Clinical Effectiveness

Patient Safety

Quality Improvement

Patient Experience

Affordability

Executive Statement of Support: Allyson Brooks, MD, CQO

With around 35,000 discharges per year, ensuring the highest quality and best outcome for all patients is vital. The Clinical Effectiveness program was initially created to support Hoag in its mission to provide the highest quality health care to the patients we serve however, has become one of the most influential programs implemented. Clinical Effectiveness brings together a multi-disciplinary team including physicians, front line staff, and performance improvement experts to develop and implement evidence based best practices. This program has transformed our approach and is an essential effort leading to significant strides in quality outcomes and safety; also resulting in a $15M addition to our contribution margin. In addition, it has created a culture of engagement bringing physicians and staff together for the common goal of providing excellence in patient care.

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Table of Contents

1. Executive Summary

The Clinical Effectiveness program is a framework for Hoag to succeed in delivering upon its mission to provide the highest quality healthcare to the communities we serve. This is accomplished through consistent and systematic improvement focused on providing the best quality of care and patient experience while lowering the cost of healthcare.

Clinical Effectiveness brings physicians and clinical staff together to evaluate specific patient populations and develop approaches to reduce variation among providers using evidence based best practices to standardize care to all patients. The program has a three year proven track record of success with continual refinement and enhancements along the way. We have delivered several major hospital implementations improving quality and boasting an average $400/case increase in contribution margin for FY16 over FY15. While also seeing an increase in volume, we added $15M to Hoag's bottom line.

2. Background and Relevance

Leadership at Hoag recognized that although our culture was focused on patient experience and providing the highest quality care, we were did not effectively engage front line physicians and staff. This led to limited progress and hindered the implementation of meaningful and sustainable changes. Although the organization promoted continuous improvement, it did not have an effective venue for collaboration to remove variation beyond isolated units. This was the genesis for Clinical Effectiveness and was a significant culture shift for Hoag. It encouraged all levels of staff (Executive Leadership, Physicians, Nurses, Performance Improvement and others) to participate on teams to remove waste, improve quality and enable best practice patient care. Clinical Effectiveness focuses on specific patient populations as a whole and allows for the identification and removal of variation so all patients receive the same standard of care.

3. Project Specifics

3.1 Scope

The first step was to identify patient populations most in need. Metrics in both quality and finance were evaluated from one fiscal year to the next by DRG (i.e. readmission ratio, mortality, contribution margin (CM) and length of stay (LOS) among others). DRG groups were then ranked based on improvement opportunity (e.g. if a metric changed negatively from the previous year, the DRG was scored higher). DRG groupings (Bundles) with the largest opportunities for improvement were presented. Our leadership then selected 8-12 Bundles for the program. Each launch of new Bundles was called a Wave and to date we have completed 5 Waves (see the table below).

Wave	Bundles (16)	DRGs (79)	Initiatives
1	Bowel Procedures	329-331	Rapid Diet Progression, Enhanced Recovery After Surgery
	PNA/COPD	190-195	Progressive Mobility, Bi-PAP in Med/Surg
	Sepsis	870-872	Patient Pathways, SNF Collaborative
	Spine	453-460, 471-473	Biologics Guidelines, Standard Preference Cards
	Valve Procedures	216-221, 266-267	TAVR Pathway, Early Extubation Protocol
2	Deliveries	765-766, 774-775	Coding & Documentation Improvements, Early Admission Criteria
	Vents & Trachs	3-4, 207-208	Patient Pathways, Trach in CC
3	GI Hemorrhage	377-379	ED Order Sets, Patient Pathways
	NICU	789-793	Patient/Family Discharge Education, Billing Improvements/Accuracy
	Stroke	61-69	Door to t-PA Process, Door to Arterial Puncture
4	Craniotomies	25-27	Coding & Documentation Improvements, DBS/VPS Patients to Med/Surg instead of Sub
	Renal Failure	682-685	Reduce Dialysis on Last Day of Stay
5	Alcohol & Drug	896-897	Coding & Documentation Improvements, ED Order Sets & Standard Detox Admission Criteria
	Bowel Obstruction	388-390	Standard Process/Timeline for Surgical Consults
	Heart Failure	291-293	DC to SNF Standard Orders
	Neuro Spine Behavioral	28-30, 518-520	Reduce Off Label Use of Anti-anxiety/Anti-depressants

3.2 Process

With the Bundles identified, our executive leaders decided on the launch schedule and teams for each Bundle, including executive sponsor, physician champion, clinical expert and ancillary support (e.g. IT, Coding, etc.). Each Bundle followed the same structure which includes three months of design followed by three months of implementation and finally six months of monitoring and tracking.

