

# **Benefits of Clinical Decision Support for Medical Training, CPD and Revalidation**

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# Audience Polling Questions



# Using UpToDate for pain free CPD

Sarah Sutton  
Clinical Librarian  
University Hospitals of Leicester

# Introduction



## Sarah Sutton, Clinical Librarian University Hospitals of Leicester

- ▶ I have been a Clinical Librarian since 2002, and am probably the UK's longest serving Clinical Librarian. I am a founder member of the University Hospitals of Leicester NHS Trust, Clinical Librarian team. I particularly values the opportunity to work closely with clinical staff and being able to contribute to improved patient care. I am a keen advocate of the best possible evidence via the speediest and most effective route and believes this is the only way to avoid medical care based on Google and Wikipedia.
- ▶ I am a Chartered Librarian and have a BA in Library Studies and an MBA in Educational Management.
- ▶ I am on the Health Libraries Group Continuing Professional Development Group. I am also a member of the International Clinical Librarians Conference organising group and on the NPC for One Health, a federated international meeting incorporating the 2013 Annual Meeting of the Medical Library Association (MLA '13), the 11th International Congress on Medical Librarianship (ICML), the 7th International Conference of Animal Health Information Specialists (ICAHIS), and the 6th International Clinical Librarian Conference (ICLC).
- ▶ I have authored systematic reviews, commentaries and articles related to emergency medicine, diabetes and clinical librarianship and contributed to many health librarianship conferences.
- ▶ I am on the Librarians Advisory Board for UpToDate.
- ▶ This is me with Prof Ian Frazer, the inventor of the vaccine against cervical cancer associated human papillomavirus.

<http://www.di.uq.edu.au/ifrazerprofile>

# What am I going to talk about



- ▶ UpToDate at University Hospitals of Leicester
- ▶ How using NHS Athens Access lead us to investigate whether UpToDate could be used for CPD
- ▶ How it is done
- ▶ A few recommendations if you are considering using Clinical Decision Support technology for CPD

# Background



- ▶ Conducted trial of UpToDate in mid 2012 because many clinicians had been asking for it
- ▶ Trial was successful and trust subscribed in October 2012
- ▶ UpToDate is available to all clinicians in the trust.
- ▶ It can be accessed from anywhere in the world by using NHS Athens authentication.
- ▶ Disclaimer: UpToDate is one of many evidence based resources purchased by University Hospitals of Leicester NHS Trust, this presentation should not be interpreted as an endorsement of UpToDate by the Trust, to the disadvantage of other products.



# Clinicians are passionate about UpToDate

- ▶ I first heard of it from a registrar, who told me about needing good information in the middle of the night
- ▶ We had a trial several years ago and even though our internal access route was very complicated, it went viral, and we received a lot of emails from distressed clinicians, when we could not proceed to purchase.
- ▶ Clinicians like the breadth of coverage, and the ease of use. The layout is consistent across all the topics, so they know where to find the information they want quickly.
- ▶ Speed is a huge issue, and with UpToDate and other clinical decision support tools, clinicians know they can find timely good evidence and will be able to drill down the information using an interface they are familiar with.
- ▶ Thiele et al in 2010 wrote [Speed, accuracy, and confidence in Google, Ovid, PubMed, and UpToDate: results of a randomised trial.](#)
- ▶ “subjects at our institution were significantly more confident in UpToDate than in PubMed (differences between Google, Ovid, and PubMed were not statistically significant). This is surprising given that Google (44.5%) was chosen more commonly than PubMed (25.1%), Ovid (4.41%), or UpToDate (26.0%). As (presumably) none of the 56 users were search-naïve, one would expect users to choose the search tools in which they had the most confidence.”
- ▶ I feel this study reflects my experience of how clinicians feel about UpToDate. The study also listed UpToDate and Google as rated the fastest resources to use.



# Feedback from Clinicians

Feedback from the clinicians has been very enthusiastic

**'potentially life-saving'**

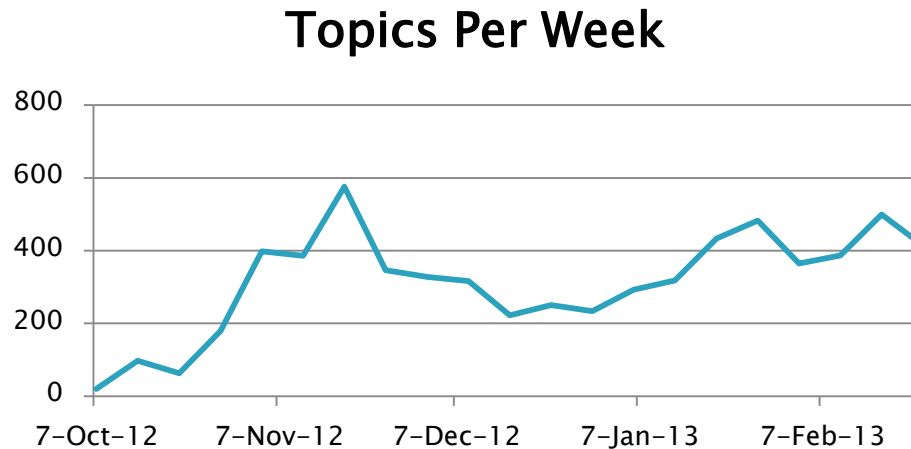
“UpToDate is a fantastic resource, I hope it is used as much as it should be”

