

White Paper



A Multi-stakeholder Agenda to Advance Enhanced Recovery for U.S. Surgical Patients

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Center for Medical Technology Policy
World Trade Center Baltimore
401 E Pratt Street, Suite 631
Baltimore, Maryland 21202

410.547.CMTp (P)
410.547.5088 (F)
info@cmtpnet.org (E)
@cmtp_baltimore (Tw)

www.cmtpnet.org

Authors

Rachael Moloney, MHS
Research Manager
Center for Medical Technology Policy

Robert Conley, MD, JD, MPH
Research Manager
Center for Medical Technology Policy

Donna Messner, PhD
Vice President
Center for Medical Technology Policy

Kristi Mitchell, MPH
Senior Vice President
Avalere Health

Nelly Ganesan, MPH
Senior Manager
Avalere Health

Sean Tunis, MD, MSc
President and Chief Executive Officer
Center for Medical Technology Policy

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Introduction

Surgical complications are a common occurrence in the U.S. Among the approximately 30 million operations performed annually, a large proportion of surgical patients have undesirable – and in many cases, preventable – levels of morbidity, mortality, and extended hospitalizations (1-8). The uncomfortable reality is that surgical complications in the U.S. are not the exception: approximately 25% of patients who undergo inpatient surgery in the United States have post-surgical complications (9, 10). This rate can be even higher for certain major surgeries; for example, up to 48% morbidity in liver surgery (11). Surgical complications vary by procedure, and may include cardiac, pulmonary, renal, and neurologic complications, as well as surgical site infections. To illustrate, Box 1 lists common early complications following colon resection surgery alone. Surgical complications can increase the length of stay (LOS) in the hospital and increase hospital readmission rates (10, 12). One study of long-term survival of over 100,000 inpatient surgical procedures in the Veterans Administration (VA) National Surgical Quality Improvement Program Database found that a surgical complication reduced median patient 10-year survival after major surgery by 69%. The same study also found that the occurrence of a single 30-day complication following one of eight common major surgeries (including colectomy, open and laparoscopic cholecystectomy, and total hip replacement) was the most important determinant of survival, independent of pre-operative patient risk (13).

Box 1. Examples of complications following colorectal surgery

- Wound infection
- Persistent Ileus
- Evisceration
- Bleeding
- Anastomotic Leak
- Pneumonia
- Urinary Tract Infection
- Deep Vein Thrombosis
- Cardiac complications

Whiteford MH. Early Complications in Colorectal Surgery. Available at: <http://www.facs.org/physicians/education/core_subjects/2007/colorectal_surgery_early_complications/>. Copyright © 2014 ASCRS

The costs of surgical complications are also extremely burdensome. The cost of at least one surgical complication can range from approximately \$6000 up to tens of thousands of dollars per procedure (10,14-17). These costs are driven in part by hospital readmissions and longer LOS, however diagnostic actions and downstream therapies for complications are also major cost contributors (10,14-17). Most costs associated with surgical complications are passed along to payers. In 2013, Lawson et al estimated the Medicare program could save up to \$31 million per year if the surgical complication rate was reduced by just 5% (10). Increasingly however, the larger the costs associated with surgical complications, the less proportionate the reimbursement rates from payers to hospitals, resulting in a shift from positive to negative margins (17). Thus U.S. hospitals are also facing significant financial losses due to surgical complications. The hospital financial losses associated with post-operative complications create financial incentive for hospitals to invest in quality improvement programs aimed at reducing or preventing the occurrence of postoperative occurrences (17).

Enhanced recovery protocols (ERPs) represent one potentially important way to reduce surgical complications, improve the patient experience of surgery, and realize cost savings. Factors like pain, stress and immobilization can increase overall complication rates and extend patient LOS in the hospital (18-20). ERPs are multimodal perioperative care pathways designed to achieve early recovery after surgical procedures by maintaining preoperative organ function and reducing the profound stress response following surgery. They offer a potential solution to reduce LOS and surgical complication rates. The chief goal of widespread adoption of ERPs is improved patient outcomes through reduced surgical complications; however, the potential for cost reductions cannot be ignored, given the significant burden currently placed on the U.S. health system as a direct result of surgical complications. Such cost savings would allow resources to be focused on better management of truly complex, unavoidable cases and facilitate additional learning and training opportunities to improve the quality of U.S. surgical care.

