Clinical Foundations I

Introduction to Evidence-Based Medicine (EBM)

Presented by:

Linda Suk-Ling Murphy, MLIS
Steve Clancy, MLS, AHIP
UCI Science Library
Shahram Lotfipour, MD, MPH, FAAEM, FACEP
UCI Dept. of Emergency Medicine

November 29, 2010

Learning Objectives

By the end of this session, you will be able to:

- Become familiar with UCI Libraries' resources and services.
- Have a basic knowledge of EBM
- Identify online and print resources from the GML website and the Antpac Online Catalog.
- Conduct searches in PubMed, MedlinePlus and Natural Standard.
- Utilize Remote Access (Web VPN and VPN)

Clinical Foundation I: EBM Agenda

- 1st session: Introduction to EBM (Today)
  - UCI Libraries' Resources and services
  - Medical Student Course Guide
  - The Basics of EBM
  - Patient-Physician encounter scenario with Dr. Lotfipour
  - PubMed search demo
  - In-class exercise and presentations
- 2nd Session: EBM follow-up (Nov 30th or Dec 1st)
  - Evidence-based point-of-care resources
  - In-class exercise
  - Class Evaluation

Why Use the UCI Libraries?

- Save you time (overload of unfiltered information):
  - Get research assistance from the most friendly and supportive medical librarians
  - Teach you how to find and filter quality information
  - Resources that can help you to pass the boards and other exams
- Save you $$ (Most resources are not freely available, but are very costly):
  - We provide access to these expensive print and online resources to meet your education and research needs
- Keep you informed with the latest medical news and research
- How many Libraries are there at UCI?

Home Page - UCI Libraries - Mozilla Firefox

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http://www.lib.uci.edu/

Grunigen Medical Libr... MLGSCA Link pubmed: ebm Spicynodes : Edit Nod... QuestionPoint

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ASK A LIBRARIAN!

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- Interlibrary Loan
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- Langson Library
- Ayala Science Library
- Grunigen Medical Library
- Libraries Gateway Study Center
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For Community Users

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- Events
- Community Outreach Programs

Find

Books, Articles, & More | Subject & Course Guides

- ANTPAC catalog
- Current Melvyl catalog
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- Databases A-Z
- Databases to get you started
- e-Books
- What's new
- Articles by Citation

Featured Resource

Cold Spring Harbor Protocols
Covers cell and molecular biology, genetics, bioinformatics, protein science, and imaging

More resources »

News & Alerts

- Science Library Renamed at Dedication Event
- Library Quest 2010 Winners!
- Microfilm and microfiche have been relocated to the Ayala Science Library

More news & alerts »

E-Resources Survey

Tell us what you think and win a $10 Starbucks gift card!

QR Codes

Scan QR Codes and boost browsing in the Art & Math sections

Anteater Antics

Odds and ends from Special Collections and Archives

Online Exhibit

Stage to Stage: The Theatrical

Done

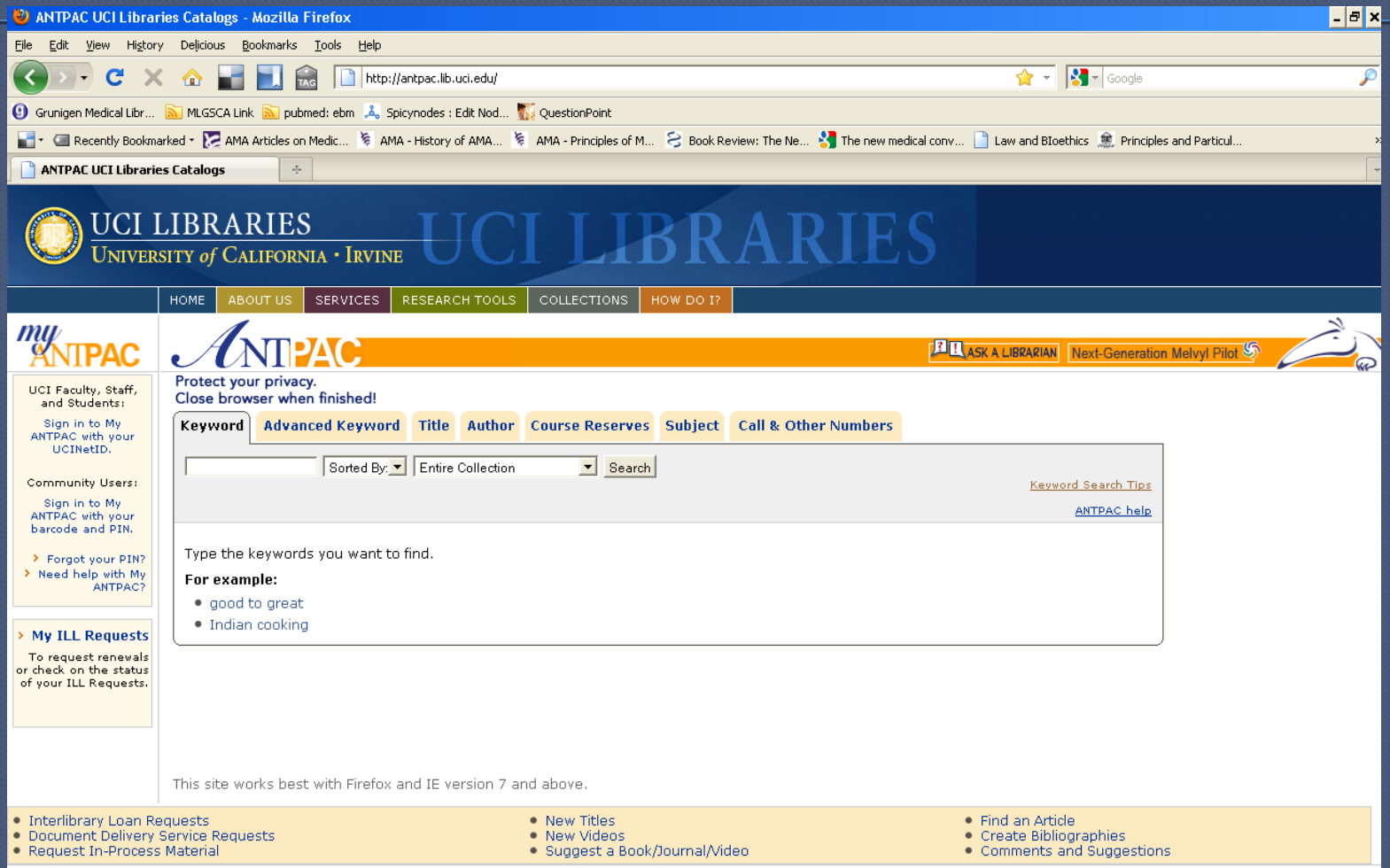
Start | Inbox for lmurphy@... | Buddy List | MURPHY, L. Suk-Li... | Microsoft PowerPoi... | Let'sGoVote::Add E... | Home Page - UCI Li... | EN | 1:05 PM

CF1 Suggested Resources for Clinical Topics

Clinical Foundations Course Handbook, p 11.

- Harrison's Principles of Internal Medicine -- Available online through AccessMedcine http://uclibs.org/PID/112098
- Cecil's Textbook of Medicine – available online through MDConsult http://uclibs.org/PID/56701
- Cecil Essentials of Medicine, Thomas E. Andreoli Call Number: WB 115 A559 2007
- EBM Guidebook http://grunigen.lib.uci.edu/ebm/index.html

Locating Online and Print Resources



Library Course Guide for Medical Students

http://libguides.lib.uci.edu/MS_courseguide

UCI LIBRARIES
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Libraries Home » Subject and Course Guides Home » Medical Student Course Guide — Admin Sign In
* UC Irvine access only

Medical Student Course Guide

This guide is specifically designed for UCI medical students. It provides direct links to online key resources and textbooks for the undergraduate medical education curriculum.

