Improving Communication and Handoff Between the Operating Room and NICU

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Background

The process of Operating Room (OR) to Neonatal Intensive Care Unit (NICU) handoff report lacked standardization.

A survey was sent to OR and NICU staff. 62% of respondents stated that a deficit existed in the current process of OR to NICU handoff.

The survey identified the following issues:

- Handoff lacked standardization
- Roles were poorly defined which led to distrust
- Information was often missed
- Report was being given multiple times

Process

A multidisciplinary team was formed and included members from NICU nursing, OR nursing, Neonatology medical staff, Anesthesiology medical staff, and an Operations Excellence Engineer.

Observations and video recording of the existing state of the handoff process were performed.

Conclusions and observations from current process included:

- Report was given multiple times by the same provider
- Work appeared to continue while handoff report was being given
- Average handoff time was 18.8 minutes
- Report had no clear beginning and end
- There were large differences in the time for patient arrival back to NICU from the OR

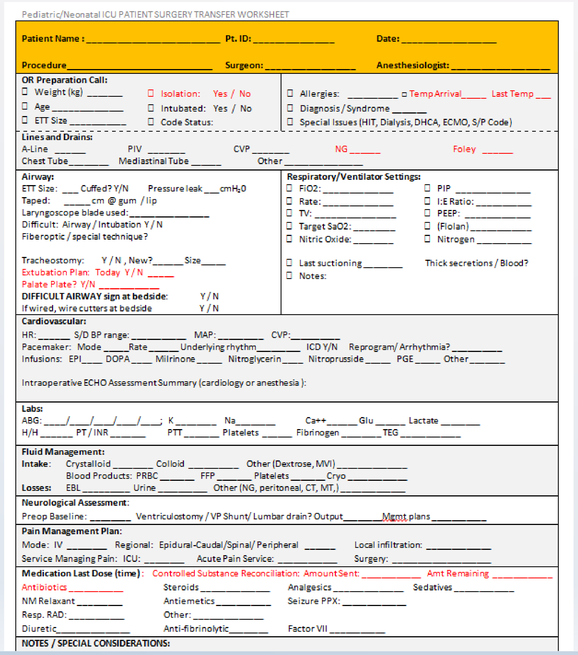
Based on the conclusions and observations of the current state, an ideal process was drafted and an existing checklist was revised.

Implementation

The ideal process was drafted based on pre-implementation survey responses. A table top walk through of the new process was done and staff were educated via live presentations. Team members were present and provided guidance and prompting for many of the first OR handoff processes using the new procedure.

The new process includes the following:

- Using a checklist to relay relevant information
- Executing a specific order of who gives report and when
- A process for notification of patient return to the NICU in order to assemble all necessary staff to hear report one time at the bedside
- Waiting to start report until all parties are present and can devote attention to hearing report
- Waiting for the bedside nurse to get the patient settled or having a second nurse assist so the nurse can listen to report



Pediatric/Neonatal ICU PATIENT SURGERY TRANSFER WORKSHEET

Patient Name : _____ **Pt. ID:** _____ **Date:** _____

Procedure _____ **Surgeon:** _____ **Anesthesiologist:** _____

OR Preparation Call:
☐ Weight (kg) _____ ☐ Isolation: Yes / No ☐ Allergies: _____ ☐ Temp Arrival_____ Last Temp ___
☐ Age _____ ☐ Intubated: Yes / No ☐ Diagnosis / Syndrome _____
☐ ETT Size _____ ☐ Code Status: ☐ Special Issues (HIT, Dialysis, DHCA, ECMO, S/P Code)

Lines and Drains:
A-Line _____ PIV _____ CVP _____ NG _____ Foley _____
Chest Tube_____ Mediastinal Tube _____ Other _____

Airway:
ETT Size: ___ Cuffed? Y/N Pressure leak ___cmH_20
Taped: ____cm @ gum / lip
Laryngoscope blade used:_____
Difficult: Airway / Intubation Y / N
Fiberoptic / special technique?

