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### Background

Philosophically, the practice of medicine has been craft-based, where the care each patient receives is “customized.” This approach can lead to unnecessary variation in care. Efforts to address variation and improve quality of care have included the use of care protocols. However, for some conditions, the rigidity of protocol can prevent appropriate patient-specific variation.

Senior leadership identified that care at Virginia Commonwealth University Medical Center needed significant improvement based on industry benchmarks for mortality, organ dysfunction and cost (Vizient, NSQIP). A major revamp of surgical care was started. The plan was to transition care into pathway-based care built on principles of Enhanced Recovery After Surgery (ERAS). My project involved tackling the intraoperative portion — changing care in the operating room to pathway-based care.

### Approach

The approach centered on concepts of mass customization: a coherent framework on which care was varied by experts. This concept reinforced three core values: respect for people, consistent application of best practice framework and transparent accountability.

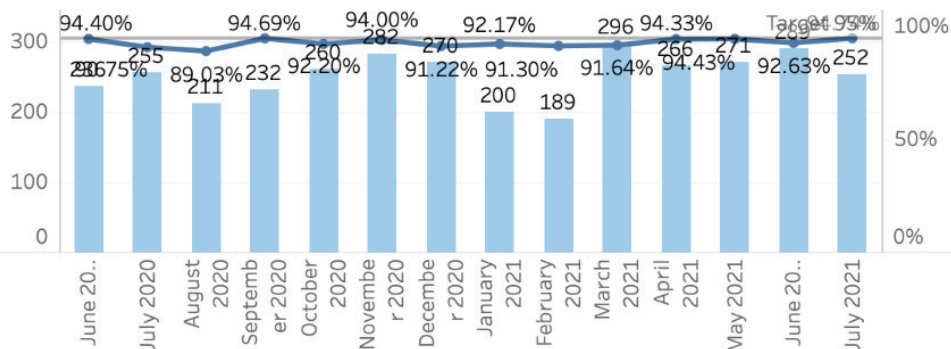
Overall, there are seven key ERAS principles that are relevant to intraoperative portion. We picked the most important three to start. We created a cohesive framework for resuscitation in the OR and analgesia management in OR. Antibiotics administration framework existed on paper.

For every division of surgery, anesthesiologists and surgeons met to identify tweaks that made sense to these frameworks. The goal was for these key elements to minimize surgeon-specific and anesthesiologist-specific variation. Hence, for 16 surgical divisions we created a cohesive framework for care on seven ERAS principles. Once this was created, we created an implementation plan focusing on upgrading the electronic health record (EHR) data system to automatically measure care process. We also stood up Lean huddle for anesthesiologists to identify barriers to consistent delivery of care process.



### Outcomes

Of the three key care-processes we targeted first, antibiotic framework already had a strong culture in the department. Our target goal was >95%, and we achieved that. We identified certain abdominal surgery service lines where we realized that patients were only



### Antibiotic Framework in OR (% Process Compliance)

getting one of two antibiotics (instead of both), and we were able to rectify those issues.

The second process, which the department was already in the process of evolving, was our approach to analgesia therapy. Our framework called for use of different modalities and mechanisms of analgesia drugs to minimize side effects of opiate therapy. Our goal was >80% of patients, and we are close.

The largest body of change culture was our approach of resuscitation. This was different than our traditional culture, where the provider variation (surgery, anesthesiologist, CRNA) was very large. Through understanding things that affect this process, we have slowly identified and removed barriers to consistent application. Currently, we are tackling the 60-80% barrier (our current plateau). The goal was 80%.

consistently is challenging, but key. There was no consistent mechanism of communication by which our team received "this is important" information. In other words, a coherent communication plan was lacking. Email doesn't work. Finding face-to-face or even large group time is key.



### #1 Priority is #1 Priority

Ron Heiftz states that the difference in "value" and "core value" is that for a "core value" you actually do something. Our organization has too many "#1 priorities" and many "values." This has been a huge barrier to project progression. The front line doesn't know what the #1 priority is. Words and actions do not match.



### Go Back to the Hippocratic Oath

Grounding the project in the "Focus is on reducing death and organ failure" is something that physicians can get behind. The challenge is that often the data (and work) that is meaningful for the front line to answer (clinical data) is not what administrative leadership cares about (billing-based benchmarks). Our bias isn't that physicians need to learn to code benchmarks, but instead the

bias is to get to clinically relevant data (the "gold standard") and work to improve that. This has highlighted that our EHR analytics need tremendous refocusing.

## Next Steps

**Goal #1:** Migrate this work to the EHR. We are undergoing EHR transition from Cerner to Epic (go-live December) and we need to make sure this work doesn't stop on the go-live date. Data is the link between "how is my patient doing" and "how I clinically treat my patient." We also need to take this opportunity to embed more "care process defaults" into the EHR.

**Goal #2:** The end goal isn't process control, but outcome improvement. We are adding this as the next step to the project. Once our process is more controlled, every suboptimal outcome will be reviewed by root-cause-analysis. The patterns in root-cause-analysis should then inform the next round of process control tweaks. This is a key goal in next six months for outcomes of in-hospital mortality and organ-failure (renal failure).

**Goal #3:** Evolve our communication plan by listening to our front line.

## Lessons Learned



### Communication

How an organization, and a department, (or in our case four major departments) communicates