Last update: Nov 19th, 2010 | URL: http://libguides.lib.uci.edu/MS_courseguide | Print Guide | RSS Updates | SHARE

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MS1 Basic Science Comments (0) Print Page — Search: This Guide — Go

Anatomy - Embryology

* = UC Irvine access only

Required Textbooks, Atlas, and Dissector

- **Before we are born : essentials of embryology and birth defects** / Keith L. Moore, T.V.N. Persaud ; w Moore, Keith L Philadelphia, PA : Saunders/Elsevier, c2008. 7th edition.
  - **Available in Print at Ayala Sci Bar**. Library CALL No.: QS 604 M822b 2008
- **Gray's atlas of anatomy** / Richard L. Drake ... [et al.] Philadelphia : Churchill Livingstone, c2008. 2nd edition.
  - **Available in Print at Ayala Sci Bar.** CALL #: QS 17 G784 2008
- **Gray's anatomy for students / Richard L. Drake, Wayne Vogl, Adam W.M. Mitchell ; illustrations by Richard Tibbitts and Paul Richardson.** Philadelphia : Elsevier/Churchill Livingstone, c2005 Library Location and Call no.:
  - **Available in Print at Grunigen Medical Library.** CALL # QS 4 D762g 2005
- ***Human gross anatomy [electronic resource] : an outline text** / by Robert J. Leonard. New York : Oxford University Press, 1995. 1st edition.
  - **Available online** via: MyiLibrary. Restricted to UCI. http://www.myilibrary.com?id=44160
- **Atlas of human anatomy** / Frank H. Netter (Frank Henry), 1906-1991. Philadelphia, PA : Saunders/Elsevier, c2011

Medical Biochemistry - Molecular Biology

Medical Biochemistry/Molecular Biology Course Textbooks:

- Lippincott's illustrated Q&A review of biochemistry / Michael A. Lieberman, Rick Ricer . Philadelphia : Lippincott Williams & Wilkins, c2010
  - **Available in Print at Ayala Sci Bar.** QU 18.2 L695L 2010
  - Limited preview via Google Book.
- Medical physiology : a cellular and molecular approach / [edited by] Walter F. Boron, Emile L. Boulpaep. Philadelphia, PA : W.B. Saunders, c2003
  - **Available in Print at Ayala Sci Bar.** QT 104 B7356M 2003

Comments (0)

Histology

Core Textbook:

- Color textbook of histology / LeslieP. Gartner, James L. Hiatt / Gartner, Leslie P., 1943- Philadelphia, PA : Saunders/Elsevier, 2007.
  - **Available in Print at Grunigen Medical Library** QS

Remote Access to Online Medical Textbooks, Databases & Journals

- You must activate your UCINetID:
  http://www.nacs.uci.edu/ucinetid/index.html#activate

- Software VPN: Requires installation of free software. Best option. Works with all UCI Library online resources. Compatible with most commonly used operating systems and computer platforms.
  http://www.nacs.uci.edu/security/vpn.html

- Web VPN: Web-based; compatible with all browsers & computer platforms. Some of our online databases and journals do not work well with this option.
  http://www.nacs.uci.edu/security/vpn/webvpn.html

How Do I?

- Connect from Off-Campus
- Find a Book
- Find an Article
- Find Primary Sources
- Report a Library Incident

Quick Links

- Hours
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- Course Reserves
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- Interlibrary Loan
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- Langson Library
- Science Library
- Grunigen Medical Library
- Libraries Gateway Study Center
- Law Library

- Support the Libraries

Connect from Off-Campus

Remote access to the UCI Libraries' licensed online resources is available to current UC Irvine students, faculty & staff. In order to use these resources you must be "authenticated" (recognized as a valid user) by the UCI campus network. Your login/password is your UCINetID. To activate, click here. For further assistance, call NACS at (949) 824-2222.

	Web VPN (Login now)	Software VPN (Download now)
Notes	On the WebVPN login screen, leave the option for GROUP set to "Default". For more info, click here.	Select "UCI Full" when you run the VPN software. For more info, click here.
Advantages	* Does not require you to download additional software.	* Access such non-web based online resources as Scifinder Scholar from off-campus. * Access the pages that are inaccessible via the WebVPN.
Limitations	* Web pages may load more slowly. * WebVPN will not access the following page(s): • ARTstor • China Online Journals (COJ) *Please note: you can search or browse China Studies Online to access the full-text of articles that are also in COJ* • Dance in Video • Eighteenth Century Collections Online titles *Please note: The database ECCO does work with the WebVPN, and you may access individual titles by browsing or searching the database.* • Science of Synthesis • Theatre in Video • Web of Science • Write-N-Cite (feature of RefWorks)	* Requires download and installation of free client software. * Some home wireless networks may not be able to utilize the Software VPN.

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Activate Your Student Photo ID and UCInetID

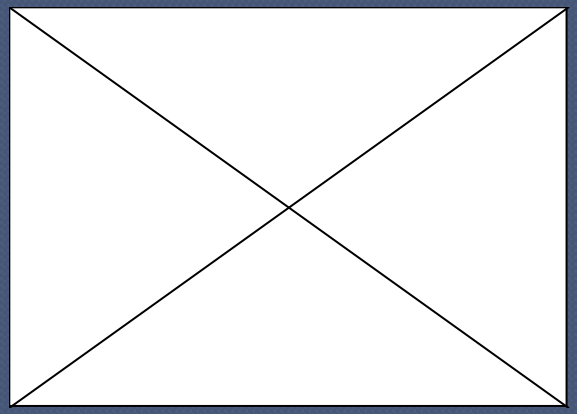
- Your Student Photo ID is your library card and your print/photocopy card!
- It must be activated at the Loan Desk before you can utilize any of the Libraries' services:
  - Transfer books or journal articles that are at the Grunigen Medical Library in Orange.
  - Check out library materials and request books or journal articles that UCI does not own.
  - Place a book on hold, renew items and utilize MyAntpac.

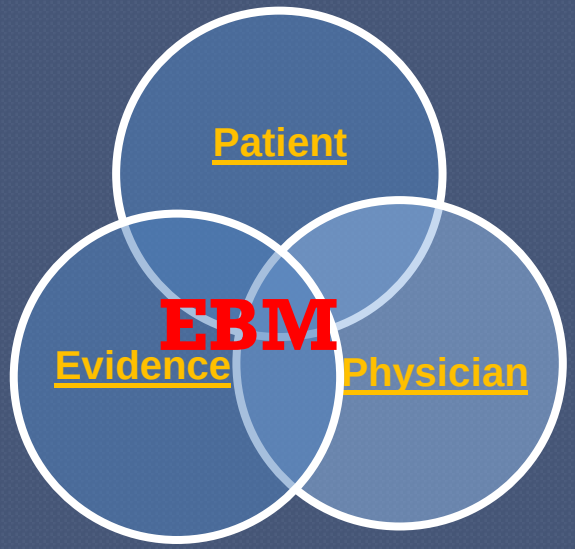
- You must activate your **UCINetID** to gain access to the UCI Libraries' online resources remotely from off-campus.
- How many of you have already activated your student ID for library access?

What is EBM?

"It is the integration of:
available research evidence with your **clinical experience/expertise** and your **patient's needs** .

Ref:
1. Evidence-based medicine : how to practice and teach EBM / David L. Sackett ... [et al.] New York : Churchill Livingstone, 2000.

