

Bedside Assistance for Safety and Eyes on Kids (BASE): Telenursing in the Pediatric-ICU

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1 Background

Telemedicine is defined as “the use of medical information from one site to another via electronic communications to improve patient’s health status” (Goran, 2010). This is not a novel concept to medicine, but has been implemented within the healthcare system since the 1970’s where the first physician-based telemedicine model was implemented (Field, 1996). Telemedicine among nurses in the ICU setting (tele-ICU nursing) has become of increased interest in recent years as a means of reducing error, delivering timely intervention, and increased monitoring of ICU patients.

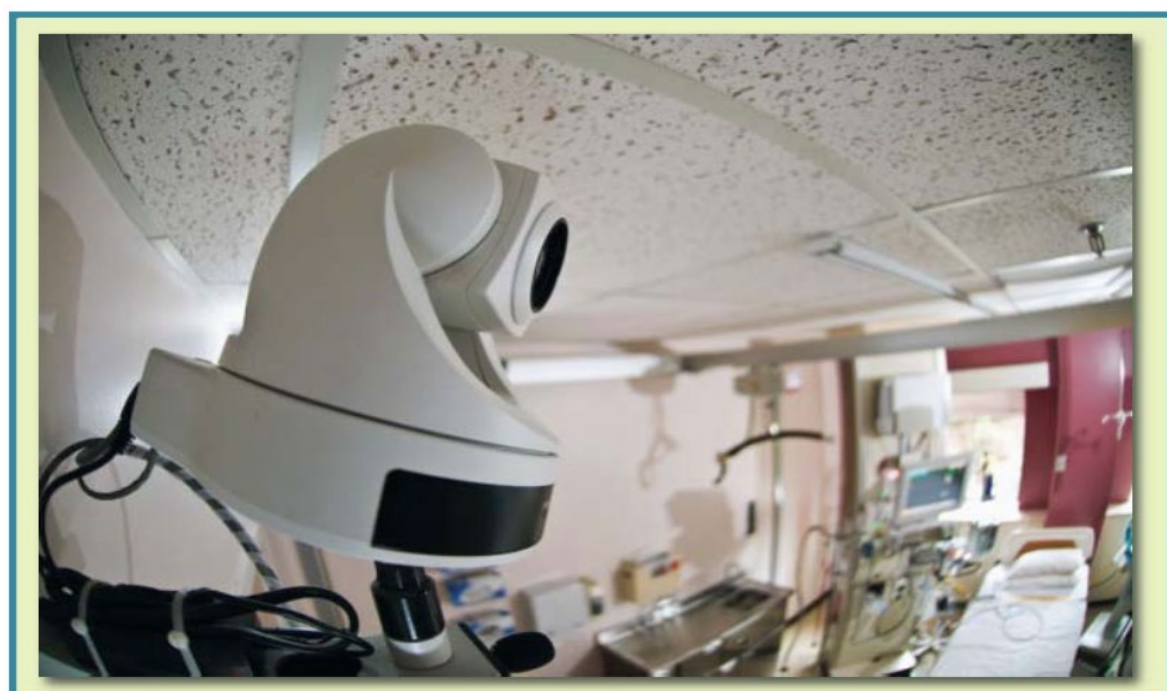
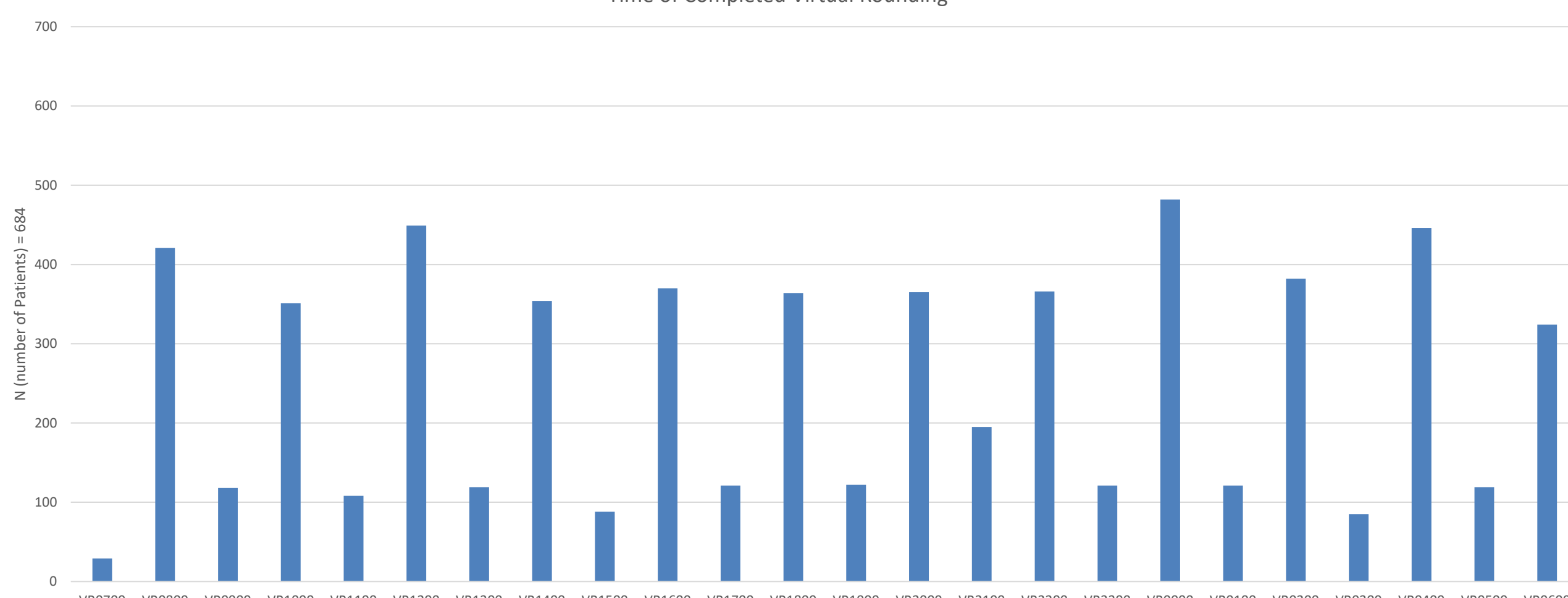


