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Chairman Orrin Hatch
United States Senate Committee on Finance
104 Hart Office Building
Washington, DC 20510

Senator Ron Wyden
221 Dirksen Senate Office Bldg.
Washington, D.C., 20510

Dear Chairman Hatch and Senator Wyden:

Thank you for the opportunity to provide thoughts and ideas regarding ways to improve outcomes for Medicare patients with chronic conditions. As Medical Director of CERTAIN—Washington State's learning healthcare system—I concur that the impact of chronic disease is staggering, both in the costs associated with healthcare utilization as well as the negative impact on the lives of patients.

You've requested recommendations that will improve care for Medicare patients with chronic conditions while lowering associated healthcare costs. In that vein, I am submitting for your consideration a solution that helps these vulnerable patients become healthier and better prepared before medical procedures, such as surgery, in order to reduce the occurrence of negative outcomes.

Focus on surgical procedures
The proportion of patients aged 50 years or older with conditions that require medical treatments and surgical procedures are predicted to double in the next 50 years. These procedures are increasingly performed in patients with multiple chronic conditions, a group at greatest risk of serious complications and procedure-related deaths.(1)

Almost a decade ago, I helped develop the Surgical Care and Outcomes Assessment Program (SCOAP)—a clinician-driven collaborative that tracks process of care and outcomes at more than 60% of hospitals in Washington State and works to reduce variability in surgical care.

Early on in analyzing hospital data, we began seeing patterns around pre-surgical patient characteristics (often related to existing chronic diseases) that strongly influenced surgical outcomes. Over time we identified evidence-based factors that were both modifiable and

strongly tied to patient outcomes. We launched a public health campaign called "Strong for Surgery" to raise awareness and change practice around these areas. The program provides tools and resources to reduce the risk of surgery and empowers patients to take an active role in improving their health.

Identify vulnerable patients with modifiable risk factors

Through the use of pre-surgical checklists, Strong for Surgery helps clinicians screen patients for certain risk factors and recommends appropriate interventions to optimize patient health *before* surgery to improve their outcomes *after* surgery. These checklists can be integrated into primary care practices referring patients for surgery, or adopted by surgical clinics for use in pre-surgery consultation. The program focuses on four key modifiable areas: nutritional support to prevent infections, smoking cessation, reviewing and managing potentially dangerous medications, and improving diabetes care.

Nutritional Support: Major surgery can temporarily weaken the immune system making the body more prone to infection. Good nutritional status is important to help patients heal better and fight infection.(2) This is especially true for patients undergoing colorectal surgery—often to treat chronic conditions such as diverticulitis, Crohn's disease, and colorectal cancer.

Smoking Cessation: Smoking is a well-demonstrated modifiable risk factor for surgical complications. In an analysis of over 600,000 surgical patients, smokers had a 40% higher 30-day mortality rate, double the risk of pneumonia, higher infection rates, and were more likely to need mechanical ventilation, compared to non-smokers.(3) Cigarette smoking triples the risk of a spine surgery failure, often resulting in worsened pain and re-operative surgery that can cost over $100,000.(4)

Managing Medications: Abrupt withdrawal of some medications, especially cardiovascular and central nervous drugs, can lead to post-surgical complications.(5) Additionally, many other drugs should be appropriately stopped prior to surgery—such as herbal medications that can increase bleeding or diuretics in a dehydrated patient.(6)

Diabetes Care: Good blood glucose control for diabetic patients having surgery reduces the risk of surgical site infections and promotes healing. Having control of blood glucose prior to surgery lessens the chance of high blood glucose (hyperglycemia) or low blood glucose (hypoglycemia) during and after the procedure.(7) Surgical site infections are a major source of preventable morbidity, mortality, and healthcare expenditures. They can cost $20,000 per diagnosed case and are the top contributor to overall costs due to healthcare associated infections. (8)

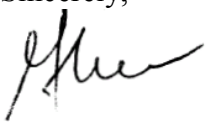
Conclusion

The treatment of chronic conditions accounts for the majority of Medicare spending, and surgical care makes up a significant and important portion of that spending. I believe Strong for Surgery provides the opportunity to transform and standardize care and decrease the occurrence of negative and costly complications for Medicare patients with chronic conditions undergoing surgery. Widespread promotion and adoption of the program should be encouraged for surgical and primary care practices across the United States. This will ultimately improve the quality of

surgical care, empower patients to take a greater role in their care, reduce the occurrence of costly hospital readmissions, and improve efficiency of healthcare utilization.

Enclosed is a packet of information about Strong for Surgery including a program overview, surgeon testimonials, news articles about the program, examples of the checklists, and academic references. Should you have additional questions, please contact me at daveflum@uw.edu.

