SYSTEMATIC REVIEW UNIT

Objectives:

At the end of this module, learners should have considered the following:

- What makes the results of a systematic review of the literature credible;
- How to evaluate the confidence in the estimates derived from a meta-analysis
- How to interpret a meta-analysis plot;
- How to assess the degree of variability in study results;
- The role for subgroup analyses in understanding the results of a systematic review;
- How to apply the results of a systematic review to patient care.

Advanced learners can use this exercise to understand pooling across trials using different measures of effect (eg, standardized effect size), learn about the different meta-analysis models and read more complex types of evidence synthesis designs such as network meta-analysis.

Assignment:

1. Read the Users' Guides to the Medical Literature, Summarizing the Evidence, chapters 22 and 23 page 459.
2. Advanced learners could review the chapters on fixed and random effects models, network meta-analysis and subgroup analysis, chapters 24, 25.1 and 25.2.
3. Read the clinical scenario below.
4. Read the corresponding article: Effectiveness of Multicomponent Nonpharmacological Delirium Interventions: A Meta-analysis. JAMA Intern Med. 2015 Feb 2. [Epub ahead of print] Hshieh TT1, Yue J, Oh E, Puelle M, Dowal S, Travison T, Inouye SK.
5. Complete the critical appraisal form.
6. Return to the scenario and formulate a plan for your practice regarding the multicomponent nonpharmacological delirium interventions in your hospital.

Clinical Scenario:

You have just started your shift on the inpatient medical service. The nurse calls you asking for an order for "vitamin H", a nickname for haloperidol, for 82 year old patient who was admitted from the nursing home for a urinary tract infection. She stated that she knew this patient from previous admissions. He usually does well during the day but as the night progresses he often becomes disoriented. She is worried that he may become delirious and agitated; pull his IV, or starts wandering around and fall and "break a hip".
You recall that you have recently read a systematic review about possible ways to reduce the risk of delirium and falls without giving drugs. Studies have used a multi-component intervention that included re-orientation strategies, early mobilization, sleep cycle preservation, and hearing and vision optimization strategies. You wonder if the evidence supporting such non-pharmacological interventions is reliable, if the results apply to your patient and can reduce his risk of developing delirium and falls.

Key Materials:

1. Murad MH, Jaeschke R, Devereaux P, J, Prasad K, Carrasco-Labra A, Agoritsas T, Cook DJ, Guyatt G. The Process of a Systematic Review and Meta-analysis. In: Guyatt G, Rennie D, Meade MO, Cook DJ. User's Guide to the Medical Literature 3 ed. McGraw Hill. 2014. p. 459-469.
2. Murad MH, Montori VM, Ioannidis JPA, Neumann I, Hatala R, Meade MO, Devereaux PJ, Wyer P, Guyatt G. Understanding and Applying the Results of a Systematic Review and Meta-analysis. In: Guyatt G, Rennie D, Meade MO, Cook DJ. User's Guide to the Medical Literature 3 ed. McGraw Hill. 2014. p. 471-489.
3. Effectiveness of Multicomponent Nonpharmacological Delirium Interventions: A Meta-analysis. JAMA Intern Med. 2015 Feb 2. [Epub ahead of print] Hshieh TT1, Yue J, Oh E, Puelle M, Dowal S, Travison T, Inouye SK.