checking is done and if it is found working in according to the specification. It involves careful planning, investigation of the current system and constraints on implementation, design of method to achieve. Two checking is done and if it is found working according to the specification, major task of preparing the implementation are educating, training the users.

8. SYSTEM MAINTENANCE

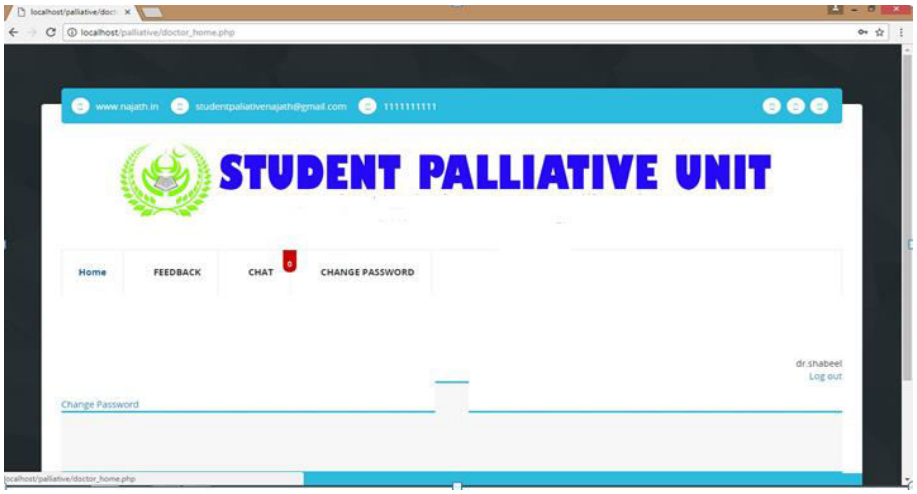
The maintenance phase of the software cycle is the time in which the software products perform useful work. After a system is successfully implemented, it should be maintained in a proper manner. System maintenance is an important aspect in the software development life cycle. The system maintenance is for to make adaptable to the changes in the environment. There may be social, technical and other environment changes, which affect the systems behavior. Software product enhancements may involve providing new functional capabilities improving user displays and mode of interaction, upgrading the performance characteristics of the system. So only through proper system maintenance procedures, the system can be adapted to come up with these changes. The first maintenance activity occurs because it is unreasonable to assume that testing will uncover all latent errors in a large software system. During the use of any large program, errors will occur and reported to the developer. The process that includes the diagnosis and connection of one or more error is called corrective maintenance.

The second activity that contributes to a definition of maintenance occurs because rapid change that is encountered in every aspect computing. Therefore, adapting maintenance is an activity that modifies software to properly interface with a changing environment is both necessary and common place. The third activity that may be applied to the definition of maintenance occurs when a software package is successful. As the software

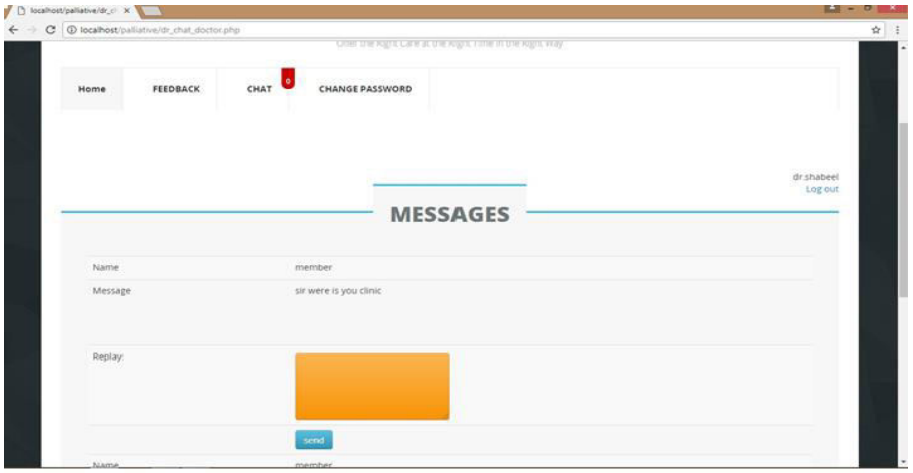
is used, recommendation for new capabilities, modification for existing functions, and general enhancement are received from the user. To satisfy request in this category, perfective maintenance is performed. The fourth maintenance activity occurs when the software is changed to improve maintainability or reliability or to provide better basis for future enhancements.