Sincerely,



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Background

About Strong for Surgery:

Nearly one-third of hospitalized patients experience adverse events related to their care, and far too often these events are preventable. While quality improvement initiatives have made surgery safer and have achieved improved outcomes, they usually focus on the care of patients once they enter the hospital. Strong for Surgery is a public health campaign that helps patients become healthier **before** surgery so they do better **after** surgery.

Strong for Surgery has engaged surgeons and clinicians in hospitals and clinics all over Washington State to implement pre-surgical best practices that are proven to reduce negative outcomes after surgery. Through the use of pre-surgical checklists, Strong for Surgery helps surgeons screen patients for certain risk factors and identify appropriate interventions to optimize patient health. The program focuses on four key modifiable areas: nutritional support to prevent infections, reducing cigarette smoking, reviewing and coordinating potentially dangerous medications, and improving diabetes care before surgery.

Strong for Surgery's goal is to educate the healthcare community on effective steps that can be taken to better prepare patients for surgery and ensure the best outcomes possible.

More Information:

- **Overview**
- **Press**
- **Testimonials**
- **Frequently Asked Questions**
- **Strong for Surgery Checklists**
- **Patient Resource – Preparing for Surgery**
- **References**

STRONG FOR SURGERY®

Overview of Strong for Surgery

Strong for Surgery is a public health campaign that engages patients and their surgeons to improve overall health and increase the likelihood of a positive surgical outcome. Pre-surgical checklists serve as a communication tool for patients and clinicians to consider four common risk areas.

NUTRITION

Nutritional status is an important independent predictor of surgical outcomes. Factors such as unintentional weight loss, changes in dietary intake, and gastrointestinal distress indicate that a patient may be at risk and should be referred for nutritional counseling. Use of a specialized nutrition formula to address immune suppression can reduce infectious complications by 40-60%.

SMOKING CESSATION

Smoking correlates with 40% higher prevalence of post-operative complications and is an independent risk factor for infections and cardiovascular events after surgery. Smokers who undergo spine surgery have a 2-3 times higher rate of non-union for spine fusion, are less likely to return to work after surgery, and have more pain and lower satisfaction with their recovery. To improve outcomes in patients currently smoking, providers will advise patients to stop smoking, choose a quit date, and refer them to available resources.

MEDICATION USE

A thorough review of all medications including over the counter drugs, supplements, and herbal remedies is important so that the patient can be advised accordingly. Evidence shows that aspirin and beta blockers can be safely continued throughout the perioperative period for cardiac protection with most surgeries. Some medications, however, increase bleeding risks and should be stopped before surgery. Specific herbal medications (e.g. Echinachea, Garlic, Gingko, Ginseng, Kava, Saw Palmetto, St. John's Wort, Valerian) can also increase risks.

GLYCEMIC CONTROL

Proper blood glucose control in diabetic patients having surgery can help support healing, and lower the length of stay. Establishing control of blood glucose prior to surgery reduces the chance of hyperglycemia and hypoglycemia during the perioperative period; studies have shown hyperglycemia can double the risk of surgical site infections. Checking blood glucose prior to surgery is a way to identify patients that have undiagnosed diabetes, a reported one-third of all patients having surgery, and let clinicians start treatment before hospitalization.

Strong for Surgery is a program of the CERTAIN Learning Healthcare Network, based in Washington State CERTAIN™

StrongforSurgery @Strong4Surgery **strongforsurgery.org**

Press

Strong for Surgery works to change practice by raising awareness of key factors in pre-surgical care that can improve post-operative outcomes. Since the program launched in 2012, Strong for Surgery has received notable local and national media attention.

The Washington Post
March 2015: Want to bounce back fast from surgery? Here's what you can do

The Wall Street Journal
October 2014: What to Expect When You Have Surgery

Physician's Weekly
September 2014: Optimizing Patient Health Before Surgery

AARP Magazine
August 2014: 8 Ways to Shape Up for Your Surgery

HealthQuest TV
August 2014: Strong for Surgery Program at Skagit Valley Hospital

Dr. Edward R. Mariano Clinical Research Blog
July 2014: Time to Rethink Preoperative Preparation

Dr. Howard J. Luks Blog
June 2014: Surgical Complications : The Role of Care Before Surgery

Institute for Healthcare Improvement
November 2013: Avoiding Checklist Fatigue: Interview with Dr. Thomas Varghese

Consumer Reports on Health
October 2013: Surgery savvy: Lower your risk

The Wall Street Journal
October 2012: Need Surgery? You Might Have to Get Healthier First

Testimonials

What Surgeons & Patients Are Saying:

Dr. Tom Varghese, Jr., MD, MS
Medical Director – Strong for Surgery
Strong for Surgery takes the idea of checklists and moves them to where decisions are being made before the patient gets to the hospital. Putting the checklist in every doctor's office across the state takes the focus of surgical safety beyond the operating room. Surgical preparedness now becomes part of the basic conversation about planning for surgery, and the patient shares in that process. It empowers patients.