Figure 1: Different levels of high resolution cameras with zoom and pan ability are mounted in each room in the ICU, enabling the tele-ICU staff to assess patients and/or communicate directly with the bedside team (Goran, 2010).

The aim of tele-ICU nursing is to increase collaboration with the bedside team, not as a means of replacing bedside clinicians or bedside care, rather to “provide improved safety through redundancy and [to] enhance outcomes through standardization” (Goran, 2010). The tele-ICU nurse provides an additional layer of support to the bedside nurse whose role includes video assessment of the patient’s physical appearance; equipment safety check; verification of continuous infusions; and verbal interactions with staff (Williams et al., 2012). The frequency of the virtual rounding by the tele-ICU nurse is dependent on the acuity of the patient.

Currently, there is unequal distribution of experience levels across the staff and the increased concern for sustain quality care. Identification of patient care-related mistakes was accounted for by the high percentage of novice nurses in the PICU, making up close to 60% of the PICU nurse population. Hence, the purpose of this quality improvement project is to develop, implement, and evaluate a tele-ICU nursing (BASE nurse) care model and mentor program within the pediatric ICU that will support the novice nurses in bedside patient care.

Time of Completed Virtual Rounding



2 Objectives:

- Initiate a 2-week pilot study of tele-ICU nursing within the JHH Children’s Center PICU.
- Evaluate adherence to nursing protocols pre and post implementation of the tele-ICU nurse within the Johns Hopkins PICU.
- Assess the Tele-ICU nurse’s compliance to essential job tasks there through post-implementation audits of the *BASE Nurse Completed Task lists*.

