New classification system to improve scheduling of emergency surgery highlighted

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Researchers in Finland have implemented a classification system for emergency operations that allows for a fair and efficient way to manage a large volume of such surgery. The system is described in a special issue of the *BJS* (*British Journal of Surgery*) that focuses on emergency surgery. Other studies in the issue focus on topics ranging from advances in the use of surgery performed through natural orifices to the global burden of conditions requiring emergency surgery.

Among hospitals, there is growing interest in centralizing emergency surgery into specialized centres that have sufficient resources and available expertise to improve patient care and save more lives. Increasing the volume of emergency operations in such regional centres—which also perform elective, or planned, surgery—requires new structural and organizational elements that allow patients needing emergency surgery to be operated on without unnecessary delay, but also ensure that elective operations are not negatively affected.

Ari Leppäniemi, MD, PhD, and Irma Jousela, MD, PhD, of the University of Helsinki, in Finland, now describe a system that has been in use at their hospital for several years that addresses these issues. The system introduces elements such as having a significant number of operating tables designated specifically for emergency surgery during the daytime. Also, because not all emergency operations need to be done immediately but can be safely postponed until the next day, only operations that are truly urgent can be performed in the evenings and a nighttime. A colour-coding system categorizes emergency operations by

urgency and helps to optimize the timing of emergency operations in a rational and fair way. The computerized system also enables the investigators to monitor how effective their system is and whether there are systematic errors or problems that need to be solved.

"Our study documents some of the objectively measurable benefits of the system. For example, the proportion of nighttime emergency operations has clearly decreased without causing disturbances in elective surgery or delaying surgery for those patients who need it urgently—the red code patients," explained Dr Leppäniemi. Another benefit of the system was demonstrated in the improved efficiency of operating room use during the day.

In another article published in the *BJS*'s special issue, investigators reviewed the history and effectiveness of surgery performed through natural orifices—called natural orifice transluminal endoscopic surgery, or NOTES—revealing that selected techniques offer reduced invasiveness for patients with intra-abdominal emergencies and may improve outcomes. "Steady future development and adoption of NOTES are likely to follow as technology improves and surgeons become comfortable with the approaches," they wrote.

Also in the special issue is a review of the global burden of conditions requiring emergency surgery (excluding trauma and obstetrics). The researchers found that in 2010, there were 896,000 deaths, 20 million years of life lost, and 25 million disability-adjusted life-years from 11 emergency general surgical conditions. The most common cause of death was complicated peptic ulcer disease, followed by aortic aneurysm, bowel obstruction, biliary disease, mesenteric ischemia, peripheral vascular disease, abscess and soft tissue infections, and appendicitis. The majority of deaths occurred in low- and middle-income countries, which have inadequate capacity to deal with the problem. "The data presented in this study will be useful for both the

surgical and public health communities to plan a more adequate response," the authors wrote.

More information: "A traffic-light coding system to organize emergency surgery across surgical disciplines." A. Leppäniemi and I. Jousela. *British Journal of Surgery* 2013 DOI: 10.1002/bjs.9325

"Natural orifice transluminal endoscopic surgery for intra-abdominal emergency conditions." J. Bingener and I. Ibrahim-zada. *British Journal of Surgery* 2013 DOI: 10.1002/bjs.9352

"Global disease burden of conditions requiring emergency surgery." B. Stewart, P. Khanduri, C. McCord, M. Ohene-Yeboah, S. Uranues, F. Vega Rivera, and C. Mock. *British Journal of Surgery* 2013 DOI: 10.1002/bjs.9329

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