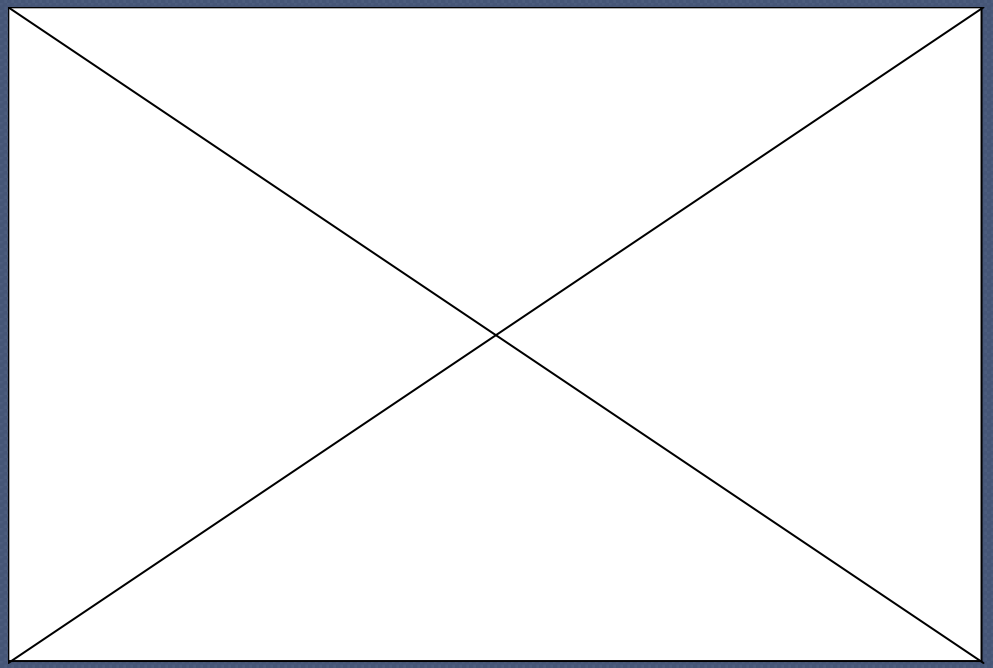




http://www.youtube.com/watch?v=Nbd--s2dFY0&feature=related

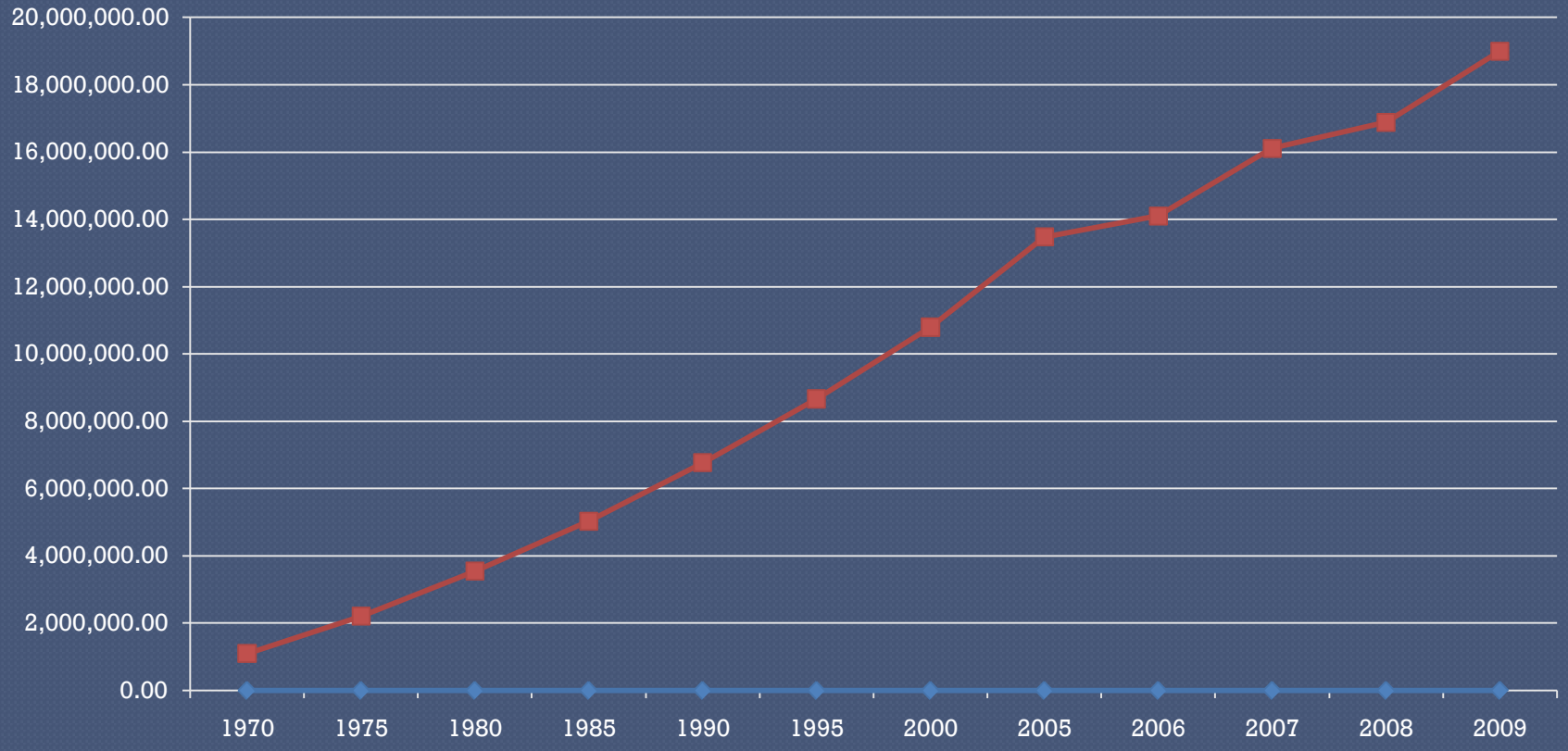
Why Practice EBM?

- Kat Arney: the importance of evidence based medicine
  http://www.youtube.com/watch?v=DOJFp48wlMQ



Other Reasons: Information Overload

Ever-increasing volume of journals and articles makes it impossible to keep up.



5,398 journals being indexed 20,335,162 PubMed records

Steps in the Practice of Evidence-Based Medicine

1. **Assess** Your patient
2. **Identify** Information needs and ask a focused clinical question
3. **Search** for relevant information from literature
4. **Evaluate** the evidence that you found or identify absence of evidence.
5. **Apply** the evidence to your patient
6. **Evaluate** the patient's outcome and your practice

Evidence Based Medicine…
Begins with your patient and ends with your patient.

Step 1 : Assess Your Patient

- Acquire the patient's history
- Physical examination
- Discussing the patient's concerns
- Determine the problem (Several clinical questions may arise)

From this, we can construct a clinical question building from the patient and the problem

"Good questions are the backbone of practicing EBM. It takes practice to ask the well-formulated question."

"An undefined problem has an infinite number of solutions."

