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Enhanced Recovery After Surgery Pathways and Resident Physicians: Barrier or Opportunity?

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Enhanced Recovery After Surgery (ERAS) pathways are evidence-based, multidisciplinary perioperative bundles of interventions that have been shown to reduce length of stay, complications, and costs and improve the patient experience after surgery. ERAS protocols have been developed for many surgical service lines, but the majority of the outcomes data are from the field of colorectal surgery¹ They are widely adopted in Europe and Canada and are increasingly being implemented in the United States. Although many of these programs include descriptions on how to engage hospital leadership, as well as senior physicians and nurses, few if any describe how the programs plan to engage resident physicians. Instead, resident physicians are mentioned as a potential barrier to implementation or a challenge that needs to be worked around.^{2,3} An informal public literature and internet search by the authors found that 21 of the top 30 surgical residency programs (rankings based on www.doximity.com search in February 2016) in the United States are affiliated with hospitals that have or are currently implementing an ERAS pathway. The question of how to engage residents in ERAS is essential for long-term durability of these programs, as well as for ensuring that the next generation of surgeons and anesthesiologists is trained in evidence-based perioperative care.

Resident physicians are not well represented in the ERAS literature to date. In the qualitative studies that explore ERAS implementation, providers who were interviewed mention the large number of residents who rotate through wards for a short time, limiting the amount of time and exposure to the ERAS pathway, as a potential barrier.^{2,3} The only study to directly assess resident attitudes and knowledge of ERAS was from a group in Toronto, Ontario, Canada.⁴ The researchers surveyed the surgical residents before the implementation of their ERAS program. They revealed that the majority of residents supported implementing an ERAS program; however, they were unfamiliar with some ERAS practices. Senior residents were more familiar with and more likely to support an ERAS program.⁴

Some programs minimize resident involvement in ERAS protocols by using advanced practice providers for postoperative care processes. At the Johns Hopkins Hospital, certified registered nurse anesthetists were used instead of residents for the intraoperative implementation of the colorectal ERAS program and still do the majority of the ERAS cases.⁵ The rationale behind using select providers is that they do not rotate between

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services and could potentially provide more consistent care practices without the need for retraining. There is no published comparison of ERAS protocol adherence for advanced practice providers and resident physicians. Maintaining compliance is important for patients undergoing ERAS because deviations from ERAS protocols are associated with more complications and lessen the reduction in the overall length of stay⁶ The majority of deviations from ERAS protocols occur during the postoperative care period.⁶

ERAS pathways offer benefits for resident physicians providing postoperative care. At most institutions, there is an order set in the electronic health record or a care pathway that outlines the diet, intravenous fluid, analgesic, Foley catheter removal, and mobility orders for ERAS. This allows the resident team to round with confidence in the morning, knowing what the care plan of the attending surgeon is likely to be for the day. In addition, setting expectations and educating patients before surgery are important aspects to ERAS, and they facilitate postoperative management, may decrease the use of the nursing call bell (and pages to the resident), and have been shown to improve the patient experience and Hospital Consumer Assessment of Healthcare Providers and Systems scores. In addition, at our institution, every patient undergoing ERAS has pain controlled by an anesthesiologist-led acute pain service, which reduces the workload of the surgical resident.⁵ Therefore, surgical residents can benefit from increased time for disease-specific surgical recovery and management of patients who “fall off” the pathway because of a surgical complication.

Developing a system for providing education and awareness about ERAS to surgical residents remains a challenge. Because of the large number of providers that need to be trained on a fairly frequent basis, engaging residents necessitates having regular education interventions for providers. This requires a consistent investment of time and energy of the ERAS leadership but would likely improve the long-term durability of these programs. Education should take the form of didactics, ideally multidisciplinary and monthly feedback on performance and the rate of compliance for the patients cared for by a specific resident team.

Engaging residents in ERAS pathways, especially in the postoperative recovery, is a worthwhile investment. With ERAS pathways becoming more popular, familiarity with the basic tenants is essential for future surgeons and anesthesiologists. In addition, residents are true frontline providers and “in the trenches” and therefore are also an essential source of feedback about the how the program is running and potential barriers to success. Educational efforts and resident participation with ERAS are consistent with Accreditation Counsel for Graduate Medical Education Clinical Learning Environment Review process measures.⁷ The healthcare quality pathways section of the Clinical Learning Environment Review program states that residents should be engaged with quality improvement projects and receive data on quality metrics, all of which could be satisfied with an ERAS engagement program.

At our institution, we are currently taking measures to engage our surgical residents in the ERAS program. When the ERAS project was initially implemented, we had a didactic session with all of the residents and added an orientation to clinical pathways to the intern orientation. We have recently developed a resident ERAS champion who will actively engage in ERAS research, as well as promote the pathway among his or her colleagues. In

addition, ERAS leadership will have a recurring monthly meeting with the resident team as they come onto the colorectal service to review the pathway protocols and specific concerns. In addition, anesthesia residents are currently staffing cases as part of the liver resection ERAS pathway⁸. A dashboard is under development to share monthly performance data with the resident team, including length of stay and process measure compliance (diet, intravenous fluids, mobility, and Foley catheter removal).

The ultimate goal of an ERAS program should be to make itself obsolete. If successful, the evidence-based practices that compose ERAS pathways will become the standard recovery pathway. Although it will likely take more resources and is probably not realistic for smaller ERAS programs, resident education in ERAS programs is critically important for ensuring a future for ERAS and promoting higher-quality perioperative care for all patients.

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