

UNIVERSITY OF SOUTH FLORIDA

# Making Evidenced-Based Practice Work for You and Your Learners



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# Tampa -- Hurricane Paths of 2004



# EBM again...Why, Why, Why?

# TIME

## Are Doctors Just Playing Hunches?

THURSDAY, FEB. 15, 2007 By CHRISTINE GORMAN



# Objectives

1. Introduce effective and efficient literature search strategies
2. Demonstrate EBM and point of care (POC) resources
3. Discuss settings to implement EBM curriculum
4. Use tools to evaluate components of EBM competency

# EBM Definition

- “It [evidence-based medicine] is the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients.”

Sackett DL [et al] Evidence-Based Medicine How to Practice and Teach  
EBM 2nd Ed. Churchill Livingstone, 2000

# EBM Basics

1. Framing an answerable patient care question
2. Searching and finding the best evidence
3. Appraising the evidence critically
4. Integrating the critical appraisal with expertise and patient's unique values
5. Evaluating the effectiveness and efficiency of steps 1-4

Sackett DL [et al] Evidence-Based Medicine How to Practice and Teach EBM 2nd Ed. Churchill Livingstone, 2000

# Just a few questions

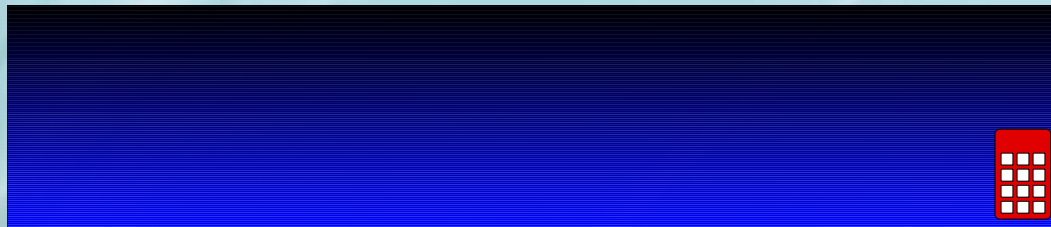
# Who are you?

1. Faculty
2. Program director or Assistant director
3. Division or Department chair
4. EBM course director
5. Just a curious person



## Choose a response that *best* describes your level of understanding of EBM

1. I do not understand the principles of EBM
2. I understand the principles of EBM, but have difficulty applying them
3. I understand the principles of EBM and can apply them
4. I understand the principles of EBM can apply and teach them
5. I am an EBM expert



# Is EBM a part of your curriculum?

1. Yes
2. No



# In what format is EBM taught?

1. Morning report
2. Journal club
3. Lecture series/workshop
4. At the bedside
5. More than one of the above



# What is your primary goal for this workshop?

1. Learn principles of EBM
2. Learn ways to incorporate EBM into a curriculum
3. Learn resources available to answer clinical questions
4. Learn ways to evaluate residents in EBM



# Time for the great divide



- **GROUP 1**

- EBM case study
- Review EBM resources
- Demonstration of POC tools

- **GROUP 2**

- EBM curriculum settings
- EBM Tools
  - Application tools for various settings
  - Evaluation tools
  - Connecting to ACGME competencies

# Overheard

**“I couldn’t find an article”**

# Information Management

Internet era of easy access to mountains of medical literature

**PLUS**

Push to practice evidence-based medicine

**EQUALS**

Requirement to develop skills to *find, evaluate and use* information at the point of care

# Relevance

- Clinicians generate questions at the rate of 1-3 questions for every 3 patient visits
- Only 40% of questions get researched
- Only 30% of questions get answered
- One of the major obstacles cited is time to search for information

Grandage KK [et. al] J Med Libr Assoc 2002 July; 90(3): 298-304

# Pediatric Competency Outcomes

- Searching the literature
  - **Patient Care:** Identifies and accesses available resources (medical literature, consultants) to support the chosen therapeutic path.
  - **Patient Care:** Uses information technology to practice evidence-based medicine and to enhance patient care
  - **Medical Knowledge:** Seeks and locates resources to answer clinical questions
  - **Practice-based learning and improvement:** Demonstrates the ability to effectively search the literature

# EBM Resources: A Case Study

- A senior resident doing a ward rotation presents a 14 month old patient with croup. The patient had received dexamethsone IM and racemic epinephrine in the emergency department. During the night the patient's condition deteriorated and the resident administered another racemic epinephrine dose and started humidified air. While she had vaguely remembered that humidified air was not helpful, she "wanted to throw the book at him." The next morning on rounds, the resident's attending wanted her to justify her use of humidified air in the treatment of croup. The resident researched the question and presented the case in EBM morning report.