Components of ERPs vary widely in practice (examples include the use of minimally invasive surgical techniques, goal-directed fluid therapy, pre-operative nutrition, and early mobilization). However, the

Box 2. Examples of ERP Components

Preoperative

- Patient and family education
- Shortened fasting
- Optimization of patient health
- Risk assessment and mitigation
- Carbohydrate loading
- Prophylaxis against thromboembolism
- Prophylactic antibiotics

Intraoperative

- Minimally invasive surgical techniques
- Goal-directed fluid management
- Epidural analgesia

Postoperative

- Early removal of urinary catheter
- Elimination of nasogastric intubation
- Postoperative nonsteroidal and anti-inflammatory drugs
- Early oral intake including potential use of oral nutritional supplements
- Early mobilization
- Gum chewing

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common purpose of all ERPs is to reduce morbidity, increase the speed of recovery, and shorten LOS, with the ultimate goal of getting patients home and healthy sooner so that they can return to their daily lives. For example, a systematic review of 29 randomized trials found that goal-directed fluid therapy, a key component of enhanced recovery, has been demonstrated to reduce surgical mortality by up to 52% in moderate and high risk surgical patients (21). Other reviews have also found that goal-directed fluid therapy significantly reduced surgical complications among adult patients (22,23). Box 2 lists examples of other interventions that may be considered ERP components.

The successful experience in Britain with ERPs is especially notable. In a report on enhanced recovery, published by the UK's National Health

Service, authors reported the findings on the initial years of their enhanced recovery program, which focused on eight elective surgical procedures in four specialties (orthopedics, colorectal, gynecological, and urological). Findings indicated that patient experience (as measured in patient-reported surveys) improved, and that the length of hospital stay was reduced by approximately 170,000 bed days between 2008-2009 and 2012-2013, while readmission rates remained the same (19). Yet, to date ERPs have been significantly underutilized in U.S. hospitals. In this paper we report insights from a one-day multi-stakeholder discussion on enhanced recovery, discuss potential barriers and opportunities to accelerate the adoption of ERPs in the U.S. that were identified by the workshop participants, and outline a collaborative agenda with potential strategies to rapidly accelerate their adoption.

Approach

On June 10th, 2014, the Center for Medical Technology Policy hosted a 50-person multi-stakeholder forum in Baltimore, MD, to discuss potential challenges and opportunities to accelerate the adoption of ERPs in the U.S. Leaders representing surgeons, anesthesiologists, nurses, patients, medical products companies, health system administrators, payers, quality organizations, and researchers gathered to discuss potential strategies and programs to improve outcomes for patients undergoing major surgery. The meeting format included didactic presentations, panel discussions, plenary discussions and small group discussions. Speakers shared lessons learned from implementing enhanced recovery programs at their own institutions, while the group discussed the potential barriers to accelerating adoption of such programs more widely in the U.S. In small breakout groups, participants brainstormed potential strategies to overcome those barriers. The full meeting was recorded and transcribed, including four breakout small group discussions. A summary of the meeting proceedings was produced and made available to meeting participants and the general public (24). To assist in identifying key themes for this paper, the meeting transcript was loaded into NVivo 10 qualitative data analysis software. The

transcripts were coded by a single reviewer, not for formal qualitative analysis but to systematically organize, identify, and categorize recurring discussion points and important insights.

Discussion

The purpose of the following discussion is to 1) share key insights from the multi-stakeholder forum regarding potential steps to overcome barriers, and 2) propose a roadmap for multi-stakeholder efforts to accelerate the adoption of ERPs in the U.S.

Part I: Key Insights from the June 10th Multi-stakeholder Forum on Enhanced Recovery

One key insight was that efforts to support ongoing work on an institution-by-institution basis would not drive the order-of-magnitude change in U.S. adoption of ERPs needed to dramatically reduce preventable complications and deaths for future surgical patients. Participants agreed that a new impartial entity bridging differences across the U.S. surgery, anesthesiology and critical care landscapes may be key to a successful campaign to accelerate adoption of ERPs by addressing and overcoming the conflicting interests posed by a highly fragmented, market-driven U.S. healthcare system. The added

