

The Teaching PHYSICIAN

For those who teach students and residents in family medicine



■ Information Technology and Teaching in the Office *Cloud Computing for Teaching Physicians*

By Richard Usatine, MD, University of Texas Health Science Center at San Antonio

What is the “cloud”? The “cloud” is a new term used to refer to services on the Internet. When the Internet started, we began to call it the “Web” because it interconnected computers like a spider web across the globe. But most people kept their own files and software on their own computers. Now it is common for people to store their files on servers and access software also found on servers in the cloud. Cloud computing is merely the use of files, software, hardware, and services that one accesses through the Internet. Examples of cloud computing include keeping your e-mail files on the servers run by Google, Yahoo, or Hotmail. However, cloud computing has been taken to new heights with the use of services such as Google docs, online photo albums, and online file storage.

“Google docs” allows you to write, store, share, and edit your files with others. This is a nice free way to col-

laboratively work on document with other teachers or your students. The software and the storage space are out there on the cloud, and all you need is a free Google/Gmail account to make this happen.

There are many ways to share photographs online these days. Services such as Fotki, Google Picassa, Snapfish, and Shutterfly are just a few to choose from. When digital cameras first became available in the 1990s I lent out these cameras to students on their family medicine clerkship to photograph patient conditions for sharing on Photo Rounds. At first the students would e-mail photos to us to show in our small-group sessions. Then we discovered cloud computing, and we directed our students to upload their photographs to an online photographic album. During our Photo Rounds sessions we opened up the album and discussed the clinical images. By using password protection, the photographs were not public and while we had patients sign consents we also had the security protection of a private photo album. This is a great strategy for sharing clinical photos with students and colleagues and also works well with friends and family.

The final example I would like to share is the use of online file storage. I personally use the services of Dropbox to protect my files from loss



through hard drive or hardware failure. Other providers of this service include ElephantDrive, Livedrive, Mozy, and Rackspace. As a medical photographer and writer, I learned early the importance of never having a single digital copy of my photographs or files. I have compulsively backed up my files on external hard drives for years. However, if a computer crashes, there will often be new files that you did not get a chance to backup. Also, if you use multiple computers at work, home, and on the go you may have one file that you want and discover that the file is only on the computer currently unavailable to you. Online file storage solves these problems immediately. When you open an account with a cloud provider you will have a folder on your computer that will synchronize with a distant server whenever your computer is connected to the Internet. You then put this folder on your desktop, laptop, smartphone, and tablet computers (iPads, Android

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Cloud Computing

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tablets) so that where ever you are you will have access to your files. While this works best during an active connection with the Internet, the synchronization occurs in the background during Internet connection so the files can remain on your computers even when you're not connected to the Internet.

I no longer need to use USB jump drives to transfer files from my desktop to laptop and vice versa. Recently some water splashed onto my laptop and

the computer died. Fortunately, cloud computing meant that all my files were safe in a remote location on a protected server. You can start using this type of cloud computing for free with introductory offers for 2 gigabytes of free server space. This can save you from a disastrous computer crash. It also saves time by automatically synchronizing files on many computing devices. You can selectively share a subfolder of files with a colleague or student using this service. For example, I run a family medicine underserved dermatology fellowship, and my fellows and I share our images using Dropbox. I am currently working on the second edition of the *Color*

Atlas of Family Medicine, and we use a shared folder to make our updated chapters available to the co-editors.

These are just a few examples of how you can make the "cloud" useful in education and your personal life. It is time to leave the earthly web and rise to the level of the clouds. You might even have some fun doing it.

Richard Usatine, MD, University of Texas Health Science Center at San Antonio, Editor

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■ Teaching Points—A 2-minute Mini-lecture *Cardiac Risk Assessment*

By William Cayley, MD, MDiv, University of Wisconsin

Editor's note: The process of the 2-minute mini-lecture is to get a commitment, probe for supporting evidence, reinforce what was right, correct any mistakes, and teach general rules. William Cayley, MD, MDiv, at the University of Wisconsin Department of Family Medicine authored this scenario in which he (Dr C) works with a third-year student (M3) in considering screening for cardiovascular disease.

