Focused Patient Handover - Improving Perioperative Transition of Care

Sergio B. Navarrete DO, Heather Lewis RN, Debra Ware, William Murphy MD, Vishal Yajnik MD, Virginia Commonwealth University Health System

Background

Virginia Commonwealth University Health System (VCUHS) is a Level 1 Trauma/Burn center and tertiary care referral center for Richmond, Virginia and the surrounding area. In 2017, approximately 24,000 surgeries were performed at VCUHS [1]. This translates to at least 50,000 perioperative patient transfers of care, assuming a minimum of two handoff events per patient. High acuity surgical cases often have a longer duration and greater complexity from both a surgical and anesthetic standpoint, translating to an increased complexity in the patient handoff process.

Patient handoff is defined by the Joint Commission as the transfer and acceptance of patient care responsibility achieved through effective communication [2]. It is well-established that the transition of patient care is associated with frequent loss of pertinent or critical patient information. The Joint Commision has emphasized the importance of establishing a patient handover procedure and culture [2]. Joint Commission data on root cause analysis showed that 67% of sentinel events were a result of errors of communication between team members; moreover, Stahl et al. demonstrated a degradation of critical information over the 24 hours following patient handoff [3]. A recent literature review identified 4500 citations related to patient transition of care, with the majority of published work between 2011 and 2016 [4]. One of the most robust studies followed the implementation of I-PASS handover, showing reductions in medical errors and preventable adverse events without a negative effect on workflow [5].

Project Aim

In 2015, VCU Health leadership identified the need for an improved perioperative patient transition of care, and took the initiative to enhance the culture of patient safety. This began with the inclusion of a face-to-face patient handoff between perioperative providers, supported by data collected on a paper form. The goals of an effective transition of care included:

1. Communication of critical information in a succinct, clear and efficient manner without omission of relevant data
2. A written or electronic tool to aid in the handoff process
3. Face-to-face communication, with a standardized delivery of information
4. Opportunity for the receiving party to synthesize the information and ask the delivering party any clarifying questions.

The goal was to achieve the following aims without an increased burden on providers, or decreasing efficiency in either OR turnover or provider handover time:

1. Standardize written/electronic handoff
2. Have a focused verbal transition of care
3. Establish a culture of safety regarding these critical time periods
4. Measure compliance, and subjective satisfaction
5. Measure outcomes such as major preventable errors in the ICU and PACU

Project Design / Strategy

We applied the Plan-Do-Act-Study (PDSA) cycle to our campaign with the goal of revising our strategy quarterly after reviewing how the written handoff document was being used. Each document was collected after the post-anesthesia care unit (PACU) nurse called report to the receiving nurse. Approximately 200 copies of each version of the document were audited to understand how the anesthesia providers and PACU nurses were using the written handoff form.

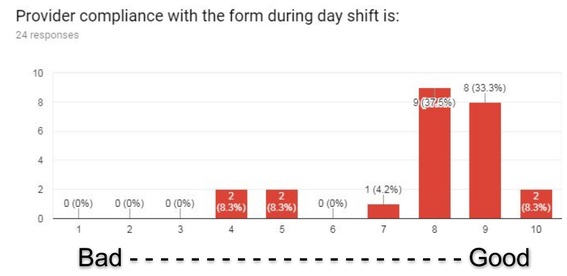
Amended versions of the patient handoff form were subsequently implemented to study other quality improvement aspects throughout the perioperative period, such as the Enhanced Recovery After Surgery (ERAS) protocol implementation, patient premedication, and improved communication with the anesthesia pain service.

Changes Made

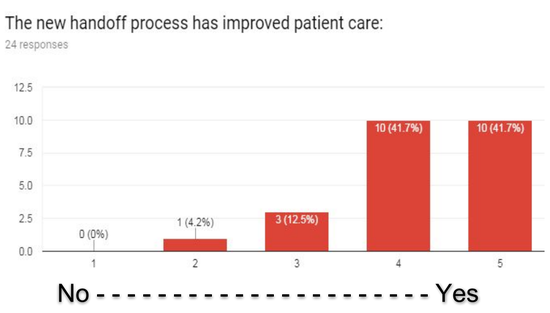
The handoff process is now used to transition patient responsibility from one anesthesia provider to another, from the anesthesia provider to the PACU nurse, and from the anesthesia provider directly to the intensive care unit (ICU) for patients requiring ICU care postoperatively. Additionally, the PACU nurses have adapted their verbal handoff to reference the handoff sheet designed in our quality improvement campaign.