Box 3. Themes from Stakeholder Discussion to Guide Future Work for ERP Adoption

- A national partnership will need to *build a sense of urgency nationally* that emphasizes a responsibility to U.S. patients between now and 2020 to address avoidable complications and deaths.
- Awareness among providers, payers, hospitals, patients and nurses about the value of ERPs is critical, and a simple message that focuses on improving patient outcomes will be key to facilitating collaboration across all surgical care-providing roles.
- The group needs to think carefully about how to overcome the upfront costs of ERP implementation which will occur before any clinical and economic benefits are seen.
- Additional lessons are yet to be learned by careful assessment of UK and U.S. programs.
- With ongoing tension between standards and innovation, promoting a set of standardized practices to accelerate the adoption of ERPs may not be the best short term approach.
- There is a need for robust quality measures that reflect more than just the typical clinical outcomes (length of stay, unadjusted mortality, readmission rates, complications) to support implementation of a bundled payment model necessary to incentivize and accelerate the adoption of ERPs (e.g., these may include metrics from the patient's perspective).

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complexity and rapid evolution of reimbursement models (which generate different incentive structures for surgery and anesthesiology) call for a balanced multi-stakeholder body, and, the need for providers who care for surgical patients to work together and coordinate across specialties. By providing a forum for collaboration and leadership that works across key healthcare stakeholder communities and experts that are already active in the

U.S. ERP space, this entity could facilitate multi-stakeholder dialogue in a neutral environment, and would be an important vehicle to build broad support and implement specific plans and activities to accelerate ERPs in the U.S. as well as drive rapid, significant change. Box 3 summarizes other key insights from the June 10th meeting summary.

An overarching theme from the discussion was the importance of care teams and shared accountability for the care of all surgical patients. This is particularly important for two reasons: 1) many people are not aware of the things that can be done easily at all levels to improve outcomes, and 2) a transparent group process for reviewing institutional data may instill a sense of accountability at the individual level while also facilitating trust and a culture of teamwork. Seeing results regularly fed back to care teams is also critically important to drive team and individual motivation at the institutional level.

Another key highlight was, in defining the care team, the importance of including individuals from all relevant care-providing roles on a surgical patient's care pathway: surgeons and anesthesiologists,

referring physicians, nurses, physician assistants, physical therapists, and department leaders, as well as patients and families themselves. Underscoring the broad relevance of the issue, several stakeholders in the room, though representing a range of professional perspectives, shared stories about their own personal experiences as surgical patients or family members of patients. Patient education and engagement is an important piece of the ERP discussion; if patients and their families are empowered with the right knowledge and tools, they can become key players in an ERP. At the other extreme, families may hinder recovery simply by acting intuitively to care for the patient in ways that may actually be contraindicated (for example, adjusting the bed to make the patient more comfortable, when the patient needs to remain upright).

Attendees also discussed the critical role of nurses on the care team and their potential contribution to advancing ERP adoption in practice. Nurses are closely involved in the continuum of patient care and offer a unique and comprehensive perspective. There are still significant evidence gaps in linking on-the-ground practice to health outcomes. Engaging nurses to identify gaps and design studies to generate real world evidence will improve the likelihood of success. Attendees discussed the critical importance of empowering nurses to know *why* they should be following a particular protocol or care pathway. Engaged and motivated nurses are also key to the implementation of ERPs on the ground because they can help create processes and become alert to situations when an ERP isn't followed: they become motivated at an individual level to critically question situations where care decisions deviate from the ERPs.

Part II: A Multi-stakeholder Agenda to Advance Enhanced Recovery for U.S. Surgical Patients

The high-level agenda for a national multi-stakeholder campaign to accelerate adoption of ERPs in the U.S. is outlined in Box 4. The agenda below was initially developed during the planning work for the multi-stakeholder forum, discussed in small breakout groups on June 10th, 2014, and revised based on stakeholder feedback.

