

Appendix 1: Methods used to identify studies of medication errors among critically ill patients in the intensive care unit

We searched MEDLINE (1950 to April week 2, 2008), EMBASE (1980 to April week 2, 2008) and the Evidence-Based Medicine Reviews (1982 to April week 2, 2008) for relevant studies. We restricted the searches to studies involving people and published in English, and we used combinations of the following search terms: medical errors, medication errors, adverse drug event, adverse event, adverse drug reaction reporting systems, iatrogenic disease, truth disclosure, critical care, critical illness and intensive care units. Appropriate “wildcards” were used in the search to account for plurals and variations in spelling. Additional articles were identified from reference lists. We identified English-language articles that addressed risk factors, prevention strategies and management approaches to medication errors in critical care.

A study was considered for inclusion if critically ill adult patients were the principal focus; if the primary or secondary study measure was medication errors; and if it was a systematic review (of controlled studies or observational studies), a controlled study (studies of medication error prevention or medication error disclosure) or an observational study (studies of risk factors).

Our search yielded 1168 citations, 870 from MEDLINE, 262 from EMBASE and 36 from Evidence-Based Medicine Reviews. Of these, 57 full-text articles met our initial inclusion criteria and were retrieved for assessment. An additional 5 articles were selected from the reference lists of retrieved articles. Two of us (E.M. and H.T.S.) independently reviewed the publications identified in the search and selected those that met our inclusion criteria. Differences in assessment by the reviewers were resolved through discussion. Reasons for exclusion included no relevant data (n = 16), nonsystematic review (n = 14), case report, series or letter (n = 11), duplicate publications (n = 2), study involving children (n = 1) and non-English language publication (n = 1) (Appendix 2, available online at www.cmaj.ca/cgi/content/full/180/9/936/DC1).

After assessment, 17 articles^{3,7,9-23} remained for review. These articles were published between 1950 and 2008. We extracted key elements from the selected studies, including study design, study population, recruitment and sampling, blinding, attrition rates and statistical methods (Appendix 3, available at www.cmaj.ca/cgi/content/full/180/9/936/DC1).