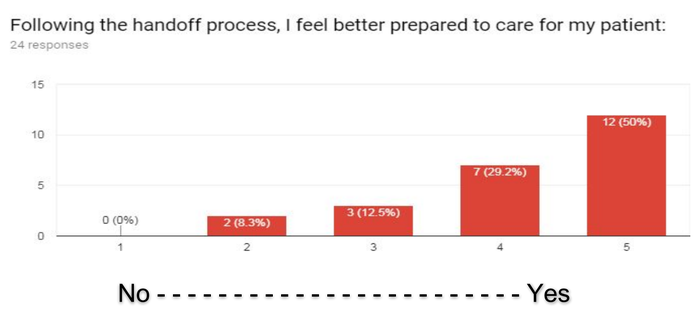
As noted in our goals, verbal face-to-face handoff is essential, so our current process uses the handoff sheet as a cognitive aide to lead these transitions of care. To determine efficacy and satisfaction, PACU nurses and ICU nurses reported on the effectiveness and adherence of anesthesia providers to the handoff process.

Outcomes

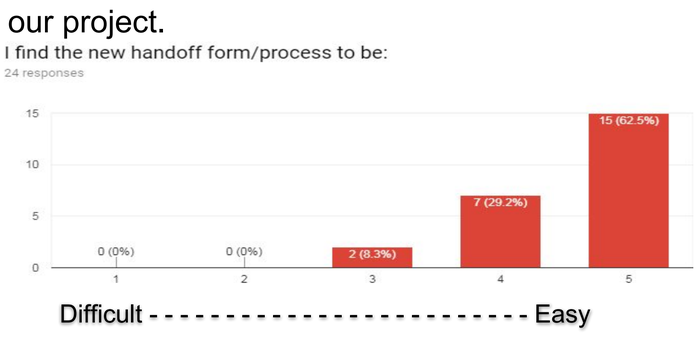


We measured subjective data from our post-anesthesia care unit staff and anesthesia providers (residents and certified registered nurse anesthetists). We surveyed our PACU staff in order to ascertain perceived comfort with the new process, value to patient safety and overall ease of use.





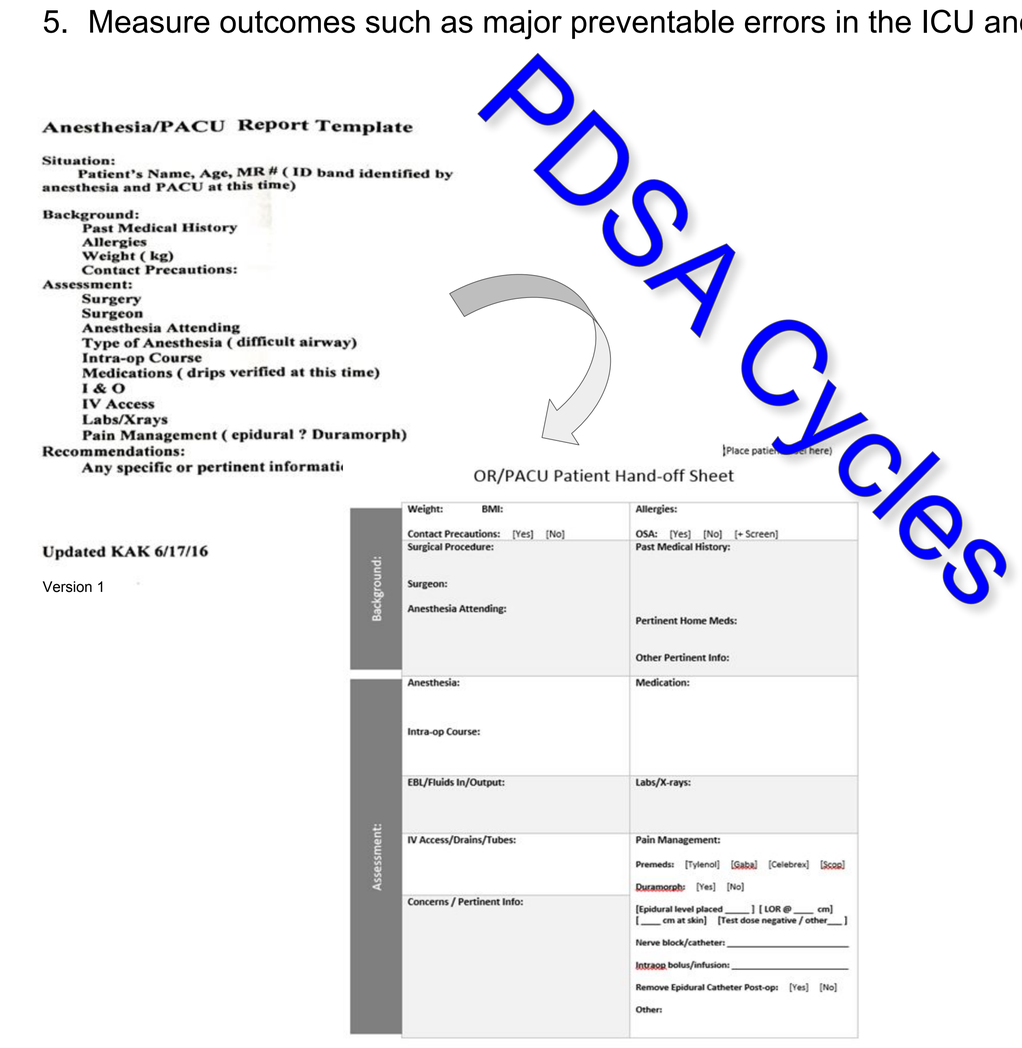
We have started to collect patient safety event data in the operating room and the PACU via our Electronic Medical Record (EMR). Subsequent efforts will seek to obtain more objective data to validate our project.

