Guideline for Minimally Invasive Surgery Evidence Review and PRISMA

Evidence Review

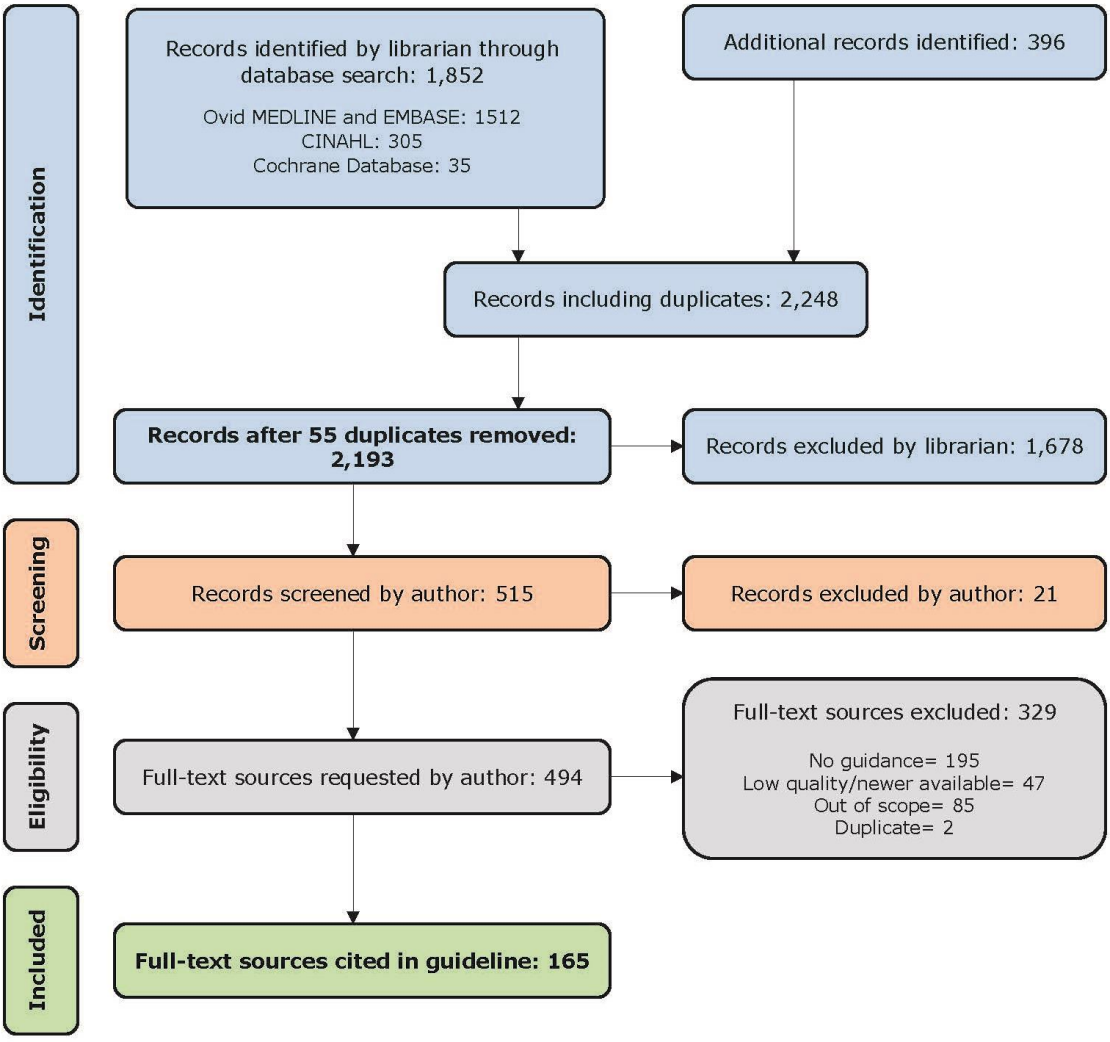
The Guideline for Minimally Invasive Surgery was approved by the AORN Guidelines Advisory Board and became effective as of November 15, 2022.

