

Improving Safety of Neonatal Intensive Care Patients During Intrahospital Transport at The Johns Hopkins Hospital

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Introduction

The intrahospital transport of critically ill neonatal patients to procedures such as MRI and CT are high risk times for preventable events and near misses. These transports negatively impact patient safety and nurse satisfaction as they require the bedside nurse to leave the critical care unit for extended periods of time creating an unbalanced nurse to patient ratio--increasing nursing workload and risk for error. Current practice for intrahospital transport is limited by the lack of guidelines and standards specific to the neonatal population. Because of this, the Neonatal Intensive Care Unit (NICU) at The Johns Hopkins Hospital needs a safe, consistent, efficient standard for transporting neonatal patients to required testing and procedural areas. Current literature shows evidence of improvements in safety and nurse satisfaction through the incorporation of standardized checklists and dedicated patient transport teams. The implementation of a dedicated patient transport team has been shown to reduce adverse events to 1.7%. To improve current practice, the following research question was examined: Does the use of a standardized intrahospital transport checklist improve nurse satisfaction and patient safety throughout the intrahospital transport process within the Neonatal Intensive Care Unit at The Johns Hopkins Hospital?

Methods

Using current literature regarding intrahospital transports, an online survey measuring nurse satisfaction and care flow during intrahospital transports utilizing Qualtrics® was developed. The survey was distributed to all nursing staff within the Neonatal Intensive Care Unit at The Johns Hopkins Hospital. One free-response and fifteen Likert Scaled questions were evaluated. Sixty nurses completed the survey. Additionally, quantitative data regarding intrahospital transport length of travel time, destination, and frequency was collected via a nurse self-report form.

Results

NICU Intrahospital Transport Data Collection:

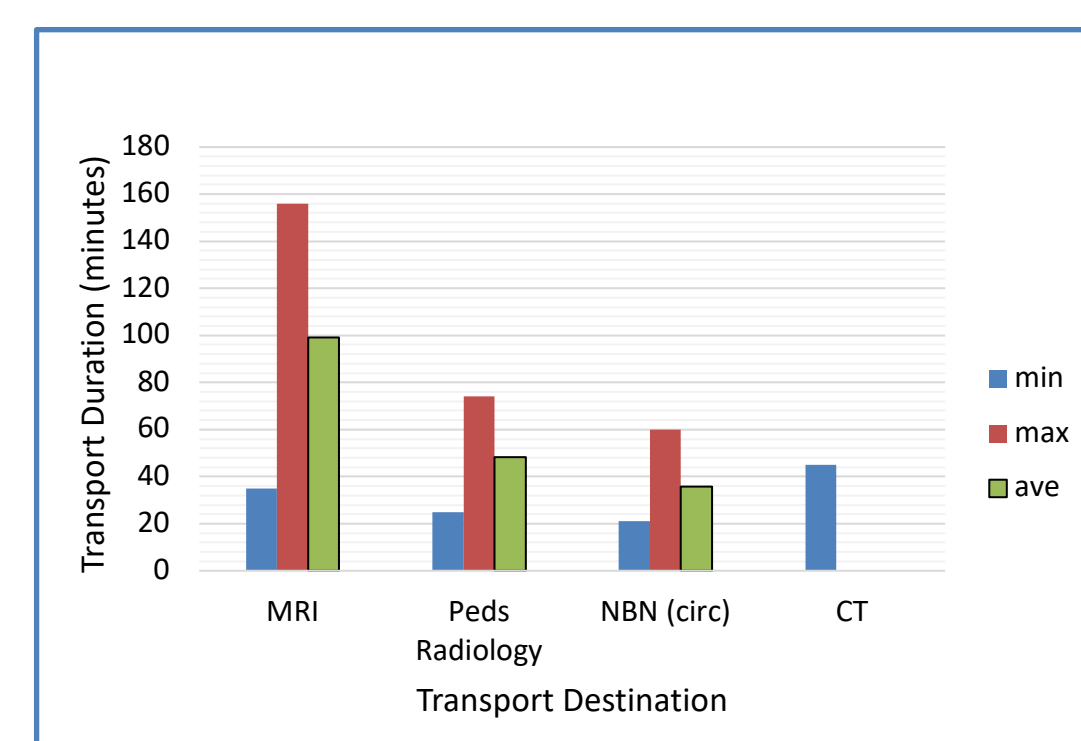


Figure 1. Intrahospital transport duration measured in minutes. The maximum length of transport was 155 minutes and the minimum length of transport was 21 minutes.