“I would like to thank you and your team very much for making UpToDate available to us. It is such a great resource which will undoubtedly help many clinicians in day to day patient care using the best available evidence. It is excellent, reliable and focused. “

“UpToDate is an extremely valuable resource for clinicians”

# Usage statistics

UpToDate usage has grown steadily since October



# Unexpected Results

- ▶ We've seen increase in interest in Athens access since UpToDate
  - I recommend preparing leaflets with information on how to access Athens
- ▶ We're seeing an increase in use of other library resources since launch of UpToDate, it is raising all boats
- ▶ Because users access UpToDate with a unique user name and password, their individual activity is tracked within the system
- Which made us wonder, can we use it for CPD?

# GMC Revalidation



- ▶ Revalidation started on 3 December 2012 and the GMC expect to revalidate the majority of licensed doctors in the UK for the first time by March 2016.
- ▶ Revalidation is the process by which licensed doctors are required to demonstrate on a regular basis that they are up to date and fit to practise. Revalidation aims to give extra confidence to patients that their doctor is being regularly checked by their employer and the GMC.
- ▶ Licensed doctors have to revalidate, usually every five years, by having regular appraisals with their employer that are based on our core guidance for doctors, *Good Medical Practice*

# CPD Evidence should be mapped to the GMP Framework attributes and domains, using UpToDate falls under 1.1 and 1.2 as shown below, in Domain 1, Knowledge, skills and performance

## Good Medical Practice Framework

Numbers following the principles and values in this framework refer to paragraph numbers in GMP, except where preceded by MfD which refers to our booklet *Management for Doctors*; or Research which refers to *Good practice in research*.

### Domain 1 – Knowledge, skills and performance

Attributes	Examples of principles and values from <i>Good Medical Practice</i>
1.1 Maintain your professional performance	<ul style="list-style-type: none"><li>• Maintain knowledge of the law and other regulation relevant to your work (13)</li><li>• Keep knowledge and skills about your current work up to date (13)</li><li>• Participate in professional development and educational activities (12)</li><li>• Take part in and respond constructively to the outcome of systematic quality improvement activities (eg audit), appraisals and performance reviews (14e)</li></ul>
1.2 Apply knowledge and experience to practice	<ul style="list-style-type: none"><li>• Recognise and work within the limits of your competence (3a)</li><li>• If you work in research, follow appropriate national research governance guidelines (7i)</li><li>• If you are a teacher/trainer, apply the skills, attitudes and practice of a competent teacher/trainer (16)</li><li>• If you are a manager, work effectively as a manager (MfD 12, 17)</li><li>• Support patients in caring for themselves (21e)</li><li>• If you are in a clinical role:<ul style="list-style-type: none"><li>- Adequately assess the patient's conditions (2a)</li><li>- Provide or arrange advice, investigations or treatment where necessary (2b)</li><li>- Prescribe drugs or treatment, including repeat prescriptions, safely and appropriately (5b)</li><li>- Provide effective treatments based on the best available evidence (3c)</li><li>- Take steps to alleviate pain and distress whether or not a cure may be possible (3d)</li><li>- Consult colleagues, or refer patients to colleagues, when this is in the patient's best interests (2c, 3a, 3i, 54, 55)</li></ul></li></ul>

# Royal Colleges of Physicians

## Definitions of Categories of CPD

Categories assist people to classify CPD and to ensure that a balance of activities is undertaken. CPD credits can be either Clinical or Non-clinical and can be derived from Personal, Internal or External activities.

- Clinical credits concern any event in which the educational content directly relates to clinical topics.
- Non-clinical credits concern an educational event that is not directly related to clinical issues, e.g. management courses, ethical and legal issues, appraisal training.
- External credits are given for events outside the hospital or trust such as attending conferences and study days. These may be regional, national or international meetings, and are often held by specialist societies, or are meetings that attendees pay for. Any External meetings not found by searching in the CPD Diary should be entered under 'Unlisted External Meetings'.
- Internal credits are events within or organised by the hospital/trust, or provided solely for local clinicians. E.g. hospital Grand Rounds, journal clubs clinico-pathological conferences, local evening medical meetings, etc.
- **Personal credits relate to study such as private reading, lecturing, researching etc.**
- Exemption credits may only be claimed in exceptional circumstances when a physician is unable to meet the annual minimum requirements due to illness, maternity leave or long absence from work.

