Surgical Comanagement: A Natural Evolution of Hospitalist Practice

Christopher Whinney, MD
Franklin Michota, MD

Department of Hospital Medicine, Cleveland Clinic, Cleveland, Ohio.

"With the rapid advance of medicine to its present-day status in which it evokes the aid of all the natural sciences, an individual is no more able to undertake the more intricate problems alone, without the aid and cooperation of colleagues having special training in each of the various clinical and laboratory branches, than he would be today to make an automobile alone.[1]"

George W. Crile, 1921
Cofounder, Cleveland Clinic

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It is ironic that our specialty of hospital-based medicine grew out of the soil of managed care and a renewed emphasis on generalism.[2] Historical precedence clearly confirms the virtue of specialization and multidisciplinary care. Taken in this context, hospitalists have been comanagers from the very start, working with primary care physicians. The unprecedented growth of hospitalists in the United States has been accelerated by forces that pulled generalists out of the hospital and off the hospital wards—namely the expensive inefficiency of trying to be in 2 places at 1 time. Faced with an expanding scope of practice and increasing outpatient volumes coupled with declining reimbursements, primary care physicians (PCPs) recognized the need to share their patients with inpatient comanagers.

Today, the surgeon is faced with many of the same pressures experienced by PCPs. Surgical productivity, efficiency, and quality are highly valued, yet require the surgeon to be in 2 places at 1 time. In the past, many surgeons in teaching hospitals relied on surgical residents to manage uncomplicated presurgical and postsurgical care and collaborated with internists for more difficult problems. Now, surgical residents are limited by work-hour restrictions imposed by the Accreditation Council for Graduate Medical Education,[3] reducing their ability to respond to patients outside the operating room. Perhaps more importantly, surgical patients today continue to increase in age and complexity, with a projected 50% rise in surgery-related costs and a 100% rise in surgical complications in the next 2 decades.[4] An experienced comanager of surgical patients that does not rely on PCPs or the surgical education system makes great practical and economic sense, and is a natural evolution of the hospitalist concept and skill set. Hospital medicine core competencies highlight perioperative medicine as a body of knowledge and practice germane to hospitalists. In fact, it

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specifically states that hospitalists should strive to engage in "efforts to improve the efficiency and quality of care through innovative models, which may include comanagement of surgical patients in the perioperative period."[5]

CONSULTATION VERSUS COMANAGEMENT

Historically, in academic settings surgeons and medical practitioners have collaborated via the framework of consultation. If a surgeon needed assistance with uncontrolled diabetes or blood pressure, he or she called the internist to make recommendations on appropriate treatment. If the internist was faced with a potential surgical issue, he or she consulted the surgeon for their evaluation and opinion. In today's chaotic hospital environment, this collaborative framework has obvious inefficiencies. By definition, the consultation involves a formal request, which demands seamless communication that often does not exist. Next, the consultant reviews the chart, evaluates the patient, reviews pertinent clinical data, and provides an assessment with recommendations for management and care. How and whether these recommendations are enacted may be explicitly defined by the requesting service, but often it is not, and a delay in execution of recommendations potentially ensues. An observational cohort study showed that patients receiving medical consultation were no more likely to have tight glycemic control, perioperative beta-blockers administration, or venous thromboembolism (VTE) prophylaxis; however, patients receiving consultation had a longer length of stay and higher costs of care.[6] Comanagement represents a patient care referral, not consultation. A comanager is requested at the outset, but subsequently plays a much more active role, which may involve daily or twice daily visits, writing progress notes and orders, assessing and managing acute issues, and facilitating discharge planning and care transitions. Despite the ability to facilitate care, the basis for comanagement should be the same as for specialty consultation.

In contrast to academic settings, comanagement by PCPs and medical subspecialists occurs routinely in community hospitals. This model works best for patients with few problems who are followed closely by a single comanager, typically the PCP. However, complex patients with multiple comorbidities may decompensate without an attentive and experienced PCP, or wind up with numerous subspecialists making recommendations and writing orders in a disorganized fashion. The extreme of this situation is an unsystematic and inefficient "management by committee," where medical specialists pick and choose an area of comanagement, without clear boundaries between the various team members. This approach is fraught with pitfalls in communication and may lead to conflicting recommendations or false assumptions among team members, further increasing patient morbidity.

In both academic and community settings, comanagement by a hospitalist offers advantages of consistent availability and proactive perioperative expertise, both in diagnosing and treating relevant problems and in recognizing the need for subspecialty involvement, thus improving efficiency of care. Although some health care systems may consider "automatic" patient care referrals to hospitalists for all surgical patients, this approach should be discouraged unless the patient population demands specialty involvement. Best practice would identify comorbid surgical patients during the outpatient preoperative process and then hardwire the patient care referral to the hospitalist upon surgical admission.

COMANAGEMENT MAKES SENSE

The multidisciplinary nature of comanagement can streamline individual patient care from the moment the decision for surgery is made. Preoperative assessment and management by the hospitalist can uncover risks from known conditions requiring optimization; identify new, undiagnosed conditions affecting the perioperative period; and initiate prophylactic and therapeutic regimens that reduce the chances for postoperative complications. Specific examples may include beta-blockers in higher risk patients, anticoagulation management, and VTE prophylaxis.

The comanaging hospitalist ensures that these strategies are implemented, tailors them to the individual patient, and diagnoses and treats complications promptly when they occur. In addition, hospitalist comanagers can be more involved to facilitate patient transitions to post–hospital care venues; this might involve communication with patients, families, case managers, and PCPs, among others. Ultimately, the investment of the comanaging hospitalist in the surgical patient is much greater in both scope and time. This may

be expected to improve patient care efficiency, reduce length of stay, and may decrease overall complications. In addition, this investment is often recognized by the other important members of the care team, including nursing, case management, and patients and families, thus improving both patient and nursing satisfaction ratings.