## Question #1

What would be your next step/s in assisting this resident?

- Use an educational Rx
- Help formulate a searchable question

### R<sub>x</sub> Educational Prescription

Patient's Name:

Learner:

#### 3-part Clinical Question

Target Disorder:

Intervention (+/- comparison):

Outcome:

Date and Place to be filled:

Presentations will cover:

1. search strategy;
2. search results;
3. the validity of this evidence;
4. the importance of this valid evidence;
5. can this valid, important evidence be applied to your patient?
6. your evaluation of this process.

- A RCT of 48 medical residents showed a simple educational intervention can increase resident searching activity
- Education on clinical question building increases # of searches performed

Cabell CH et al J Gen Intern Med. 2001 Dec;16(12):838-44.

# First frame the PICO question

- The PICO model is the standard for stating a searchable question
- P= In pediatric patients with moderate croup,
- I=does administration of humidified air
- C=versus room air
- O= result in clinical improvement (lower croup score)?

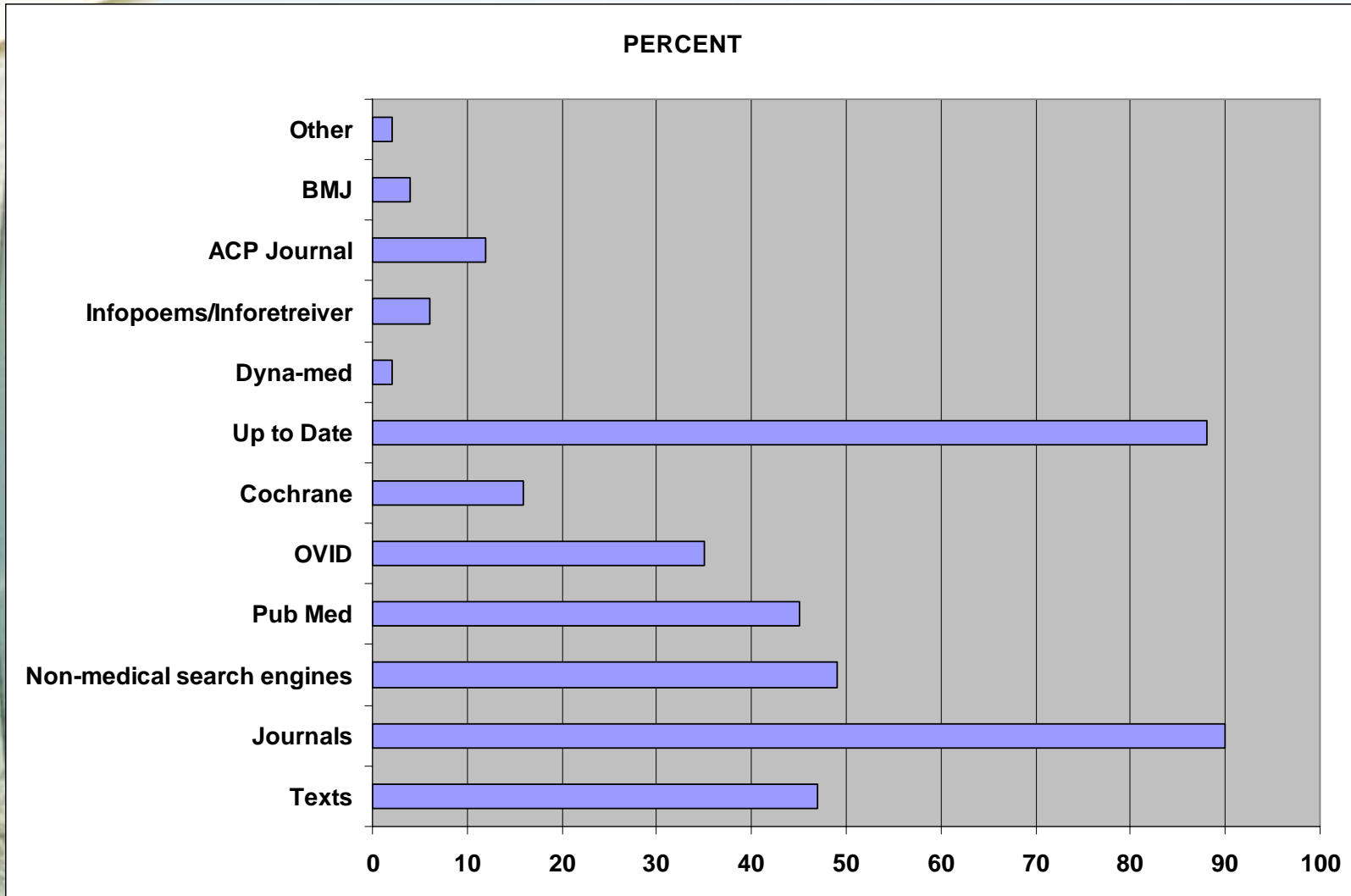
## Question #2

**What resources do you have to help her?**

- Librarians
- Educational courses in literature searching
- Internet access to databases
- PDA resources
- Other?