## Credit requirement per year and per five years

The annual minimum credit requirement is a total of 50 CPD Credits. Certain minimum and maximum restrictions apply to the categories of credits claimed:

- External – the annual minimum requirement for External credits is 25.
- Internal – There are no restrictions or requirements on the number of Internal credits claimed.
- **Personal – Only 10 Personal credits may count towards the total annual minimum credit requirement. However, you may record as many Personal credits as you have completed**

# Supporting Evidence

**Personal reading is allowed as part of CPD by many colleges\*, but should be done in this context:**

**“Scope of practice** – You should plan and participate in a wide range of CPD covering the scope of your practice. The learning must be relevant to the current and emerging knowledge and skills required for your specialty or practice, professional responsibilities and areas of development and work. CPD should be linked to the domains and attributes of the *Good Medical Practice* Framework.

**Reflection** – *Good Medical Practice* requires you to reflect on your practice and whether you are working to the relevant standards.

**Outcomes** – CPD should focus on outcomes or outputs rather than on inputs and a time-served approach. You should evaluate what you have learned and understood from your CPD activity and how it may impact on and improve your performance.

**Needs-based** – You should identify and participate in CPD based on your day-to-day work and what you perceive will be needed in the future to undertake your roles and responsibilities. CPD should also prepare you to address the unpredictable and changing nature of medical practice. Some CPD should be based on developing and considering new areas of competence, knowledge and skills. You should also participate in CPD that meets the needs of your patients, colleagues and your employer where appropriate.

**Appraisal and clinical governance** – You should make sure that your CPD is influenced by your participation in clinical governance processes, individual, organisational and national audit, workplace-based assessments, and other mechanisms that shed light on your professional and work practices.”


[Supporting information for appraisal and revalidation. GMC 2012](#)

[\\*Check this website for the rules for your college](#)

