TeleICU: The Strategy That Delivers

Session #254, February 14, 2019
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Cindy Welsh, RN. MBA. FACHE. VP System Adult Critical Care, VPMS
Conflict of Interest

Michael Ries, MD, MBA, FCCM, FCCP, FACM
Has no real or apparent conflicts of interest to report.

Cindy Welsh, RN, MBA, FACHE
Has no real or apparent conflicts of interest to report.
Agenda

• Overview of AdvocateAuroraHealth
• Evaluation of Tele-ICU Use
• Tele-ICU tools and data
• Leveraging the Tele-ICU Technology in Other Care Settings
• eSepsis
• Use of Tele-ICU in Rapid Response Teams
• Employing Tele-ICU to Support Nursing
• Final Thoughts
Learning Objectives

- Recognize that the success of telehealth is determined less by what technologies you have and more by how you use them.
- Discuss how tele-ICU can achieve clinical and financial benefits across a large healthcare system utilizing implementation science.
- Recognize that collaboratively employing population management tools between the tele-ICU and ICU can improve patient outcomes and realize financial results.
- State how tele-ICU is a facilitator of change management as much as an “intervention”.
- Demonstrate how gap analysis affords an opportunity for telemedicine to improve evidence-based practice adherence in the ICU.
Value is created not by the technology you have but how you use the technology
Advocate Critical Care

• 10 hospitals / Five Level One Trauma Centers
• 16 ICUs
• Advocate legacy = 424 beds
  – 312 Critical Care beds (plus three Outreach programs = 104 additional beds)
  – eMobile carts in the ED (N = 7)
  – Critical Access Hospital with eMobile cart
• > 6000 physicians / > 100 Intensivists
• 24,686 Annualized ICU Admissions with APACHE Predictions in 2018
  – Ventilator days: 27,401 on 8,555 cases
  – Total direct costs for days while the patients were treated in the ICU (excluding ED and OR costs) were approximately $200M or 17% of direct costs for inpatients
• eIntensivist and eRN coverage 24/7/365 with board certified critical care physicians
Aurora Critical Care

• 15 Hospitals
• 18 ICUs
• 2 Outreach customers = 35 beds
• Aurora legacy eICU = 320 beds
• 19,252 Annualized ICU Admissions with APACHE Predictions in 2018
  – Ventilator days: 18,558 on 6,693 cases
• eIntensivist and eRN coverage 24/7/365 with board certified care physicians
• ED Triage program separate from eICU
• Telestroke program at single hospital
AdvocateAurora Critical Care

- 25 Hospitals
- 34 ICUs
- eICU = 764 beds
- 7 Outreach Sites (WI, IL, DE, MD)
- eIntensivist and eRN coverage 24/7/365 with board certified care physicians
- Several instances of use of tele-ICU technology outside of the ICU
eIntensivist Workstation
Transformation to Integrated Care

- Population Management and Evidence-Based Standardization
- Patient Centric Focus
- Information Technology
- Collaborative and Integrated Workflows
Variance in Practice of Tele-ICU

- Technology
- Types of ICUs
- Bedside intensivist staff model
- Bedside documentation/CPOE availability
- Remote center staffing patterns
- Qualifications of providers
- Hours of Operation
- Buy-in by bedside clinicians
- Adherence to best practices
- Use of quality and safety information
- Intensivist handover of their patients
- Community v. Tertiary Facility
- Teaching v. Non-teaching
What Does Tele-ICU do to Improve Quality?

• Disease Management
  - Acute interventions
  - Patient surveillance for proactive intervention
• “Population Management” – Best Practices
• Support Individual Unit Special Needs – Process flow variability through “gap analysis”
• Education
  - Resident eRounds
  - Nurse Mentoring
• Leveraging the technology in other care settings
Opportunities that can leverage Telemedicine

- “AHA” moments
- Data demonstrating Opportunities for Improvement
- Serious Safety events
- Gap analysis
- Evidence–based practice
- Individual ICU requests leading to successes that can be disseminated
- Lessons learned from other population management successes
Factors that reduce variation in care

• Surveillance
• Every Patient, Every Day
• Consistent Evidence-Based Practice
• Timely Interventions
• Risk Adjusted Data
• Horizontal Integration
• Vertical Integration
Data, data, data,…..