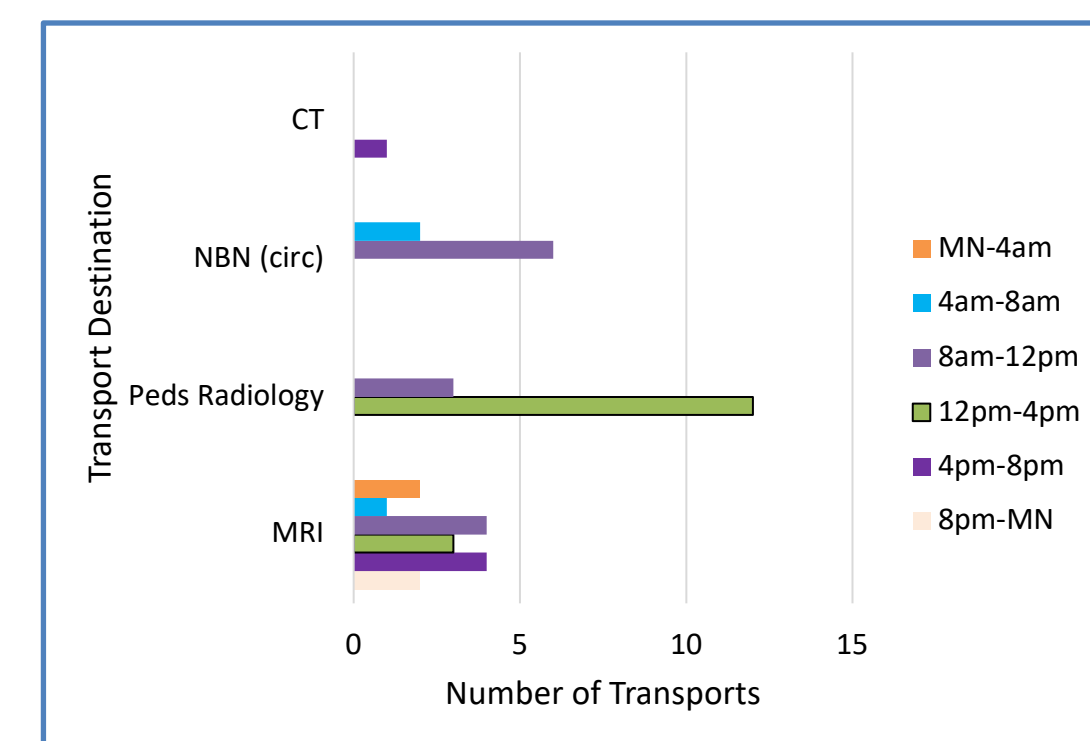
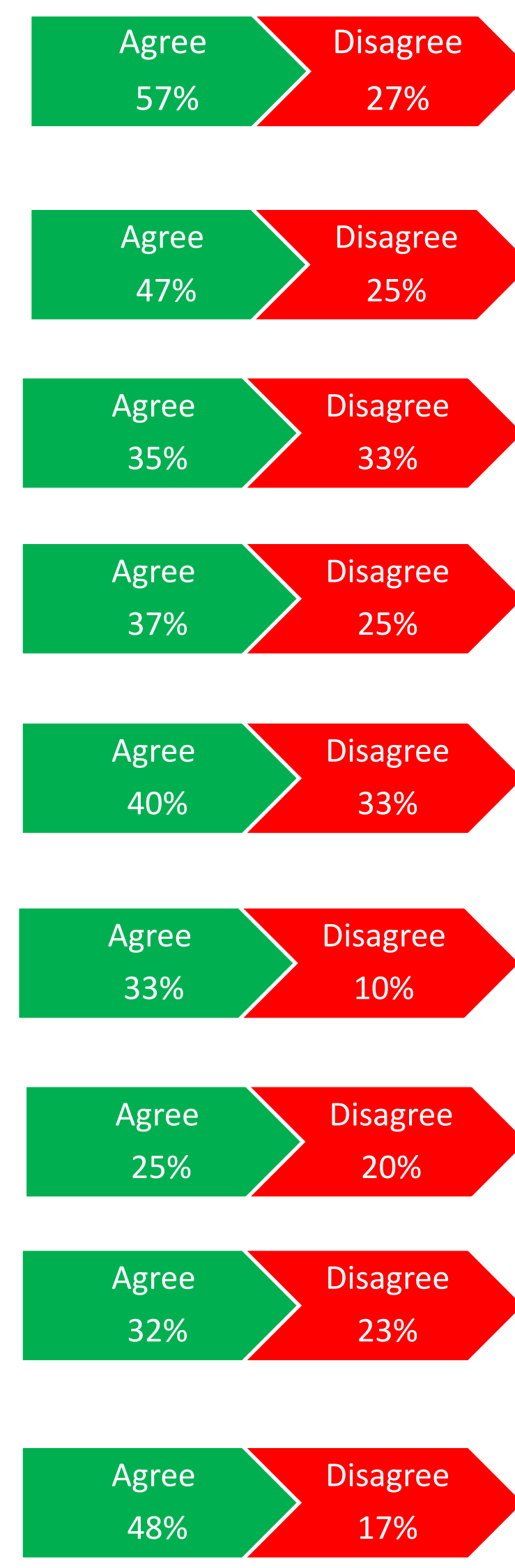


Figure 2. Time of day in which intrahospital transport takes place. The majority of transports take place between the hours of 12:00pm to 4:00pm to Pediatric Radiology.