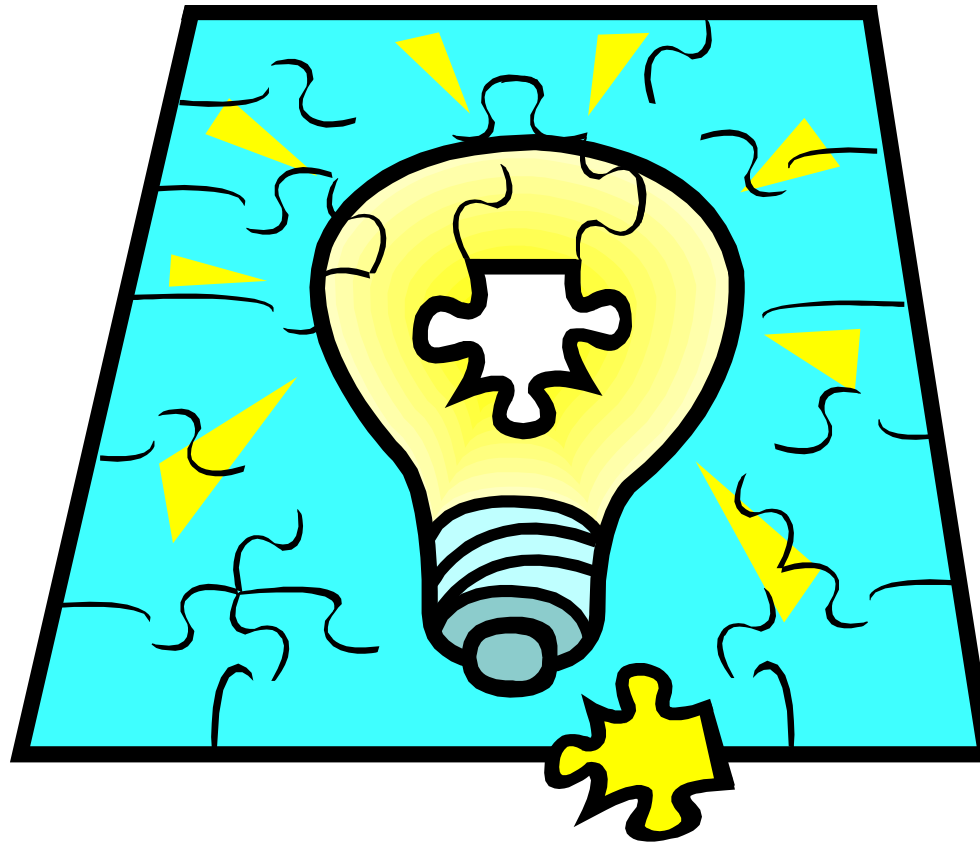




# The answer is YES (to our question, can UpToDate be used for CPD)

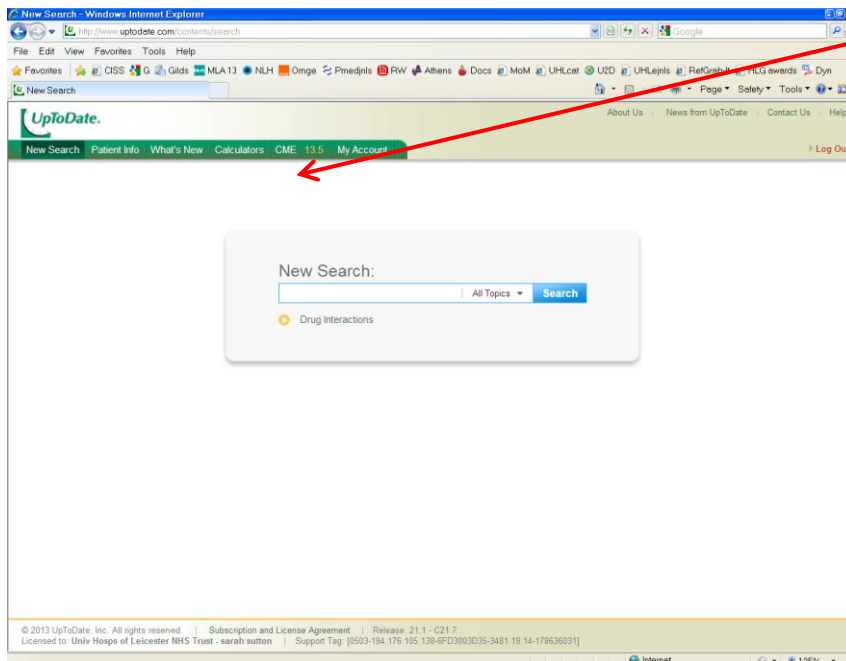
- ▶ Clinicians can use UpToDate for CPD because accessing UpToDate with an NHS Athens account automatically tracks individual usage activity
  - ▶ This makes for very pain-free CPD option
  - ▶ And allows clinicians to see a complete record of which topics they have accessed on what date, reflect on their learning and get a record of that learning for CPD purposes.
- 

# How do you do it?

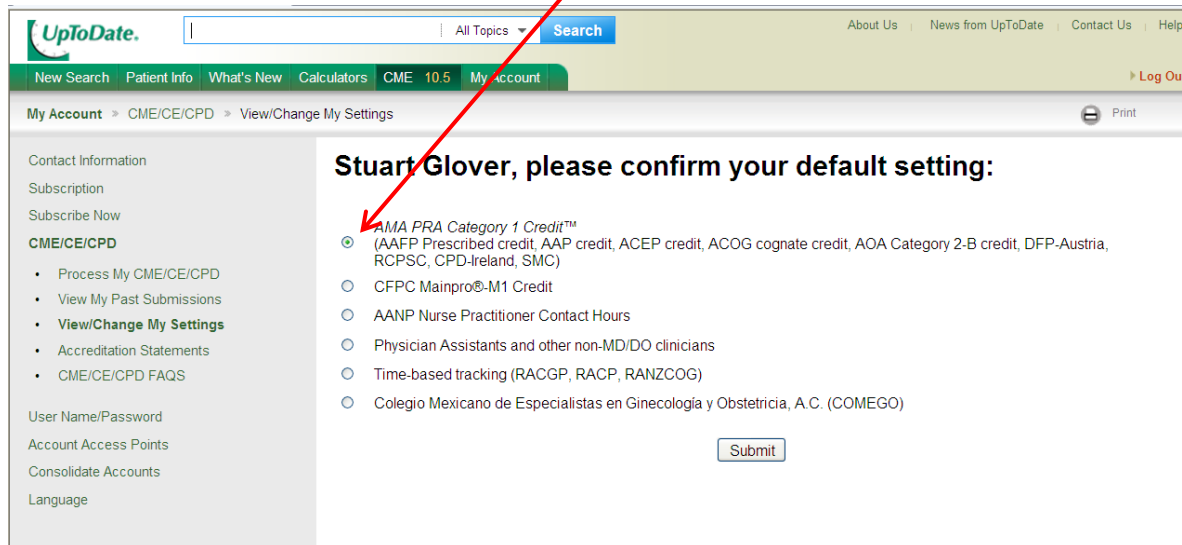


# When you have logged into UpToDate

- ▶ Select CME from the home page



When it asks you to confirm your default setting, select the top option.



The screenshot shows the UpToDate website interface. At the top, there is a search bar and navigation links. Below the search bar, there is a green navigation bar with links for 'New Search', 'Patient Info', 'What's New', 'Calculators', 'CME 10.5', and 'My Account'. The 'My Account' link is highlighted. Below the navigation bar, there is a breadcrumb trail: 'My Account > CME/CE/CPD > View/Change My Settings'. On the left side, there is a sidebar with links for 'Contact Information', 'Subscription', 'Subscribe Now', 'CME/CE/CPD', 'Process My CME/CE/CPD', 'View My Past Submissions', 'View/Change My Settings' (highlighted), 'Accreditation Statements', 'CME/CE/CPD FAQs', 'User Name/Password', 'Account Access Points', 'Consolidate Accounts', and 'Language'. The main content area has the heading 'Stuart Glover, please confirm your default setting:'. Below the heading, there is a list of radio button options. The first option, 'AMA PRA Category 1 Credit™ (AAFP Prescribed credit, AAP credit, ACEP credit, ACOG cognate credit, AOA Category 2-B credit, DFP-Austria, RCPSC, CPD-Ireland, SMC)', is selected. A red arrow points to this option. Below the list of options, there is a 'Submit' button.