M3: I just saw our next patient who is here for a general physical. His father recently had a heart attack at age 70, and now he wants to be sure he's healthy. I took his history, and he had cholesterol levels checked at work last month, but I'm not quite sure what else to do. Doesn't he also need more blood work and an ECG, a stress test, and some other testing to be sure he's healthy?

Dr C: That's a good question—how might you go about deciding what to recommend?

M3: Well, he's pretty healthy and active, and he doesn't smoke, so it seems like

a lot of testing might be overkill. On the other hand, since he's 40 and a man, isn't his risk higher than a woman or someone younger?

Dr C: Good thought. As it turns out, the United States Preventive Services Task Force (USPSTF) addresses exactly that kind of question. They put together all of the evidence into comprehensive reviews, related to preventive medicine topics. Fortunately, in the age of the Internet, it's easy to find their most up-to-date recommendations at <http://www.uspreventiveservicestaskforce.org/uspsttopics.htm>.

M3: Wow! That's a pretty long list—do I have to review each one of those articles?

Dr C: That would take all day, wouldn't it? Their "Electronic Preventive Services Selector" (EPSS) gives you specific guidance quickly. You just have to type in gender and age and then answer if the patient is currently pregnant, sexually active, or using tobacco. Let's look at the EPSS Web site at <http://epss.ahrq.gov/ePSS/search.jsp>.

M3: That's great—I assume those ratings of A, B, C, D, and I have something to do with how important each type of testing is?

Dr C: Right. A and B grade recommendations should be routinely offered to patients. You can consider some of the C recommendations and I recommendations depending on the actual patient, but D recommendations are discouraged. What does this table say about cardiac screening in particular?

M3: Hmm. We should definitely screen for blood pressure, which we did with his vitals, and for cholesterol levels—he had those drawn recently. We should also talk about healthy diet, and about weight control, although he's already active and his BMI is 25.

Dr C: Read on. What about some of the other testing you mentioned?

M3: It says that for low-risk adults, we should NOT use ECG, a stress test, or CT scan to screen for heart disease!

Dr C: That's right, and there is also a link to the details of the recommendations if you want to read further.

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Cardiac Risk Assessment

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M3: This is great information. I'd like to give it to the patient, but this medical jargon might be a bit confusing.

Dr C: Right again, but they do have another patient-oriented tool that conveys similar information in patient-friendly language, at <http://www.healthfinder.gov/>.

M3: These are great resources. But what about his cholesterol level? His LDL was 125. If his father had a heart attack, don't we need to be sure he has a really low cholesterol level?

Dr C: Let's look at some of the specific tools that USPSTF suggests. The "Tools" page lists many helpful clinical calculators, including the link to the "Framingham CHD Risk Calculator" maintained by the National Cholesterol Education Program (NCEP) at <http://hp2010.nhlbi.nih.net/atp/iii/calculator.asp?usertype=prof>.

M3: OK, so if we put in his age of 40, his blood pressure of 135, and the fact he's not on medications, and his cholesterol levels of 200 (LDL) and 35 (HDL), plus the fact he does not smoke, they tell us his cardiac risk is only 2%.

Dr C: Very good, and that final summary page makes a nice handout to give the patient as well. I'll tell you what: we need to keep moving right now. But let me ask you to skim through the summary of the Adult Treatment Panel (ATP) guidelines. Here's the link at the bottom of that summary page. And we'll talk about the cutoffs for treatment tomorrow. Bottom line is that he does not need a statin today! (http://nhlbi.nih.gov/guidelines/cholesterol/atp_iii.htm)

Alec Chessman, MD, Medical University of South Carolina, Editor

**Helping You Teach Better—
The STFM Resource Library**

Adult Preventive Screening Exam 2011 www.fmdrl.org/3408

This PowerPoint lecture's learning objectives help you understand the basic epidemiology principles upon which screening and prevention are based.

An Innovative Approach to Same Day Sick Visits in an FMC and PCMH www.fmdrl.org/3342

This presentation describes an innovative and successful same-day access strategy furthering the Patient-centered Medical Home concept of enhanced access. The strategy is applicable to any type practice setting.

Medical Resources for your iPhone/iPod Touch . . . www.fmdrl.org/2423

This is a newly updated, handy list of software applications for iOS devices, namely the iPhone, iPod Touch, and iPad, which provide information and decision support in medical care.