W. Edward Deming:

• “In God we trust; all others bring data.”

• “Without data, you're just another person with an opinion.”

• “If you can't describe what you are doing as a process, you don't know what you're doing.”
# Year over Year Improvement

**ICU Detailed Clinical Outcomes Summary**  
**Advocate APACHE IVa**  
*Obtained from Quarterly Detailed Clinical Outcomes Reports*

Quarterly Average Annual  

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<td>System</td>
<td>2014Q4 - 2015Q3</td>
<td>2015Q4 - 2016Q3</td>
<td>2016Q4 - 2017Q3</td>
<td>2017Q4 - 2018Q3</td>
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<td>828</td>
<td>1203</td>
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## 2018 Safety & Quality Accomplishments

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<tr>
<th>Area of Focus</th>
<th>Initiative</th>
<th>Financial Impact</th>
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<tr>
<td>IL eICU®</td>
<td>Improvements in quality of patient care</td>
<td><strong>507 ICU lives saved</strong> (mortality ratio went from 0.42 to 0.22). <strong>Decrease of 259 ICU days</strong> with a cost avoidance of <strong>$959K</strong> (ICU LOS ratio went from 0.63 to 0.61). <strong>Decrease of 441 ICU vent days</strong>, with a cost avoidance of <strong>$287K</strong> (vent ratio went from 0.77 to 0.76).</td>
</tr>
</tbody>
</table>
Who is your Customer: Define Your “Population”

- Patients
- Physicians
- RNs
- Regulatory Reporting Requirements
- Administration
Implementation Alternatives

• Pilot in one or two units
  – Pros:
    • Allows testing and modification of the tool (PDSA)
    • Manageable for the eICU staff during learning curve
    • May recruit sites with high need for that particular initiative to volunteer for pilot
  – Cons:
    • Limited population
    • Still requires education and roll out to other sites if successful
    • Variances by type of ICU
    • Delays in achieving the benefits

• Roll out across the entire system at once
  – Pros:
    • Big Bang theory – everyone gets it on day one
    • Depending on initiative, may help prevent a safety event
  – Cons:
    • All sites may not perceive initiative as beneficial in the absence of data to demonstrate efficacy
Multidisciplinary Round Checklist Report
## Multidisciplinary Round Checklist

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ICU VAP: Avoided Cost Trend

*Bethany Hospital excluded from January 2007 forward
*Brotmann Medical Center included starting in 2010
*Erman Hospital included starting in 2013
*Data represents Adult ICU units only
ICU CLABSI: Attributable Cost Trend

• Sherman Hospital included starting in 2013
• Data represents Adult ICU units only
Leveraging the Technology in Care Settings Other than the ICU
Patient Safety Story

• An elderly patient was admitted to the ED with shortness of breath and a decision was made to admit to ICU. While boarding in ED due to lack of ICU bed availability, the patient continued to deteriorate, suffered a cardiac event and ultimately expired.

• A Root Cause Analysis (RCA) ensued with at least four areas of opportunity for improvement identified.

• Corrective action resulted in the implementation of four eCareMobile carts, definition of new work flows for ICU boarders including the handover process and continuous patient monitoring (unique in the ED for ICU overflow monitoring).

