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Beyond “a chance to cut is a chance to cure”: Surgical quality in the cancer care continuum

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The Institute of Medicine 2013 report describes a cancer care crisis in the United States.¹ The report provides an important perspective as surgeons assess variation in cancer care quality, documenting a system that lacks in communication and coordination, exposing patient to potentially delayed and ineffective treatments. It also describes a lack of information on patient-centered outcomes, which might reveal important discrepancies between perceived quality and clinical results. As key participants in the multidisciplinary cancer care team, surgeons must engage with their colleagues and the health care system to improve the safety and quality of care. Three important areas that demand improvement in cancer care are continued improvement in clinical outcomes, increased focus on patient-centered metrics, and effective communication.

Surgery has a key role in cancer care, and surgical quality is integral to safe and effective cancer care delivery. Surgeons have the ability to offer cancer patients curative and palliative treatments, improving longevity and quality of life. However, a cancer operation that results in perioperative mortality clearly does not improve chance of cure, while postoperative complications can lead to delays in adjuvant chemotherapy or radiation, reducing the benefits of multimodality cancer care. Equally importantly, perioperative complications may also have a significant decrement in patient quality of life in both the short and long term perspective. Complications after cancer resections have also been reported to be associated with decreased overall survival years after the operation is performed.^{2–4}

Accordingly, performance of high quality operations with the best clinical outcomes has been the focus of much surgical quality research. The majority of quality improvement projects and metrics in surgery focus on a circumscribed set of clinical outcomes, primarily perioperative mortality and surgical complications. With the increase in national prospective database research, such as the use of the American College of Surgeons National Surgical Quality Improvement Project Database (ACS NSQIP), our ability to track and compare clinical outcomes has never been greater. Surgeons can determine mortality and morbidity rates for patients undergoing a variety of operations taking into account preoperative characteristics and comorbid diseases. Determining what factors have the greatest impact on clinical outcomes can provide surgeons and patients data that can inform decision making, as well as clinical quality improvement activities.

The article by Wong and colleagues⁵ in this issue highlights the ability to use national clinical outcomes data to begin to answer quality questions in cancer care. Hospitals with both high and low mortality rates after major cancer surgery were identified from the ACS NSQIP database; the authors sought to determine what differences between the hospitals contributed to the 7% absolute mortality rate increase. Complication rates were found to be similar in high and low mortality hospitals, despite these being the focus of many quality improvement initiatives. The key difference between the groups was the failure to rescue (FTR) rate. Patients who had complications at the high mortality hospitals had a threefold higher mortality rate than those at low mortality hospitals. These findings highlight an important area of further research to improve the surgical care of patients with cancer.

Failure to rescue is a concept describing patients who die after a postoperative complication is identified. This phrase was coined by Silber and colleagues in 1992 after their analysis of Medicare claims data revealed that patients undergoing elective cholecystectomy or transurethral prostatectomy at high and low mortality hospitals had similar complication rates, a pattern also seen following major cancer operations in the study by Wong and colleagues.⁶ The difference in mortality rates after complications was thought to be due to delay in diagnosis or suboptimal management of the complication. These findings were generalized further in 2009 when an analysis of patients in the ACS NSQIP database who underwent general and vascular surgery described similar results.⁷ With parallel findings in operations on cancer patients it is clear that addressing this problem could improve postoperative mortality and thus the benefit from oncologic procedures.

Determining why patients at high mortality hospitals are more likely to die from complications could provide valuable information on how to improve surgical quality. Research using approaches such as positive deviance analysis could illuminate practices and factors in low FTR hospitals that lead to better survival after complication. Failure to rescue rates may vary between hospitals due to a variety of mechanisms, including delayed diagnosis of complications, poor communication and coordination of treatment, lack of appropriate support staff, or inadequate ICU resources to care for patients with critical illness. Few studies to date have been able to elucidate the precise cause of variation. While patients may suffer complications after cancer surgery, the ultimate outcome for the patient can vary dramatically. The prompt and effective treatment of complications likely has a large impact on pain, suffering, and risk of death.

Clinical outcomes are important metrics that require our continued attention, yet they are not the only measures that are important to improving cancer care quality. Postoperative quality of life and functional status are important patient-centered metrics that are not well addressed in our current national databases. Surgeons should be concerned with providing good clinical results and state of the art cancer care; however, functional outcomes and quality of life must also be a high priority in order to achieve a focus on patient-centered care. Studies of functional outcomes and quality of life after surgical interventions provide rich information about the true benefits of undergoing an operation.^{8,9} For example, many patients value their ability to be at home with loved ones at the end of life. If a patient identifies this as an important goal, knowing the likelihood of this outcome may change a patient's decision regarding treatment. In contrast to clinical metrics of quality, patient

centered outcomes focus on the individual's goals. This may mean trading shorter life expectancy for comfort at the end of life. It also might stop providers from recommending invasive care after serious complications occur, which could result in higher FTR rates. Information about quality of life and functional outcomes should be integrated into databases so that we can better understand these outcomes. This could be accomplished with the current ACS NSQIP database by providing a patient survey at the 30 day follow-up time-point. Focusing on mortality alone cannot take into account patient preferences and true patient-centered outcomes.

Communication and coordination between providers is imperative to ensure that the patient is provided efficient and effective care. Poor communication between health care workers can be especially detrimental after complications occur and could be an important cause of FTR. Problems with communication could lead to delays in the diagnosis of a complication as well as incorrect treatments. Effective communication with patients is also paramount to ensure that early symptoms of a complication are identified. Explaining the risks, benefits, and expected outcomes of operations in the greater context of the patient's current health state is essential. Discussing the patient's prognosis and providing realistic expectations of treatment outcomes is key to ensure patients make decisions consistent with their own goals and values. Identifying patients' goals and counseling them on treatments most consistent with those goals is fundamental to providing patient focused quality cancer care.

Surgery is an important treatment modality that has the ability to improve cancer patients' longevity and quality of life. Because of this, surgical outcomes are a critical facet of cancer care quality. Tracking surgical outcomes, such as mortality and FTR rates, can provide important information about why surgical cancer quality varies between hospitals. Surgical quality improvement studies must be continued to assess clinical outcomes; however, patient-centered metrics should be included to determine the full benefits of surgical treatments. Communication, both between providers as well as patients and their physicians, is an essential tool to provide the most effective and efficient care to the growing cancer population.

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