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Clinical Guidelines That Can Improve Your Care

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Teaching Points—A 2-minute Mini-lecture

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■ Clinical Guidelines That Can Improve Your Care *Child Passenger Safety. Committee on Injury, Violence, and Poison Prevention, American Academy of Pediatrics*

By Diana L. Heiman, MD, University of Connecticut

How many of you remember riding in the back seat of the car, sitting between the seats leaning into the front? I definitely do, growing up in the 1970s!

Car safety has increased exponentially in the last 30+ years, and no one would think of allowing their children to sit unrestrained as we commonly did. The American Academy of Pediatrics (AAP) recently updated their child passenger guideline, and I thought it a timely topic to discuss, since September 18–24 was National Child Passenger Safety Week.

The Policy is accompanied by a more detailed Technical Report and represents an evidence-based recommendation for car safety. They also provide an excellent algorithm for recommending the most appropriate safety restraint for children of all ages (<http://aappolicy.aappublications.org/cgi/reprint/pediatrics;127/4/788.pdf>). Also, there are myriad resources on car safety seats and transportation safety on the AAP website (<http://www.aap.org/healthtopics/carseatsafety.cfm>). Some resources are appropriate for patients and families, and others are directed toward medical professionals.

There are five best practice recommendations in the policy:

1. All infants and toddlers should ride in a rear-facing car safety seat (CSS) until they are 2 years of age or until they reach the highest weight or height allowed by the manufacturer of their CSS.

2. All children 2 years or older, or those younger than 2 years who have outgrown the rear-facing weight or height limit for their CSS, should use a

forward-facing CSS with a harness for as long as possible, up to the highest weight or height allowed by the manufacturer of their CSS.

3. All children whose weight or height is above the forward-facing limit for their CSS should use a belt-positioning



booster seat until the vehicle lap-and-shoulder seat belt fits properly, typically when they have reached 4 feet 9 inches in height and are between 8 and 12 years of age.

4. When children are old enough and large enough to use the vehicle seat belt alone, they should always use lap-and-shoulder seat belts for optimal protection.

5. All children younger than 13 years should be restrained in the rear seats of vehicles for optimal protection.

The recommendations have significantly changed since the 2002 update regarding the recommendation that all children under the age of 2 years be in rear-facing seats. This change is based on new data from the United States and Sweden that the chance of significant injury is reduced up to 90% when children are in a rear-facing car seat versus an unrestrained child. In Sweden, it is policy that children remain in rear-facing car seats until they are 4 years old as well.

There are many resources to assist with proper CSS installation: National Child Passenger Safety Certification Web site (<http://cert.safekids.org>), NHTSA child safety seat inspection station locator (www.nhtsa.dot.gov/cps/cpsfitting/index.cfm), and car seat check-up events (www.safekidsweb.org/events/events.asp). Some of the best practice recommendations are also applicable to air travel (refer to Technical Report at <http://pediatrics.aappublications.org/content/127/4/e1050.full.html>). The policy does not provide recommendations for children with special needs but refers the clinician to other resources for those patients.

It is important to remember to counsel all parents of children from infancy to adolescence on transportation safety at all well child visits.

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■ POEMs for the Teaching Physician

Exercise Improves Symptom Control in IBS

Clinical Question: Does regular exercise improve symptoms in patients with irritable bowel syndrome?

Study Design: Randomized controlled trial (nonblinded)

Funding: Government

Allocation: Concealed

Setting: Outpatient (specialty)

Synopsis: To date, there have been no randomized trials of exercise as a treatment for IBS. These Swedish researchers identified 162 patients who met the Rome II criteria for IBS, 102 of whom were not already actively exercising and agreed to participate. The median age of participants was 33 years (range=17–67 years), and 89% were women. Allocation was appropriately concealed, although the study was not masked once it began. Analysis was both per protocol and by intention to treat, with 75 patients completing

the study (11 dropped out before the first session, 16 at a later point). The intervention was quite minimal: a phone call from a physical therapist once or twice a month encouraging patients to exercise. Several standard surveys including the IBS Severity Scoring System, the IBS Quality of Life score, the Short Form (36) Health Survey, and the Fatigue Impact Scale were used to evaluate the effect of exercise at baseline and after 12 weeks. The IBS Severity Score improved significantly more in the physical activity group (37 points more in the intention-to-treat analysis, 46 more in the per-protocol analysis), a difference that is of borderline clinical significance. There were also significant improvements in physical role and physical function subscales of the IBS Quality of Life score. The general trend across all scales and outcomes was for modest improvements in the physical activity group compared with the usual care group. The percentage with a clinically significant improvement in the IBS Severity Score was 43% in the physical

activity group and 26% in the control group ($P=.07$).

