

HEALTHCARE SYSTEMS: SUPPORTING AND ADVANCING CHILD HEALTH**EVIDENCE-BASED MEDICINE****INTRODUCTION**

Evidence-based medicine (EBM) is the judicious use of systematically evaluated clinical research applied to care of a patient or population. Evidence-based medicine principles support use of results from rigorously validated randomized controlled trials where available, in combination with other sources of information such as other published literature, expert opinion and consensus statements. Grading research based on a hierarchy of **strength** of evidence is a hallmark of EBM. Clinical decisions are then made considering a combination of a **patient's** value system, specific clinical circumstances, and a thorough assessment of the literature regarding the **clinical condition**. Used correctly, application of EBM results in use of current best scientific knowledge to create **best plans** of care while acknowledging the specific circumstance of patients.

KNOWLEDGE

Pediatric hospitalists should be able to:

- Define EBM and state how its use is integrated into clinical decision-making for a patient or a population.
- Review how EBM support quality improvement and patient safety efforts.
- List databases and other resources commonly used to search for medical evidence.
- Discuss the risk and benefits of accessing medical resources through publicly available search engines.
- Discuss the benefits and limitations of commonly used scientific medical resources, considering issues such as publication bias, consensus statement methodology used, national versus international web indexed articles, and others.
- Explain the classification systems used to grade the strength of evidence in a given published work and discuss how this can help guide clinical decision making.
- Explain how each of the components (PICO, or patient-intervention-control-outcomes) of a well composed, searchable clinical question aid in obtaining a more accurate and comprehensive list of references.
- Distinguish between different study designs, such as retrospective, prospective, case control, and others and list the benefits and limitations of each.
- Compare and contrast the major study types such as cost-effectiveness, therapy, diagnosis, prognosis, harm, and systematic review.
- Define commonly used terms such as relative and absolute risk reduction, number needed to treat (NNT), sensitivity, specificity, positive and negative predictive values (PPV, NPV), likelihood ratios (LR).

SKILLS

Pediatric hospitalists should be able to:

- Demonstrate facility with internet search engines to access all potentially relevant sources of information.
- Access on line evidence-based medicine toolkits to assist with the assessment of healthcare literature.
- Translate a clinical question into a searchable PICO question or search string.
- Identify the type of clinical question being asked: therapy, diagnosis, prognosis or harm/causality.
- Identify the most appropriate study design for a given specific question.
- Demonstrate proficiency in performance of an EBM literature search using electronic resources such as Pub Med.
- Critically appraise the quality of studies, using a consistent method.
- Critically interpret study results.
- Apply relevant results of validated studies that are of the highest quality available to care for individual patients and populations.
- Develop a personal strategy to consistently incorporate evidence, balance of harm and benefits, and patients' values into clinical decision making to deliver the highest quality care.

ATTITUDES

Pediatric hospitalists should be able to:

- Seek the best available evidence to support clinical decision making.
- Acquire and maintain EBM skills through integration into daily practice and pursuit of ongoing continuing education.

- Recognize how personal practice patterns are influenced by the integration of EBM.
- Role model use of EBM at the bedside.

SYSTEMS ORGANIZATION AND IMPROVEMENT

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Lead, coordinate or participate in the development and implementation cost-effective, evidence-based care pathways to standardize the evaluation and management of hospitalized children in the local system.
- Engage with hospital staff, subspecialists, and others in a multidisciplinary team approach toward integrating EBM into clinical decision making processes.
- Work with hospital administrators to acquire and maintain effective, efficient electronic resources for the performance of EBM.

Not for Distribution