Welcome from Neil A Halpern, MD

Chair, Intensive Care Unit Committee of the RFID in Healthcare Consortium and the Intelligent Hospital

It is my pleasure to welcome you to the Intensive Care Unit (ICU) of the Intelligent Hospital. Critical care is important in America. There are approximately 6,400 ICUs in the US with 95,000 ICU beds. These beds represent 15% of hospital beds and ICU care accounts for almost 1% of the GDP.

The ICU is a crucial component of the spectrum of inpatient care and hospital-based informatics which stretches from the Emergency Department, operating rooms, interventional procedural suites, post anesthesia care unit to the wards. However, the ICU is also a semi-autonomous, mini-hospital that cares for the sickest of all hospitalized patients utilizing the highest staff to patient ratio within the hospital as well as a myriad of costly and advanced devices, consumables and informatics systems. The Intelligent Hospital format allows the visitor to both conceptualize and visualize how the ICU fits into the overall hospital care paradigm and how the technologies interact within the ICU patient room and across the ICU.

The ICU patient room at its core includes a patient bed, physiological monitor, mechanical ventilator, and infusion pumps as well as a medical utility system that houses these devices and brings medical gasses, vacuum, data ports, and power to the bedside. The room also contains communication systems, wired ports and a variety of wireless access devices. A connectivity envelope surrounds the patient to help bring the patient, staff, medical devices (really informatics platforms), supplies and ICU and hospital middleware as well as the hospital's bed management system and electronic medical record (EMR) into an informatics continuum. This envelope permits advanced monitoring of all aspects of care, the projection of imaginative displays that integrate diverse systems to create a modern view of the patient and the room's environment, and real time locating systems that not only track assets but link with other middleware to push forward innovative ICU programming and help solve complex problems.

We hope that you enjoy your visit to the Intelligent Hospital and the ICU and come away with new thoughts and possibilities to advance informatics and care in your own ICUs.

Neil A Halpern MD is Chief of Critical Care Medicine and Medical Director of Respiratory Therapy at Memorial Sloan-Kettering Cancer Center, NY. He is a Professor of Medicine and Anesthesiology at Weill Cornell Medical College, NY. Dr. Halpern is a Master of the College of Critical Care Medicine and a Fellow of the American Colleges of Physicians and Chest Physicians.

Critical Care Designs

Critical Care Designs is a consulting firm that assists healthcare architects, hospital administrators, facility planners, informatics specialists and critical care (intensive care) clinicians in designing new, or upgrading existing, intensive care units.

Our focus is on creating a connected environment with advanced informatics in the context of innovation, efficiency, data management, healing and patient safety.

Dr. Halpern is Chief of Critical Care at Memorial Sloan Kettering Cancer Center in New York City and helped design Memorial's design award winning ICU. He is a consultant to informatics companies and has written and spoken extensively on ICU design both in the US and Europe, and is vice-chair of the ICU Design Award Committee of the Society of Critical Care Medicine.

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