Doug Rice
Patient of Dr. Varghese
I had a half a pack on me at his office and I handed them to my wife and went cold turkey after smoking 50-plus years. *On following Dr. Varghese's recommendation for preparing for surgery.*

Alessandro Fichera, MD
Colorectal Surgeon – UW Medicine Colorectal Surgery and Surgical Oncology Programs
Dr. Varghese presented the idea of systematically looking at pre-operative nutritional status of patients undergoing major abdominal surgery, which makes perfect sense. It's something that we should do anyway and something we should have been doing, but it was left mostly to the individual surgeons, nurses, and clinics to properly address these issues, and he was offering a checklist that would allow us to systematically do it on everybody. The checklist is very easy, it's extremely user-friendly.

Joseph H. Frankhouse, MD
Colorectal Surgeon – Legacy Medical Group, Gastrointestinal Surgery
[Dr. Varghese] spurred us to look at all the data, really focus on it, and realize the important pieces that we were missing with our program. Here we were worried about infections, but we weren't worried about the effect of preoperative nutrition on our infection rates and our outcomes. [Implementing Strong for Surgery] was an easy way for the hospital to say, "Why don't we spend $30 a patient, and just get them this nutrition, and in addition, spend more time talking to them about nutrition." Let's just imagine that we are going to stop one or two infections a year – it pays for itself so easily. Once you put it in that perspective, for the administration it's an easy sell.

STRONG FOR SURGERY®

Frequently Asked Questions

What is Strong for Surgery?

- **Strong for Surgery** is a public health campaign bringing pre-surgery checklists to doctors' offices to improve clinical outcomes.
- The **Strong for Surgery** initiative aims to identify and improve evidence-based practices for surgical patients in four target areas: **nutrition, smoking cessation, medications,** and **blood sugar control.**
- **Strong for Surgery's** goal is to educate the healthcare community on effective steps that can be taken to better prepare patients for surgery and provide the best outcomes possible.

Why should I use a pre-operative checklist?

- A patient's risk of negative outcomes from surgery can be improved when doctor's offices standardize best practices such as education and perioperative care .
- Research globally has shown that use of a checklist improves patient optimization for surgery and helps ensure that important aspects of care are followed for each case.

What does Strong for Surgery offer to hospitals and clinics?

- Evaluation and planning
- Assistance with process and workflow mapping
- Consultation, facilitation, and training during implementation
- Support to staff throughout the first year to address any challenges

How would we participate?

- Involve staff responsible for patient care
- Adopt the checklist and practices
- Join our network

How can I find out more?

- Visit our website and sign up for our newsletter: strongforsurgery.org
- Follow us on Twitter: @Strong4Surgery, @TomVargheseJr
- Like our page on Facebook: facebook.com/StrongforSurgery

Please contact us at **StrongforSurgery@becertain.org**

Connect with us on:

STRONG FOR SURGERY

Blood Sugar Control

All Patients

Does the patient have a prior diagnosis of diabetes?

☐ Yes ☐ No

Patient's age > 45?

☐ Yes ☐ No

Patient's BMI ≥30?

☐ Yes ☐ No

If YES to any of the questions:

☐ Check fasting blood sugar level on the morning of surgery prior to OR case

☐ If fasting blood glucose level > 200, then recommend use of insulin drip during OR case

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Diabetic Patients

Degree of Blood Sugar Control:

Hemoglobin A1c level > 7.0%?

OR

Has any fingerstick reading in the past 2 weeks been >200?

☐ Yes ☐ No

If YES or UNKNOWN then:

☐ Referral for diabetes management

Diabetic Patients

Perioperative Management:

Will the patient be NPO after midnight?

☐ Yes ☐ No

Is the patient having bowel prep?

☐ Yes ☐ No

If YES, while NPO and during prep:

☐ Stop all diabetic medications except for pioglitazone (Actos)

☐ Reduce Lantus by 50%

☐ Check blood sugars frequently and use sliding scale as needed

Version 1.08 Revised 12/26/12

STRONG FOR SURGERY

Medication Checklist

Bleeding Risks

Is the patient on a prescribed anti-coagulant (ex. Coumadin, Plavix, other)?