Step 2 : Ask a Clinical Question

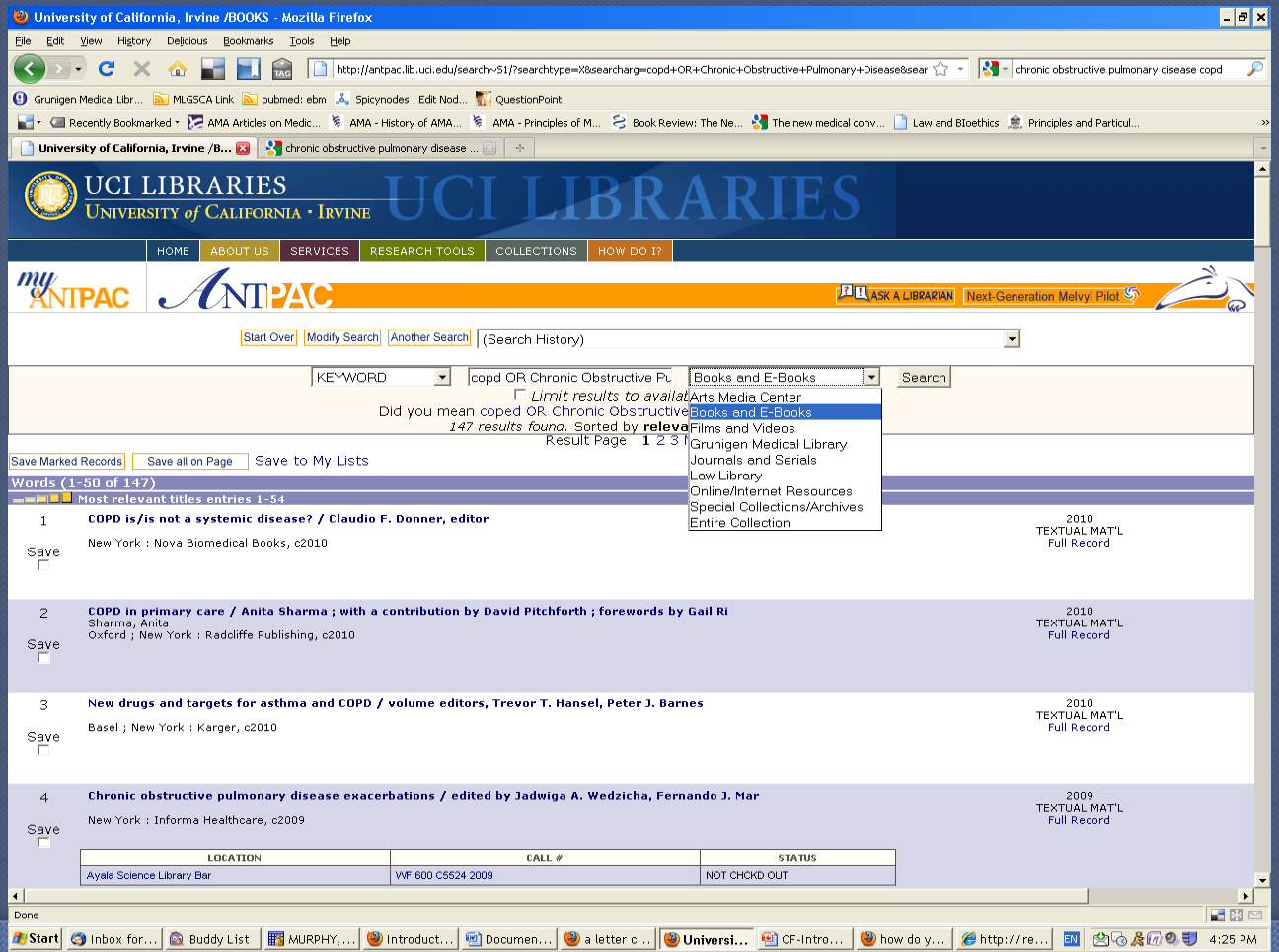
A Background question:

- Asks for general knowledge about a disorder and available treatment.

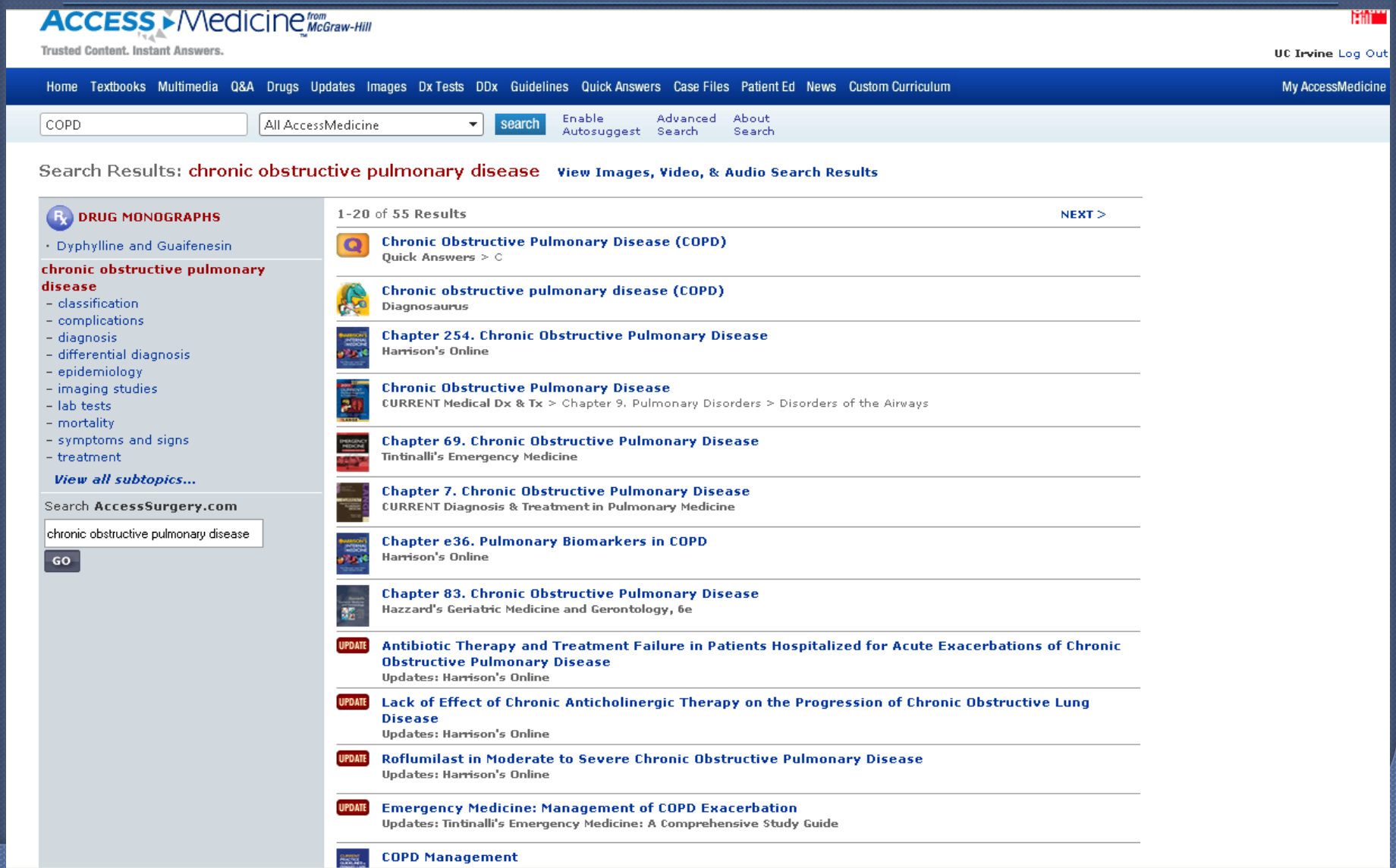
- Answer can often be found in medical texts, book chapters and review articles.
  1. What are the symptoms of COPD?
  2. What are the risk factors for heart disease?
  3. Is second-hand smoke hazardous to your health?

Background Resources: Books and eBooks

- Antpac antpac.lib.uci.edu -- UCI Libraries Online Catalog
  - Locate both online and print copies of textbooks



Background Resources: Book Chapters



Background Resources for Medical Students

Step 2 : Ask a Clinical Question

A Foreground question:

- Asks for specific knowledge about a disorder or treatment.
- Usually relates to a specific patient or population
- Includes four components -- **PICO**

What is PICO?

P – the patient or problem of interest
I – the main intervention (therapeutic, diagnostic, prognostic) or exposure
C – a comparison intervention if relevant.
O – the clinical outcome of interest

Why Bother with PICO?

- Helps focus on evidence directly relevant to your patient's needs and your specific knowledge needs
- Forces you to ask a specific and answerable question
- Helps make a search of the medical literature easier by identifying specific search concepts and keywords
- Questions are answerable, reinforcing the satisfaction of finding evidence that makes you a better, more effective clinician

Step 2 : Ask a Clinical Question

A clinical question usually falls into one of four clinical categories:

- **Therapy**
  How to select treatments that do more good than harm and that are worth the effort and cost of using them
- **Diagnosis**
  How to select and interpret diagnostic tests
- **Harm/Etiology**
  How to identify causes for disease (including iatrogenic forms)
- **Prognosis**
  How to estimate the patient's likely clinical course over time and anticipate likely complications of disease

Types of Clinical Questions: What Clinical Category?