UpToDate. | All Topics | Search

About Us | News from UpToDate | Contact Us | Help

New Search | Patient Info | What's New | Calculators | CME 10.5 | My Account | Log Out

My Account > CME/CE/CPD > View/Change My Settings | Print

Contact Information  
Subscription  
Subscribe Now  
**CME/CE/CPD**  
• Process My CME/CE/CPD  
• View My Past Submissions  
• **View/Change My Settings**  
• Accreditation Statements  
• CME/CE/CPD FAQs  
User Name/Password  
Account Access Points  
Consolidate Accounts  
Language

**Stuart Glover, please confirm your default setting:**

- ☒ AMA PRA Category 1 Credit™  
(AAFP Prescribed credit, AAP credit, ACEP credit, ACOG cognate credit, AOA Category 2-B credit, DFP-Austria, RCPSC, CPD-Ireland, SMC)
- ☐ CFPC Mainpro®-M1 Credit
- ☐ AANP Nurse Practitioner Contact Hours
- ☐ Physician Assistants and other non-MD/DO clinicians
- ☐ Time-based tracking (RACGP, RACP, RANZCOG)
- ☐ Colegio Mexicano de Especialistas en Ginecología y Obstetricia, A.C. (COMEGO)

Submit

# Providing the evidence

UpToDate. New Search | All Topics Search About Us | News from UpToDate | Contact Us | Help

New Search Patient Info What's New Calculators CME 10.5 My Account Log Out

My Account > CME/CE/CPD > CME/CE/CPD Reflection

**Stuart Glover Log for December 2012**  
 AMA PRA Category 1 Credit™  
 (AAFP Prescribed credit, AAP credit, AAPA equivalent credit, ACEP credit, ACOG cognate credit, AOA Category 2-B credit, DFP-Austria, RCPSC, CPD-Ireland, SMC)

- Verify your log and indicate for each search how you applied the information to practice.
- Click SAVE when you are done.
- Search sets that are not complete are highlighted in green.
- You may return to this log at any time to complete additional credits.

Date	Source	Search terms/Clinical question	Topic(s) Reviewed	I searched for information about (Please check your primary response)	How did you apply the information to your practice? (Please check your primary response)	Credits
Dec 21 2012 10:06:18AM GMT	WEB (Univ Hosp of Leicester NHS Trust)	brain tumor children	10:17:46AM GMT Drug prescribing for older adults 10:06:29AM GMT Overview of the management of central nervous system tumors in children	<input type="checkbox"/> Clinical manifestations <input type="checkbox"/> Diagnosis <input checked="" type="checkbox"/> Treatment <input type="checkbox"/> Prognosis <input type="checkbox"/> Prevention <input type="checkbox"/> Other	<input type="checkbox"/> This modified my plan <input checked="" type="checkbox"/> This reinforced my plan <input type="checkbox"/> I need more information	0.5
Dec 14 2012 09:38:34AM GMT	WEB (Univ Hosp of Leicester NHS Trust)	bronchiectasis	09:41:35AM GMT Clinical manifestations and diagnosis of bronchiectasis in adults 09:40:13AM GMT Clinical manifestations and diagnosis of bronchiectasis in adults 09:38:53AM GMT Treatment of bronchiectasis in adults	<input checked="" type="checkbox"/> Clinical manifestations <input type="checkbox"/> Diagnosis <input type="checkbox"/> Treatment <input type="checkbox"/> Prognosis <input type="checkbox"/> Prevention <input type="checkbox"/> Other	<input type="checkbox"/> This modified my plan <input checked="" type="checkbox"/> This reinforced my plan <input type="checkbox"/> I need more information	0.5

- ▶ Users can print out helpful records of their reading by the month, and update them to show why they were reading the information and what they have done with the information.
- ▶ Please note users won't get CPD credits under the US scheme for this, or accrue automatic UK CPD either.

# Recommendations to promote UpToDate and encourage use of CPD option



- ▶ Communicate often and in many ways as possible – intranet, handouts, induction, emails, grand rounds – do them all and do them repeatedly
- ▶ Take advantage of any ready-made communications from the vendor, add information about CPD and NHS Athens
- ▶ Invite vendor to host training and information session

# Researchers have established that Clinical Decision Support (CDS) plays an important role in medical education and CPD

*Speaker: Kathy Brenock, M.S., UpToDate Product Marketing*



# Introduction



Kathy Brenock is a senior manager of product marketing at UpToDate and a master's level psychiatric clinician with experience working inpatient and outpatient as a director of psychiatric emergency teams.

# What is UpToDate?



UpToDate® is an evidence-based clinical decision support system authored by physicians to help clinicians make the right decisions at the point of care.

# Many benefits of high-quality CDS

Quick answers to clinical questions saves clinicians time

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Improves outcomes

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Avoidance of unnecessary tests and referrals

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Reduces cost of care



# Role in training and education is often an overlooked benefit

CDS has an important role in medical education

- Training
- Continuing education
- Revalidation



# Traditional forms of CPD are less effective for achieving sustained learning

## Retention rate of learners is:

- 5% when they learn from lecture (classic Continuing Education format)
- 75% when learners practice what they learn
- **90%** when learners use what they have learned immediately

The Learning Pyramid. National Training Laboratories for Applied Behavioral Science, Alexandria, VA.

