

ICT SIMPLIFIES HOMECARE

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Homecare is a new approach to monitor patients and their daily routines. With the competitive and complex life styles, looking after the elderly and the feeble has become an obstacle for many. To ease these circumstances homecare has become a popular choice. Sophisticated digital medical tools and communication protocols have been developed and introduced to the industry to further enhance the level of care received by the needy [1]. Yet, the prevailing situation and the medical condition of the patient are not easily accessible to their immediate relatives, such as children (Figure 1).

Sophisticated Homecare is needed when...

- The relatives would be worried to know the immediate conditions of a person having care.
- The person is lonely at home.
- It is difficult for a relative to reach the person.

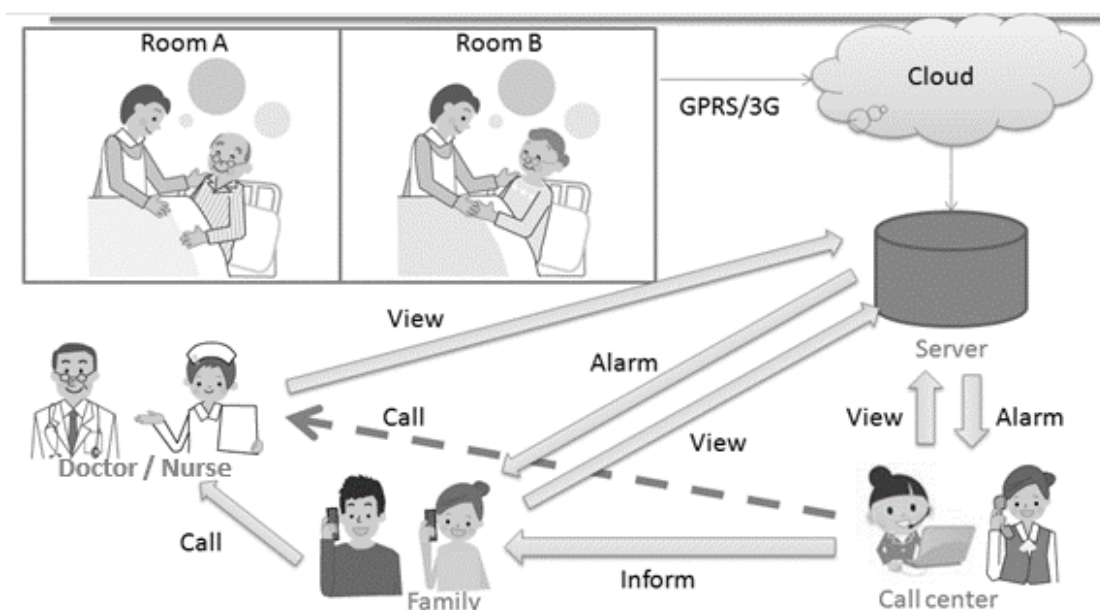


Figure 1: System Overview

Main features of the System

A sensor called Mat Sensor, attached (Figure 2) to the mattress or bed-sheet that a person is lying on, measures a few vital signs such as,

- Heart rate
- Respiratory rate
- Body movement



Figure 2: Transponder



Figure 3: Mat Sensor

A transponder (Figure 3) collects the sensor signals and uploads to a server in every pre-configured time interval. The patient is provided with a mobile computer such as a tablet PC, with a user-friendly software application (Figure 4 and Figure 5) to update their daily routine. In the case of a patient being incapable of performing these updates, a medical assistant will visit the patient to update the system. The collected information is stored and managed by a central database. The relatives of the patient who are authorized to access the information are registered at the digital call center.



Figure 4: Graphical View of Vital Signs



Figure 5: Vital Record Mobile Application

When a registered relative places a call to the call center, the information of the patient is automatically displayed to an agent who receives the call. Thus, homecare, supported by advanced vital sign sensors with computer software and call center hybrid solution simplifies the patient monitoring effectively and economically.

References

1. P.M.P.C. Gunathilake, P.D.C.R. Jayarathna, Charith Atapatthu, Sachith Premasiri, Vajira Karunathilake, Y.P.R.D. Yapa and Motoki Furue, "A Hybrid Solution to Enhance Homecare", Conference on Sri Lanka - Japan Collaborative Research, December 2014.