- *In patients with COPD who smoke, what is the efficacy of antidepressants for achieving prolonged smoking cessation?*
  - Therapy
- *How effective are pulmonary function tests in screening patients with existing lung diseases?*
  - Diagnosis
- *In adults with COPD, can air pollution cause the exacerbation of symptoms?*
  - Etiology
- *What is the likely outcome and quality of life for patients with COPD admitted to the ICU?*
  - Prognosis

Physician-Patient Encounter with Dr. Shahram Lotfipour:

A Patient with COPD

Clinical Scenario

Mr. X, a 57-yo male, presents to an urgent care center with cough of 2 wks duration. The cough initially developed during an upper respiratory illness he had 1 month ago. At the time he had fever (to 100.8 F), chills and green sputum.

He had a mild degree of right sided chest pain- sharp in nature when he would cough. The symptoms were also associated with decreased exercise tolerance and shortness of breath with speaking fast.

He did not seek medical attention, but instead he took 2 antibiotics leftover from a previous illness. He can't recall the name but thinks it started with a "Z." He states that gradually the symptoms resolved except for the cough which is now dry and hacking with mild shortness of breath.

He occasionally can hear himself wheeze. He has no associated-phlegm, headaches, fevers, chills, chest pain, or edema.

Clinical Scenario: Physical Exam

CC: "I have been coughing for 2 weeks"

HPI presents to an urgent care center with cough of 2 weeks duration.

FHx: Father passed away at the age 70 from a heart attack. Mother is alive and well at the age of 72. Family history is also significant for colon cancer in his uncle.

PMHx: Coronary artery disease- diagnosed 5 yrs ago after he developed chest pain at work. Type 2 Diabetes Mellitus, control unknown. Colon polyps removed during a colonoscopy at age 50. Hospitalized for pneumonia at UCIMC in 2002.

Medications: Plavix 75 mg po qday, EcASA 81 mg po qday, Combivent. Inhaler 2 puffs q 4 hours prn shortness of breath (ran out 2 weeks ago). Metformin 1000 mg po bid

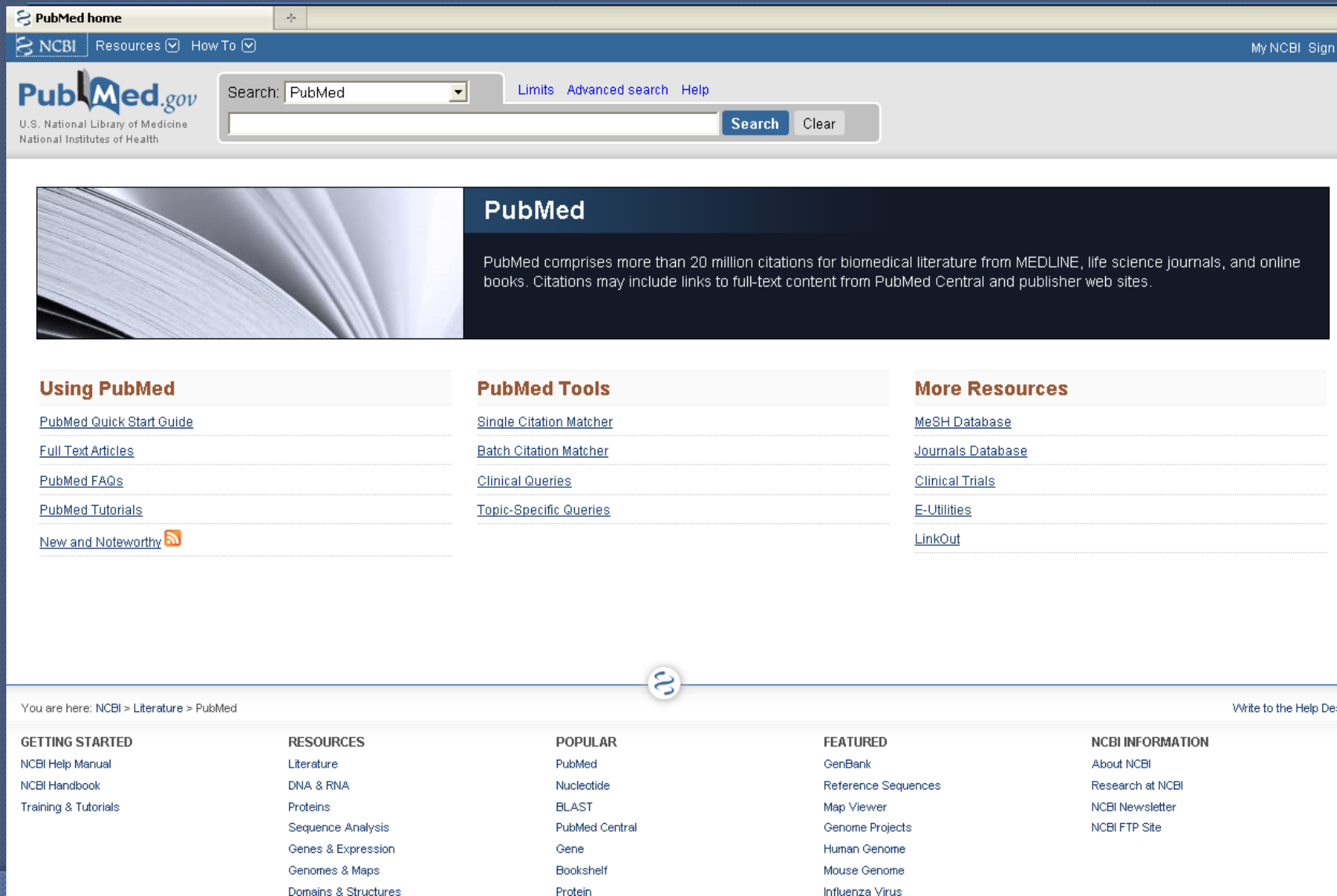
Vitals: BP: 157/90 mmHg, Pulse 99, RR: 20, Temp: 98.6, Pulse Ox: 93 % on room air, Weight: 207 lbs, Height: 5'5"

A Therapy Question

"In patients with COPD who smoke, what is the efficacy of antidepressants compared to 'quitting cold turkey' for prolonged smoking cessation (6+ months)?"

PICO -- Therapy	
Patient / **P**roblem	Patients with COPD who smoke
Intervention	antidepressants
Comparison	Cold turkey/no treatment /placebo
Outcome	Prolonged smoking cessation

Step 3: Find the Best Evidence -- Literature Search



PubMed – Sample Search

- Search Strategy:

  Antidepressants AND (Chronic Obstructive Pulmonary Disease OR COPD) AND (smoking OR smoke)

  - Limits: Published in the last 10 years, English, All Adults: 19+ years

Display Settings: Summary, 20 per page, Sorted by Recently Added

Send to:

Limits Activated: English, All Adult: 19+ years, published in the last 10 years Change | Remove

Results: 17

Cost effectiveness of varenicline versus bupropion and unaided cessation for smoking cessation in a cohort of Finnish adult smokers.
1. Linden K, Jormanainen V, Linna M, Sintonen H, Wilson K, Kotomäki T.
Curr Med Res Opin. 2010 Mar;26(3):549-60.
PMID: 20050814 [PubMed - indexed for MEDLINE]
Related citations

The cost-effectiveness of antidepressants for smoking cessation in chronic obstructive pulmonary disease (COPD) patients.
2. Van Schayck CP, Kaper J, Wagena EJ, Wouters EF, Severens JL.
Addiction. 2009 Dec;104(12):2110-7.
PMID: 19922576 [PubMed - indexed for MEDLINE]
Related citations

Four years' follow up at a smoking cessation clinic.
3. Aguiar M, Todo-Bom F, Felizardo M, Macedo R, Caeiro F, Sotto-Mayor R, Bugalho de Almeida A.
Rev Port Pneumol. 2009 Mar-Apr;15(2):179-97. English, Portuguese.
PMID: 19280068 [PubMed - indexed for MEDLINE]
Related citations