# Traditional forms of CPD are less effective for achieving sustained learning

Studies of physicians who attend CME conferences or read biomedical literature on their own suggest that retention rates were less than 10%.

Also found that didactic types of education do not change physician performance or impact patient care.

McDonald, F.S., S.L. Zeger and J.C. Kolars, *Factors associated with medical knowledge acquisition during internal medicine residency*. J Gen Intern Med. 2007. 22(7): p.926-8

# Clinical Decision Support technology offers more effective alternative

Interactive learning, and learning that is sequenced or reinforced in multiple sessions improves retention and has the potential to improve quality of care.

Thus, resources like UpToDate that can provide learning at the point of care have great promise in facilitating continual learning.

Davis, D., et al., *Impact of formal continuing medical education: do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes?* JAMA, 1999. 282(9); p. 867-74

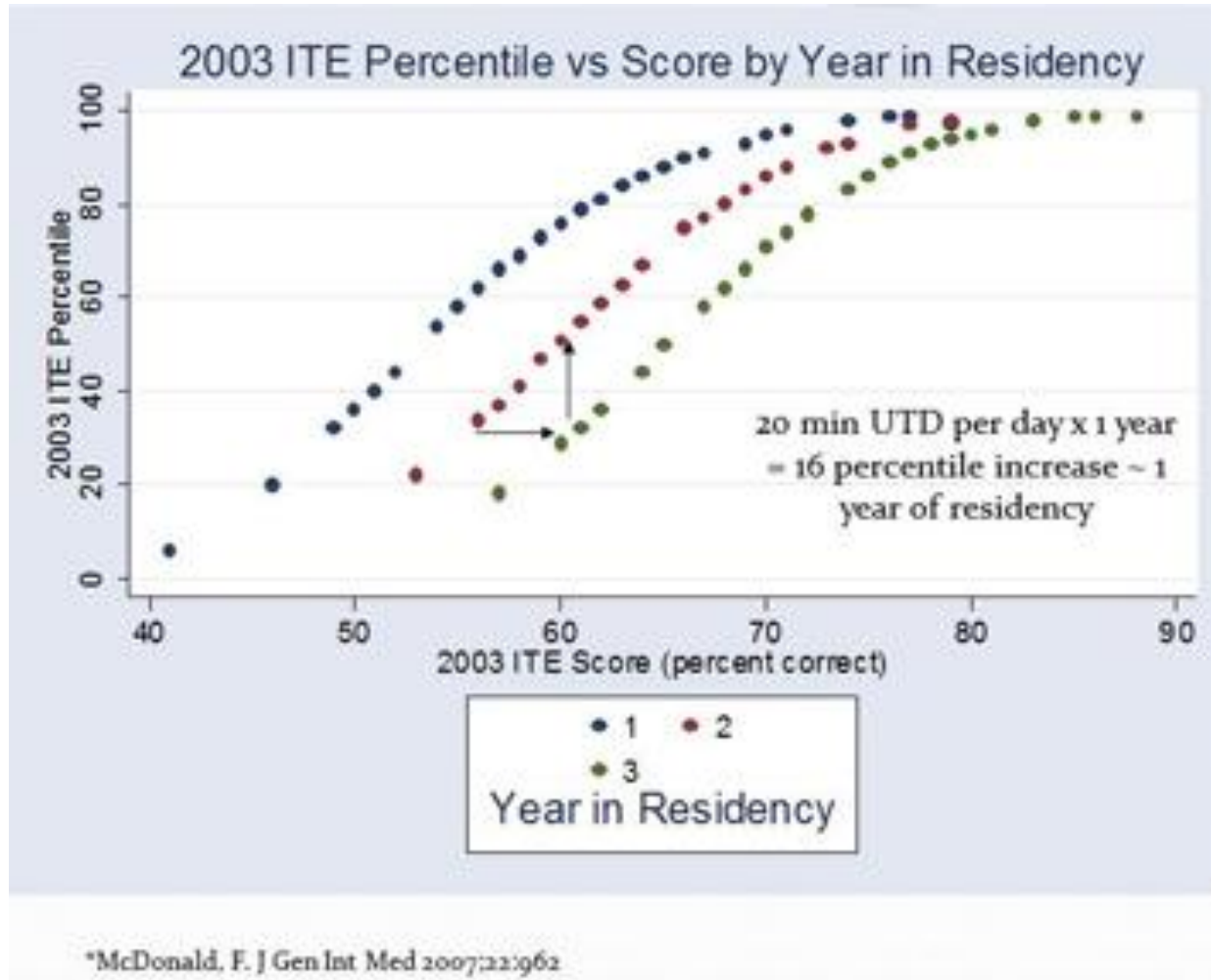


# Using UpToDate Increases Medical Knowledge



20 Minutes a Day  
Equals An Entire Year  
of Residency

# Using UpToDate Increases Medical Knowledge



McDonald, F, Zeger, SC, Kolars, JC. Factors Associated with Medical Knowledge Acquisition During Internal Medicine Residency J Gen Intern Med 2007.