**The search...where to begin?**

# Resident Resource Utilization Survey



# Information seeking behavior

- Residents generate 1.5 questions per patient encounter
- Seek answers to 66% of questions
- Most commonly used another person or pocket reference, rarely evidenced-based source

Ramos K, et al Fam Med. 2003 Apr;35(4):257-60.

**Question #3**  
**What databases would you suggest?**

# Databases

- [BMJ Clinical Evidence](#) PDA
- [The Cochrane Library](#)
- [DynaMed](#) PDA
- [FIRSTconsult](#) PDA
- [InfoPOEMs](#) PDA
- [PubMed](#) PDA *Free*
- [UpToDate](#) PDA

# Use of information dictates database

- Many start with Medline (PubMed or Ovid)
- Use clinical queries to narrow search
- Use limits/filters
- Use in-house librarians when possible

# Demonstration

- [PubMed](#)

# BMJ Clinical Evidence

- “*BMJ Clinical Evidence* systematic reviews summarize the current state of knowledge and uncertainty about the prevention and treatment of clinical conditions, based on thorough searches and appraisal of the literature.”
- [Demonstration](#)

# BMJ Clinical Evidence

- Covers 230 conditions
- Categorizes Rx as effective or ineffective or harmful
- Concise version available
- Updated every 6 mo
- PDA version
- Only therapy and prevention addressed
- Cost \$239

# The Cochrane Library

- The Cochrane Library is an electronic publication designed to supply high quality evidence to inform people providing and receiving care, and those responsible for research, teaching, funding and administration at all levels.
- Provides highly structured systematic reviews with evidence included/excluded on basis of quality.
- Respected worldwide as the most rigorous searches of literature for analysis and findings
- [Demonstration](#)

# The Cochrane Library

- 4655 systematic reviews
- Evidence-Based Child Health: A Cochrane Review Journal
- Not point of care tool
- Cost \$235
- PDA version \$29.95 per review

# DynaMed

- "DynaMed strives to provide the best available evidence updated daily, and has more than 1,000 clinical topics" with content "derived from systematic literature surveillance" and synthesized with "other clinically relevant information for easy comprehensive browsing."
- Demonstration

# DynaMed

- Over 1800 topics
- Updated daily
- Systematic surveillance of literature
- Provides materials to evaluate practice based learning and improvement
- True POC tool
- PDA
- References linked to abstracts or articles
- \$349

# FIRSTConsult

- FIRSTConsult is an evidence-based and continuously updated clinical information resource for healthcare professionals.
- Designed for use at point of care, it provides user-friendly access to the latest information on evaluation, diagnosis, clinical management, prognosis, and prevention.
- Demonstration

# InfoPOEMS

- InfoPOEMS consists of two components, InfoRetriever and DailyPOEMs.
- "InfoRetriever simultaneously searches the complete POEMs database along with 6 additional evidence-based databases, plus a leading quick-reference tool, to enable rapid lookup and application of information and tools while you practice.
- DailyPOEMs points out valid, relevant research to you via daily e-mail synopses."
- Demonstration



# InfoPOEMS/Info retriever

- Over 3200 POEMs
- Patient oriented outcomes
- Daily Poems email (evidence that finds you)
- Monthly archive of POEMs
- Clinical Decision Rules
- 5-minute clinical consult
- Cochrane Database abstracts
- Individual studies not systematic reviews
- \$249

# UpToDate

- A clinical reference designed to provide instant access to the information. It is comprised of thousands of original topic reviews written by a recognized faculty of experts who each address a specific clinical issue and provide detailed recommendations.
- Collection of well-referenced reviews.
- [Demonstration](#)

- 7000 topics/ 750 Pediatric topics
- CME available
- Point of Care tools
- Concise and practical
- Patient information
- ? Evidenced-based (new grading system)
- \$495 new subscription/\$395 renewal
- User satisfaction highest of 5 databases studied\*

