

Current Challenges Operating Room

Where Can Decision Assist and Autonomous Control Play a Role



Conventions

- Challenges
- Watch
- Help
 - Standards & Regulations
 - Product development
- Drive
 - Research
 - Standards & Regulations
 - Product development



Challenges - Environment & Devices

- Integration of monitoring devices – operating room design - capturing data – DRIVE
- Plug and play – interoperability - HELP
- Transition from ED to OR – workflow design issue – HELP – DRIVE STANDARDS
- Sensors – plug in or wireless – to any monitor – electrical –physical- communication - WATCH



Challenges Information

- Data versus Information
- Natural language alarms - HELP
- Intelligent alarms – trend over time- HELP
- Prioritization of alarms – hierarchy – control panels – displays – DRIVE STANDARDS

Challenges - Patient Monitoring

- Fluid resuscitation - WATCH
- Hemostasis rapid assessment coagulation state – HELP/WATCH
- Transfusion - WATCH
- Temperature control - hypothermia – hyperthermia - DRIVE
- Provision and depth of Monitoring –depth of anesthesia
 - Pain control
 - Muscle relaxation
 - Sedation WATCH MORE RESEARCH
- Ventilation/oxygenation – WATCH/HELP
- Agent delivery/anesthesia – WATCH/HELP

Challenges - Decision Assist

- Decision assist for injuries outside of the realm – guidelines orthopedics, craniotomy, burr holes - HELP
- Real time on demand expertise
- Telecomm – remote surgery – teleconsult – RESEARCH/HUMAN INTERFACE - DRIVE
- Surgical closure – sewing machine - WATCH
- Ultrasound – internal visualization – continuous scan - WATCH
- OR table – 3 D imaging system - WATCH
- Tissue imaging – image registration
- Hyperspectral imaging – non-invasive oxygenation/biochemistry – burn and wound management - WATCH