# Study by Mayo Clinic showed effectiveness of UpToDate for recertification

A 2012 study conducted by the Mayo Clinical established that frequent use of electronic resources such as UpToDate was associated with enhanced IM-MOCE (Internal Medicine Maintenance of Certification Examinations used in the US) performance.

Darcy A. Reed, MD, MPH, Colin P. West, MD, PhD, Eric S. Holmboe, MD, Andrew J. Halvorsen, MS, Rebecca S. Lipner, PhD, Carola Jacobs, BA, and Furman S. McDonald, MD, MPH. *Relationship of Electronic Medical Knowledge Resource Use and Practice Characteristics with Internal Medicine Maintenance of Certification Examination Scores*. J Gen Intern Med. 2012 Feb.

# Most Used Resource for Third-Year Medical Students for Attending Rounds and Admissions

## Title:

*Resource utilization patterns of third-year medical students.*

Survey of 130 third-year medical students in Pittsburgh

Clin Teach. 2011 Mar;8(1):43-7. doi: 10.1111/j.1743-498X.2010.00393.x.

General Internal Medicine, University of Pittsburgh, Philadelphia, USA.

PMID: 21324072

***UpToDate most commonly used resource for attending rounds (64%) and for admitting patients (67%)***



# UpToDate Most Commonly Used Resource among Residents in the US

## Aim:

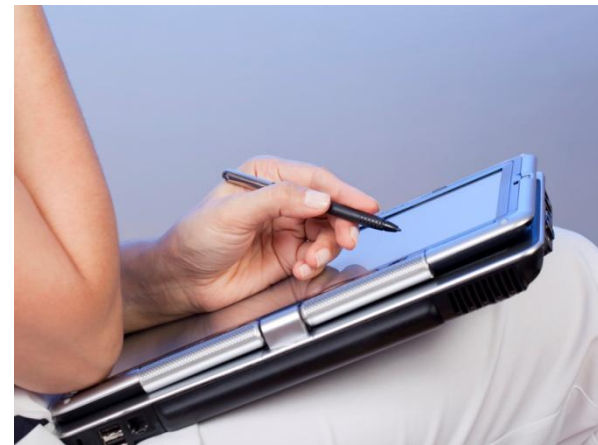
To assess residents' reading habits and preferred educational resources

- National survey of five major internal medicine training programs
- ***95% reported UpToDate was the most effective resource for learning***
- ***90% reported that UpToDate was their first choice for answering clinical questions***

## Title:

A multi-institutional survey of internal medicine residents' learning habits.

Mayo Clinic College of Medicine, 200 First Street SW, Rochester, MN 55905, [USA.edson.randall@mayo.edu](mailto:USA.edson.randall@mayo.edu)  
Med Teach. 2010;32(9):773-5. PMID: 20795809



# UpToDate most useful info source for residents

Internal medicine residents practicing self-directed learning by answering patient specific clinical questions reported improvement in knowledge and changes in patient care decisions

The study also found that the residents rated UpToDate as the most useful final information source.

Leff B, Harper GM. *The reading habits of medicine clerks at one medical school: frequency, usefulness, and difficulties.* Acad Med. 2006 May;81(5):489-94.



# Better Decisions Improve Quality and Efficiency

Cook County Hospital, Chicago, IL



- Test: Critical decisions assessed before and after providing clinical knowledge support
- Result: Attending physicians changed treatment decisions for 18% of patients
- Insight: UpToDate drove most decision changes



# Better Decisions Improve Quality and Efficiency

- **Main findings**

- Treatment changed in 18% of patients
- Most changed decisions considered to have improved care of patient
- Many of these decisions would likely shorten LOS
- Some may have prevented an adverse event



Problem	Original decision	New decision	Possible Impact
Nonfunctioning AV graft	Place temporary vascular access	Fibrinolytic therapy	Restore graft function Avoid new procedure
Severe labile HTN	Diltiazem	Stop diltiazem add atenolol	Improved blood pressure control
Community acquired pneumonia	IV antibiotics	Oral antibiotics	Inpatient stay avoided
Diastolic heart failure	Furosemide, isosorbide, hydralazine	Stop hydralazine, add atenolol	Improved symptom control
Inoperable hepatocellular cancer with ascites	Transarterial chemo-embolization	Palliative care only	Complications avoided Decreased cost Improved symptom control

# Changes Decisions

Singapore Med J 2012 Feb;53(2):116-20.

Utility of the electronic information resource UpToDate for clinical decision-making at bedside rounds.

Phua J, See KC, Khalizah HJ, Low, SP, Lim TK

“UpToDate searches led to a change in investigations, diagnosis or management 37% of the time.

Conclusion: Incorporating UpToDate searches into daily bedside rounds was feasible and useful in clinical decision-making.”

