

Evidence Review

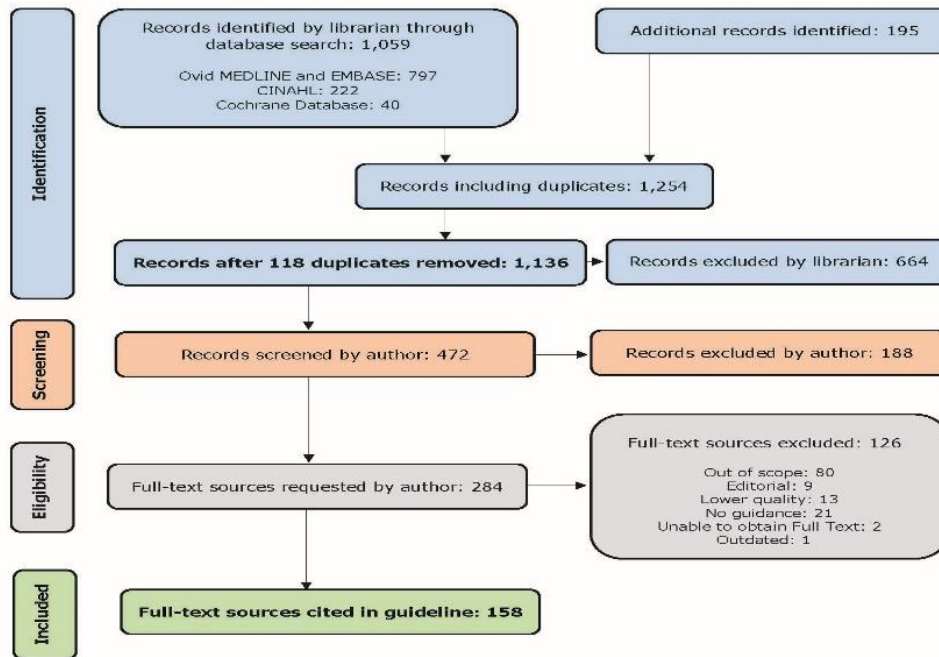
The Guideline for Electrosurgical Safety was approved by the AORN Guidelines Advisory Board and became effective as of July 29, 2020.

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 **January 2009 through June 2019**. 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 **August 2019**. 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 *ablation techniques, access control, accident prevention, accidental activation, airway fires, argon beam coagulation, argon plasma coagulation, artificial pacemaker, bipolar, burns, burns (electric), capacitive coupling, cauterization, cautery, device failure, device safety, diathermy, durable medical equipment, electric power supplies, electric wiring, electrical equipment and supplies, electrical power supplies, electrocautery, electrocoagulation, electrodes (implanted), electrosurgery, endocavitary fulguration, endometrial ablation techniques, energy device, equipment and supplies (hospital), equipment contamination, equipment defects, equipment failure, equipment failure analysis, equipment hazard, equipment malfunction, equipment safety, eye protective devices, fire extinguisher, fire management, fire safety, fires, grounding, high-intensity focused ultrasound ablation, hospital incident reporting, hospital risk reporting, implantable electronic devices, implanted electrode, ligation, medical device safety, misdirection, nurses, occupational exposure, occupational hazards, occupational injuries, occupational safety, occupational-related injuries, pacemaker (artificial), patient safety, perioperative nursing, personal protective equipment, postoperative complications, power sources, power sources and settings, power supplies, protective clothing, protective devices, radiofrequency ablation, risk management, safety, shared airway procedures, shared airway safety, surgical diathermy, surgical equipment, surgical equipment and supplies, surgical fires, thermocoagulation, ultrasonic surgery, ultrasonic surgical procedures, and ultrasonic therapy*. Included were research and non-research literature in English, complete publications, and publications with dates within the time restriction when available. Historical studies also were included. Excluded were non-peer-reviewed publications and older evidence within the time restriction when more recent evidence was available. Editorials, news items, conference proceedings, and poster abstracts 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. After evaluating the literature, the project team decided to exclude ultrasonic devices because they are not electrosurgical devices (**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, Altman 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 March 1985, *AORN Journal* as Recommended Practices: Electrosurgery. Revised April 1991; revised July 1993.
- Revised November 1997; published January 1998, *AORN Journal* as Recommended Practices for Electrosurgery. Reformatted July 2000.
- Revised November 2003; published February 2004, *AORN Journal*.
- Revised November 2004; published in *Standards, Recommended Practices, and Guidelines*, 2005 edition. Reprinted March 2005, *AORN Journal*.
- Revised July 2009 for online publication in *Perioperative Standards and Recommended Practices*.
- Minor editing revisions made in November 2009 for publication in *Perioperative Standards and Recommended Practices*, 2010 edition.
- Editorial revisions made July 2012. Recommendation X was 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 as *Guideline for Electrosurgery in Guidelines for Perioperative Practice*, 2015 edition.
- Revised and combined with the Guideline for Laser Safety, as Guideline for Safe Use of Energy-Generating Devices, September 2016, for online publication in *Guidelines for Perioperative Practice*.
- Evidence ratings revised and minor editorial changes made to conform to the current AORN Evidence Rating model, September 2019, for online publication in *Guidelines for Perioperative Practice*.
- Revised July 2020 for publication in *Guidelines for Perioperative Practice* online.

Scheduled for review in 2024.