Efficacy of confronting smokers with airflow limitation for smoking cessation.
4. Kotz D, Wesseling G, Huibers MJ, van Schayck OC.
Eur Respir J. 2009 Apr;33(4):754-62. Epub 2009 Jan 7.
PMID: 19129277 [PubMed - indexed for MEDLINE] **Free Article**
Related citations

The combination of a smoking cessation programme with rehabilitation increases stop-smoking rate.
5. Paone G, Serpilli M, Girardi E, Conti V, Principe R, Puglisi G, De Marchis L, Schmid G.
J Rehabil Med. 2008 Aug;40(8):672-7.
PMID: 19020702 [PubMed - indexed for MEDLINE] **Free Article**
Related citations

High rate of smoking abstinence in COPD patients: Smoking cessation by hospitalization.
6. Sundblad BM, Larsson K, Nathell L.
Nicotine Tob Res. 2008 May;10(5):883-90.
PMID: 18569763 [PubMed - indexed for MEDLINE]
Related citations

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Search details
("antidepressive agents"[MeSH Terms] OR ("antidepressive"[All Fields] AND "agents"[All Fields]) OR "antidepressive agents"[All Fields] OR
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Antidepressants AND (Chronic Obstructive Pulmonary Disease OR COP... (9) PubMed
Antidepressants AND (Chronic Obstructive Pulmonary Disease OR COP... (5) PubMed
The cost-effectiveness of antidepressants for smoking cessation in chronic obs PubMed
(antidepressive agents AND (Humans[Mesh] AND Randomized PubMed
See more...

Addiction. 2009 Dec;104(12):2110-7.

The cost-effectiveness of antidepressants for smoking cessation in chronic obstructive pulmonary disease (COPD) patients.

Van Schayck CP, Kaper J, Wagena EJ, Wouters EF, Severens JL.

Department of General Practice, Care and Public health Research Institute (CAPHRI), Maastricht University, Maastricht, the Netherlands. onno.vanschayck@hag.unimaas.nl

Abstract

OBJECTIVES: In healthy smokers, antidepressants can double the odds of cessation. Because of its four times lower costs and comparable efficacy in healthy smokers, nortriptyline appears to be favourable compared to bupropion. We assessed which of both drugs was most effective and cost-effective in stopping smoking after 1 year compared with placebo among smokers at risk or with existing chronic obstructive pulmonary disease (COPD).

METHODS: A total of 255 participants, aged 30-70 years, received smoking cessation counselling and were assigned bupropion, nortriptyline or placebo randomly for 12 weeks. Prolonged abstinence from smoking was defined as a participant's report of no cigarettes from week 4 to week 52, validated by urinary cotinine. Costs were calculated using a societal perspective and uncertainty was assessed using the bootstrap method.

RESULTS: The prolonged abstinence rate was 20.9% with bupropion, 20.0% with nortriptyline and 13.5% with placebo. The differences between bupropion and placebo [relative risk (RR) = 1.6; 95% confidence interval (CI) 0.8-3.0] and between nortriptyline and placebo (RR = 1.5; 95% CI 0.8-2.9) were not significant. Severity of airway obstruction did not influence abstinence significantly. Societal costs were 1368 euros (2.5th-97.5th percentile 193-5260) with bupropion, 1906 euros (2.5th-97.5th 120-17 761) with nortriptyline and 1212 euros (2.5th-97.5th 96-6602) with placebo. Were society willing to pay more than 2000 euros for a quitter, bupropion was most likely to be cost-effective.

CONCLUSIONS: Bupropion and nortriptyline seem to be equally effective, but bupropion appears to be more cost-effective when compared to placebo and nortriptyline. This impression holds using only health care costs. As the cost-effectiveness analyses concern some uncertainties, the results should be interpreted with care and future studies are needed to replicate the findings.

PMID: 19922576 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

LinkOut - more resources

Related citations

Efficacy of bupropion and nortriptyline for smoking cessation amor [Arch Intern Med. 2005]

Cost-effectiveness of varenicline compared with bupropion, NRT, and [Curr Med Res Opin. 2008]

Cost-effectiveness of bupropion, nortriptyline, and psychologic [J Behav Health Serv Res. 2005]

Review Antidepressants for smoking cessation. [Cochrane Database Syst Rev. 2007]

Review Antidepressants for smoking cessation. [Cochrane Database Syst Rev. 2004]

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Related Citations

Compound (MeSH Keyword)

Substance (MeSH Keyword)

Recent activity

Turn Off Clear

Antidepressants AND (Chronic Obstructive Pulmonary Disease OR COP... (17) PubMed

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Antidepressants AND (Chronic Obstructive Pulmonary Disease OR COP... (5) PubMed

The cost-effectiveness of antidepressants for smoking cessation in chronic obs PubMed

(antidepressive agents AND (Humans[Mesh] AND Randomized... PubMed

Addiction

RESEARCH REPORT

doi:10.1111/j.1360-0443.2009.02723.x

The cost-effectiveness of antidepressants for smoking cessation in chronic obstructive pulmonary disease (COPD) patients

Constant P. Van Schayck[1], Janneke Kaper[1], Edwin J. Wagena[1,2], Emiel F. M. Wouters[2] & Johannes L. Severens[3]

Department of General Practice, Care and Public health Research Institute (CAPHRI), Maastricht University, Maastricht, the Netherlands,[1] Department of Respiratory Medicine, University Hospital Maastricht, Maastricht, the Netherlands[2] and Department of Health Organization, Policy and Economics, CAPHRI, Maastricht University and Department of Clinical Epidemiology and MTA, University Medical Centre, Maastricht, the Netherlands[3]

ABSTRACT

Objectives In healthy smokers, antidepressants can double the odds of cessation. Because of its four times lower costs and comparable efficacy in healthy smokers, nortriptyline appears to be favourable compared to bupropion. We assessed which of both drugs was most effective and cost-effective in stopping smoking after 1 year compared with placebo among smokers at risk or with existing chronic obstructive pulmonary disease (COPD). **Methods** A total of 255 participants, aged 30–70 years, received smoking cessation counselling and were assigned bupropion, nortriptyline or placebo randomly for 12 weeks. Prolonged abstinence from smoking was defined as a participant's report of no cigarettes from week 4 to week 52, validated by urinary cotinine. Costs were calculated using a societal perspective and uncertainty was assessed using the bootstrap method. **Results** The prolonged abstinence rate was 20.9% with bupropion, 20.0% with nortriptyline and 13.5% with placebo. The differences between bupropion and placebo [relative risk (RR) = 1.6; 95% confidence interval (CI) 0.8–3.0] and between nortriptyline and placebo (RR = 1.5; 95% CI 0.8–2.9) were not significant. Severity of airway obstruction did not influence abstinence significantly. Societal costs were €1368 (2.5th–97.5th percentile 193–5260) with bupropion, €1906 (2.5th–97.5th 120–17 761) with nortriptyline and €1212 (2.5th–97.5th 96–6602) with placebo. Were society willing to pay more than €2000 for a quitter, bupropion was most likely to be cost-effective. **Conclusions** Bupropion and nortriptyline seem to be equally effective, but bupropion appears to be more cost-effective when compared to placebo and nortriptyline. This impression holds using only health care costs. As the cost-effectiveness analyses concern some uncertainties, the results should be interpreted with care and future studies are needed to replicate the findings.

Keywords Antidepressants, bupropion, COPD, cost-effectiveness, nortriptyline, smoking cessation.

Correspondence to: C. P. van Schayck, Department of General Practice, CAPHRI, Maastricht University, PO Box 616, 6200 MD Maastricht, the Netherlands. E-mail: onno.vanschayck@hag.unimaas.nl

Submitted 19 February 2009; initial review completed 18 May 2009; final version accepted 1 July 2009

INTRODUCTION

Because nicotine may have an antidepressant effect [5]

What Else is Left?

