

## **SYSTEMATIC REVIEW UNIT**

### **Objectives:**

At the completion of this module, participants will be able to critically appraise a systematic review and gain an understanding of the role of systematic reviews in guiding practice.

### **Instructional Objectives:**

At the completion of this module, you will be able to:

1. Assess the validity of a systematic review;
2. Understand the concept of heterogeneity, and how this is measured;
3. Interpret a meta-analysis plot;
4. Appreciate the role of a sensitivity analysis; and
5. Be aware of the issues with subgroup analyses.

### **References (Further Reading)**

Guyatt GH, Rennie D, Meade MO, Cook DJ, Editors. Part F: Summarizing the Evidence. In: User's Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice, 3rd Edition, New York, NY: The McGraw-Hill Companies, Inc. 2015.

Specifically: Chapter 22, p.459 - Summarizing the Evidence  
 Chapter 23, p.471 – Understanding and Applying the Results of a Systematic Review and Meta-analysis

### **Problem-Based Educational Strategy**

Read the enclosed Clinical Scenario

1. Compose a well-built PICO-format clinical question about the problem posed
2. Conduct a thorough literature review using the information from your PICO question and narrow your results to systematic reviews/meta-analyses
3. Read the Users Guides chapter on “Summarizing the Evidence”. Chapter 22, page 459
4. Advanced learners could review the chapters on “Advanced Topics in Systematic Reviews”. Chapter 25.1, p 507 – “Fixed Effects and Random Effects Models”; And Chapter 25.2 p 515 – “How to Use a Subgroup Analysis.”
5. Read the reference: Boundy EA et al, “Kangaroo Mother Care and Neonatal Outcomes: A Meta-analysis.” Pediatrics. (2016) ; 137:1-16.
6. Complete the critical appraisal form.
7. Return to the scenario and formulate a recommendation.
8. Advanced learners could use this module in tandem with the practice guideline module and grade the evidence, discuss whether they would recommend the intervention or not, and decide with what strength would they make such a recommendation.

**Clinical Scenario:**

You are the Director of the Neonatal Intensive Care Unit of a large teaching hospital in U.S.A. The Head Nurse of the NICU, has arranged a formal meeting with you, as she is keen to institute the popular method of nursing preterm infants in the NICU – namely “Kangaroo Mother Care” (KMC; AKA: “Kangaroo Care”). She has had experience with KMC in a previous NICU, and tells you how effective this was, as well as being very popular with both NICU staff, and the parents.

You are aware of the concept of KMC. The key element being early, continuous, and prolonged skin-to-skin contact (SSC) between the preterm newborn and mother. You also understand there are other variable components, including exclusive breastfeeding, early discharge from hospital, and close follow-up at home. You also recall that KMC was introduced in South America many years ago as an alternative to incubators for LBW infants. However, you are uncertain about the effectiveness, and whether KMC could increase the risk of serious infection.

Since the Head Nurse of the NICU is obviously very passionate about introducing KMC, you decide it would be very wise to check the current published literature.

You frame your PICO question and put the relevant search terms into PUBMED, Clinical Queries.

You find a systematic review in a recent article in Pediatrics: Boundy EA et al, “Kangaroo Mother Care and Neonatal Outcomes: A Meta-analysis.” Pediatrics. (2016) ; 137:1-16.

You decide to critically appraise this review using the skills you have recently acquired at the McMaster EBCP Workshop.