Box 4. A Multi-stakeholder Agenda to Advance Enhanced Recovery for U.S. Surgical Patients

1. Establish a neutral forum for ongoing and transparent national stakeholder dialogue
2. Identify stakeholder evidence needs and generate data on a) individual complications as cost drivers and b) effectiveness of ERP programs at reducing both individual and overall complications in the U.S.
3. Identify and develop quality measures related to enhanced recovery
4. Identify and test new payment and delivery models
5. Generate visible support from U.S. leaders for broad adoption of ERPs in practice
6. Create national awareness and public demand for the adoption of enhanced recovery programs

1. Establish a neutral forum for ongoing and transparent national stakeholder dialogue

All key stakeholder groups will need to be represented in a national dialogue to drive widespread adoption of ERPs in the U.S. These groups include public and private payers, patient advocacy groups, academic researchers, industry, care providers across multiple disciplines and specialties, professional medical society leaders, etc. There are, however, numerous financial and professional interests that span the broad area of surgical care in the U.S., and which do not always align. At the national level, therefore, a new, neutral body to facilitate dialogue, build momentum and trust among U.S. stakeholders, and operate outside existing institutional and professional bureaucracies will be necessary to facilitate progress between now and 2020.

There are already multiple hospitals and health delivery systems in the U.S. doing some form of enhanced recovery, or implementing some components of ERPs. Early successes in the U.S. and successes from the UK all indicate that creating a shared awareness, sense of responsibility, and common mission within care teams is essential for driving adoption.

A Call to Action: Adoption of ERPs in 80% of U.S. Hospitals by 2020

One suggestion to help build momentum for a national multi-stakeholder partnership was to identify and publicly announce an aggressive but concrete goal: for example, a national call to action to support efforts in enhanced recovery so that 80% of U.S. hospitals have adopted some form of enhanced recovery program in at least one specialty by 2020. The feasibility of such a goal is supported by the UK experience, in which they were able to achieve significant uptake of ERPs: an estimated 86% of acute provider organizations in the UK had implemented enhanced recovery in at least one specialty after just two years following the start of a national program (19). An early task for the national stakeholder partnership will be to examine the existing evidence and deliberately define the population, disease area, evidence-based targets, and how adoption will be characterized so that it will be possible to measure progress. Milestones and targets could initially be based on the best 10-20% of providers and continuously revisited and revised. For example, for a set of common surgical procedures, what are the corresponding lengths of stay among the best systems in the U.S.?

There is also much to learn from the UK experience in implementing the NHS Enhanced Recovery Programme, including how they engaged stakeholders to drive behavior change in just a couple years. One insight shared by a leader from the NHS Enhanced Recovery Programme is that cultural differences of individual institutions are often very entrenched and difficult to overcome directly: “it is much, much easier to change a country than it is to change an ivory tower.” Therefore, changes in practice are more likely to take place if institutions can rally behind a common goal that can be widely accepted as a new national standard or milestone (such as “patients better, sooner”).

Based on the experiences of NHS leaders, the discussion at the June 10th multi-stakeholder forum, and previous work that was done to understand both 1) the U.S. surgical care environment and 2) the role of effective stakeholder engagement , we propose that the success of a national partnership will therefore be enhanced by the following factors:

- Clear mission and transparent governance and decision-making structure
- Accountability to a concrete, publicized goal, with built-in milestones and opportunities to evaluate progress
- Opportunities for in-person stakeholder relationship-building and dialogue
- Public support from national stakeholder organizations, including payers, patient advocacy groups, professional societies and research funding agencies

2. Identify stakeholder evidence needs and generate data on surgical complications and costs in the U.S.

Every speaker who presented on their institution’s enhanced recovery efforts at the June 10th stakeholder forum referenced a pivotal decision making point sparked by seeing surgical outcomes data for their own hospitals, and highlighting critical areas in need of improvement. From the meeting discussion, it was clear that strong data demonstrating improvement in patient outcomes have the most impact on changing provider behavior. In U.S. institutions like Duke University, Johns Hopkins University, Kaiser and Intermountain Health, these types of outcome data spoke for themselves and were enough to create incentives for both the leadership and surgical teams to embark on the work

needed to change practice in order to improve outcomes. Identification of additional patient-centered outcomes should also be informed by patient and other stakeholders' values and preferences.

Patient outcome data is not the only level on which a compelling case for ERP adoption can or should be made. Another motivator for broad adoption of ERPs will include program-level evidence on cost and effectiveness. Currently, data is lacking on specific cost drivers for surgical episodes of care and the cost impact when these cost drivers are avoided via reduced complications. Additional evidence could also elucidate the true real-world predictors of increased length of stay in the U.S. (e.g. clinical, patient-driven, or due to institutional policies). In the UK, for example, NHS researchers found that health status of the patient before surgery was not necessarily predictive of length of stay (e.g., the sickest patients were not necessarily driving higher average lengths of stay). While there is literature demonstrating overall costs of complications, different complications vary in their roles as cost drivers, and there is little evidence to differentiate which complications are the biggest cost, readmission, and LOS drivers.