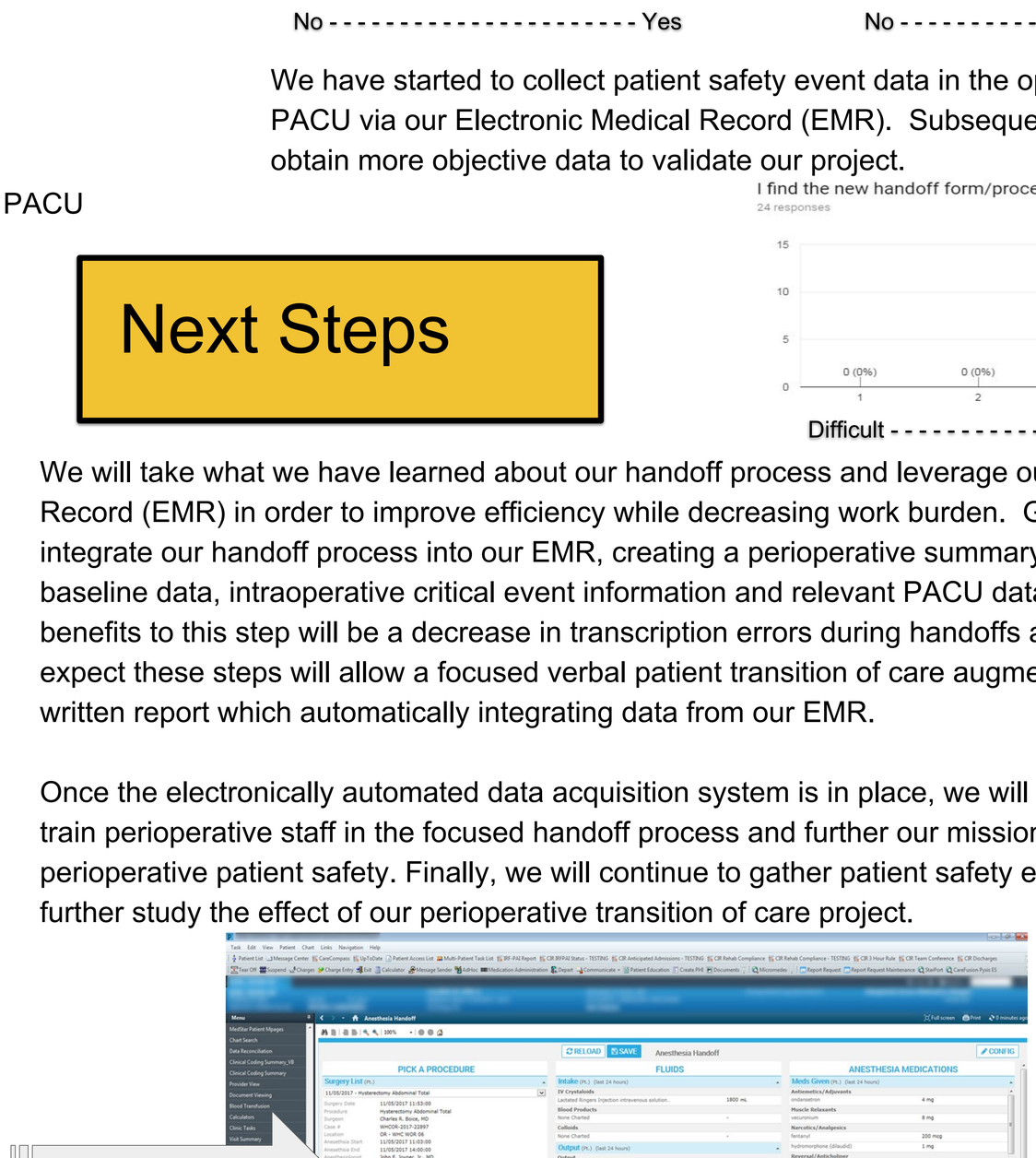


Next Steps

We will take what we have learned about our handoff process and leverage our Electronic Medical Record (EMR) in order to improve efficiency while decreasing work burden. Going forward, we will integrate our handoff process into our EMR, creating a perioperative summary including preoperative baseline data, intraoperative critical event information and relevant PACU data. The likely additional benefits to this step will be a decrease in transcription errors during handoffs and work duplication. We expect these steps will allow a focused verbal patient transition of care augmented by an accurate written report which automatically integrating data from our EMR.