Ongoing PDSA revealed an opportunity to utilize change management of both the IT and clinical processes.
Cause Map Opportunities for Improvement

Patient Safety Goal
Impact

Limited treatment options for cardiac condition
Cardiogenic shock
Patient hemodynamic unstable
Significant myocardial injury
Delay in diagnosing STEMI
Pt admitted to MICCU and holding in ED
No beds available
Patients awaiting bed availability 1 transfer from MICCU.
Lack of available beds due to census.
ED physicians cannot write admit orders
No repeat labs/EKGs ordered
No ICU protocols utilized in ED
Credentials do not allow
Pt admitted to MICCU and holding in ED
Too busy with MICCU patients

MICCU residents work under intensivists who do not see patients before admit to MICCU
Patient not seen in ED by attending MICCU docs/residents
Intensivist/Resident from MICCU not involved in patient care in ED
MICCU residents work under intensivists who do not see patients before admit to MICCU
Too busy with MICCU patients

Patient not seen in ED by attending MICCU docs/residents
Intensivist/Resident from MICCU not involved in patient care in ED
MICCU residents work under intensivists who do not see patients before admit to MICCU
Too busy with MICCU patients
MICU Admission Boarding in ED Workflow

**MICU patient in ED, MICU bed needed**

**Physician places ICU bed request after “Dr. Done”**

**Bed request to Bed Board**

**ED notified by bed board that ICU bed not available**

(MICU bed not available if less than 2 open beds)

**Desk clerk places patient into “ICU Virtual Hold Bed” ECC5, ECC6, ECC8, ECC9**

**Patient is admitted as Inpatient status**

**ED RN notifies ED Attending Physician and/or ED Resident that patient is placed on Cart**

**eICU mobile Cart activated & eAlert button pressed by ED RN**

**ED RN staff notifies eICU RN of admission and provides report:**
1. Name
2. Patient ID (MRN)
3. Diagnosis
4. Attending Intensivist
5. ED room number
6. Virtual Unit Admit Date/Time

**eICU HCA admits patient into eCareManager**

Verifies lab and trended vital signs, enters height, weight and other data per eICU process. Notifies eRN and ePhysician of admission.

**ED staff enters MRN, Pt Name (Last, First) on monitor**

**e стaff enters MRN, Pt Name (Last, First) on monitor**

**Hand-over (Follow Communication Workflow)**

**ED Physician or Resident calls eICU attending to review case**
- ED RN calls eICU RN to discuss case
- eICU Intensivist writes brief summary note in chart (Update and summary note to be written as an addendum to the original note)

**eICU Intensivist writes brief summary note upon transfer to MSDU and provides hand-over to Attending Physician.**

**eICU HCA admits patient into eICU**

**Physician places ICU bed request after “Dr. Done”**

**ED notifies eICU of transfer to MICU bed by eAlert button or phone call**

**Physician places ICU bed request after “Dr. Done”**

**eRN calls MICU RN to handover the patient only if update needs to be provided.**

*Note: ED RN will provide full report.*

**eICU Intensivist writes summary note on chart every shift to provide better handover**

**ED notifies eICU of transfer to MICU bed by eAlert button or phone call**

**Physician places ICU bed request after “Dr. Done”**

**eRN calls MICU RN to handover the patient only if update needs to be provided.**

*Note: ED RN will provide full report.*

**eICU intensivist writes brief summary note upon transfer to MSDU and provides hand-over to Attending Physician.**

**After report is received the eRN will call the MICU to inform them of the boarding eMobile cart patient MICU charge RN 41-8558**

**ED Physician or Resident calls eICU attending to review case**
- ED RN calls eICU RN to discuss case
- eICU Intensivist writes brief summary note in chart (Update and summary note to be written as an addendum to the original note)
eMobile Cart (ICU) Percent by Unit Discharge Location

Cumulative February 2015 through July 2018

- ICU: 73.1%
- Floor or Tele: 16.5%
- Home: 0.5%
- Other Hospital: 0.2%
- SDU: 8.9%
- Death: 0.8%

Locations:
- Floor or Tele
- Home
- Other Hospital
- SDU
- Death
ED Collaboration Results