9. SCREENSHOT

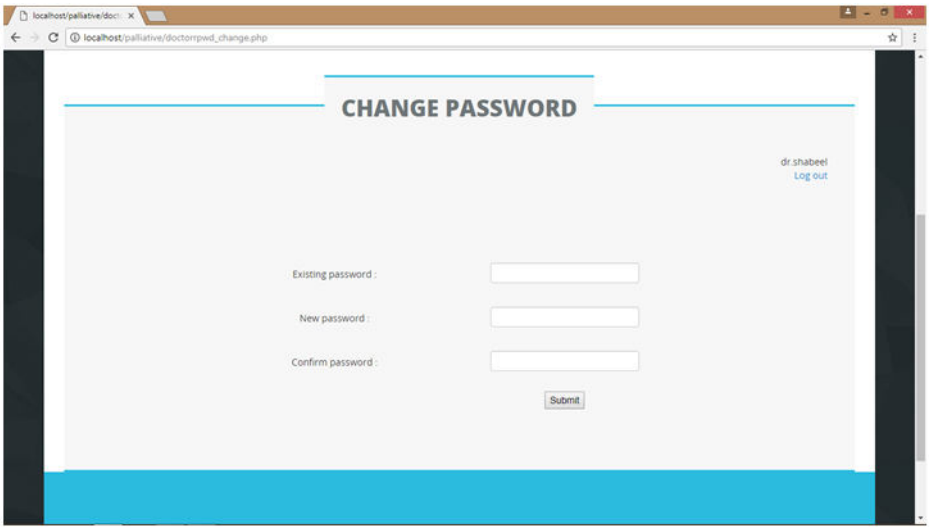
DOCTOR HOME



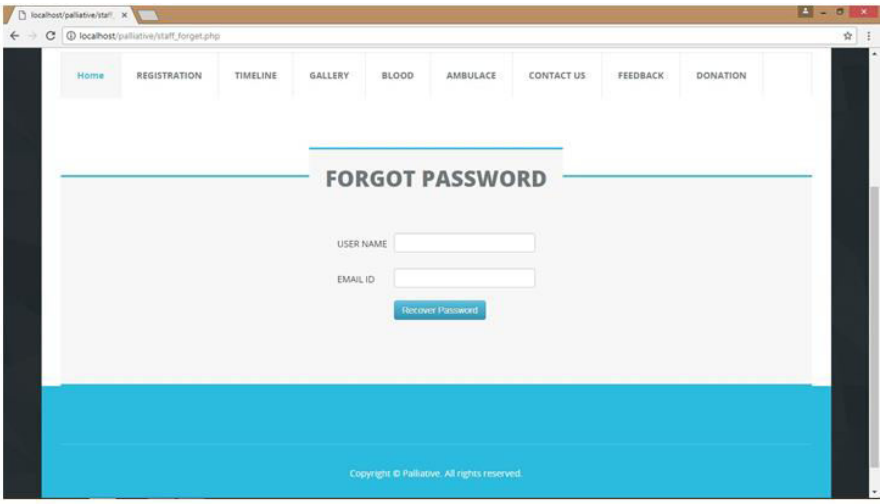
DOCTOR CHAT



CHANGE PASSWORD



FORGOT PASSWORD



10.CONCLUSION

The project entitled **"PALLIATIVE CARE UNIT"** is done in an effective manner. **PALLIATIVE CARE UNIT** enables the users many benefits, the main objective of this project is to introduce an efficient time campus palliative to the society. The project had been divided into several modules. The coded modules are integrated further to accomplish the objective that is the automation process. SMS based invitation is added in this phase to make the application easier to the user. Anyone can be given the membership to use this application.

11.REFERENCES

[1] Geneva: World Health Organization; [Last accessed on 2012 Mar 02]. "WHO Definition of Palliative Care" Available from: http://www.who.int/cancer/palliative/definition/en .

[2] Raj Gopal MR, Kumar S. A model for delivery of palliative care in India-the Calicut experiment. *J Palliat Care.* 1999; 15:44–9

[3] Hind B. New Delhi: Can Support India; 2004. Touching lives.