Step 4:

Appraise the evidence for its quality and usefulness (validity and applicability)

Step 5:

Implement useful findings to treat the patient along with your clinical expertise, and the patient's preferences, values and concerns.

Step 6:

Evaluate your performance with this patient (the evidence, intervention, and EBM process)

EBP - Mozilla Firefox

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http://www.lib.uci.edu/how/tutorials/EvidenceBasedPractice/

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EBP

Evidence-Based Practice (EBP): Improving Patient Care

Tutorial for a Therapy Question

Click on the NEXT button (bottom right) to go to the next page.

Use the arrows at the bottom of the page to navigate this tutorial; do not use your browser's back and forward buttons.

Inappropriate Use of Antibiotics

An **antibiotic** is a substance produced naturally by microorganisms or synthetically by chemists in a laboratory. Antibiotics are capable of inhibiting the growth of or killing **bacteria** (a particular class of germs). A Nobel Prize was awarded to Alexander Fleming for his discovery of penicillin in 1928. However, it wasn't until 1941 that penicillin was successfully produced for commercial use, in time to treat infections in soldiers injured during World War II. Since then many new antibiotics have been discovered and produced. Most have a limited number of the types of bacteria that they can inhibit or destroy. Other antibiotics are **broad spectrum**, meaning they can destroy many types of bacteria. Antibiotics should be used only for bacterial infections and are not effective against the viruses that cause many illnesses including influenza and most upper respiratory tract infections, including the common cold, or fungal infections like those caused by yeast. The inappropriate use of antibiotics for these types of infections as well as the more frequent use of broad-spectrum antibiotics has caused the emergence of newer strains of bacteria that are resistant to many antibiotics. The August 19, 2009, issue of *JAMA* includes an article about use of antibiotics in acute respiratory illness.

THESE INFECTIONS CAN USUALLY BE TREATED WITHOUT ANTIBIOTICS

- Common cold
- **Influenza** (flu)
- Most coughs and **bronchitis** (chest cold with a cough)
- Many ear infections (also called **otitis media**)
- Many skin rashes

INFECTIONS CAUSED BY INAPPROPRIATE ANTIBIOTIC USE

- Bacteria like *Staphylococcus aureus* (a bacterium that causes serious infections in immune-compromised persons) develop resistance to the antibiotics typically used to treat the infections they cause, leading, for example, to **methicillin** (a type of antibiotic)-resistant *Staphylococcus aureus* (MRSA), which can now affect individuals in hospitals and in the community and is difficult to treat effectively.
- Other bacteria, such as *Streptococcus pneumoniae* (common cause of meningitis, blood infections, and pneumonia), are also developing resistance to antibiotics.
- Multiple drug–resistant tuberculosis may occur when an infected person does not complete the several-months-long antibiotic regimen needed to cure tuberculosis.

PROBLEMS CAUSED BY RESISTANT BACTERIA

- Common infections become more difficult to treat and can become life threatening.
- Infected people often require longer, more expensive, and more toxic treatment during extended hospital stays.
- The spread of the resistant bacteria to family members, coworkers, and friends threatens communities.

Sources: American Academy of Pediatrics; American Academy of Family Physicians Clinical Practice Guideline; Harrison's Principles of Internal Medicine, 17th Edition; Centers for Disease Control and Prevention

WHAT YOU CAN DO

- Take antibiotics only when prescribed to you by a physician.
- Follow all directions when taking antibiotics and take the entire prescribed regimen even if you feel better before finishing them.
- Throw away any unused antibiotics; don't save antibiotics for future use since partial and incomplete treatment regimens are ways that bacteria develop resistance to antibiotics.
- Do not share your medication and don't take antibiotics prescribed for someone else; specific antibiotics are prescribed for specific bacteria, since all antibiotics are not able to cure all bacterial infections.

FOR MORE INFORMATION

- Centers for Disease Control and Prevention www.cdc.gov/drugresistance/community/know-and-do.htm
- American Academy of Pediatrics www.aap.org/advocacy/releases/aomqa.htm

INFORM YOURSELF

To find this and other JAMA Patient Pages, go to the Patient Page link on *JAMA*'s Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on coughs, cold, and antibiotics was published in the May 28, 2003, issue.

Carolyn J. Hildreth, MD, Writer
Alison E. Burke, MA, Illustrator
Richard M. Glass, MD, Editor

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Grading System

- A — Strong Positive Scientific Evidence
- B — Positive Scientific Evidence
- C — Unclear Scientific Evidence
- D — Negative Scientific Evidence
- F — Strong Negative Scientific Evidence

Testimonials

"Natural Standard has provided just what the doctor ordered - an evidence-based review to tell us what is known, and what is not. Given the clear imperative to talk with our patients about CAM, here's the evidence summary you need."

Harley Goldberg, DO
Medical Director, CAM
Kaiser Permanente

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Search Results

Source	Relevancy Score	Excerpt
Condition Monograph (Integrative Care):Chronic obstructive pulmonary disease (COPD)	100%	Chronic obstructive pulmonary disease (COPD) is a type of lung disease that involves damage or obstruction to the airways of the lungs, making it difficult to breathe. COPD is an overall term referring to a group of chronic lung conditions, most commonly including chronic bronchitis and emphysema, and possibly asthma o...
News:October 2010 -- Traffic Pollution Linked to COPD	100%	A new study suggests that traffic pollution may be linked to an increased risk of chronic obstructive pulmonary disease (COPD).COPD is a type of lung disease that involves damage or obstruction to the airways of the lungs, making it difficult to breathe. COPD refers to a group of chronic lung condit...
News:November 2009 -- Mindfulness-Based Breathing May be Ineffective for COPD	100%	Mindfulness-based breathing therapy may not offer benefits to patients with chronic obstructive pulmonary disease (COPD), researchers report in the Journal of Alternative and Complementary Medicine.In the study, 86 adults with COPD were randomly assigned to participate in mindfulness-based breathing...
News:July 2009 -- Eucalyptus Compound for COPD	100%	A clinical trial by German researchers suggests that cineole, the main constituent of eucalyptus oil, may reduce flare-ups of chronic obstructive pulmonary disease (COPD) when used in conjunction with standard treatments such as bronchodilators.COPD refers to a group of chronic lung conditions, most...
News:November 2002 -- Long-Term Oxygen Therapy and Quality of Life in Elderly Patients Hospitalised Due to Severe Exacerbation of	100%	ABSTRACT OF ARTICLE:The aim of this study was (1) to evaluate the effects of long-term oxygen treatment (LTOT) in elderly patients with severe exacerbations of chronic obstructive pulmonary disease (COPD) and hypoxaemia, (2) to study the

Chronic Obstructive Pulmonary Disease (COPD)

Synonyms

Alpha-1-antitrypsin deficiency (AAt), Arterial blood gases (ABC
corticosteroids, cutis laxa, dyspnea, emphysema, inhaled ste
syndrome, plethysmograph, pulmonary disease, pulmonary fu
breath (SOB), smoking cessation, spirometry test, sputum ex

Background

Chronic obstructive pulmonary disease (COPD) is a type of lur
lungs, making it difficult to breathe. COPD is an overall term re
chronic bronchitis and emphysema, and possibly asthma or a
occur separately, it is common for patients to have both disea

Chronic bronchitis is characterized by an ongoing, mucus-proc
year for two consecutive years or more. Constant coughing ca
become scarred. Long-term irritation also leads to the producti
a result, less oxygen is able to enter the airways.

In addition, the excessive mucus in the bronchial tubes provide
infections are common complications of chronic bronchitis.

Emphysema is an incurable illness that occurs when the walls
and recoil, causing shortness of breath (SOB).

The Centers for Disease Control (CDC) report that COPD affec
Association, is the fourth leading cause of death in the United
severe lung infections, heart problems, or lung cancers.

