The standard of care therapy for rectal cancer for the past decade has been, and continues to be, neoadjuvant chemoradiation followed by transabdominal total mesorectal excision (TME) followed by chemotherapy for stage II and III rectal cancer, and transabdominal TME alone for stage I rectal cancer, with the exception of low-risk stage I tumors, for which transanal local excision is considered an acceptable treatment alternative. Driven by the high potential morbidity of this treatment regimen, investigators continue to advocate new approaches that can achieve oncologic control with less morbidity and fewer long-term adverse effects. Currently, there are studies underway that omit surgery for patients who have a complete response to chemotherapy and radiation,1 others that omit radiation in patients who have a good response to chemotherapy and surgery,2 and still others that replace TME with local excision, either alone or in combination with chemotherapy and radiation.3

Beyond changes in the use and sequencing of different treatment modalities, there is burgeoning interest in newer technical approaches. Numerous minimally invasive approaches to local excision and TME have been introduced over the past decade, including laparoscopic, endoscopic, robotic transabdominal, robotic transanal, and combined transabdominal and transanal minimally invasive approaches. A quick search of PubMed yields 200 to 300 articles published thus far in 2013 and 2014 that address alternative approaches to the surgical management of rectal cancer. The procedures described range from endoscopic submucosal excision to TME performed via an entirely transanal approach. Although there are a few published clinical trials and meta-analyses, the majority of these articles represent single-institution, single-surgeon, or even single-case experiences. Most address techniques and feasibility with some early data on oncologic outcomes, but there are very limited data available on quality-of-life, functional, and long-term outcomes.

Although some novel approaches are being studied in the context of trials, it is clear that some innovations are already being adopted into practice. Thus, it is important to understand patterns of care to ensure that the quality of rectal cancer care is not being compromised for the sake of innovation. Unfortunately, understanding what treatments patients are receiving on a population level is a considerable challenge.

In this issue, Gillern et al4 report on a study examining trends in the use of local excision for the treatment of stage I rectal cancer in older adults. As the authors point out, there is good evidence that local excision alone is not appropriate therapy for a fit patient with a T2 tumor or a T1 tumor with lymphovascular invasion. Despite this, using Survey of Epidemiology and End Results (SEER) data linked to Medicare claims, the authors found that approximately one third of patients in this older population underwent local excision rather than TME. Although these data support a trend in the right direction with use of local excision decreasing from 33.6% to 29.8% between 2000 and 2009, this 3.8% decrease over a decade is discouragingly small. And, in fact, previous studies examining the National Cancer Database (NCDB) actually found the use of local excision for stage I rectal cancer to be increasing.5,6

Unfortunately, a thorough exploration of the factors that drive treatment choices is not possible with existing secondary data. We do not know whether there are providers who still do not understand the importance of nodal clearance or whether there are other factors driving choice of surgical procedure. It is somewhat encouraging that 19% of patients with a T1 tumor and 42% of patients with a T2 tumor who underwent local excision also received chemotherapy and/or radiation, suggesting that providers recognized that local excision alone was not optimal management.

Older patients and those with more comorbidity were more likely to undergo local excision, suggesting that, for a portion of patients, competing health concerns may have made TME impractical. Maybe local excision really is the optimal choice for many of these patients, but, given the relatively high numbers, the concern still remains that some patients are receiving local excision without fully understanding the oncologic risks. Interestingly, colorectal sur-
geons were more likely to perform local excision, and these procedures were also more common at teaching hospitals and National Cancer Institute cancer centers. This speaks against the possibility of a lack of provider knowledge. Maybe these specialists are more likely to see patients with more complex competing health problems, or maybe these are the surgical innovators. The study by Gillern et al\(^4\) gives us a sense of what treatment choices are being made, but getting at the why behind those choices is a much greater challenge.

Registry data (ie, National Cancer Data Base [NCDB]; Surveillance, Epidemiology, and End Results [SEER] program; or state cancer registries) are also extremely limited in their ability to capture surgical detail. For example, the NCDB, which captures more detail than most cancer registries, did not record surgical approach until 2010 and still does not distinguish between laparoscopic and endoscopic procedures or indicate whether a procedure was performed transabdominally or transanally. Data resources that include provider claims (ie, SEER-Medicare) provide more detail on surgical procedures than registry data. The most granular detail comes from Current Procedural Terminology codes recorded on the provider claims. There are Current Procedural Terminology codes for transanal local excisions (45171 and 45172) and a temporary code introduced in 2008 for transanal endoscopic microsurgery full-thickness local excisions (0184T). However, most of the innovative procedures described recently in the literature do not fit into traditional categories, so it is unclear how procedures, such as transanal total mesorectal excision, would be coded. These shortcomings of administrative data make tracking surgical practice patterns for rectal cancer even more difficult.

Although new treatment paradigms and surgical approaches have the potential to greatly improve rectal cancer care, the influx of innovation in rectal cancer care brings the risk that excitement for new approaches will lead to incorporation into general practice before there is sufficient evidence to support safety and efficacy. Ad hoc innovation does not add to our understanding of best practices and, moreover, can put patients at risk. As a result, carefully designed clinical trials are essential for productive innovation. At the same time, surgical trials are notoriously difficult to complete. Recognizing this and understanding the limitations of existing secondary data resources, investigators in the United Kingdom have established a transanal total mesorectal excision registry to track uptake and outcomes of these procedures.\(^7\) Maybe it is time to consider expanding on this lead. The establishment of similar registries of innovation for rectal cancer care in the United States would be a prudent way to track uptake of procedures and treatment paradigms, assess learning curves, and track outcomes. Although we may be on the verge of major advances in rectal cancer care, we cannot lose sight of the proven successful treatment paradigms but rather must proceed cautiously, systematically studying oncologic and functional outcomes as we go.

**REFERENCES**