In the design phase, DRG data was reviewed. Based on the data, the team identified areas of opportunity for improvement. Design ended by selecting the top three to four initiatives and creating a project plan and timeline for implementation.

The three months of implementation focused on completing the project plan. This typically involved updating IT systems and educating the staff. During this phase, we began early monitoring of our metrics to validate that changes are resulting in the improvements expected. In true 'Plan – Do – Check – Act' methodology, plans were adjusted based upon these early results.

Once all of the initiatives were implemented, the team moved into six months of monitoring and tracking. The goal of this phase was to transition management of the Bundle from Performance Improvement (PI) to the clinical leads and to continue to see improvement in the selected metrics.

3.3 Strategies and Tactics

Clinical Effectiveness uses similar tactics to begin each Bundle however, since each Bundle's initiatives vary based on what opportunities are selected by the team, the implementation from one Bundle to the next may be different. Data analysis is heavily relied upon to identify the areas of opportunity focusing on variations in length of stay, utilization of supplies, labs and medication as well as physician practices. The team then uses process mapping and brainstorming sessions to identify ways to address the variation. Typical tactics and strategies include revision to existing order sets or the creation of new ones, documentation improvements to support accurate coding, controls to limit inappropriate medication use, partnerships with Skilled Nursing Facilities, and creating Standardized Nursing Protocols.

3.3 Challenges

Challenges arise when a patient population does not have clear leadership. For example, patients admitted for renal failure do not fall into one of our established institutes and do not have Nurse Navigators so finding the right clinical leaders for the team was difficult. Additionally, this Bundle struggled because the physicians and staff were initially unclear about the objectives of the program. Subsequently, Hoag created an Acute Care Institute to manage these populations. As Clinical Effectiveness has grown and significant outcomes have been proven, this engagement problem is mostly eliminated. Leaders are now approaching Performance Improvement requesting to be selected in the program.

Lastly, as with most organizations, competing priorities restrict the staff's ability to participate. To combat that, the Clinical Effectiveness program was included in the strategic plan of the organization and deemed one of our highest priorities to ensure that the critical front line resources needed for our success are made available to participate.

4. Results

The measurements of success for Clinical Effectiveness vary from one Bundle to the next. Just getting physicians to the table to openly discuss opportunities and ultimately trust the data we presented was huge for one team while another implemented large scale protocols that every nurse was taught and changed almost every order set available.

One such implementation came from the Pneumonia/COPD team. The goal was to improve patient ambulation, but we needed to build a system that supported and enabled the nurses to lead patient mobility without having to wait for physician orders. Research on existing mobility protocols turned up several focused on patients in Critical Care, but little was available for patients in Med/Surg. The Nursing Education Department, with support from physicians, bedside nurses and physical therapists, created a holistic Progressive Mobility Protocol that defined activity levels for all patients no matter what their level of acuity or physical location. The Protocol was rolled out floor by floor until all units

were educated. Nursing documentation was also modified to support the new system and make it easier for the nurses and aides to document activities. The last step was to take the new protocol to our Nursing Practice Council and Medical Executive Committee for approval. Early results showed that readmissions from the pilot unit dropped from 14% to 10% and we also reduced the LOS for patient discharged from that floor. Our nurses were so proud of the results they submitted the program as a poster presentation to the 2016 Western Institute of Nursing Conference (see Appendix A).

Another major success from this program came from the Vents and Trachs team. The team consulted with several surgeons and quickly found that contrary to our current practice, a tracheostomy could often be safely performed in Critical Care instead of incurring the additional cost, risk and delay in getting the patient to the OR as an add-on case. It was also identified that these patients needed care pathways after seeing that 80% of those that don't wean off the vent within 4 days eventually get a trach. With those odds, the patient and family needed to hear from the physicians and staff earlier about potential outcomes so they were more prepared to make this difficult decision. With these changes, a reduction in the average LOS by 3 days and the average OR costs by $400 was realized for these patients.