[4] Gupta H. How basic is palliative care? *Int J Palliat Nurs.* 2004; 10:600-1

[5] Gupta H. Community participation in palliative care: A comment. *Indian J Palliat Care.* 2005; 11:19–21.

[6] Bansal M, Patel FD, Mohanti BK, Sharma SC. Setting up a palliative care clinic within a radiotherapy department: A model for developing countries. *Support Care Cancer.* 2003; 11:343–7.
[7] Growing focus on palliative care. [Last accessed on 2012 Jul 25]. Available from: http://www.indiatogether.org/2010/mar/hlt.palliate.htm/
[8] Kumar S. Learning from low income countries: What are the lessons? Palliative care can be delivered through neighbourhood networks. *BMJ.* 2004; 329:1184.
[9] Pretoria: Department of Health; 2001. Department of Health. Department of Health National Guideline on Home-Base Care/Community. Based Care. December 2001.
[10] Sharma DC. Poor palliative care in India. *Lancet Oncol.* 2008; 9:515.
[11] Vasanthy M and M. Jeganathan. 2007. Ambient air quality in terms of NOx in and around Ariyalur, Perambalur DT, Tamil Nadu. Jr. of Industrial pollution Control., 23(1):141-144.
[12] Vasanthy. M ,A.Geetha, M. Jeganathan,and A.Anitha. 2007. A study on drinking water quality in Ariyalur area. J.Nature Environment and Pollution Technology. 8(1):253-256.
[13] Ramanathan R ,M. Jeganathan, and T. Jeyakavitha. 2006. Impact of cement dust on azadirachtain dicaleaves – ameasure of air pollution in and Around Ariyalur. J. Industrial Pollution Control. 22 (2): 273-276.
[14] Vasanthy M and M. Jeganathan. 2007. Ambient air quality in terms of NOx in and around Ariyalur, Perambalur DT, Tamil Nadu. Pollution Research., 27(1):165-167.
[15] Vasanthy M and M. Jeganathan. 2008.Monitoring of air quality in terms of respirable particulate matter – A case study. Jr. of Industrial pollution Control.,24(1):53 - 55.
[16] Vasanthy M, A.Geetha, M. Jeganathan, and M. Buvaneswari. 2008. Phytoremediation of aqueous dye solution using blue devil (Eichhornia crassipes). J. Current Science. 9 (2): 903-906.
[17] Raajasubramanian D, P. Sundaramoorthy, L. Baskaran, K. Sankar Ganesh, AL.A. Chidambaram and M. Jeganathan. 2011. Effect of cement dust pollution on germination and growth of groundnut (*Arachis hypogaea* L.). IRMJ-Ecology. International Multidisciplinary Research Journal 2011, 1/1:25-30 : ISSN: 2231-6302: Available Online: http://irjs.info/.
[18] Raajasubramanian D, P. Sundaramoorthy, L. Baskaran, K. Sankar Ganesh, AL.A. Chidambaram and M. Jeganathan. 2011. Cement dust pollution on growth and yield attributes of groundnut. (*Arachis hypogaea* L.). IRMJ-Ecology. International Multidisciplinary Research Journal 2011, 1/1:31-36.ISSN: 2231-6302. Available Online: http://irjs.info/
[19] Jeganathan M, K. Sridhar and J.Abbas Mohaideen. 2012. Analysis of meterological conditions of Ariyalur and construction of wind roses for the period of 5 years from January 2002. J.Ecotoxicol.Environ.Monit., 22(4): 375-384.
[20] Sridhar K, J.Abbas Mohaideen M. Jeganathan and P Jayakumar. 2012. Monitoring of air quality in terms of respirable particulate matter at Ariyalur, Tamilnadu. J.Ecotoxicol.Environ.Monit., 22(5): 401-406.
[21] Jeganathan M, K Maharajan C Sivasubramaniyan and A Manisekar. 2014. Impact of cement dust pollution on floral morphology and chlorophyll of *healianthus annus* plant – a case study. J.Ecotoxicol.Environ.Monit., 24(1): 29-34.
[22] Jeganathan M, C Sivasubramaniyan A Manisekar and M Vasanthy. 2014. Determination of cement kiln exhaust on air quality of ariyalur in terms of suspended particulate matter – a case study. IJPBA. 5(3): 1235-1243. ISSN:0976-3333.