AVAILABLE DATA ON THE BENEFITS OF COMANAGEMENT

Early studies on comanagement focused on orthopedic surgery and geriatric collaboration. Zuckerman et al.[7] studied the effects of an interdisciplinary team approach to the hip fracture patient, entitled the Geriatric Hip Fracture Program (GHFP), in the mid-1980s. They compared 431 patients admitted under the care of the GHFP for surgical repair of hip fracture between 1985 and 1988 with 60 historical controls at the same institution prior to the inception of the program. GHFP patients were evaluated by an orthopedic surgeon and a consulting internist or geriatrician. In addition to therapy service evaluations, each patient was screened by an ophthalmologist for visual impairment, a psychiatrist for preexisting cognitive dysfunction and depression, a social worker, and a case manager. GHFP patients had fewer postoperative complications, fewer intensive care unit transfers for acute medical issues, better ambulatory status and distance ambulated at discharge, and nonsignificant trends toward decreased length of stay and increased likelihood of return to home. A more recent prospective observational study of patients with hip fracture in Australia[8] compared a 4-year period of geriatric comanagement of 447 patients with hip fracture with 3 years of historical control patients (n = 504) prior to the institution of the comanagement service. Postoperative medical complications, mortality, and 6-month readmission rates were significantly lower in the geriatric comanagement cohort. No differences in median length of hospital stay or in discharge destination were noted. The proportion of patients receiving anti-osteoporotic therapy (calcium, vitamin D, and bisphosphonates) increased from 12% to 93% after the institution of comanagement. Also, the proportion of patients prescribed pharmacologic VTE prophylaxis increased from 63% to 94%, and symptomatic VTE events (deep vein thrombosis or PE) decreased from 4.6% to 1.3% after implementation. In another geriatrician comanagement study, Marcantonio et al.[9] performed a randomized trial in patients with hip fracture comparing geriatric comanagement with a structured treatment care protocol to usual care. Although length of stay was unchanged and costs of care were not reported, geriatric comanagement significantly reduced the number and severity of episodes of delirium.

Macpherson et al.[10] studied the effect of internist comanagement of 165 cardiothoracic surgery patients in the Minneaoplis Veteran's Affairs Medical Center in 1990. They found that, compared with the prior year, the implementation of internist comanagement was associated with hospital stays of 6 days shorter length, lower use of resources such as lab and radiology, and a trend toward decreased mortality. Huddleston et al.[11] conducted a randomized controlled trial of 526 patients undergoing elective total hip or knee arthroplasty, comparing a comanagement hospitalist-orthopedic team with standard orthopedic surgery care and internal medicine consultation as needed. Despite comparison to the standard of tightly managed care protocols in elective hip and knee arthroplasty, patients comanaged by hospitalists were more likely to be discharged without postoperative complications, and were ready for discharge half a day sooner when adjusting for skilled facility bed availability. No difference in mortality rates or total cost of care was noted between the 2 models. However, nurses and surgeons both strongly preferred the comanagement model, with providers reporting that care was prompt and coordinated, and there was an enhanced ease of providing care. In a second study, the authors from the same institution[12] studied 466 patients over 65 years of age admitted for surgical repair of hip fracture. Patients in the comanagement group went to surgery faster, were discharged sooner after surgery, and had an overall lower length of stay. No differences were noted in inpatient mortality, 30-day readmission rates, or complication rates. Delirium was diagnosed more often in the comanagement group, but a diagnosis of delirium was associated with an earlier discharge after surgery. This may reflect greater attention to the presence of delirium, better documentation, and more prompt treatment.

Preoperative testing centers staffed by anesthesiologists have been shown to positively impact surgical care.[13–15] However, there has been little study to specifically evaluate the role of medical comanagement in the preoperative setting. Jaffer et al.[16] demonstrated a reduction in postoperative pulmo-

nary complications in a mixed surgical population by utilizing a structured preoperative assessment and management program of hospitalists.

COMANAGEMENT SATISFACTION

Surgical comanagement has been reported to improve surgeon and nurse satisfaction ratings.[11] Salerno et al.,[17] in their study of consultation preferences of surgeons, internists and family physicians, confirmed that surgeons, especially orthopedic surgeons, favor the comanagement model more than the traditional consultation model. This is not surprising as surgeons in the comanagement model may be expected to spend more time in the operating room as opposed to the hospital floors, thus improving patient access to timely surgery and reducing cancellations and delays. Ultimately, the comanagement model may result in a competitive advantage over traditional care. Improved patient access and throughput may improve patient satisfaction with their surgical experience, which could lead to increased surgical referrals, both patient and PCP initiated. Satisfaction and positive learning experiences of surgical residents with this system of care may improve the likelihood of them joining such a practice, which will then foster the cultural evolution of comanagement. In addition, because of the increased scrutiny and potential financial ties (ie, pay for performance) to quality and safety issues, a comanagement model involving hospitalists is ideally poised to systematically account for these issues. Finally, because of nurse staffing shortages, care processes that promote workplace satisfaction and respect may promote nurse recruitment and retention, thus improving the competitive advantage even further.

CONCLUSION

Surgical comanagement has many distinct advantages for all parties involved, including the surgeon, hospitalist, house staff, nurses, case manager, patient and family, and the health care system overall. As hospitalists have been comanaging medical inpatients with primary care physicians for years, the concept of surgical comanagement is truly a natural evolution of the scope of hospitalist practice.

Address for correspondence and reprint requests: Christopher Whinney, MD, Department of Hospital Medicine, Cleveland Clinic, Desk S70, 9500 Euclid Avenue, Cleveland, OH 44195; Fax: 216-445-6420; E-mail: whinnec@ccf.org

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