A Tablet PC based System for Ubiquitous Patient Monitoring and Smart Alert Generation in an Intensive Care Unit

Providing critical care to patients admitted to an ICU is a very important aspect in healthcare. This requires mechanisms for ubiquitous monitoring and smart alert generation systems. The conventional systems in many hospitals are not able to cope up with this requirement. So that medication and other required actions will be getting delayed making life difficult for a patient. These issues can be addressed by implementing a Tablet PC based system focussed on ICU based work flows. Designing and developing of Apps can provide better solutions for clinical data entry, patient monitoring and meaningful alert generation. The clinical data entry can be made easier with the help of a Tablet PC which offers a number of possibilities for organised data entry. Once the data becomes available; forms, charts, graphs etc can be generated easily without much manual intervention. Interfacing bed side monitors to the central server can provide automated and ubiquitous solutions for monitoring and analysis of patient data. Another important aspect is the way in which alert generation is made. In existing systems alerts are generated based on hard limits set by the clinical staff. There is a need to develop a more comprehensive system that holistically looks at all available information about the situation before generating an alert. Towards this, it should continuously monitor all vital signals available and evaluate the cross functional effects between them before arriving at the seriousness of the conditions leading to more meaningful alerts.

Abstract

Providing critical care to patients admitted to an ICU is a very important aspect in healthcare. This requires mechanisms for ubiquitous monitoring and smart alert generation systems. The conventional systems in many hospitals are not able to cope up with this requirement. So that medication and other required actions will be getting delayed making life difficult for a patient. These issues can be addressed by implementing a Tablet PC based system focussed on ICU based work flows. Designing and developing of Apps can provide better solutions for clinical data entry, patient monitoring and meaningful alert generation. The clinical data entry can be made easier with the help of a Tablet PC which offers a number of possibilities for organised data entry. Once the data becomes available; forms, charts, graphs etc can be generated easily without much manual intervention. Interfacing bed side monitors to the central server can provide automated and ubiquitous solutions for monitoring and analysis of patient data. Another important aspect is the way in which alert generation is made. In existing systems alerts are generated based on hard limits set by the clinical staff. There is a need to develop a more comprehensive system that holistically looks at all available information about the situation before generating an alert. Towards this, it should continuously monitor all vital signals available and evaluate the cross functional effects between them before arriving at the seriousness of the conditions leading to more meaningful alerts.
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Index Terms

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