eICU and Beyond: Nursing Practice
Leadership within Tele-health

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Agenda

- Part I – Tools That You Need to Be Successful
- Part II – Clinical Transformation through the eICU
Telehealth: A Tongue-in-Cheek Retrospective
19th Century Healthcare Teleconference
Tele-consultation and early telehealth robot controls
NYC’s First Telestroke Network
1st telepsych evaluation
Peds Consultation Circa 1960
1970s – 2am Consultation with Attending
I Have No Idea!

If adding video to the telephone was enough to change healthcare,

Wouldn’t we be there by now?
The eICU Program

Leveraging scarce resources to create a system-wide safety net

Remote eICU Center
Check list for eICU

- Population Management
- Continuous Clinical Team Engagement
- Evidence–based Decision Support
- Integrated Data and A/V
- Benchmarking Clinical Outcomes
- Workflows that integrate remote care teams
Population Management Thinking

The Rathmell Syllogism:
- If scarce and expensive clinical resources must be shared across many patients; and,
- If EMRs are designed to optimize one on one patient care
- Therefore, you need different tools to allow clinicians to work effectively with many patients at once

Population Management Needs:
- Filter to just the really important things
- Quickly get to know the patient
- Focused on status of patient, not documentation of care
Continuous Clinical Team Engagement

Intensivist (1)
- Proactive clinical intervention
- Continuous rounding
- Code management, supervise procedures
- Document orders and brief progress notes

Critical Care Nurses (2)
- Triage patients
- Filter Smart Alerts
- Facilitate evidenced-based practice
- Mentor new/inexperienced staff
- Patient rounding

Computer Intelligence
- Continuous proactive monitoring
- Manage and deploy communications to the remote eICU team

Screening

100+ Beds
Evidence-based Decision Support

Refined against >100,000 patients’ data

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Combined parameters
Patient-specific parameters
Color coded
Integrated Data and A/V

Scaling up means moving across EMR instances
Benchmarking Clinical Outcomes

- **Severity-adjusted mortality**
- **Severity-adjusted LOS**
- **Low risk monitor patients**
- **Severity Adjusted vent days**

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**eICU Composite Performance**
- VTE prophylaxis
- Median ventilator days
- Stress Ulcer prophylaxis
- Low tidal volume ventilation
- Blood Transfusion threshold
- Beta-blocker usage
- Glycemic control
- Complications
- eICU Physician Interventions

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**VTE Prophylaxis Compliance**
- Within 48 Hrs of Unit Admission
- All eICU Centers
- Sample Health System
- First ICU
- Second CCU
- Second CVICU
- Second SICU
- Third ICU
- Fourth ICU
- Fifth ICU
- Sixth ICU
- Seventh ICU

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**Program Performance Reports**

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**Daily Management Reports**
- Ventilator bundle
- Discharge readiness
- Glucose control
- MI bundle
- APACHE Missing Data
Compliance with DVT Prophylaxis

VTE Prophylaxis Compliance - Q4 2010

HealthFirst
Swedish Medical Center
John Muir

Sample Health System
Organizational Success Factors

- Clinical programs do not run themselves (medical / operations directors)
  - Right skills - maturity / clinical competence
  - Aligned incentives

- ICU-eICU integration essential
  - Strong institutional support
  - Accountability and performance-based compensation for ICU leaders

- Senior leadership
  - Communicate vision
  - Manage political challenges
  - Provide resources
“I want you to find a bold and innovative way to do everything exactly the same way it’s been done for 25 years.”
Clinical Transformation

eICU Program and Beyond
The eICU Program

CLINICAL TRANSFORMATION

People
- Highly leveraged, centralized, intensivist-led care team

Technology
- Enabling tools provide continuous monitoring
- Early warning clinical decision support

Process
- Data transparency to drive sustainable improvement
  - System-wide, standardized, severity-adjusted reporting

Proven, Predictable, and Sustainable RESULTS
Why the eICU Program?

Third party validated: Proven, predictable, sustainable results

23% Severity Adjusted ICU Length of Stay

22% Severity Adjusted ICU Mortality

Why the eICU Program?

Third party validated: Proven, predictable, sustainable results
Conclusions

If tele-ICU systems were broadly and effectively implemented in MA

- >350 additional lives could be saved each year,
- The potential savings for payers would exceed $122 million annually
- Academic Medical Centers and Community hospitals with >10 ICU beds should implement Tele-ICU systems by 2015

Study published December, 2010
CONCLUSION: The eICU LifeGuard more than pays for itself in dollars, lives saved and quality of care.

Summary:
- Baptist Health South Florida
- 114 beds across 5 acute care facilities
- eICU Program monitors 24X7
- Since Q2, 2006:
  - 26% lower SMR
  - 36% reduction in SA ICU LOS
- 1H 2010:
  - 2083 ICU days saved
  - 4699 Hospital days saved
  - $6.6 million saved
Telehealth Solutions for Health Systems

Provide hospitals and health systems a sustainable model for 24x7 clinical support of patients across the care continuum.

Enable enhanced care delivery integrating a centralized TeleHealth Center to leverage scarce resources and improve transitions for patients across care areas.

Greater access to clinical specialists, improved patient outcomes, and reduced healthcare costs.