Results (continued)

Likert Scaled Survey Results:

- There is adequate coordination between nurses, doctors/NNPs, and transport location staff when planning an intrahospital transport. (Agree 57%, Disagree 27%)
- I understand Johns Hopkins Hospital's policy and procedures related to transport. (Agree 47%, Disagree 25%)
- I know how to classify the level of acuity of my patient to properly plan for transport. (Agree 35%, Disagree 33%)
- My patient is receiving the same level of care during transport as they would on the unit. (Agree 37%, Disagree 25%)
- My patients that remain on the unit while I am away on a transport are receiving the same level of care as if I had stayed. (Agree 40%, Disagree 33%)
- I am confident in my ability to manage an additional patient while my colleagues are on a transport. (Agree 33%, Disagree 10%)
- The responsibility of transporting a patient off the unit negatively impacts my job satisfaction. (Agree 25%, Disagree 20%)
- Having to care for an additional patient while my colleague is off the unit on a transport impacts my ability to deliver quality care. (Agree 32%, Disagree 23%)
- Overall, I am satisfied with the flow of care during an intrahospital transport. (Agree 48%, Disagree 17%)



Tool Development

In order to improve nurse satisfaction and patient safety, a checklist and intrahospital transport educational tool were developed in collaboration with NICU nurse leaders utilizing survey results, current literature, and hospital policies.

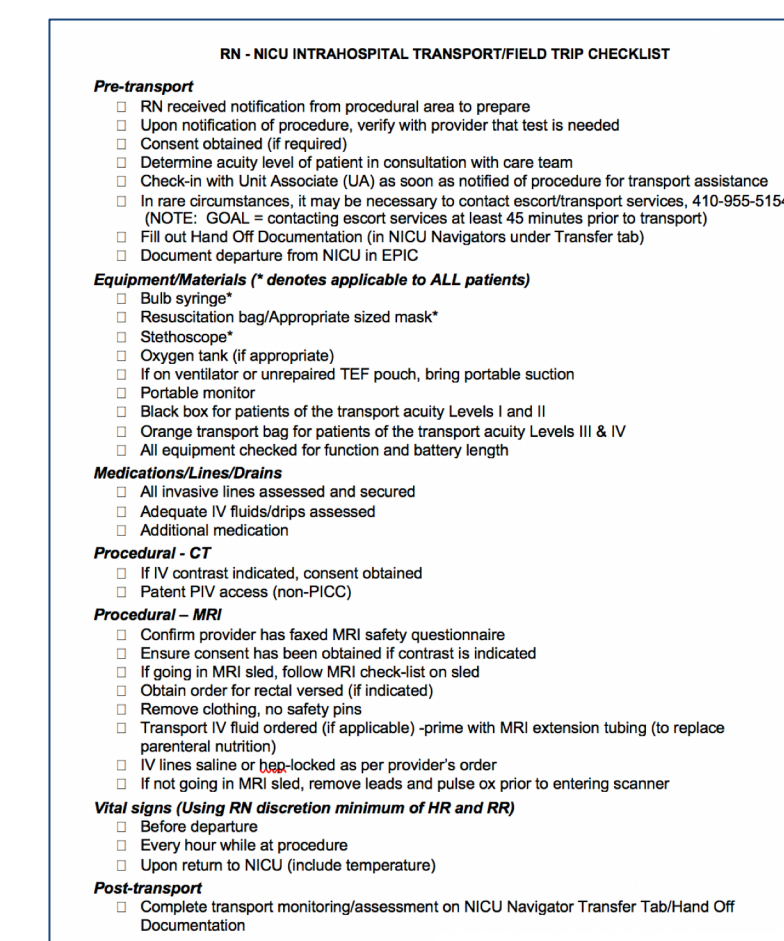


Figure 3. Intrahospital transport checklist.