Another win for this team was that once PI transitioned management, the team continued working on vented patients creating a Standardized Awake and Breathing Trial protocol. Six months in, their gains stabilized below their goal so PI was asked to join the team again. Due to the need and opportunity, the Bundle was selected to be revisited in Wave 5. Since launching in February 2016, we have improved compliance with the Awake Trial from 73% to 92% and the Breathing Trial from 15% to 87%. Now that we are comfortable with the first part of the protocol we are going to focus on strategies to improve the time to extubation and reduce the length of time on the vent.

The Stroke Bundle team focused solely on our Door to t-PA time. The American Stroke Association's Get with the Guidelines goal is that 75% of patients given t-PA are treated within 60 minutes of entering our door. In calendar year 2014 our 60 minute treatment compliance was 37%. In 2015 it hovered around 43% with an average time to treat of 74 min. After creating a process map with all stake holders, identifying several areas of waste as well as many opportunities for improvement, we implemented changes quickly throughout the fall of 2015 and are now typically seeing 75% compliance each month with an average Door to t-PA time of 55 min.

5. Significance

The results shared above are just a sample of what the Clinical Effectiveness teams have accomplished. Every team has a story to share and an improvement for which they are proud. What is most significant about these results is that they were generated through multidisciplinary teams, led by physicians and nurses and backed by our Executive Leadership. The individual members took ownership to create solutions and implement changes. They were empowered to do the right thing to improve the value we provide to our patients and are eager to continue the work. This program has

created a culture at Hoag that was unimaginable before. Physicians and front line staff proactively working together and making data driven decisions to continuously improve the care we provide.

6. Sustainability and Scaling

The Clinical Effectiveness Program is designed to allow for multiple iterations of DRGs Bundles under the tenet of continuous improvement. The structure allows us to complete a Bundle and then let the clinical team continue to identify additional areas of opportunity and either implement them on their own or request PI resources to have the bundle revisited through Clinical Effectiveness. Our FY17 plan includes several revisited Bundles (i.e. Sepsis, Bowel Procedures and Spine Procedures).

In order to sustain the program, a 1 year maintenance period was established to ensure there is a long term owner to monitor progress. It is critical to train and then transition management to the clinical team so they can continue to work on the Bundle's processes and quality metrics. We also created a guidebook as a resource to reference processes and methodologies and hopefully repeat successes going forward (See Appendix B).

Recently, this program was adopted by the St. Joseph Health System. While the tactics may be different, the methodology will be scaled to enable change at a regional level and support improvements among the entire system.

7. Lessons Learned and Advice to Colleagues

In our three years of running Clinical Effectiveness we have learned several lessons. These lessons and the ones we learn with each Wave drive us continually improve our approach.

The first lesson learned was that a change among one patient population will have an effect on others. This effect was much larger than anticipated. We quickly learned that successes need to be shared more broadly throughout the organization so that others better understand the changes they see within their areas.

Secondly, there are opportunities identified within a Bundle that do not have a large enough impact compared to the other initiatives identified on that DRG population. These concerns continue to arise in all bundles and therefore should be explored and addressed house-wide. New for FY17, we allowed for these overarching Bundles and in Wave 6 are working on 2 non-DRG Bundles centered on Lab Utilization and Robotic Surgery.

Finally, when the program began, the Bundles were selected a month or two prior to the start of design. Due to resource constraints and competing priorities, we struggled to get quick participation and data. Now, the program is structured so that each wave is developed and agreed upon prior to the beginning of the fiscal year and is based on strategic priorities and available resources. This way our leadership knows the schedule and can ensure resources are available when needed.

The most important advice to our colleagues is to seek out and engage your early adopters. It is vital to have the front line staff and physicians on your team open and willing to discuss and try new ideas. It is crucial to ensure you have access to reliable, timely data and to allow the data to speak for itself. The team will respond when they accept and trust the numbers. By reaching out to early adopters, you are enabled to trial and error your approach and then showcase the results to the organization to gain the momentum needed.