Infecting Healthcare with Human Factors

Highly interdisciplinary and collaborative, CRIS is dedicated to developing effective strategies and tools to improve patient and clinician safety and quality of care.

Clinical Decision Support Tool for Cirrhosis Treatment

CRIS collaborates with the Vanderbilt University Health Administration to develop a clinical decision support tool (CDST) aimed at improving the quality and timeliness of care for patients with cirrhosis. The tool integrates structured knowledge and clinical evidence to help clinicians identify cirrhosis patients and guide appropriate care pathways. It can be easily integrated into electronic health records (EHRs) to provide real-time decision support to healthcare providers.

Teaching & Training

Faculty and staff provide guidance in the VA, other Vanderbilt centers and Work Analysis & Improvement centers to identify decisions and tasks relevant to current clinical practice and future needs.

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Simulation-Based Performance Assessment

It is important for physicians to maintain their collective knowledge throughout their careers. We used a high-fidelity simulation-based standardized patient assessment tool to assess and improve the performance of interprofessional teams at Vanderbilt University Medical Center. Our findings indicate that simulation-based standardized patient assessment is a valuable tool for assessing and improving the performance of interprofessional teams.

Checklist Tool Improves Quality of NICU Intraoperative Handovers

Intraoperative handovers in neonatal intensive care units (NICUs) are critical to patient safety. We developed a visual checklist tool to improve quality of handovers during NICU intraoperative cases. The tool we developed was effective in improving handover quality and ensuring that critical information was transferred to the surgical team.

Communication & Decision Making

We investigate team communication, coordination, adaption, practice, culture and effectiveness, and individual and group performance-shaping factors. Our research aims to improve patient care and reduce errors.

CRIS collaborates with the Vanderbilt Institute for clinically relevant simulations (ICReS) to develop high-fidelity simulation scenarios. We have used simulations to gather preliminary evidence that simulations can improve clinician performance by providing a controlled environment for learning and practice.

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Video rating software.

We observed 60-handovers pre- and post-implementation of our tool. The critical performance elements rated improved significantly post-implementation, with participants managing 27% more critical information and improving the frequency of transition-of-care-related events.

Frequency-Sensitive Selective Device for Digital Filtering of Alarm Sounds

At Vanderbilt University Medical Center, we have observed that excessive and repetitive alarms can lead to alarm fatigue and desensitization. In response, we developed the Frequency-Sensitive Selective Device (FSSD), which selectively filters out low-frequency sounds, thereby reducing the number of nuisance alarms while maintaining alerts for important events.

Patient-Chronic Illness Routines

In four separate studies, we explored routines by patients with chronic illnesses and identified several factors that contribute to the development and maintenance of these routines. Our findings highlight the importance of considering these factors in the development of interventions designed to improve patient outcomes.

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