DocBox

Innovative Clinical Process Management Solutions to Improve Medical Safety

Statistically, preventable medical errors are the sixth leading cause of death in the United States. This not only includes medical negligence but also the ongoing failure of established systemic processes that, while designed to promote better care, instead compromise medical safety. In the past, attempts to confront the costs of medical negligence whether through malpractice insurance or additional healthcare processes have been reactive, not proactive.

Challenges with Data and Medical Systems

Today's healthcare systems rely on human intervention and operation – even when solutions can be simply solved through intelligent, automated data distribution that has been applied in other non-medical industries. Currently both automated infusion pumps (for drug delivery) and monitoring systems may be connected to a patient. This drug delivery system is configured to deliver a specific dosage over a specific timeframe. If, during this timeframe, the monitoring system registers the patient's vital signs as being abnormal, it may, at most, trigger both an auditory and visual alarm to alert the provider. During this scenario, the automated drug delivery system continues to infuse the drug, which is now contraindicated, until a clinician manually interrupts the pump's programming.

Imagine a monitoring system with a decision engine that can directly interact with a pump to automatically pause the pump under certain circumstances until the clinician arrives. The risk of a drug overdose would decrease significantly.

Patient data input is another high-risk process. Data on most patients is neither organized nor prioritized to speed room setup with correct and properly configured equipment. Personalized checklists based on patient history can alleviate some of the risks by ensuring that the relevant staff receives information required to populate the room with correctly configured equipment for that patient's specific needs.

The DocBox Solution

DocBox – a company whose goal is to develop innovative clinical process management solutions for hospitals – chose the proactive route to confront medical errors by integrating complete patient information at the point of care. Its open platform enables hospitals to properly structure and prioritize medical data. The platform also efficiently distributes that data to physicians and clinicians when and where it is needed most.

DocBox conforms to guidelines specified in the Integrated Clinical Environments (ICE) initiative that ensures regulatory approval and provides both functional and safety standards. DocBox provides technology options that hospitals can use to improve their efficiency, and explains the best approach to configure profiles and settings for those technologies to achieve the best results and promote interoperability.

The ICE initiative was developed by the Center for Integration of Medicine and Innovative Technology (CIMIT) to improve the effectiveness of medical records and decision-making support for clinicians. Over 100 different institutions have contributed to efforts to identify and establish standards and specifications to optimize and integrate clinical workflow with interoperable devices and technologies.

Many DocBox efforts are designed to open standards such as ASTM F2761 and made publicly available at MDPnP (http://mdpnp.org/), a leading program for developing ICE concepts and capabilities. In fact, DocBox collaborated with MDPnP to demonstrate interoperable medical systems at a recent HIMSS conference.

Benefits of DDS for DocBox

At the heart of DocBox efforts lies medical data. And data is where RTI excels. Since 2001, when a DocBox engineer suggested DDS, Connext™ DDS products have served as the messaging solution for all DocBox network communication needs.

With the goals of improving patient safety, delivering superior patient care, and lowering healthcare costs, data integrity and management are primary concerns for DocBox. RTI applies a similarly rigorous data-centric approach as a precursor to organizing and delivering relevant data to devices, people, and other systems that can then take appropriate action.

"RTI Connext DDS met all our initial needs, and continues to grow with us – whether we're handling expanding amounts of data for 12 patients, or 200."
DocBox Founder, Tracy Rausch

Additionally, Connext DDS helps ensure that the DocBox platform remains architecturally agnostic. Its light weight easily allows a wide variety of platforms and devices to interoperate. DocBox continues to rely on the flexibility and scalability of the RTI DataBus to handle ever expanding amounts of data, whether for 12 patients, or for 200. A robust collection of QoS parameters precisely and accurately handles a wide range of requirements.

DocBox and RTI have worked together for more than a decade to make sure vast amounts of media data can be handled safely, securely and accurately. Their goal is to help doctors, nurses and other medical practitioners get critical, relevant patient data in real time. As a result, preventable medical errors can be avoided, increasing patient safety and reducing healthcare costs.

About RTI

RTI is the real-time infrastructure software company.

RTI provides the messaging backbone for the world's most demanding real-time systems. RTI Connext™ enables applications – running on the smallest devices and the largest enterprise servers – to seamlessly share information and work together as one.

Committed to open standards, open community source and open architecture, RTI provides the leading implementation of the Object Management Group (OMG) Data Distribution Service (DDS) standard.

Our customers are in aerospace and defense, process automation, financial services, energy, automotive, health sciences and transportation. RTI is privately held and headquartered in Sunnyvale, California.

rti
Your systems. Working as one·

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