Specific warning signs of complications in colorectal surgical patients released

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Colorectal surgical patients are often discharged from the hospital with vague guidance on how to recognize complications, but researchers at the Michael DeBakey Veterans Administration (VA) Medical Center and Baylor College of Medicine, Houston, aim to change that scenario. A health services research team convened a panel of surgical experts to develop a list of postoperative complication signs that should prompt colorectal surgical patients to call their surgeons or go to an emergency room. The study on the development of this early patient-centered warning system appears in the February 2013 issue of *Journal of the American College of Surgeons*.

Each year, more than 600,000 people undergo operations to treat colon and bowel disorders, including tumors, colon cancer, and bowel obstruction, according to the Society of American Gastrointestinal and Endoscopic Surgeons.* Research has also shown that 11.4 percent of all colorectal surgical patients are back in the hospital 30 days later. The stay lasts about eight days on average and costs the health care system a total of $300 million each year, according to a 2011 study published in the journal Diseases of the Colon & Rectum.†

The Patient Protection and Affordable Care Act (ACA), passed in March 2010, allows the national Centers for Medicare & Medicaid Services (CMS) to decline payment to hospitals for some patients who are readmitted after being discharged. "Many hospitals are looking at ACA and readmissions," said study author Linda T. Li, MD, research fellow at the Houston VA Health Services Research Center of

Excellence and surgical resident at Baylor's Michael E. DeBakey Department of Surgery. "We're trying to see if the discharge process has anything to do with readmissions. Everything is under scrutiny."

Dr. Li and her team of health services researchers at the Michael E. Debakey VA Medical Center set out to define specific warning signs that might be important for colorectal surgical patients to watch for at home following hospital discharge. "Whether patients are discharged for a medical or surgical reason, all the discharge instructions are similar—'call if you're vomiting, having abdominal pain, or a fever,'" Dr. Li said. "We felt that surgical and medical patients are different, and there might be some specific concerns that may not be addressed by generic instructions."

Therefore, Dr. Li and her colleagues recruited a panel of 11 experts nationally recognized for expertise in colorectal operations, including surgical oncologists, colorectal surgeons, and general surgeons from academic institutions across the U.S. After a preliminary face-to-face meeting at the Academic Surgical Congress in February 2012, the panelists engaged in five rounds of intense deliberation about which warning signs are most important to notice when colorectal surgery patients get home and what should be done about these complications.

The deliberations were modeled after the Delphi method, a communication technique first used in the military and now commonly used in business forecasting and policy making. The technique required that all feedback be given anonymously. "The thought is that collective knowledge is better than one person's expertise," Dr. Li explained. "Everyone is an established expert in the field, but we didn't want any panelist to think that if a doctor is from a particular institution, 'He or she must be right, I'll just agree with what he or she says.'"

Each round of deliberations started with questions like "describe at least

10 symptoms you would warn your patients about," then "rate these warning signs in order of importance and explain [why]." After Dr. Li and her team compiled the responses, the answers and comments of the group were e-mailed to all panelists along with the next round of questionnaires.

Even though discharge instructions are relatively standardized, Dr. Li said the wide spectrum of opinions underscored why the study was necessary. "Everyone seemed to have a different definition of the same symptom," Dr. Li said. "When we were talking about a fever, the temperature could be 101, 102, or 100.4."

"One of the interesting things about the Delphi process is that we summarize what everyone says," Dr. Li added. "So if you were the only one who said a fever is 102, but everyone else thinks it's 100.4, you might join the group or explain why on the next round of feedback."

After five rounds, between February and July 2012, the panel of surgeons came up with 10 symptoms that should prompt patients to contact their surgeons:

- wound drainage, opening, or redness (all three of these signs can indicate an infection)
- no bowel movement or lack of gas/stool from any ostomy for more than 24 hours
- increasing abdominal pain
- vomiting
- abdominal swelling
- high ostomy output and/or dark urine or no urine
- fever greater than 101.5
- not being able to take anything by mouth for more than 24 hours

The panel also identified two symptoms that are serious enough to warrant a trip to the nearest emergency department:

- chest pain
- shortness of breath

Dr. Li said the study is the first step toward incorporating these warning signs into already established discharge instruction tools. This surgical patient education process should help colorectal surgical patients have clear, open communication with surgeons when they feel something is wrong. "Regarding health care use," the authors wrote, "all panelists agreed that warning signs should decrease emergency care visits and readmission, triage the level of health care accessed, and increase patient-to-provider communication."

Other participants in the study included Whitney L. Mills, PhD; Amanda M. Gutierrez; Levi I. Herman, BS; David H. Berger, MD, MHCM, FACS; and Aanand D. Naik, MD.

More information: *Patient information for laparoscopic colon resection from SAGES. Society of American Gastrointestinal and Endoscopic Surgeons. Available at www.sages.org/publication/id/PI09/(.) Accessed February 6, 2013.

† Wice EC, Shore AD, Hirose K, et al. Readmission Rates and Cost Following Colorectal Surgery. Dis Colon Rectum 2011 Dec; 54(12):1475-9.

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