Using telehealth in the ICU: results of a national survey of tele-ICU nurses

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Research Team

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Virtual ICU – the Tele-ICU
Telemedicine in the intensive care unit (ICU) has expanded to include over **200 hospitals**, with monitoring capability for over **6000 beds** (12% of ICU patients in the US)

It is estimated that between **800 and 1000 RN’s** currently practice in tele-ICU’s and over **16,000 bedside nurses** interface with these units.

Telemedicine is an emerging subspecialty of critical care nursing, yet limited information exists on the impact on nursing care.
There are approximately 45 tele-ICU’s in the U.S., reaching >200 hospitals & 12% of all critically ill patients in the U.S.¹

2011 AACN Impact Research Grant

- **Aim 1**: Conduct a national benchmarking survey of nurses working in telemedicine facilities in the U.S. to identify the impact of ICU telemedicine, including barriers and benefits.
- **Aim 2**: Using the Delphi technique, identify priority areas of care to form the foundation for developing competencies and standards for tele-ICU nursing.
Phase 1

- An online survey was developed to assess nurses’ perceptions of the impact of ICU telemedicine on nursing care and identifying priority areas of tele-ICU nursing.
Methods

- The eICU Acceptance Survey (Kowitlawakul, 2008), a tool developed to assess nurses’ acceptance of telemedicine technology was adapted to include questions assessing barriers and benefits of telemedicine implementation on nursing care and priority areas of care for nursing care.
- The tool consists of 58 items divided into sections including perceived usefulness, perceived ease of use, nursing attitudes toward telemedicine, intention to use and knowledge and awareness of telemedicine.
Methods

- All tele-ICU sites in the U.S. were identified & contact information obtained
- Sites were divided amongst 5 study co-investigators
- Directors of each program were sent email invitation to participate in study which each director distributed to all tele-ICU & bedside staff
- 3 reminders were sent in the same manner prior to closing date for survey return
N=1,213 respondents (projected sample size = 350)

Number of years as RN range <1 year to 48 (Mean = 16 years)

Number of years of critical care nursing <1 to 40 (Mean = 12 years)

Number of years using tele-ICU range <1 to 20 years (Mean = 3 years)
What is your gender?

N=1213

- Male: 88.1%
- Female: 11.9%
In what ways have you used tele-ICU?

- 76.0%: I am a bedside ICU nurse that interfaces with the tele-ICU
- 13.5%: I am a remote tele-ICU nurse working in a tele-ICU monitoring center
- 10.5%: I work in both areas

N=1213
Second Degree Nursing program

- Diploma: 7.5%
- MSN: 8.5%
- BSN: 55.3%
- Associate Degree: 27.0%
1. Using tele-ICU enables me to accomplish tasks more quickly.
3. Using tele-ICU in my job increases my productivity.

- **Strongly Agree**: 20.4%
- **Agree**: 39.6%
- **Uncertain**: 15.8%
- **Disagree**: 20.5%
- **Strongly Disagree**: 5.0%
8. I find tele-ICU is useful in nursing assessment (e.g. labs, vital sign trends, problem lists, physician notes).
1. The use of tele-ICU improves patient care by giving the nurse more time with the patients.
4. Tele-ICU can be a threat to patient privacy.
5. Tele-ICU can cause nurses to give less time to quality patient care.
11. Tele-ICU improves communication.
12. Tele ICU improves collaboration.
Benefits of using Tele-ICU

- Arrhythmia detection: 13%
- Physiologic instability detection: 13%
- Enhance patient safety: 14%
- Prevent falls: 9%
- Prevent self-extubations: 7%
- Medical management: 15%
- Vital sign trending: 15%
- IV maintenance: 5%
- Watch patient when nurse is out of the unit: 9%
Phase II

- A 3 round modified Delphi technique will be used to conduct phase two, which will identify top priority areas of tele-ICU nursing care.
- The proposed study will help to address the gap in knowledge, providing needed data for the development of competencies and standards for tele-ICU nursing.