- **ICU LOS** similar excluding outliers
  
  (95% CI -0.8-0.5, p=0.65)
  
  - eICU 3.2 days
  
  - Non-eICU 3.0 days

- **Hospital LOS** less in eICU excluding outliers
  
  (95% CI 0.6-2.8, p=0.0023)
  
  - eICU 5.2 days
  
  - Non-eICU 6.9 days

- eICU Downgrades
  
  - 36

- 78

- Downgraded

- Sent to ICU

Downgrades resulted in

$436K in avoided expense
CMC ED eMobile Cart Data

Other Benefits:
- No additional Patient Safety events for ICU/ED boarders
- Shorter LOS indicates improved throughput
- Now covering Step Down boarders as of 7/24/17

ICU vs. Med/Surg Saved Expenditure (Day one of Hospitalization)
February 2015 - July 2018

- ICU: $775,234
- Med/Surg Floor: $264,552
- Avoided Expense: $510,682
eICU Handoff to MSDU

- MSDU bed available
- eICU calls Intensivist to handover patient
- ED RN calls report to MSDU RN
- Patient transfers to MSDU
- MSDU RN calls Intensivist if orders are required
eMobile Cart (MSDU) Percent by Unit Discharge Location

Cumulative July 2017 through July 2018

- SDU, 60.9%
- ICU, 10.7%
- Floor or Tele, 26.8%
- Home, 1.6%

MSDU: Medical Step Down Unit Cart instituted on 7/24/17
eSepsis
Advocate Sepsis Bundle Compliance
October 2015 - October 2018

90th percentile target is 77%

89% increase over 3Q2016
(32 point increase in percentage points)
SIRS ALERTS

• Almost half of patients hospitalized on the wards developed SIRS at least once during their ward stay.

• SIRS does not equate Sepsis

• SIRS Alerts are not specific and clinicians often do not even know what they are supposed to do with a SIRS Alert
**Nursing/PCA**

- Vitals entered into EMR

**In-house rapid response team**

- (a separate team) marks a flag within the patient’s record to reset time 24 hours

**SIRS criteria:**

1. Temperature >38 OR < 36 degrees Celsius
2. Heart rate > 90 beats per minute
3. Respiratory rate >20 OR P<sub>a</sub>CO<sub>2</sub> < 32 mm Hg, and
4. WBC > 12,000 OR < 4000/mm<sup>3</sup> OR > 10% bands

---

*MAP < 65 mm Hg, SBP < 90 mm Hg, Cr > 2.0 (if not ESRD), bilirubin > 2 mg/dL, platelet < 100, INR > 1.5 (not on warfarin), PTT > 60 (not on intravenous heparin) or lactate > 2 mmol/L*
Three Possible Scenarios

SEPSIS
- Concern for Severe Sepsis or Septic Shock
- EICU recommends huddle patient at bedside
- Medical Alert: Sepsis Alert paged
- Sepsis Alert Response Team, Charge RN, and Bedside RN huddle patient at bedside

No SEPSIS
- No Concern for new onset Severe Sepsis or Septic Shock OR patient is already being treated appropriately
- No Huddle recommended by eICU
- Alert Suppressed by SSUB Clinician for 12 hours

Something Else
- No Concern for new onset Severe Sepsis or Septic Shock
- Concern noted for patient deterioration for another cause
- EICU recommends RRT response

Sepsis Alert
Fires in EMR:
EICU views
**Future State – Scenario #1**

**eICU sees the Alert First**

**Scenario #1 – eICU aware first of Care Connection alert**

- Care Connection Alert Fires
- Populates Sepsis Alert Screen in eICU
- eICU Surveillance team member notifies eICU physician
- eICU physician calls S Sub unit – “we have a sepsis alert” and participates in a team sepsis huddle with bedside RN and CN