[23] Jeganathan M, S Gunaselvi K C Pazhani and M Vasanthy. 2014. Impact of cement dust pollution on floral morphology and chlorophyll of *healianthus annus.*plant a case study. IJPBA. 5(3): 1231-1234. ISSN:0976-3333.

[24] Gunaselvi S, K C Pazhani and M. Jeganathan. 2014. Energy conservation and environmental management on uncertainty reduction in pollution by combustion of swirl burners. J. Ecotoxicol. Environ.Monit., 24(1): 1-11.

[25] Jeganathan M, G Nageswari and M Vasanthy. 2014. A Survey of traditional medicinal plant of Ariyalur District in Tamilnadu. IJPBA. 5(3): 1244-1248. ISSN:0976-3333.

[26] Premalatha P, C. Sivasubramanian, P Satheeshkumar, M. Jeganathan and M. Balakumari.2015. Effect of cement dust pollution on certain physical and biochemical parameters of castor plant (*ricinus communis*). IAJMR.1(2): 181-185.ISSN: 2454-1370.

[27] Premalatha P, C. Sivasubramanian, P Satheeshkumar, M. Jeganathan and M. Balakumari.2015. Estimation of physico-chemical parameters on silver beach marine water of cuddalore district. Life Science Archives. 1(2): 196-199.ISSN: 2454-1354.

[28] Seshadri V, C. Sivasubramanian P. Satheeshkumar M. Jeganathan and Balakumari.2015. Comparative macronutrient, micronutrient and biochemical constituents analysis of *arachis hypogaea.* IAJMR.1(2): 186-190.ISSN: 2454-1370.

[29] Seshadri V, C. Sivasubramanian P. Satheeshkumar M. Jeganathan and Balakumari.2015. A detailed study on the effect of air pollution on certain physical and bio chemical parameters of *mangifera indica* plant.Life Science Archives. 1(2): 200-203.ISSN: 2454-1354.

[30] Shakila N, C. Sivasubramanian, P. Satheeshkumar, M. Jeganathan and Balakumari.2015. Effect of municipal sewage water on soil chemical composition-A executive summary. IAJMR.1(2): 191-195.ISSN: 2454-1370.

[31] Shakila N, C. Sivasubramanian, P. Satheeshkumar, M. Jeganathan and Balakumari.2015. Bacterial enumeration in surface and bottom waters of two different fresh water aquatic eco systems in Ariyalur, Tamillnadu. Life Science Archives. 1(2): 204-207.ISSN: 2454-1354.

[32] Ashok J, S. Senthamil kumar, P. Satheesh kumar and M. Jeganathan. 2016. Analysis of meteorological conditions of ariyalur district. Life Science Archives. 2(3): 579-585.ISSN: 2454-1354. DOI: 10.21276/lsa.2016.2.3.9.

[33] Ashok J, S. Senthamil Kumar, P. Satheesh Kumar and M. Jeganathan. 2016. Analysis of meteorological conditions of cuddalore district. IAJMR.2 (3): 603-608.ISSN: 2454-1370. DOI: 10.21276/iajmr.2016.2.3.3.

[34] Satheesh Kumar P, C. Sivasubramanian, M. Jeganathan and J. Ashok. 2016. South Indian vernacular architecture -A executive summary. IAJMR.2 (4): 655-661.ISSN: 2454-1370. DOI: 10.21276/iajmr.2016.2.3.3.

[35] Satheesh Kumar P, C. Sivasubramanian, M. Jeganathan and J. Ashok. 2016. Green buildings - A review. Life Science Archives. 2(3): 586-590.ISSN: 2454-1354. DOI: 10.21276/lsa.2016.2.3.9.

[36] Satheesh Kumar P, C. Sivasubramanian, M. Jeganathan and J. Ashok. 2016. Indoor outdoor green plantation in buildings - A case study. IAJMR.2 (3): 649-654.ISSN: 2454-1370. DOI: 10.21276/iajmr.2016.2.3.3.

[37] Manikandan R, M. Jeganathan, P. Satheesh Kumar and J. Ashok. 2016. Assessment of ground water quality in Cuddalore district, Tamilnadu, India. Life Science Archives. 2(4): 628-636.ISSN: 2454-1354. DOI: 10.21276/lsa.2016.2.3.9.

