Introduction

1.1 Preface:

Constant monitoring of the human's body parameters such as temperature, pulse rate, voltage etc. is a difficult task. Also in intensive care units it is necessary to monitor continuously the patient's health parameters and keep their record. There is possibility of human errors. There are some shortcomings present in existing system. Currently there are number of health monitoring systems available for the ICU patients which can be used only when the patient is on bed. This system has wiring complexities. Such systems become difficult where the distance Between System and PC is more.

The available systems are huge in size. Regular monitoring of patient is not possible once he/she is discharged from hospitals. These systems cannot be used at individual level. Hence to remove human errors and to lessen excessive burden of continuously monitoring patient's health from doctor's head, we are proposing health monitoring system using Mobile number through SMS with computer through GUI.

This project aims to that we can easily save many lives by providing them quick service. Such as sending a message regarding the health status of the patient to the doctor and family by mobile number through SMS remote and sending through GUI to doctor by computer inside hospital. Normally it is difficult to keep track on abnormalities in heartbeat count for patient itself manually. The average heartbeat per minute in ranges between 60 - 80 BPM, the body temperature is range between 36 - 39 degree Celsius, and the range of blood pressure is between 93 –105mm Hg. Patients are not well versed with manual treatment which doctors normally use for tracking the count of heartbeat.

So there must be some device which would help patient to keep track on their health by themselves. There are various instruments available in market to keep track on internal body changes. But there are many limitations regarding their maintenance due their heavy cost, size of instruments, and mobility of patients. To overcome these limitations a device use to keep track on heartbeat count of patient should be easy to use, portable, light weighted, small size etc so that it give freedom of mobility for patient. The devices which can be carried everywhere to keep track on patient's health. This device that is a heartbeat sensor would help them to keep track on heartbeat counts of a patient and check for any abnormalities.

1.2 Problem statement:

The fixed monitoring system can be used only when the patient is on bed and is not out door device and cannot be portable with patient in any place because of the size and connection technique.

1.3 Proposed solution:

Design a complete portable system for patient monitoring using microcontroller and sensors unit .The system should be able to observe the patient situation on distance and send the data through wireless connection to the doctor.

1.4 Objective:

The objective of patient monitoring system is to have quantitative assessment of important physiological variables of patients during critical conditions, development of microcontroller based system for heartbeat, blood pressure and temperature status is the main objective:-

1. A proposed control system using microcontroller is to be design.

2. The proposed circuit will be simulated for enchantment.

3. Practical implementation of the proposed circuit will be done.

4. Performance evaluation of the proposed system will be run.

1.5 Scope:

The scope of this research will cover the area of control specially microcontroller system along with the area of the bio sensor .the wireless area should be covered.

1.6 Methodology:

The research had been done through two phases towards complete design. Phase One: Design phase in this phase different individually for performance check. Sensors such as lm35 for temperature, blood pressure and heart rate sensor circuit are developed to measure human temperature, blood pressure and heart rate, the control system is developed using microcontroller (ATMEGA 16) and the wireless technique (ASK) & GSM system is connected for signal transfer. A Graphical user interface is designed in the doctor computer for monitor purpose. Phase Two: practical implementation when the simulated system is implemented and tested.

1.7 Chapter Organization:

Chapter1: Introduction: This chapter summarized Preface, the problem statement, proposed solution and the objectives along with the methodology.

Chapter2: Literature review which covered main area of the research including sensors, control system and data transfer modeling.

Chapter3: System design, explain in details the full connection of the system and how does it work.

Chapter4: Implementation and Simulation results, height different scenario of simulation result with a brief discussion on the obtained result.

Chapter5: Conclusion and recommendations conclude the work done on the research and present several recommendations for future work.