Overcoming information overload in the ICU

Intelligent dashboard delivers organ-based insights to critical care clinicians to support informed and efficient decisions

Need

Extracting meaningful insights from the massive amount of data produced in the intensive care unit (ICU) may create a cognitive burden on clinicians, and contribute to medical errors.[1]

Solution

IntelliSpace Console is a patient-centered clinical decision support dashboard that aggregates and analyzes data from medical devices, hospital information systems, and the electronic medical record, to give a dynamic display of a patient's condition.

Benefits

Studies in the Journal of Medical Systems and Applied Clinical Informatics showed that systems showing consolidated data into organ systems like IntelliSpace Console contributed to improvements such as[2,3]:

· 55% reduction in medical error
· 44% reduction in cognitive load
· 50% reduction in ICU length of stay
· 37% reduction in hospital stay

Health systems are seeking to better address the vast amount of data available in the intensive care unit.

IntelliSpace Console Critical Care extracts high fidelity data from multiple systems, including the electronic medical record, pharmacy systems, and lab systems. It consolidates those data sources and analyzes them to present an organ-based summary of the clinically relevant information when and where it is needed. It is designed to be organized around the way clinicians think and collaborate, helping them to get relevant information from large amounts of data.

Studies have shown that, compared to a traditional EMR, use of systems that create an organ-based dashboard – as IntelliSpace Console does – can lead to a **reduction in medical errors by 55%**[2] and a reduction in ICU length of stay by **nearly 50%**[4]

Facts and figures

The ICU can generate more than **1200 data points** per patient per day.[5]

Studies suggest that there is an association between **high cognitive load** when viewing patient health data and likelihood of medical errors occurring.[2,6]

Medical errors are estimated to be the **third biggest cause of death** in the US.[7]

Patient care in the ICU has been estimated to generate more than 1200 data points per patient per day.[5]

Information overload could result in communication failures and errors of omission, which may affect patient outcomes. Systems like IntelliSpace Console that organize data into organ systems are designed to improve performance and efficiency in the ICU.[2,6]

Compared to a traditional EMR, use of systems that create an organ-based dashboard - as IntelliSpace Console does - reduced time to task completion, provider cognitive load, and medical errors when viewing patient health data of critically ill patients.[2,6]

Developed in collaboration with clinical and research partners

IntelliSpace Console is the result of a multi-year clinical study and research collaboration between Philips, US decision support software company Ambient Clinical Analytics, and the Mayo Clinic under the product name AWARE[8] (Ambient Warning and Response Evaluation).

Together with the United States Critical Illness and Injury Trials Group, these organizations received support from the Center for Medicare and Medicaid Innovation (CMMI) to research the impact of using AWARE, the technology that was evaluated in the Journal of Medical Systems study.

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