Appendix 1 (as supplied by the authors): Description of establishing corporate wait-time standards for emergency surgery at The Ottawa Hospital

In consultation with the Institute for Healthcare Optimization, an independent not for profit research, service and educational organization which applies variability methodology to improve patient flow and operations management, The Ottawa Hospital's peri-operative team used previously applied methods to establish and implement new wait time standards for emergency OR access starting in January 2012.

The development of the standards involved input from surgeons, nurses, and anesthesiologists. First, the perioperative leadership team (which included anesthesiologists, nurses, surgeons and administrators) established that emergency surgery cases would be uncoupled from elective surgery. In other words, separate resources would be attributed to the emergency surgery patient population during daytime hours to improve patient flow.

To create standards, the team first adopted a common urgency priority, which has previously been used at Mayo Clinic,[1] Cincinnati Children's,[2] and Boston Medical Center[3] (and subsequently at many other hospitals — listed at end of this document). This prioritization system involved a 5-level urgency classification (A - <45 minutes, B – <2 hours, C - <4 hours, D- <8 hours, E <24 hours) [1]. As recommended,[4] the leadership team extracted data on historical surgical procedures at The Ottawa Hospital from SIMS and grouped the cases by surgical discipline to produce an initial draft of a case categorization matrix based on historical outcome data and clinical expertise. This first draft of case categorization was circulated to all members of each surgical division, who were allowed to either approve the categorization of their cases, or to re-classify their case types within an urgency class that they deemed appropriate. Once the entire list of procedures was classified and reclassified, this list was distributed to all disciplines, including surgery, anesthesiology and nursing for feedback. The finalized priority classification list was then submitted to the leadership team (who also adjudicated any disagreements) and was approved by the corporate Peri-operative Committee, which is represented by all surgical and anaesthesia leads as well as nursing and administration.

In addition to the development of the priority system, there was modification of the booking process. This included improved clarity on when to book patients. Booking was to occur at the time the patient was deemed ready for surgery. To be booked, the patient could have no outstanding required consultations, diagnostic tests or procedures, and be fasted (if applicable, as for many urgent and emergency cases fasting according to guidelines for elective surgery is not possible). In other words, a patient could not be booked unless they were appropriately prepared to come to the operating room at any time after the case was booked. There was also a process instituted to enable a post-hoc review of cases in which there was dispute over the classification or when a non-compliance event occurred. This enabled us to refine the booking process and our education efforts. No changes to the urgency classification system were made. Finally, there was extensive communication of the initiative to all hospital staff, physicians, and trainees. The new system was implemented in January 2012.

Appendix to: McIsaac DI, Abdulla K, Yang H, et al. Association of delay of urgent or emergency surgery with mortality and use of health care resources: a propensity score–matched observational cohort study. *CMAJ* 2017. DOI:10.1503/cmaj.160576.

List of hospitals adopting common system for urgency priority: University Hospital, Newark, New Jersey; Jersey Shore Medical Center, New Jersey; Cooper University Hospital, New Jersey; Monmouth Medical Center, New Jersey; JFK Medical Center, New Jersey; Hackensack UMC Mountainside Hospital, New Jersey; Valley Hospital, New Jersey; Inspira Medical Center, Woodbury, New Jersey Greater Baltimore Medical Center, Maryland; Johns Hopkins Hospital, Maryland; Palmetto Richland Memorial Hospital, South Carolina; Spartanburg Regional Medical Center, South Carolina; NHS Borders, UK; NHS Tayside, UK; NHS Greater Glasgow and Clyde, UK; Lucille Packard Children's Hospital, California

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