Once the electronically automated data acquisition system is in place, we will increase our efforts to train perioperative staff in the focused handoff process and further our mission to establish a culture of perioperative patient safety. Finally, we will continue to gather patient safety event data in order to further study the effect of our perioperative transition of care project.





Preop (open box) [ERAS link] Case selection dropdown menu OSA (yes/no/+screen) | Isolation (yes/no)	Intraop (open box)) Surgeon | Surgical Service | Surgery (hover over) ASA | Anes type | Attending / Provider (end of case)	Regional/Neuraxial (closed box)
Bleeding assessment (closed box - red) - Hgb/Platelets / INR / Ptt - Anticoagulant/ptt (last dose / date-time) - Blood bank info (blood bank requirements) - Flag known bleeding disorders (search cerner)?? - Flag if patient has anticoagulant or antiplatelet other than aspirin as home med.	Airway (open box) - Most recent airway management - History airway management link	Procedures (open box) - Peripheral IV - A-line - Line
HPI (open box) - ERAS (yes/no) – future - Review of systems – (specific list provided) - Preop vitals - Anes Concerns Exam (open box) - Last preop airway exam	Intraop Meds (open box) - Paralytics (last dose / time) - Reversal (dose / time) / Train of four (last / time) - Antibiotics (last dose / time) - Analgesics (minimized sub catergory) - Tylenol / Toradol (last dose) - PONV ppx (hover-over)	Intraop Infusions (open box) - Cardiovascular - Sedation/Pain - Paralytic (cisatracurium)
Labs / Diagnostics (closed box) - POCT glucose / BMP / Mg / Phos / Pregnancy test - EKG link - Echo link - Chest link	Intraop Fluids (open box) - Ins - Outs - Estimated Blood loss	Cardiac Info (closed box) - Times (CPB time, X clamp time, circ arrest) - Cardiac Devices - Prelim TEE (item in development)
Pre op Meds (closed box) - Antibiotics/Antifungals/Antivirals - Analgesics - Antiemetics - Immunosuppressants	Intraop Labs (closed box) - Hemoglobin – trend (ex. 6 -> 7.2 -> 6.4) - Platelets –trend (ex. 90 -> 110 -> 50 -> 90) - INR – last / PTT - last - Last ABG (display as pH ___ /pCO2__/pO2__) - Lactate – trend (ex. 7 -> 10 -> 5 -> 3) - K+ last / Cr – last	Post op (closed box) [ERAS link] - Brief Post op plan Post op narcotics and antiemetics (48hrs) - Total narcotic dose (scheduled and PRN) - Identify if patient is on a narcotic PCA - Antiemetics used

References

1. Facts and figures - VCU Health Annual Report 2016-17. Available at: https://annualreports.vcu.edu/vcuhealth/facts.html. Accessed September 8, 2018.
2. Commission J, Others. Sentinel event alert 58: inadequate hand-off communication. 2018.
3. Stahl K, Palileo A, Schulman CI, Wilson K, Augenstein J, Kiffin C, McKenney M. Enhancing patient safety in the trauma/surgical intensive care unit. J Trauma 2009;67:430–3; discussion 433–5.
4. Zjadewicz K, Deemer KS, Coulthard J, Doig CJ, Boiteau PJ. Identifying What Is Known About Improving Operating Room to Intensive Care Handovers: A Scoping Review. Am J Med Qual 2018:1062860618754701.
5. Starmer AJ, Spector ND, Srivastava R, West DC, Rosenbluth G, Allen AD, Noble EL, Tse LL, Dalal AK, Keohane CA, Lipsitz SR, Rothschild JM, Wien MF, Yoon CS, Zigmont KR, Wilson KM, O'Toole JK, Solan LG, Aylor M, Bismilla Z, Coffey M, Mahant S, Blankenburg RL, Destino LA, Everhart JL, Patel SJ, Bale JF Jr, Spackman JB, Stevenson AT, Calaman S, et al. Changes in medical errors after implementation of a handoff program. N Engl J Med 2014;371:1803–12.

VCU Health
VCU Health System