- Yes?
  - Notify Hospitalist

- Sepsis?
  - Yes?
    - Notify Hospitalist
  - No?
    - Yes?
      - Triage/Escalate
    - No?
      - Stop

**The Huddle Team or Wingman Concept is an evidence-based way to improve sepsis recognition**
Future State – Scenario #2

The Concerned Nurse

- Scenario #2: South Sub RN suspects or has manually screened the patient for sepsis – no CareConnection alert and calls the eICU for a huddle


The Huddle Team or Wingman Concept is an evidence-based way to improve sepsis recognition
Medical Alert: Sepsis Alert

• **New Sepsis Alert Response Team** to evaluate and “huddle” patients at bedside to determine new onset Severe Sepsis or Septic Shock requiring Sepsis Bundle initiation
  
  • House Doctor
  • ICU RN
  • Lab

A Sepsis Response team will be paged by:

• **Calling 46-6100** and requesting Sepsis Alert to be paged. Identify patient room number.
• Operator will overhead page “Medical Alert: Sepsis Alert” followed with patient room number
Lessons Learned from the South Sub-eICU Pilot: Med-Surg Units

**Bundle Compliance:** 9/13 – 11/16/2018
- 43 cases met Time Zero
- 26 passed the severe sepsis bundles

\[
26/43 = 60\% \text{ passed the severe sepsis bundles}
\]

**Key Take Aways:**

More cases identified with new alert
- 43 cases of severe sepsis identified within the 3 week period above
- 2017 data identified 6 in a year. *(based on discharge code, not alerts)*

**Increased bundle compliance for inpatients** in the 6 week period (9/13-11/16/18) compared to 2017:
- **2017** severe sepsis bundle compliance for inpatients was **33%**
- **2018** severe sepsis bundle compliance for inpatients was **60%** for past 2 months.
Other Findings

• Deterioration from causes other than sepsis:
  – 46% of huddles found deterioration for causes other than sepsis – with rapid referral to RRT

• Impact on HOA Sepsis Mortality (inpatient units)

<table>
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<th>Mortality Associated With Sepsis</th>
<th>Total Cases</th>
<th>Expired Percent</th>
<th>Est Exp count</th>
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<td>16.7</td>
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<td>Jul-18</td>
<td>9</td>
<td>44.4</td>
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<tr>
<td>Aug-18</td>
<td>6</td>
<td>33.3</td>
<td>2</td>
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<tr>
<td>Sept 13 - Nov 16 2018 *</td>
<td>16</td>
<td>0.6</td>
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*Pilot time frame, all data not yet finalized (16 cases coded final out of 44 cases huddled for sepsis)
Debriefing Form

Completed by Team members participating in the Sepsis huddle to determine what went well and opportunities for improvement. Attach to Green huddle Sheet for collection by Unit Educators/Sepsis Coordinator.
Impact of Telemedicine on Mortality, Length of Stay, and Cost Among Patients in Progressive Care Units: Experience From a Large Healthcare System*

Donna Lee Armaignac, PhD, APRN CNS-BC, CCNS, CCRN; Anshul Saxena, PhD; Muni Rubens, PhD; Carlos A. Valle, MSIT; Lisa-Mae S. Williams, MSN; Emir Veledar, PhD; Louis T. Gidel MD, PhD

TPCU intervention significantly decreased mortality in progressive care unit and hospital and progressive care unit length of stay despite the fact patients in TPCU were older and had higher disease severity, and risk of mortality. Increased postprogressive care unit hospital length of stay and total mean direct costs inclusive of telemedicine costs coincided with improved survival rates. Telemedicine intervention decreased overall mortality and length of stay within progressive care units without substantial cost incurrences.

Crit Care Med 2018; 46:728–735
Impact of Telemedicine on Mortality, Length of Stay, and Cost Among Patients in Progressive Care Units: Experience From a Large Healthcare System*

Survival curves for Cox proportional hazards model with telemedicine at progressive care unit (PCU) (TPCU) admission (solid line) and without telemedicine at PCU (NTPCU) admission (dotted line). LOS = length of stay.