A medical librarian with a perioperative background conducted a systematic search of the databases Ovid MEDLINE, Ovid Embase, EBSCO CINAHL, and the Cochrane Database of Systematic Reviews. The search was limited to literature published in English from **March 2016 through April 2021**. At the time of the initial search, weekly alerts were created on the topics included in that search. Results from these alerts were provided to the lead author until **January 2022.** The lead author requested additional articles that either did not fit the original search criteria or were discovered during the evidence appraisal process. The lead author and the medical librarian also identified relevant guidelines from government agencies, professional organizations, and standards-setting bodies. **Search terms** included *3D, 4K, abdominal hypotension, access to health care, accidents (occupational), attitude of health personnel, autofluorescence imaging, availability of health services, back injuries, blood pressure, body temperature, carbon dioxide insufflation, cholangiopancreatography (endoscopic retrograde), compartment syndromes, computer-aided surgery, contraindications (procedure), contraindications (surgery), conversion to open surgery, cooperative behavior, cross-training, daVinci, distension media, distension medium, edema, electrolytes, endoneurosurgery, endoscopic retrograde cholangiopancreatography, endovascular aneurysm repair, endovascular procedures, extravasation of diagnostic and therapeutic materials, extravasation injuries, fetal surgery, Firefly, fluid imbalance, fluid management, fluid shifts, fluid therapy, fluorescence imaging, fluoroscopy, HD, health care inequalities, health personnel, health services accessibility, health services availability, healthcare disparities, heart rate, heated insufflation, hemodynamic monitoring, hernia*, humidified insufflation, hyponatremia, image-guided surgery, imaging safety, insufflation, integration, interventional magnetic resonance imaging, interventional radiography, interventional ultrasonography, intra-abdominal hypertension, intra-abdominal pressure, intraabdominal hypertension, intraabdominal pressure, intracranial hypertension, intraoperative care, intraoperative complications, intrauterine surgery, intravascular procedures, intravascular ultrasonography, keyhole surgery, laparoscopic assisted surgery, laparoscopic surgery, laparoscopic surgical procedures, laparoscopy, lavage, lead aprons, lead garments, lead shield, magnetic resonance guided interventional procedures, magnetic resonance imaging (interventional), medically underserved area, medically underserved population, minimal access surgical procedure, minimal surgical procedure, minimally invasive procedures, minimally invasive surgery, minimally invasive surgical procedures, monitoring (intraoperative), monitoring (physiologic), MR guided interventional procedures, musculoskeletal diseases, natural orifice endoscopic surgery, natural orifice transluminal endoscopic surgery, natural orifice transluminal endoscopy, neuronavigation, nurse's role, nurses, nursing assessment, nursing staff, occupational accidents, occupational diseases, occupational injuries, ocular hypertension, operating room nursing, operating rooms, optical imaging, patient care team, patient safety, peritoneoscopy, perioperative nursing, physician-nurse relations, physician shortage area, picture archiving and communication systems, pneumoperitoneum (artificial), postoperative complications, puncture*, racial disparities, radiography (interventional), radiosurgery, respiratory rate, robot-assisted surg*, robot-enhanced procedures, robot-enhanced surgery, robot surgery, robotic procedure, robotic surg*, robotic surgical procedures, social determinants of health, staff development, staff nurses, Stryker, surgery (computer-assisted), surgical navigation, surgical procedures (operative), systems integration, telecommunications, telerobotic*, therapeutic irrigation, thoracic surgery (video-assisted), three-dimensional, transcatheter aortic valve replacement, TUR syndrome, TURP syndrome, ultrasonic surgical procedures, ultrasonography (interventional), underserved patients, underserved populations, vascular surgery, vascular surgical procedures,* and *video integration.* Included were research and non-research literature in English, complete publications, and publications with dates within the time restriction when available. Historical studies were also included. Excluded were non-peer-reviewed publications and older evidence within the time restriction when more recent evidence was available. Editorials, news items, and other brief items were excluded. Low-quality evidence was excluded when higher-quality evidence was available, and literature outside the time restriction was excluded when literature within the time restriction was available **(Figure 1)**.

Articles identified in the search were provided to the project team for evaluation. The team consisted of the lead author and one evidence appraiser. The lead author and the evidence appraiser reviewed and critically appraised each article using the AORN Research or Non-Research Evidence Appraisal Tools as appropriate. A second appraiser was consulted in the event of a disagreement between the lead author and the primary evidence appraiser. The literature was independently evaluated and appraised according to the strength and quality of the evidence. Each article was then assigned an appraisal score. The appraisal score is noted in brackets after each reference as applicable.

Each recommendation rating is based on a synthesis of the collective evidence, a benefit-harm assessment, and consideration of resource use. The strength of the recommendation was determined using the AORN Evidence Rating Model and the quality and consistency of the evidence supporting a recommendation. The recommendation strength rating is noted in brackets after each recommendation.

Figure 1: PRISMA 2009 Flow Diagram



Adapted from Moher D, Liberati A, Tetzlaff J, Atman DG; The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. PLoS Med. *2009;6(6):e1000097.*

Publication History

- Originally published as proposed recommended practices February 1994, AORN Journal.
- Revised November 1998; published February 1999, AORN Journal. Reformatted July 2000.
- Revised November 2004; published as Recommended Practices for Endoscopic Minimally Invasive Surgery in Standards, Recommended Practices, and Guidelines, 2005 edition. March 2005, AORN Journal.
- Revised October 2009 for online publication in Perioperative Standards and Recommended Practices.
- Editorial revision July 2012. Recommendation IV.j revised and approved by the Recommended Practices Advisory Board. Reformatted September 2012 for publication in Perioperative Standards and Recommended Practices, 2013 edition.
- Minor editing revisions made in November 2014 for publication in Guidelines for Perioperative Practice, 2015 edition, as Guideline for Minimally Invasive Surgery.
- Revised December 2016 for online publication in Guidelines for Perioperative Practice.
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- Revised November 2022 for online publication in Guidelines for Perioperative Practice.

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