- **Remote Systems**... fixed and mobile solutions for every care environment.
- **Population Management**... workflow and CDS tools to facilitate efficiency.
- **Reporting Solutions**... enabling real time performance management.
- **Consultative Modules**... specific solutions for care area initiatives.
- **Clinical Transformation**... dedicated to successful implementation to enhance care and practice.
Coordinated Tele-health Care Team

Telehealth Center
Clinical Decision Support
Clinical Management

Intensivist

Hospitalist

Specialty Consultants
PCPs & Care Managers
Clinical Pharmacist

Home-Health Nurse

Specialty Nurses
The Case for TeleMedicine

- Quality
- Access
- Cost

TeleMedicine
Early Identification for Potential Organ Donation

**CHALLENGE**
Maintaining a focus on the timely identification of potential organ donors in conjunction with ongoing patient care demands.

**SOLUTION**
Use of VISICU’s eICU® Program for faster, more efficient identification of potential organ donors.

**BENEFITS**
- 28% increase in “timely” donor referrals
- 16% rise in overall donor referrals
- Greater efficiency/less burden

**CONCLUSION**
Innovative providers are finding that the eICU Program provides an effective model for identifying donors, creating decision protocols and integrating organ donation into the end-of-life continuum of care.
Telemedicine in a Rural Community Hospital for Remote Wound Care Consultations

**BACKGROUND:**
- Increase in wound consultations
- Distance between rural campus and main campus
- Utilized technology manufactured by VISICU (Baltimore, MD) used by intensive care and step-down patients in our health system.

**PROCESS:**
- Initiated a formal program for remote wound care consultations
- $5000 savings estimated with completion of 50 remote wound consultations

**CONCLUSION:**
Initial experiences suggest:
- Using **real-time telemedicine** reduces delays in completion of consultation
- Decrease in transportation
- Non-productive staff time costs,
- Results are comparable to traditional face-to-face consultations.
CONCLUSION

- A collaborative PU mgmt program with bedside RNs effectively and significantly improves initial and ongoing wound assessment and documentation.
- Recommendation for a house-wide physician education plan on pressure ulcer documentation.
- Request to the Medical Executive Committee (MEC) for consideration that pressure ulcer documentation become a role for the tICU physician for all ICU patients.
Eyes of Champions Guide Rookies Through the Race of Critical Care Nursing: Use of a Telemedicine Mentoring Program

Tele-ICU Mentors

- Mentorship agreement
  Designed to confirm the commitment
- Mentoring workflow
  Puts actions into a flow
  Looks at decision making
- Daily Evaluation form
  Completed by eICU mentor
- Pre/Post Perception tool
  Operations Director responsible for administration

- Second Opinions
- Simple Reassurance
- Reviewing the Safety checklist and POC
- Assistance with Documentation
- Assistance with performing tasks
Tele-ICU and the Transfer Center: Saving Lives, Dollars and Time

Integrating the efforts of the Tele-ICU and the Transfer Center

* Real-time situational awareness
* Comprehensive continuity of care
* Advice on transfer responsibilities and resources
* Constant physician availability to the Transfer Center
* Compliance with EMTALA laws and documentation
* Standardization of transfer protocols
* Improved throughput
Providence Health: eICU Implementation Utilizing Nursing Model and Transitioning to a Physician Model

**Purpose**
Impact of first nurse-implemented Tele-ICU staffing model, with the intent that shared nursing vigilance and collaboration can decrease patient complications potentially impacting patient outcomes.

**Solution**
Created a multi-stage plan to launch the hospital’s eICU as nurse-led, with the option of switching the model to being collaboratively intensivist and nurse led when the intensivist resources became available.

**Results**
Data demonstrate post Tele-ICU implementation improvements as follows:
- Severity Adjusted LOS decrease 15% (222 patient days saved)
- Severity Adjusted ICU mortality decrease 14% (20 lives saved);
- Compliance improvement of ‘at risk’ patients:
  - Restraint 26% improvement;
  - Ventilator bundle compliance 8% increase
  - VAP 13% decrease patient days.
Emergency Response and Mobile Telemedicine: A Collaboration in Disaster Preparedness

**CHALLENGE**

Establishing and maintaining a skilled clinical disaster response team in the community hospital setting can be challenging.

**SOLUTION**

Use of eCareMobile to leverage physicians and nurses with the expertise to manage, triage and consultation for critically injured patients in multiple hospital sites.

**CONCLUSION**

Successful implementation of mobile telemedicine was achieved in 9 ED’s.
The Way Forward

- eICU
  - Clinical Leadership
  - Infrastructure Enhancements
- eConsultant
  - Focused Care Needs
  - Consultative Solutions
- Tele-health
  - eHospital
  - Hospital@Home
  - eL&D

CLINICAL TRANSFORMATION

People
Technology
Process

Proven, Predictable and Repeatable RESULTS
Telehealth Coordination

Telehealth COR provides continuity of care

a seamless patient pathway
Telehealth Center

- Point-of-Care Testing
- Symptoms
- Video
- Devices (Telemonitoring)

Hospital

- Identify Patients
- Track Clinical Trajectory
- Provide Education
- Prepare for Discharge & communicate with PCP

Home

Hospital @ Home

- Supports safe and seamless transitions from Hospital to Home
- 24x7 patient care to reduce in-patient length of stay & avoid unnecessary readmissions
- Provides processes and technology to deliver comprehensive patient care
- Delivers coordination between in-patient & out-patient care providers

Providing Optimal, Coordinated & Early Discharge to the Home
The Telehealth Center

- eED
- eICU
- eHospital
- Hospital@Home
- eHome

Ancillary Services

Accountable Care Organization

Health Information Exchange

Specialty Consultants

PCPs & Care Managers

Transfer Services

Disaster Preparedness

Case Management