Tracheostomy: Y / N , New?_____Size____
Extubation Plan: Today Y / N _____
Palate Plate? Y/N _____
DIFFICULT AIRWAY sign at bedside: Y / N
If wired, wire cutters at bedside Y / N

Respiratory/Ventilator Settings:
☐ FiO2: _____ ☐ PIP _____
☐ Rate: _____ ☐ I:E Ratio: _____
☐ TV: _____ ☐ PEEP: _____
☐ Target SaO2: _____ ☐ (Flolan)_____
☐ Nitric Oxide: _____ ☐ Nitrogen _____
☐ Last suctioning_____ Thick secretions / Blood?
☐ Notes:

Cardiovascular:
HR: _____ S/D BP range: _____ MAP: _____ CVP:_____
Pacemaker: Mode _____Rate _____Underlying rhythm_____ ICD Y/N Reprogram/ Arrhythmia?_____
Infusions: EPI____ DOPA____ Milrinone_____ Nitroglycerin____ Nitroprusside_____ PGE_____ Other_____

Intraoperative ECHO Assessment Summary (cardiology or anesthesia):

Labs:
ABG: ____/____/____/____/____; K _____ Na_____ Ca++_____Glu _____ Lactate _____
H/H _____ PT / INR _____ PTT _____ Platelets _____ Fibrinogen _____ TEG _____

Fluid Management:
Intake: Crystalloid _____ Colloid _____ Other (Dextrose, MVI) _____
Blood Products: PRBC _____ FFP _____ Platelets _____ Cryo _____
Losses: EBL _____ Urine _____ Other (NG, peritoneal, CT, MT,) _____

Neurological Assessment:
Preop Baseline: _____ Ventriculostomy / VP Shunt/ Lumbar drain? Output_____Mgmt plans _____

Pain Management Plan:
Mode: IV _____ Regional: Epidural-Caudal/Spinal/ Peripheral _____ Local infiltration: _____
Service Managing Pain: ICU: _____ Acute Pain Service: _____ Surgery: _____

Medication Last Dose (time): Controlled Substance Reconciliation: Amount Sent: _____ Amt Remaining _____
Antibiotics _____ Steroids _____ Analgesics _____ Sedatives _____
NM Relaxant _____ Antiemetics _____ Seizure PPX: _____
Resp. RAD: _____ Other: _____
Diuretic_____ Anti-fibrinolytic_____ Factor VII _____

NOTES / SPECIAL CONSIDERATIONS:

Results and Evaluation

Evaluation post-intervention was done by direct observations.

Results of the post-implementation observations include:

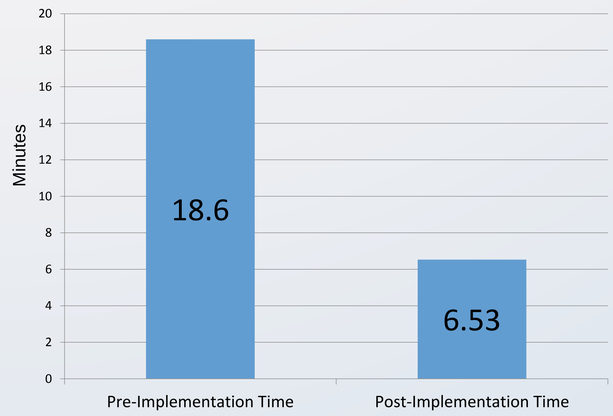
- Time spent giving report decreased from 18.8 minutes to 6.53 minutes
- The checklist was used 88% of the time
- The team waited until the patient was settled and the bedside nurse could be attentive to the report 88% of the time

Use of the checklist ensures an accurate, efficient handoff.

A more thorough process allows for questions from the NICU staff to the Anesthesiologist and Surgeon before they leave the bedside.

Decreasing report time allows for the surgeon and anesthesiologist to return to the OR in a timely manner for their next case.

Time Spent Giving Handoff Report



Conclusions

Use of the checklist and gathering the team members in one place for one report decreased the time spent and improved report quality.

This best practice allows for streamlining of the handoff process which in turn allows for a report that is:

- Thorough and efficient
- Given one time
- Given to an attentive audience
- Heard by all involved parties
- Eliminates the possibility of missed or forgotten information

Next Steps

- Post survey of staff to evaluate perceptions of the new process and further education needs
- Continued observations
- On-going education to ensure that the process continues

Team Members

- Brian Cheney MD
- Janet Geyer MSN, RN, CPNP
- Laurilyn Helmers MD
- Jeanna Humpton BSN, MBA, RNC
- Tyler Kerr MD
- Denise Kirk BSN, RN, CNOR
- Julie Lindower MD, MPH
- Kerianne Rice BSN, RN
- Scott Sherman MD
- Emily Spellman MSN, RNC
- Stephanie Stewart MSN, RNC
- Jeff Vande Berg, MS