

ACADEMY FOR EXCELLENCE IN HEALTHCARE

IMPACT ASSESSMENT PAPER

Executive Summary

Integrating Interventional Services Pre-Procedural Process at OhioHealth Riverside Methodist Hospital

Riverside Methodist Hospital Interventional Heart and Vascular Services consist of three departments — interventional cardiology (CVL with six labs), electrophysiology (EP with four labs), and vascular interventional radiology (VIR with five labs) — located in separate towers on the Riverside campus. With disparate locations, there was potential for adverse impacts at the 1,026-bed teaching hospital. Riverside leadership set a goal to integrate CVL, EP, and VIR departments into a single location on the second floor of the hospital's Red Tower.

A three-year strategy was set to execute approved capital projects in Phase I, including the construction of a Hybrid Cardiovascular lab and a Hybrid IR/CT lab, and move the VIR labs with CVL and EP in Phase II. The integration of the three departments (the I3 project) would create a space that promotes an interdisciplinary approach and the performance of advanced procedures; differentiate OhioHealth by creating a technology profile that is state-of-the-art; and increase the value of care by standardizing quality protocols, enhancing patient and family experiences, and lowering the cost structure for interventional services.

In Phase II, a cross-functional team was formed (I3 Operations Team) to begin the integration. The team attended the Academy for Excellence in Healthcare at The Ohio State University in October 2016, where they improved their understanding of lean tools, such as mapping, standardized work, and A3 thinking. The I3 team developed and communicated their project via an A3, using iterations of the A3 to identify and articulate problems, such as varied workflows among departments and bay capacity constraints: The current-state PCU 2 consisted of 21 bays and daily demand of 19.5 bays; future-state demand would increase to 25.5 bays, with no additional bays. The team's goals were to decrease utilization of pre-procedure bays for all inpatients by 50 percent (approximately six patients per day) by May 1, 2017, and decrease pre-procedure utilization by 90 percent (approximately 10.8 patients) by October 1, 2017.

The I3 team mapped the current state of VIR — from the VIR physician being consulted to the patient being transported to the critical care unit — and identified problems, such as pre-procedural orders missing at many process steps, delayed patient transports, physicians not always communicating with the patient/family after the procedure, miscommunication, and inconsistent step-to-step handoffs.

The I3 team developed three primary countermeasures and would track their outcomes against three new metrics (percent of standardized order sets utilized for inpatients, percent of pre-procedural work-up completed

upon arrival to lab, and number of inpatients utilizing pre-procedural bays per day). Countermeasures (implementation began in January 2017) and *progress as of May 2017* are as follows:

Changes to informed consent process: CVL and EP departments acquired informed consent on the floor for inpatients, so the patient moves directly to the procedural lab. However, for VIR the inpatient does not come directly to the procedural lab; patients are consented in a pre-procedural bay by the provider because VIR physicians do not have a rounding service at Riverside. The team proposed — mindful of patient throughput, resources available, and compliance issues — to use advanced practice providers (APPs) to educate inpatients about their procedures prior to being transported to the pre-procedural bay. — *This countermeasure has expanded and is being considered for the entire OhioHealth system; thus, it will require more stakeholder involvement with OhioHealth Medical Staff Affairs, the organizational regulatory and compliance department, general counsel, and the private physician groups.*

APP process changes: The team proposed that APPs review both inpatient and outpatient VIR consults (except off-hours), and that the VIR charge nurse would no longer review consults. — *Unfortunately, one of the APPs took a position outside of the organization, which has temporarily limited the ability to change the process. Opportunities for effectively managing incoming consults throughout the day continue to be explored as a process improvement opportunity.*

Order sets: An order-set team was formed to create and implement standardized/comprehensive order sets and set provider expectations with utilization (physician and APPs). There were approximately 80 procedures (inclusive of laterality) in VIR, and various order sets; some sets were incomplete or inaccurate and some procedures did not have order sets. — *The team reduced VIR order sets from approximately 40 to approximately 15. The order-set change also will impact VIR beyond Riverside because changes in Epic (OhioHealth's EMR system) requires system-wide approval for implementation.*

To prepare for the go-live integration, the team incorporated some additional lean tools, such as visual management (an easy-to-access centralized dashboard in the EMR system for PCU) to track patients in real time. The team is building an internal communications tool so that staff can quickly alert each other to changing requirements, such as diverting a pre-patient due to capacity constraints. The team expects their project to create more streamlined, standardized processes that will improve patient access to interventional services, improve awareness of the services within Riverside, improve interaction among physicians, and provide better patient care and reduce complications. Intangible benefits from the project have included a cultural change, enhanced provider engagement, team development/relationship building, and expanded use of lean tools beyond this project.

[Read the full study of the Riverside project](#), which illustrates that solutions to complex healthcare problems can run into regulatory and/or organizational policies, require a broader group of problem solvers, but lead to improvements that extend well beyond the initiative. The project also shows how a cross-functional team equipped with lean tools improves communication, breaks down misconceptions, and leads to a rapid examination of root causes and the develop of meaningful countermeasures.

[About the Academy for Excellence in Healthcare:](#) AEH blends in-person class time with hands-on project work, interactive simulations, and recurrent coaching, all aimed at helping healthcare teams spark actionable change at their organization. To learn more about AEH, contact [Margaret Pennington](#), Faculty Director, or [Beth Miller](#), Program Director.