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Integrative Therapies

Good scientific evidence:

Boswellia: Boswellia has been proposed as a potential therapy for asthma. Future studies are needed to assess the long-term efficacy and safety of boswellia and to compare the efficacy of boswellia to standard therapies. Boswellia should not be used for the relief of acute asthma exacerbations. Boswellia is generally believed to be safe when used as directed, although safety and toxicity have not been well studied in humans. Avoid if allergic to boswellia. Avoid with a history of stomach ulcers or stomach acid reflux disease (GERD). Use cautiously if taking lipid-soluble medications, agents metabolized by the liver's cytochrome P450 enzymes, or sedatives. Use cautiously with impaired liver function or liver damage or lung disorders. Use cautiously in children. Avoid if pregnant due to potential abortifacient effects or if breastfeeding.

Buteyko breathing technique: The Buteyko breathing technique (BBT) consists of breathing techniques, relaxation exercises, and asthma education. The technique aims to reduce hyperventilation. Studies have shown reduced use of rescue inhalers among patients receiving BBT. Improvements in other measures of asthma severity have not been shown. Additional study is warranted.

BBT is generally considered safe. Avoid with asthma that changes suddenly ("brittle asthma"). BBT may interact with asthma medications and should be used with caution when decreasing asthma medication. Asthma should be treated by a qualified healthcare professional and patients should always carry a rescue inhaler. Avoid if pregnant or breastfeeding.

Choline: Choline is possibly effective when taken orally for asthma. Choline supplements seem to decrease the severity of symptoms, number of symptomatic days and the need to use bronchodilators in asthma patients. There is some evidence that higher doses of 3 grams daily might be more effective than lower doses of 1.5 grams daily. Choline is generally regarded as safe and appears to be well-tolerated. Avoid if allergic/hypersensitive to choline, lecithin, or phosphatidylcholine. Use cautiously with kidney or liver disorders or trimethylaminuria. Use cautiously with a history of depression. If pregnant or breastfeeding it seems generally safe to consume choline within the recommended adequate intake (AI) parameters; supplementation outside of dietary intake is usually not necessary if a healthy diet is consumed.

Coleus: There is a lack of sufficient data to recommend for or against the use of coleus in the treatment of bronchial asthma. Preliminary data appears to be promising. However, larger, randomized, controlled trials are needed to confirm the safety and efficacy of coleus in bronchial asthma. Coleus is generally regarded as safe, as very few reports have documented adverse effects. However, only a few short-term trials have assessed its safety in a small sample size of patients. Avoid if allergic to *Coleus forskohlii* and related species or with bleeding disorders. Avoid if pregnant or breastfeeding.

Ephedra: Ephedra contains the chemicals ephedrine and pseudoephedrine, which are bronchodilators (expand the airways to assist in easier breathing). It has been used and studied to treat asthma and chronic obstructive pulmonary disease, such as asthmatic bronchoconstriction, in both children and adults. Other treatments such as beta-agonist inhalers (for example, albuterol) are more

Interactive Video on COPD

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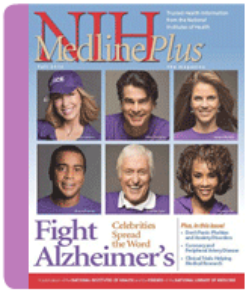

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- Weight Control

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13 OCT Health News

- National Latino AIDS Awareness Day on October 15, 2010
- Newer Therapies for Eye Disorder Not Tied to Heart Problems
- Non-Prescription 'Fashion' Contacts Can Harm Your Eyes

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Alopecia
Amyotrophic Lateral Sclerosis (ALS)

Angina
Anthrax
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Arthritis
Asthma

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Avian Influenza (Bird Flu)
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Bell's Palsy
Brain Cancer

Breast Cancer
Burns
Cataracts
Cerebral Palsy
Cold Sores (Herpes)

Colon Cancer
Congestive Heart Failure
COPD (Chronic Obstructive Pulmonary Disease)
Crohn's Disease
Cystic Fibrosis

Depression
Diabetes - Eye Complications

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Colposcopy
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Cystoscopy - Men

Cystoscopy - Women
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Echocardiography Stress Test
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Mammogram
MRI
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Shoulder Arthroscopy
Ultrasound
Upper GI Endoscopy

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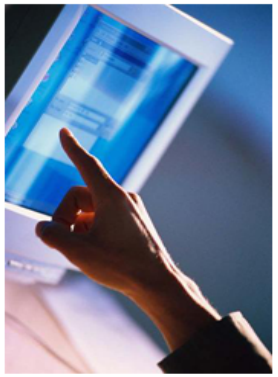
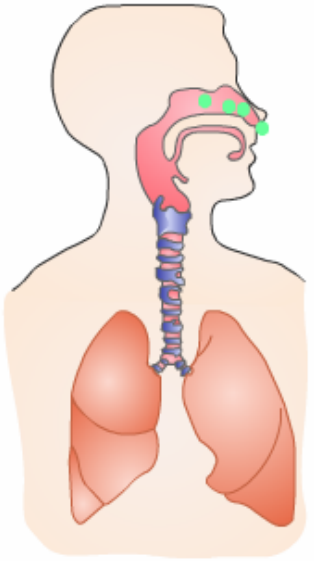
C-Section



Oxygen is vital for life. Without it, death occurs very rapidly.



EBM Exercise

- Login to www.eee.uci.edu with your UCInetID.
- Complete a short assignment: https://eee.uci.edu/quiz/CF1_EBM1
  - Read the case scenario: Overweight Male with Cardiac Risk
  - Come up with one background and one foreground question
  - Provide us with at least one resource (discussed in the lecture) for each question that would be likely to provide an answer.
- Be prepared to present your findings (Volunteers get a gift bag!)
- Submit your assignment online

EBM Exercise: Case Scenario

https://eee.uci.edu/quiz/CF1_EBM1

Overweight Male with Cardiac Risk (High Cholesterol) and Recent Shortness of Breath on Exertion

Bill Keller, a 45 year old male Caucasian businessman, travels frequently all over the U.S. as part of his sales job with Google. He has not seen a doctor for over 3 years.

His wife sent him in to discuss his diet because she noticed a weight gain of over 20# in the last 4 months. His father had a stressful lifestyle and died at age 50 years of a sudden heart attack.

Mr. Keller was at a health fair last weekend with his wife and a finger-prick blood test for cholesterol showed that it was "high" (about 300, he thinks). He has recently noticed that he gets "winded" very easily and this is worrisome.

Presentations
By
Future Doctors!!

Sample Background Questions

- What is Myocardial Infarction (MI)?
- What are the risk factors for heart disease?
- What are the risk factors for type 2 diabetes?
- How does hypercholesterolemia contribute to coronary heart disease risk?
- What is the difference between microvascular disease and macrovascular disease?

Sample Foreground Questions

- In an otherwise healthy male with a family history of heart disease, does prophylactic use of aspirin vs. no treatment reduce the risk of cardiovascular mortality?
- In an obese sedentary adult male, is exercise and a healthy diet (lifestyle modification) as effective as drug therapy for hypercholesterolemia to reduce the risk of cardiovascular disease?
- Given a 50-year old obese sedentary male with CVD risk factors, does reducing consumption of diet soda (artificially sweetened beverages) vs. continued consumption reduce the risk of diabetes and CV events?
- In patients >50 years of age, does routine screening for colon cancer decrease mortality?
- In men >50 years of age, does routine screening for prostate cancer with the Prostate Specific Antigen (PSA) test decrease mortality?

Reminders!!!

- Please submit your assignment Online
- Remember to attend your follow-up session on
  - Tue, Nov 30th or
  - Wed, Dec 1st

Questions and Comments??

Feel free to contact your medical librarians anytime!

Steve Clancy
Science Library
949-824-7309
sclancy@uci.edu
AIM: ucilibsclancy

Linda Murphy
Science Library
949-824-6419
lmurphy@uci.edu
AIM: uciliblmurphy

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Thank you!!