[38] Manikandan R, M. Jeganathan, P. Satheesh Kumar and J. Ashok. 2016. A study on water quality assessment of Ariyalur district, Tamilnadu, India. IAJMR.2 (4): 687-692.ISSN: 2454-1370. DOI: 10.21276/iajmr.2016.2.3.3.

[39] Sethuraman G, M. Jeganathan, P. Satheesh Kumar and J. Ashok. 2016. Assessment of air quality in Ariyalur, Tamilnadu, India. Life Science Archives. 2(4): 637-640.ISSN: 2454-1354. DOI: 10.21276/lsa.2016.2.3.9.

[40] Sethuraman G, M. Jeganathan, P. Satheesh Kumar and J. Ashok. 2016. A study on air quality assessment of Neyveli, Tamilnadu, India. IAJMR.2 (4): 693-697.ISSN: 2454-1370. DOI: 10.21276/iajmr.2016.2.3.3.

[41] Senthil Thambi J, C. Sivasubramanian and M. Jeganathan. 2018. Ambient Air quality monitoring in terms of (Nitrogen di oxide in and around Ariyalur District, Tamilnadu, India. IAJMR.4 (3): 1414-1417.ISSN: 2454-1370. DOI: 10.22192/iajmr.2018.4.3.2.

[42] Senthil Thambi J, C. Sivasubramanian and M. Jeganathan. 2018. Study of Air pollution due to vehicle emission in Ariyalur District, Tamilnadu, India. Life Science Archives. 4(4): 1409-1416.ISSN: 2454-1354. DOI: 10.22192/lsa.2018.4.4.3.

[43] Ashok J, S.Senthamil kumar, P.Satheesh kumar and M.Jeganathan. 2018. Estimation of Cement kiln exhaust on Air quality of Ariyalur in terms of suspended particulate matter - A Case Study. International Journal Of Civil Engineering And Technology. 9 (12): Scopus Indexed Journal ISSN: 0976 – 6316.

[44] Ashok J, S.Senthamil kumar, P.Satheesh kumar and M.Jeganathan.2018. Air quality assessment of Neyveli in Cuddalore District, Tamilnadu, India. International Journal Of Civil Engineering And Technology. 9 (12): Scopus Indexed Journal ISSN: 0976 – 6316.

[45] Senthilkumar M, N. Nagarajan, M. Jeganathan and M. Santhiya. 2018. Survey of Medicinal Plants diversity on Bodha Hills in Salem District, Tamil Nadu, India. Indo – Asian Journal Of Multidisciplinary Research (IAJMR) ISSN: 2454-1370.

[46] Senthilkumar M, N. Nagarajan, M. Jeganathan and M. Santhiya. 2018. Survey of Traditional Medicinal Plants in and around Ariyalur in TamilNadu, India. Life Science Archives (LSA) ISSN: 2454-1354. DOI: 10.22192/lsa.2018.4.6.5.

[47] Malarvannan J, C. Sivasubramanian, R. Sivasankar, M. Jeganathan and M. Balakumari. 2016. Shading of building as a preventive measure for passive cooling and energy conservation – A case study. Indo – Asian Journal of Multidisciplinary Research (IAJMR): ISSN: 2454-1370. Volume – 2; Issue - 6; Year – 2016; Page: 906 – 910. DOI: 10.21276.iajmr.2016.2.6.10.

[48] Malarvannan J, C. Sivasubramanian, R. Sivasankar, M. Jeganathan and M. Balakumari. 2016. Assessment of water resource consumption in building construction in tamilnadu, India. Life Science Archives (LSA) ISSN: 2454-1354 Volume – 2; Issue - 6; Year – 2016; Page: 827 – 831 DOI: 10.21276/lsa.2016.2.6.7.

[49] Sivasankar R, C. Sivasubramanian, J. Malarvannan, M. Jeganathan and M. Balakumari. 2016. A Study on water conservation aspects of green buildings. Life Science Archives (LSA),ISSN: 2454-1354. Volume – 2; Issue - 6; Year – 2016; Page: 832 – 836, DOI: 10.21276/lsa.2016.2.6.8.

[50] Ashok J , S. Senthamil Kumar , P. Satheesh Kumar and M. Jeganathan. 2016. Analysis and design of heat resistant in building structures. Life Science Archives (LSA), ISSN: 2454-1354. Volume – 2; Issue - 6; Year – 2016; Page: 842 – 847. DOI: 10.21276/lsa.2016.2.6.10.