Crit Care Med 2018; 46:728–735
Incorporating Tele-ICU Infrastructure into Rapid Response
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<th>Control</th>
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<td>Total Events</td>
<td>Total Events</td>
<td>Weight</td>
<td>M-H, Random, 95% CI</td>
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<td>1.1.1 Cluster RCT, CBA and ITS Studies</td>
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<td>Bristow</td>
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<td>Howell</td>
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<td>Priestley</td>
<td>27</td>
<td>530</td>
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<td>487</td>
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<td><strong>Subtotal (95% CI)</strong></td>
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<td><strong>100104</strong></td>
<td><strong>13.6%</strong></td>
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<td>Total events</td>
<td>2026</td>
<td>1947</td>
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<td>Heterogeneity: Tau² = 0.00; Chi² = 3.11, df = 3 (P = 0.38); I² = 3%</td>
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<td>Test for overall effect: Z = 2.70 (P = 0.007)</td>
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<td>1.1.2 Observational and Before After Studies</td>
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<td><strong>Subtotal (95% CI)</strong></td>
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<td><strong>86.4%</strong></td>
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<td>Heterogeneity: Tau² = 0.02; Chi² = 129.79, df = 15 (P &lt; 0.00001); I² = 88%</td>
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<td>Test for overall effect: Z = 3.20 (P = 0.001)</td>
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<td><strong>Total (95% CI)</strong></td>
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<td><strong>787975</strong></td>
<td><strong>100.0%</strong></td>
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<td>Total events</td>
<td>17404</td>
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<td>Heterogeneity: Tau² = 0.02; Chi² = 135.66, df = 19 (P &lt; 0.00001); I² = 86%</td>
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<td>Test for overall effect: Z = 3.69 (P = 0.0002)</td>
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<td>Test for subgroup differences: Chi² = 0.41, df = 1 (P = 0.52), I² = 0%</td>
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a) Forest plot of RRT/MET impact on in-hospital mortality. (b) Forest plot of RRT/MET impact on IHCA (non-ICU). Abbreviations: CI, confidence interval; M-H, Mantel-Haenszel; MET, medical emergency team; RRT, rapid response team.

Of the 20 studies that reported hospital mortality, 9 favored RRT/METs, 10 found no difference with RRT/METs, and 1 favored RRT/METs for surgical patients while favoring usual care (no RRT/MET) for medical patients. The pooled analysis demonstrated that implementation of RRT/METs was associated with a significant reduction in hospital mortality (RR 5 0.88, 95% CI: 0.83-0.93).

Of the 20 studies that reported rates of IHCA, 12 favored RRT/METs and 8 found no difference with RRT/METs (Figure 2b). In the pooled analysis, RRT/METs were associated with a significant reduction in IHCA (RR 5 0.62, 95% CI: 0.55-0.69).

Most studies were performed in teaching hospitals; thus, the results may not be as applicable to community hospitals.
Projecting Critical Care Beyond the ICU: An Analysis of Tele-ICU Support for Rapid Response Teams

Peter A. Pappas, MD, Luann Tirelli, James Shaffer, and Scott Gettings

33-month period from January 2012 through September 2014

- Purpose: to evaluate the ability of eMobile to support care administered by RRTs.
- No adverse patient outcomes (33%) were managed without ICU upgrade.
- Increased projected cost avoidance from unnecessary ICU transfers by a mean of 66%
- A return on investment up to $1.66 for every $1 invested in IT support.