☐ Yes ☐ No

If YES then:

☐ Discuss with prescribing MD the safety of stopping medication 1 week prior to surgery

Is the patient taking over the counter medications that increase bleeding risk (ex. NSAIDS)?

☐ Yes ☐ No

If YES then:

☐ Consider stopping all over the counter medications that can increase risk of bleeding 2 weeks prior to surgery

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Beta-Blockers

Is the patient taking a beta-blocker?

☐ Yes ☐ No

If YES then:

☐ Patient should take throughout perioperative period

Aspirin

Is the patient taking aspirin for cardiac protection?

☐ Yes ☐ No

If YES then:

☐ Patient should take throughout perioperative period

Herbal Medication

Is the patient taking herbal supplements containing ingredients that may increase perioperative risk (e.g. Echinacea, Garlic, Ginkgo, Ginseng, Kava, Saw Palmetto, St. John's Wort, Valerian)?

☐ Yes ☐ No

If YES then:

☐ Consider stopping all herbal supplements that increase perioperative risk 2 weeks prior to surgery

Version 1.08 Revised 10/1/13

STRONG FOR SURGERY

Nutrition Screening Checklist

Screening for Malnutrition

Is BMI less than 19?

☐ Yes ☐ No

Has the patient had unintentional weight loss of over 8 pounds in the last 3 months?

☐ Yes ☐ No

Has the patient had a poor appetite – eating less than half of meals or fewer than two meals per day?

☐ Yes ☐ No

Is the patient unable to take food orally (ex. dysphagia, vomiting)?

☐ Yes ☐ No

If YES to any of the questions:

☐ Referral to Registered Dietitian for evaluation unless currently receiving nutrition therapy

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Lab Tests for Risk Stratification

Is the patient having inpatient surgery?

☐ Yes ☐ No

If YES then:

☐ Check albumin level to assess complication risk after surgery

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Supplementation

Is the patient having complex surgery (example: GI anastomosis)?

☐ Yes ☐ No

If YES then:

☐ Give evidence-based immune modulating supplementation

Version 1.07 Revised 01/25//2013

Smoking Cessation Checklist – All Patients

Risk Stratification	If YES then:
☐ Has the patient ever smoked?	**Record Patient's Smoking Status** ☐ Current Smoker ☐ Former Smoker ☐ Record number of pack-years (packs per day x years smoking) **Pack Years** _____
☐ Does patient currently smoke?	**If YES then:** ☐ Advise the patient to stop smoking and set quit date within 2 weeks **Quit Date** _____ ☐ Refer patient to preferred cessation program **Program Selected** ☐ Freedom From Smoking (ALA) ☐ Plan My Quit ☐ Become An Ex ☐ 1-800-quit-now

Version 1.05 Revised 1/24/14

STRONG FOR SURGERY

Preparing for Surgery

Eat Well

It is important to eat healthy foods before surgery. Tell your doctor if you have trouble eating or if you have not been very hungry. Also tell your doctor if you have lost weight without trying or cannot eat at all. Your doctor may want you to see a dietitian, who can help you work out an eating plan. A lab test called an "albumin" level may be ordered to see if you are at extra risk for problems after your surgery because of your nutrition or for other reasons.

Quit Smoking

Smoking increases the risk for many problems after surgery. It can:

- Make it hard for you to breathe
- Make an infection in your wound (incision) more likely
- Increase your chance of having a heart attack

Ask your doctor about how to quit smoking. Quitting will not only reduce these risks, it will also improve your overall health and even add years to your life.

Medicines

Your doctor needs to know what medicines, over the counter drugs and supplements, and herbal remedies you are taking. Some of these can increase your risk of bleeding. Your doctor will tell you which ones to stop taking, and when to stop them, before surgery.
Some medicines should not be stopped. If you are taking one of these, your doctor will make sure the hospital staff knows so that you get the right medicines before and after surgery.

Blood Sugar Control

If you have diabetes, you know how important good blood sugar control is. Your doctor needs to know what your recent blood sugar test results have been. On the day of your surgery, your doctor should check your blood sugar before your operation.

Having surgery puts stress on your body, and stress can affect your blood sugar level. Blood sugar that is too high or too low can cause serious problems. Keeping blood sugar in control before, during, and after surgery will reduce your risk of infection in your incision and will help you heal better.

Even if you haven't been told you have diabetes, your doctor may want to check your blood sugar. Many people have high blood sugar and don't know it.

For more information, visit www.strongforsurgery.org

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Nutrition Checklist

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Medication Checklist

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Smoking Cessation Checklist

Smoking and Increased Post-Operative Risks

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Smoking Cessation Checklist Continued

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