The following questions reflect the additional evidence needs discussed by participants:

- 1) Which are the preventable complications, and which are not preventable?
- 2) How can we isolate the causal effects of complications due to operational error, complications due to hospital-level policies and procedures, and complications caused by underlying comorbidities?
- 3) Of complications that can be prevented, which can be efficiently prevented with ERPs or evidence-supported interventions?
- 4) For which complications does evidence suggest intervention makes a difference in outcomes (thus supporting the cost of investing in ERPs)?

Meeting participants agreed that the champions of ERPs in the U.S. must be honest about the upfront costs to implement ERP programs at the local level and evidence is needed to demonstrate whether these costs can be offset. Stakeholders who embrace ERPs must convince their health system leaders, clinicians and patients that the benefits of ERP programs will outweigh the risks, and that investments will create positive results. The costs of treating complications are enormous: "Treating complications is usually more expensive than the surgical procedure itself." Data demonstrating true investment costs of ERP programs, when compared to current costs of treating complications, can help illustrate overall benefits to bottom line, a secondary benefit to improving patient care.

The group also considered the tactics likely to be most effective to generate data on surgical complications and cost. The general consensus on June 10th was that the best approach for embarking on a new ERP program within a hospital or system was to start small: use available outcomes data to pick a patient subpopulation demonstrating the clearest need for improvement in which to start the new ERP program, gather evidence on the effectiveness of the new program for improving post-surgical outcomes, share those results, and eventually support should spread to other surgical specialties. Evidence to address the questions above can help institutions identify their own priorities and decide which patient populations and surgeries should be institutional priorities for starting their first ERP programs. The group agreed that while the NSQIP database may not be the perfect vehicle for institutions to mark their progress, and the cost of joining may be challenging for smaller hospitals, it may nevertheless be useful for health systems to identify problem areas and pick a starting point for ERPs.

Interim outcomes data and progress reports can also help to maintain motivation among care teams. “Nurses with data are phenomenally empowered, because they can see the impact that they’re making on care.” Hard evidence is difficult to ignore: data create pressure to do well; hospitals and providers cannot “hide” from publicly available data. The challenge becomes identifying what to measure and publish that is appropriate, relevant and fair.

3. Identify and develop quality and outcomes measures related to enhanced recovery

In a retrospective study of the impact of complications following open colectomy on hospital finances, Flynn et al. found that the occurrence of one or more complications increased the total cost of treating a patient from \$23,101 to \$48,180, while reimbursements only increased from \$23,231 to \$35,651, resulting in a total margin decrease from +\$131 to -\$12,000. The hospital financial losses associated with post-operative complications create financial incentive for hospitals to invest in quality improvement programs aimed at reducing or preventing the occurrence of postoperative occurrences (17).

Ultimately, there are multiple ways to arrive at improved surgical outcomes. Due to differing financial characteristics, facilities, capabilities, and customs, institutions may have their own preferred “ingredients” for enhanced recovery of their patients. There could be many justifiable ways to get to enhanced recovery, and multiple permutations of successful ERP programs. Many stakeholders would say that if they can demonstrate overall improvement in surgical outcomes, why should it matter how they achieved it? The June 10th stakeholders came together around the idea of structuring enhanced recovery care plans to be flexible to the care settings, local capabilities and treated populations. In these highly heterogeneous surgical fields, decisions based on overall outcomes may be a more widely accepted approach than process outcomes or whether or not someone followed standardized process. A multi-stakeholder platform for developing quality and outcome measures can provide a forum in which the specific types of local flexibility needed can be discussed and taken into account in planning for a more widely adaptable program.

4. Identify and test new payment and delivery models

Given the continuous shift from volume to value in today’s healthcare environment, the best vehicle for accelerated adoption of ERPs is their inclusion in payment and delivery models. As part of the multi-stakeholder agenda to accelerate adoption of ERPs in the U.S., participants agreed that payment reform could be a major contributor to accelerated adoption of ERPs, with the caveat that any new models should be developed with input from the full range of stakeholders, and evaluated rigorously in demonstration projects.