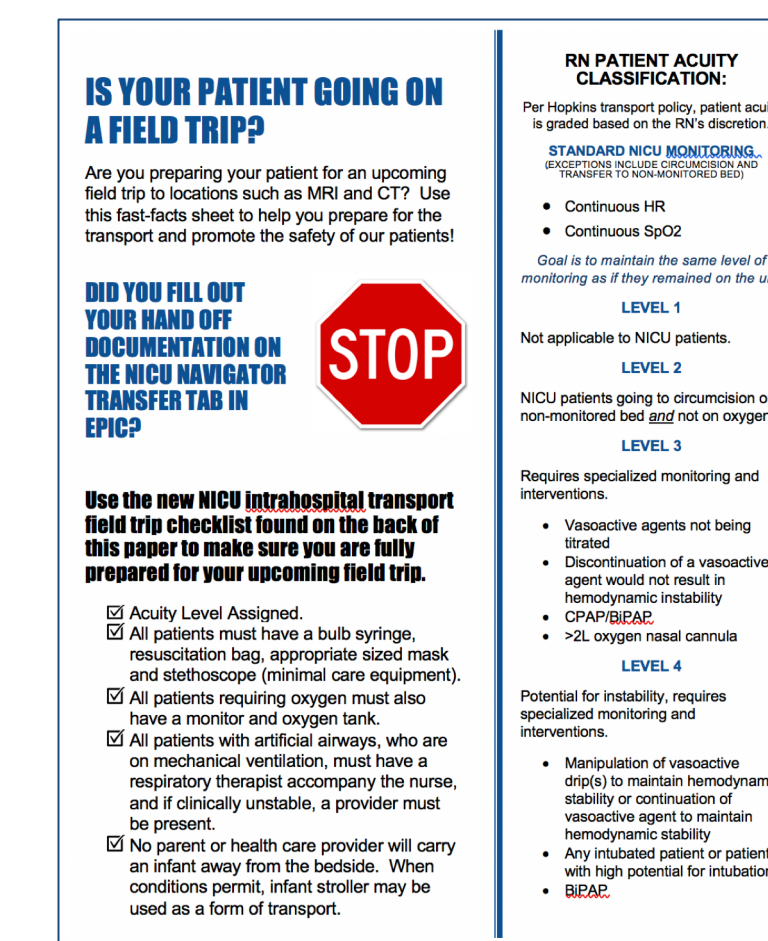


Figure 4. Intrahospital transport nurse educational tool

Conclusions

- Intrahospital transports are time consuming--removing nurses from the floor for hours at a time, decreasing nurse satisfaction
- Current areas for improvement of intrahospital transport include: acuity level classification, communication, and standardization of transport process
- The use of a standardized tool such as a checklist may improve patient safety and nurse satisfaction
- Many nurses in the Neonatal Intensive Care Unit would be open to the utilization of a standardized tool to improve intrahospital transports

There is a lack of evidence related to patient safety and nurse satisfaction involving the intrahospital transport of neonates. Further investigation regarding the transport of this vulnerable population is essential to improving the quality and safety of patient care at The Johns Hopkins Hospital.

Future Work

Currently, our team is working to educate NICU nurses on the intrahospital transport process and how to utilize the newly developed transport checklist. Once all nurses are educated on this tool, the team will evaluate the effectiveness of improving nurse satisfaction by re-administering the initial 16 question survey via Qualtrics®. A review of Hopkins Event Reporting Online (HERO) will be conducted to evaluate our tool's effectiveness at reducing preventable events. Our intention through this work is to illuminate safety concerns associated with intrahospital transports, and that one day the Neonatal Intensive Care Unit will have a dedicated Neonatal Intrahospital Transport Team.

References

Brunsveld-Reinders, A. H., Arbous, M. S., Kuiper, S. G., & de Jonge, E. (2015). A comprehensive method to develop a checklist to increase safety of intra-hospital transport of critically ill patients. *Critical Care*, 19(1), 1-10. <https://doi.org/10.1186/s13054-015-0938-1>

Comeau, O. Y., Armendariz-Batiste, J., & Woodby, S. A. (2015). Safety first! using a checklist for intrafacility transport of adult intensive care patients. *Critical Care Nurse*, 35(5), 16-25. [doi:10.4037/ccn2015991](http://doi.org/10.4037/ccn2015991)

Kue, R., Brown, P., Ness, C., & Scheulen, J. (2011). Adverse Clinical Events During Intrahospital Transport by a Specialized Team: A Preliminary Report. *American Journal of Critical Care: An Official Publication, American Association of Critical-Care Nurses*, 20(2), 153-162. <http://doi.org/10.4037/ajcc2011478>

Ringdal, M., Chaboyer, W., & Warrén Stomberg, M. (2016). Intrahospital transports of critically ill patients: Critical care nurses' perceptions: IHT. *Nursing in Critical Care*, 21(3), 178-184. [doi:10.1111/nicc.12229](http://doi.org/10.1111/nicc.12229)

Starmer, A. J., Spector, N. D., Srivastava, R., West, D. C., Rosenbluth, G., Allen, A. D., ... Landrigan, C. P. (2014). Changes in medical errors after implementation of a handoff program. *New England Journal of Medicine*, 371(19), 1803-1812. DOI: 10.1056/NEJMs1405556