\*Campbell R J Med Libr Assoc 94(4) October 2006

# Point of Care tools

- ACP PIER
- Clinical Evidence\*
- Clinical Resources @ Ovid
- Diseasedex – General Medicine
- DynaMed
- eMedicine
- Evidence Matters
- FirstConsult
- Harrison's Practice: Answers on Demand
- HealthGate\*\*
- InfoPOEMS/InfoRetriever
- Prodigy Knowledge\*
- UpToDate
- Zynx Evidence Evidence

\*United Kingdom

\*\*excluded from final ranking

# Comparison of Rankings

Raw	Evidence	Important/Not As Important	Levels
ACP PIER	ACP PIER	ACP PIER	ACP PIER
eMedicine	Clinical Evidence*	Clinical Evidence*	Clinical Evidence*
DynaMed	DynaMed	DynaMed	Diseasedex – General Medicine
Clinical Evidence*	Clinical Resources @ Ovid	eMedicine	DynaMed
Clinical Resources @ Ovid	eMedicine	Diseasedex – General Medicine	InfoPOEMS/InfoRetriever
UpToDate	UpToDate	Clinical Resources @ Ovid	Zynx Evidence
Diseasedex – General Medicine	Diseasedex – General Medicine	UpToDate	eMedicine
FirstConsult	InfoPOEMS/InfoRetriever	InfoPOEMS/InfoRetriever	Clinical Resources @ Ovid
InfoPOEMS/InfoRetriever	FirstConsult	FirstConsult	UpToDate
Zynx Evidence	Zynx Evidence	Zynx Evidence	FirstConsult
Harrison's Practice: Answers on Demand	Evidence Matters	Harrison's Practice: Answers on Demand	Prodigy Knowledge*
Prodigy Knowledge*	Harrison's Practice: Answers on Demand	Evidence Matters	Harrison's Practice: Answers on Demand
Evidence Matters	Prodigy Knowledge*	Prodigy Knowledge*	Evidence Matters

\*United Kingdom

# Many ways to get answers

- Many available databases
- Choose most appropriate one for use of information
- Point of care tools may help get more questions answered

# Our USF Experience

- Morning report format
- Noon conference lecture series
- Bedside teaching
- Fellow conferences
- Faculty journal club

# Challenges for EBM Curriculum Implementation and Evaluation

- Having 1-2 dedicated/point person faculty EBM champions
- Buy-in from the Chief residents
- Faculty with varying levels of comfort and EBM knowledge base

# Wrap up

- Own experiences to share with the group?
- How will you implement what you have learned today?
- Please complete the evaluation.

# References

- Slawson DC and Shaughnessy AF. Teaching evidence-based medicine: Should we be teaching information management instead? *Acad Med* 2005; 80 685-689.
- Coucou HC How do primary care physicians seek answers to clinical questions? A literature review. *J Med Libr Assoc* 94(1) January 2006 56-60.
- Alper BS. Usefulness of online medical information. *Am Fam Physician*. 2006: Aug 1;74(3):482, 485.
- Apler BS. Practical evidence-based internet resources. *Fam Pract Manag*. 2003 Jul-Aug;10(7):49-52.
- Campbell R and Ash J. An evaluation of five bedside information products using a user-centered, task-oriented approach. *J Med Libr Assoc*. 2006 Oct;94(4):435-41, e206-7.
- Doig GS and Simpson F. Efficient literature searching: a core skill for the practice of evidence-based medicine. *Intensive Care Med*. 2003 Dec;29(12):2119-27. Epub 2003 Sep 3. Review.

# References

- Frohna JG and Park SM. Promoting the use of evidence-based medicine in pediatrics. *J Pediatr.* 2002 Nov;141(5):599-600.
- Garrison JA. UpToDate. *J Med Libr Assoc.* 2003 Jan; 91(1): 97.
- Gorman C. Are doctors just playing hunches? *Time* 2007 Feb 15.
- McCord G et al. Answering questions at the point of care: do residents practice EBM or manage information sources? *Acad Med.* 2007 Mar;82(3):298-303.
- Grandage KK et al. When less is more: a practical approach to searching for evidence-based answers. *J Med Libr Assoc.* 2002 Jul;90(3):298-304.
- Ramos K, Linscheid R and Schafer S. Real-time information-seeking behavior of residency physicians. *Fam Med.* 2003 Apr;35(4):257-60.
- Schwartz K, Northrup J, Israel N, Crowell K, Lauder N, Neale AV. Use of on-line evidence-based resources at the point of care. *Fam Med.* 2003 Apr;35(4):251-6.
- Trumble JM et al. A systematic evaluation of evidence based medicine tools for point of care. Presented at SCC/MLA 2006