In order to be successful, efforts to further adopt ERPs into new models of care will need to consider the following:

- Financial tensions between surgery and anesthesiology staff in fee-for-service settings
- The complexity of fairly compensating providers who collaborate on peri-operative care
- Stakeholder concerns regarding inequitable division of cost-savings in a non-fee-for-service payment model, e.g., bundled payment, pay for performance, or risk-adjusted reimbursement
- Barriers to adopting methods that have yet to be fully vetted in venues like the National Quality Forum and public/private use

5. Generate visible support from U.S. leaders for enhanced recovery efforts

Since 2012, the Enhanced Recovery After Surgery (ERAS) Society, The European Society for Clinical Nutrition and Metabolism (ESPEN), and International Association for Surgical Metabolism and Nutrition

(IASMEN) have published guidelines for perioperative care in elective colonic surgery, elective rectal/pelvic surgery, gastrectomy, radical cystectomy, and pancreaticoduodenectomy (25-29). However, there is still a lack of precise, evidence-based practice guidelines from U.S. professional societies around ERPs for most surgeries. Participants generally agreed that while needed, new guidelines alone would not create sufficient incentives to change practice. Visible support and commitment from health system leadership is a critical key to success at a U.S. institutional level. However, given the objective to change practice at a national level, lessons learned from the UK indicate that leaders from the national government and professional societies also play a key role in setting new standards of care and creating a national culture of and momentum for change. In the UK, enhanced recovery now has consensus support from 17 Royal Colleges and professional associations, supporting the extension of relevant elements from ERPs to their different specialties. Signatories of the consensus statement included the President of the Association for Upper GI Surgery, the President of the British Orthopaedic Association, the President of the Royal College of Physicians, President of the Royal College of Anaesthetists, the Chief Nursing Officer for England, President of the Royal College of Surgeons, and the Medical Director of NHS, to name a few (19).

A national stakeholder partnership for ERPs may create more incentives for change by engaging national figures to align with care improvement goals, issue public statements, offer training opportunities and curricula, and make enhanced recovery “the new normal” of U.S. surgical care.

“The most important factor of really affecting change, and that’s to get all our key national bodies to say that this is the new norm. So, once the ASA’s and the ACS’s and the various societies go to the public and say we should be aspiring to do this, it becomes a standard.”

“We’ve nationally signed up to the fact that we’re not going to hide from this issue.”

Those promoting a multi-stakeholder agenda to accelerate adoption of ERPs will thus need to convince national leaders representing federal agencies, national offices of professional societies, top-level health system executives, and well known health policy experts to align priorities and rally around a paradigm shift in which the nation adopts the view that change is urgently needed. In order to gain national leadership support, early multi-stakeholder efforts may need to do additional work to demonstrate or predict the potential long-term health benefits and cost savings of ERPs.

6. Create national awareness and public demand for the adoption of enhanced recovery programs

“If the public were clamoring for it, every institution would do it.”

The rate of adoption of ERPs in the U.S. may ultimately depend on the level of demand from patients, citizens and health care consumers. As it stands, however, society lacks the knowledge and tools to create such a demand. To address a lack of public awareness and create a push for change, a public education and awareness campaign would ideally accompany efforts to drive adoption of ERPs in the U.S. Lessons from the UK experience indicate that the media can be leveraged to educate and bring awareness to the public, and, moreover, that the anticipated presence of the media creates a strong motivation for providers to become engaged, as their participation (or lack thereof) will become visible to the public.

“We called our 85 surgeons together...to a WebEx meeting and we present the data to them and say you can choose; we’re never going to tell you how to do it, but this is your outcomes and... each of

them has their own costs and they see where they are on this grid of 85, and you can do it however you want it, we're never going to tell you how to do it, but in this next six months we're going to add one more piece to it; we're going to call every patient and we're going to ask their mom or their dad or their caregiver or whoever it is tell us about the experience; how was that for you, and we're going to add that into it and then after that we're going to present you the data one more time and then we're going to sit down with the media and we're going to release this... and let the public know who they should choose to do their surgeries."

Illustrating the step-by-step process of ERPs is another helpful tool for patients to make an educated decision about their care. For example, within 24 hours patients are dressed in their own clothes (ideally), have no tubes, drips or drains, and are walking, eating and drinking – participating in ERPs may result in these types of outcomes.