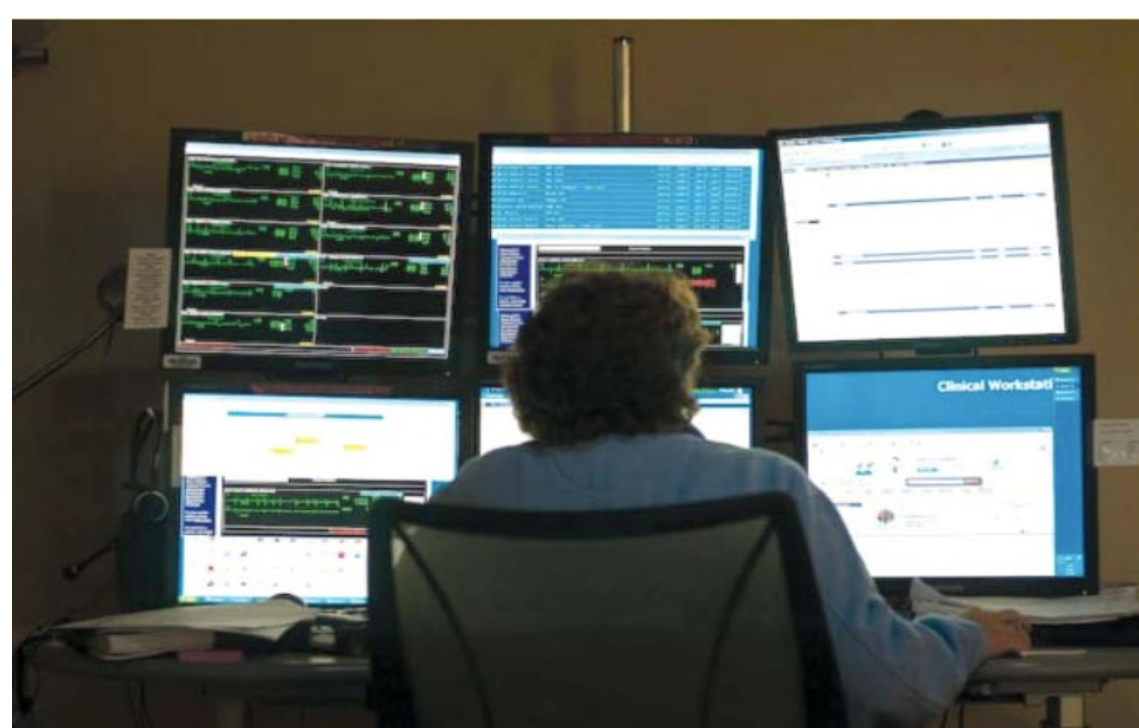


Figure 2: Workstation arrangements may vary, but the tele-ICU nurse will typically have between 5 and 7 screens monitoring individual patients in their rooms, as well as displaying the patient’s EMR (Goran, 2010).

3 Methods

- A 2-week pilot study was conducted within the 40-bed PICU of the JHH Children’s center. The tele-ICU nurse was stationed in the BASE room located within the unit.
- The BASE was equipped with video monitors and speakers to give the BASE nurse (tele-ICU nurse) the ability to observe and communicate with bedside staff inside a patient’s room.
- The BASE nurse was live stream via video cameras to watch forty patients at one time.
- Additionally, the BASE nurse had access to all electronic medical records via desktop computer through the JHH network connection.
- The *BASE Nurse Completed Tasks Checklist* (BASE Virtual Rounding Tool) consisting of completed rounds, safety bundle checks (CVAD, CAUTI, VAE, VTE, PICU UP, and skin care) were filled out daily by the BASE nurses and filed inside the BASE.
- Data collected in the BASE Virtual Rounding Tool has been compiled and documented.

4 Results

The frequency of the virtual rounding, although inconclusive at this time, is graphed below.

5 Conclusions

The data from the first pilot study is inconclusive, as more accurate data collection methods are necessary. However, the frequency of virtual rounding times by the BASE nurse reveal the potential value of BASE nursing for improved patient care.

Limitations of the study include:

- Data collection methods are not targeted towards identifying increased efficiency.
- Inadequate education and training of BASE nurses.
- Larger BASE nurse sample size.
- Lack of control group.
- Incomplete data collection by BASE nurses.

6 Future Directions

1. Audit *BASE Nurse Completed Task list* during the 2 week study immediately following the BASE implementation through random selection of electronic medical records (EMRs) of patients who have been assigned a novice nurse (pre and post implementation) to collect nurse documentation of double signatures for medications, and CLABSI, and/or CAUTI care bundles.
2. Determine the novice nurses’ level of job satisfaction after implementing the tele-ICU Nursing care model through measuring their levels of job satisfaction pre and post implementation of the tele-nurse.
3. Determine the level of the tele-ICU nurses’ satisfaction of the role through administering a satisfaction survey post-implementation.

7 References

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