Conclusions: Mobile critical care coupled with RRT is clinically effective and can generate meaningful cost avoidance.
The rapid response system should include team members with:

• Ability to diagnosis the clinical problem
• Ability to initiate therapy
• Appropriately triage patients to appropriate level of care
• Authority to transfer the patient to higher level of care
• A leader to coordinate team actions
Tele-RRT can provide

• An intensivist without pulling a physician away from elsewhere (esp ICU)
• An eIntensivist to fill the role of RRT team leader
• Real time access of an ICU attending to house staff or nurses during the RRT
• Every RRT to be a teaching opportunity
• An intensivist to establish a differential diagnosis and direct the work up
• Triaging of patients – not all RRTs should be transferred to the ICU
• End of life discussion
Tele-RRT can provide (cont’d)

• Earlier initiation of critical care while waiting for transfer to ICU
• A longer period of observation to ensure stability for patients not transferred to ICU
• Support for simultaneously occurring RRTs
• Initiation of sepsis EGDT sooner (e.g. antibiotics within 1 hour)
• Appropriate documentation for CMS SEP-1 sepsis compliance
• A forum for “Huddles” during shifts to review the status of RRT patients that were not transferred to the ICU
• Avoid “de-skilling” of floor staff
• Assess system safety deficiencies
Delayed transfer to the ICU has been shown to be associated with increased mortality.

Contact on call intensivist for the following reasons:
- Second RRT within 12 hours
- Third RRT within 48 hours
- Unable to reach Attending

RRT RN & RT Arrive, Assess Patient & Reason for RRT

RRT Intervention Needed
- NO
- YES

RRT Physician Paged / Called by RRT RN

Attending Present
- YES
- NO

End of RRT

End of RRT

Plan of Care Huddles w/ RRT & Nursing Team

End of RRT

Attending Only or Attending & RRT Physician Coordinate RRT Management

Attending Present
- YES
- NO

End of RRT

Contacts on call intensivist or eCare

NO

NO

ICU Needed

RRT Physician Coordinates RRT Management with Attending (and Surgical Team if Surgical Patient)

End of RRT

End of RRT

End of RRT

NO

NO

ICU Needed

Contacts on call intensivist or eCare

NO

NO

RRT Physician Notifies Surgical Resident

NO

NO

RRT Physician Evaluates Patient

RRT Physician Coordinates RRT Management with Attending (and Surgical Team if Surgical Patient)

Conducts and Documents Plan of Care Huddle w/RRT & Bedside Team

RRT & Bedside Team Care for Patient Until Transfer

Conducts and Documents Plan of Care Huddle w/RRT & Bedside Team
Leveraging the Tele-ICU to support Nursing
Advocate eICU Mentorship Program

Need:

- Our sites identified that new RNs often feel under supported at the bedside and this program was developed to bridge the gap from novice to advanced beginner ICU RN

Results:

- To date (from 2012), >200 RNs have completed the program; 31 currently enrolled and 17 in pipeline
- Will be expanded to outreach partners and to two additional Advocate sites
- This program is utilized as part of the recruitment/retention strategy by our ICUs

Lessons Learned:

- Adapt the program based on feedback from each participant
- eRN staff requested additional education on mentor/precepting principles
- Adjust eRN schedule, for consistency in mentor, based on number of participants
- Instituted support pods in CORE to provide support to mentor/coach
Final Thoughts
Re-evaluate the process regularly

- Unanticipated discoveries
- Unforeseen outcomes
- Evolving medical literature
- Changes in EMR, technology, staffing,…
Learning Objectives

• Recognize that the success of telehealth is determined less by what technologies you have and more by how you use them

• Discuss how tele-ICU can achieve clinical and financial benefits across a large healthcare system utilizing implementation science

• Recognize that collaboratively employing population management tools between the tele-ICU and ICU can improve patient outcomes and realize financial results

• State how tele-ICU is a facilitator of change management as much as an “intervention”

• Demonstrate how gap analysis affords an opportunity for telemedicine to improve evidence-based practice adherence in the ICU
Questions

• Thank you

• Contact:
  – Michael.Ries@advocatehealth.com
  – Cindy.Welsh@advocatehealth.com

• Please complete online session evaluation