Another example of a helpful way to inform and motivate patients is an NHS-sponsored pamphlet written by patients, for patients, on enhanced recovery, called: 'My Role and My Responsibilities in helping to Improve My Recovery.' Within three months of launching the patient leaflet, NHS had received requests from providers across the UK for 100,000 copies, indicating that providers were implementing the new policy of patient-centeredness in practice (19). Kaiser Permanente, which has made significant advances in enhanced recovery within some of their own care regions, developed a video for patients, emphasizing simple messages that can serve to educate patients on a broad scale. Before outlining simple steps patients can take to prepare for their day in surgery, Dr. Efren Rosas, featured in the film, says simply: "Studies show that this program helps patients feel better and recover more quickly. And, that's the goal: to help you recover from your surgery and return to your normal life faster, all by following these simple and safe steps" (30). A major take-away is that focusing on the simple, key message of improving patient care is likely the best approach to create common ground for collaboration from the many different stakeholder perspectives. From the voice of the neutral, multi-stakeholder entity, there are several other messages to highlight in order to convey the critical need for ERP adoption in the U.S. and to drive the sense of urgency needed to reach aggressive goals by 2020.

The June 10th attendees identified several critical messages to highlight in a public awareness and education campaign (Table 1). All key messages are based on the multi-stakeholder discussion; however quoted text reflects comments made verbatim and is used to further contextualize key messages.

Table 1. Key messages to consider in a public awareness campaign for enhanced recovery
<p>Post-surgical complications are NOT exceptions; they are happening in hospitals all over the U.S., all the time, and they have dramatic consequences:</p> <ul style="list-style-type: none">➤ "What's important is that it happens to lots of families, harm after surgery, harm in the hospital. Happens to families every single day."
<p>ERPs address an urgent issue of patient safety. We as healthcare stakeholders have an urgent responsibility to current and future patients to prevent complications, now.</p> <ul style="list-style-type: none">➤ "He...had an epiphany as a gastroenterologist non-surgeon that he was delivering patients up for potentially curative surgery but he was delivering them up into a 'crap shoot'... he woke up in a cold sweat and said, 'what have I done? I haven't quality assured what happens next!'"➤ "We've got to fix this, and we've got to fix it quick, because actually I've driven a whole lot of people towards potential premature death as opposed to curative surgery...."➤ "Given the avoidable morbidity associated with NOT doing this more broadly, it's kind of irresponsible for us to take a 'go-slow' approach... to go one institution at a time...and maybe

hope in 10 years we've got 30% penetration, think of all the patients and families you've harmed in the process...it seems just too irresponsible to contemplate."

National adoption of ERPs will help patients get better, sooner, so they can return to their lives.

- "Most people, all things being equal, would prefer not to be in the hospital."
- "Patients' return to status, back to work, back to school, back to their job, back to their life, that's what they want out of the healthcare system."
- "Somehow patients want to stay close to their home and they want to be assured that they're receiving the same care whether they go to the ivory tower or their community facility or their rural critical access hospital."

There is no clinical downside to adopting ERPs.

- "There is no evidence to suggest that ERPs cause worse outcomes or longer hospital stays."

National adoption of ERPs is a win-win for all stakeholders.

- Patients get better faster and have better quality of life.
- Hospitals will see impact on margins and profits.
- "From an industry perspective, based on change that you drive in your processes and procedures, what is that actually going to mean for the products that you're using today, and what will you be using tomorrow so that we can anticipate that?"
- "Given that we share a common goal, we ought to be willing to work to overcome whatever differences might exist to make progress."

Implementation of ERPs in practice can be minimally burdensome if everyone on the care team is engaged.

- "If the WHOLE team gets involved and everyone gets up in the morning and tries to do 30 things 1% better, you can get 30% better."
- However, the ability for multidisciplinary teams to tackle this issue and promote the adoption of ERP will be unique to each organization.

There are many examples of success stories following ERP adoption.

- "Immediately post-op she was alert, oriented, eating that night, walking that night, she was discharged on day two postoperative, no delirium, amazing. And we've had experience after experience like that with our patients. It's just been an amazing positive thing."

Advancing the Adoption of ERPs in the U.S.: Anticipating the Hurdles

The existing imbalance of financial and professional risk was considered another potential challenge to wide scale implementation; for example, anesthesiologists and surgeons have to meet different performance measures, and are reimbursed differently. Participants discussed how, because of these differences, U.S. surgical care stakeholders have serious concerns with the idea of being required to adhere to quality and process measures for enhanced recovery surgical care.