Source: Division of Respiratory and Critical Care Medicine, Department of Medicine, National University Hospital, National University Health System Tower Block, Level 10, 1E Kent Ridge Road, Singapore 119228



# Over 4 Million Physician Responses on UpToDate Usage

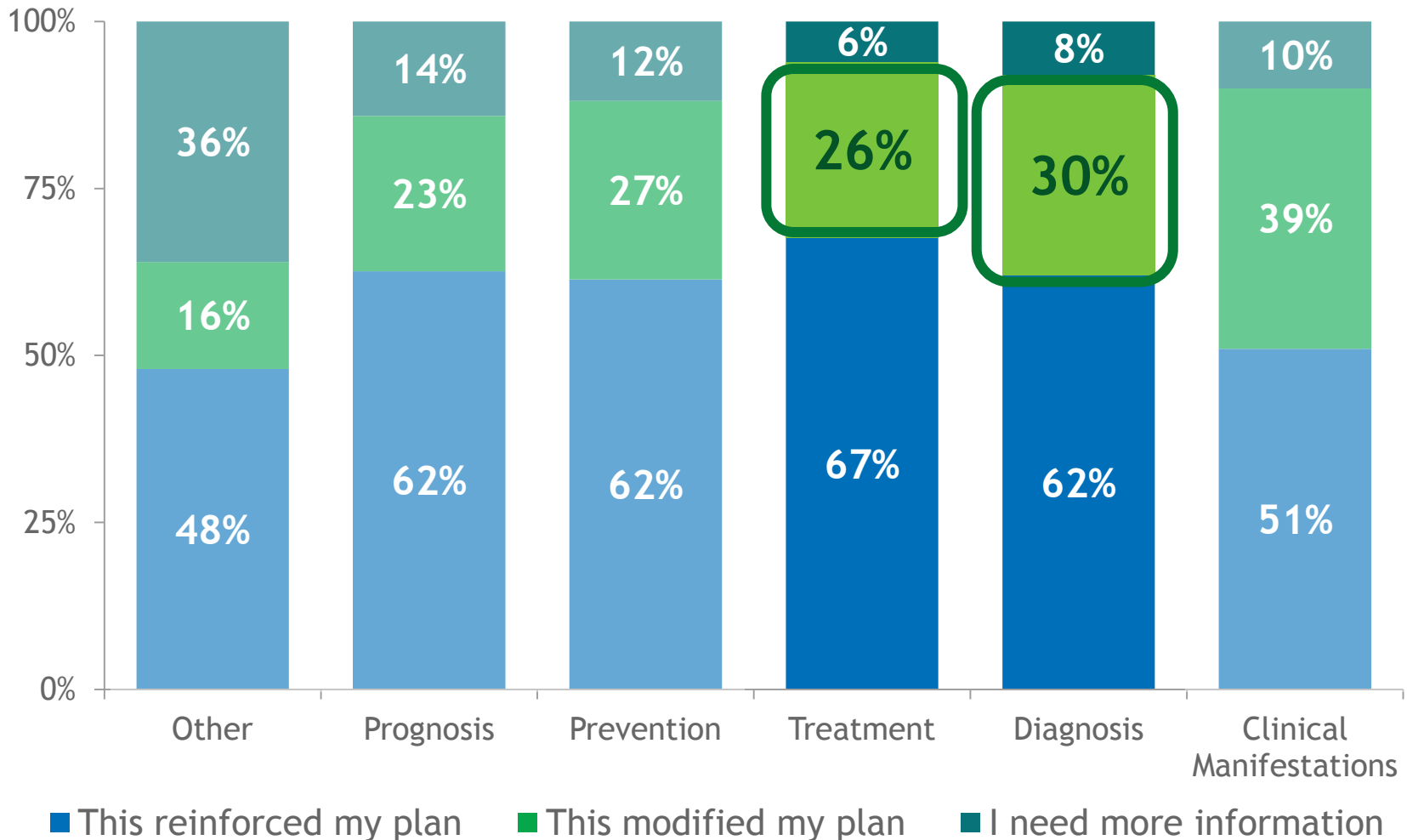
- Accredited Provider of *AMA PRA Category 1* credits to physicians
- Accreditation Council requires documentation of 3 steps:
  - The clinical question or search
  - Review of clinical content
  - Reflection on how the information is used in physician practice
- 4 million reflections on impact of UpToDate on physician practice

# I Searched for Information About:

	Percent of Total Responses	Total Responses
Clinical Manifestations	15.4%	634,274
Diagnosis	25.4%	1,050,355
Prevention	2.1%	87,374
Prognosis	3.5%	144,889
Treatment	48.3%	2,010,770
Other	5.3%	221,570
Total Responses		4,149,232

# Results by Question Types

(n= 4.1 Million CME Responses )



# Benefits of CDS to CPD

Best method for sustained learning of medical information

Significantly impacts medical training

Saves time and money traditionally spent on conference attendance

Clinician satisfaction

# Audience Polling Questions



- Q&A





• END