Participants also cautioned that providers may be reluctant to change practice even when outcomes are not meeting best practice benchmarks, based on concerns that their performance-related outcomes may actually worsen as they transition to new protocols. Surgical teams will require significant institutional support during the period of transition. Depending on the learning curve for such changes, providers may face drops in their performance during transition time and their institutions may experience short term financial losses as a result. As one surgeon noted: "if I move off my peak of efficiency to try to get to the next highest peak, I have to go through the valley first." Going through this "valley" can impact both reimbursement and individual professional record. Accordingly, another task for a multi-stakeholder partnership will be to support efforts to explore payment models and policies that reflect the multidisciplinary team approach to surgical care delivery and provide some reasonable

level of protection against drops in performance and reimbursement during an appropriate period of learning and adjustment.

Limitations

The recommendations and insights reported in this manuscript reflect the views of multiple stakeholders who attended an in-person stakeholder forum on June 10th. While significant attention was paid to including representatives from all key stakeholder groups, it is likely that some perspectives (e.g. hospitalists, health information technology vendors) were not fully represented by the participants. In addition, no formal content analysis was performed on the meeting transcript. We also fully acknowledge that the views of some individuals were more often expressed than others, although facilitators worked consistently throughout the day to ensure that all attendees had equitable opportunity to express their opinions. Moreover, small group breakout discussions provided additional opportunity for more stakeholders to comment, who, in some cases, had not contributed as much to the large group discussions. In spite of this, by a show of hands the full group agreed that, moving forward, an entity that would promote ongoing discourse and collaboration across multiple stakeholder groups was a critical next step. Additional work as outlined in our multi-stakeholder agenda to advance enhanced recovery for U.S. surgical patients will shed additional light on challenges and opportunities and foster additional multi-stakeholder discussion and collaboration.

Implications for a national stakeholder partnership

A successful partnership will require ongoing intellectual support from leaders in the enhanced recovery arena, and substantial financial support from public and private partners. While individual companies may have financial interests tied to individual products, this partnership will become a neutral body with multiple public and private funders to support the collaborative work of many stakeholder organizations who share the same goal of helping U.S. patients' recover from surgery and return to their normal lives sooner.

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Table 2. June 10th Enhanced Recovery Multi-Stakeholder Forum Participants

Joshua Bloomstone Banner Health	Mary Hawn Birmingham Veterans Affairs Medical Center	Anthony (Tony) Senagore Central Michigan University College of Medicine
Steve Brotman AdvaMed	Joseph Hutter Centers for Medicare and Medicaid Services	Martha Sewall Smiths Medical
Danna Caller Abbott	Diane Jacobsen Institute for Healthcare Improvement	Vadim Sherman Houston Methodist
Peter Clayton Edwards Lifesciences	Karen Johnson American Association of Critical-Care Nurses	Elizabeth (Liz) Spurgin Deltex Medical
Molly Clopp Kaiser Permanente Northern California	Patricia (Trisha) Kurtz Joint Commission	Carlyn Solomon Edwards Lifesciences
Cathryn Crookston Emmi Solutions	Andrew Lyzenga National Quality Forum	Matthias Stopfkuchen-Evans Partners Healthcare
Sandra (Sandy) Cupples Veterans Health Administration	Mary Lou (Lou) Marsh BevMD	Leigh Volkland Edwards Lifesciences
William (Pepper) Denman Cheetah Medical, Inc.	Frédéric Michard Edwards Lifesciences	Lawrence (Larry) Volz Midlands Clinic
Richard Dutton Anesthesia Quality Institute	Monty Mythen University College London Hospitals	Aaron West Memorial Hospital
Noel Eldridge Agency for Healthcare Research and Quality	Victoria Nahum Safe Care Campaign	Elisabeth (Liza) Wick Johns Hopkins University School of Medicine
Michael Elniski Edwards Lifesciences	Bob Oosdyke BevMD	Paul Wiles Novant Health (former)
Tong-Joo (TJ) Gan Duke University School of Medicine	Mark Ott Intermountain Health	Christine Zambricki America's Blood Centers
Tom Garthwaite Hospital Corporation of America	Lynn Reede American Association of Nurse Anesthetists	

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