Bottom Line: In this small and somewhat underpowered randomized trial, exercise appears to improve symptoms in patients with irritable bowel syndrome (IBS). (LOE = 1b-)

Source article: Johannesson E, Simrén M, Strid H, Bajor A, Sadik R. Physical activity improves symptoms in irritable bowel syndrome: a randomized controlled trial. *Am J Gastroenterol* 2011;106(5):915-22.

LOE—level of evidence. This is on a scale of 1a (best) to 5 (worst). 1b for an article about treatment is a well-designed randomized controlled trial with a narrow confidence interval.

Mark Ebell, MD, MS, Michigan State University, Editor

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■ From the “Evidence-Based Practice” HelpDesk Answers Published by Family Physicians Inquiries Network (FPIN)

What Is the Best Method for Ablating the Nail Plate During Surgical Treatment of an Ingrown Toe Nail?

By Robert L. Gauer, MD, and Timothy H. Cho, MD, Womack FMR Clinic, Fort Bragg, NC

Evidence-based Answer

Partial or total nail avulsion followed by chemical matrixectomy with phenol is the preferred method for nail plate ablation for recurrence of ingrown toenails. (SOR: A, based on a systematic review.) However, sodium hydroxide ablation may have equal efficacy. (SOR: B, based on a single RCT.) Cryotherapy, CO₂ laser, and radio-wave ablation have less data but are acceptable alternative treatment options. (SOR: C, based on a single RCT, a retrospective case study, and a case series.)

A Cochrane meta-analysis of nine trials (n=1,094 procedures) compared different treatment modalities for ingrown toenails. Procedures investigated included avulsion with and without phenol, excisional surgery with phenol, or excisional surgery alone. Primary outcomes were regrowth and relief of symptoms.¹

The use of phenol with a total or partial nail avulsion significantly reduced the rate of symptomatic recurrence (OR 0.07; 95% CI, 0.04–0.12) with greater patient satisfaction. Simple avulsion with phenolization was also more effective than an invasive surgical excision to prevent symptomatic recurrence

after 6 months or more (OR 0.44; 95% CI, 0.24–0.80). However, phenol use was associated with an increased rate of postoperative infection, compared with not using phenol (OR 5.69; 95% CI, 1.93–16.8). Despite one trial having more than twice the number of patients than any other trial in this systematic review, sensitivity analysis was still statistically significant, with a 50% reduction in recurrence with simple avulsion and phenolization.¹

An RCT (n=19) compared cryotherapy with phenol ablation. A liquid nitrogen cryoprobe was placed on the germinal matrix for 20 seconds and repeated, whereas phenol (concentration not specified) was applied three times for 1 minute each. Outcomes were equal in healing (25.9 days for phenol and 27.1 days for liquid nitrogen), infection rates (no postoperative infections), and patient satisfaction (100% satisfaction).²

Another RCT (n=100) compared 80% phenol applied for 3 minutes with 10% sodium hydroxide applied for 20 seconds and repeated once. There were no significant differences in pain or patient satisfaction. Regrowth at 1 year was not statistically different.³

A case series (n=73 procedures) using a radiowave ablation technique with

a frequency of 3.8 MHz applied for 2 to 4 seconds noted a 98.63% success rate (defined as no regrowth in 12 months) and subjective satisfaction in cosmetic and functional outcomes. Patients with minor presurgical infections took a prophylactic antibiotic prior to the therapy.⁴

A retrospective case study (n=154) using CO₂ laser therapy showed a 2.1% recurrence rate and an infection rate of 6.6%. Most patients (95.5%) reported mild to no pain.⁵

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The opinions and assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Medical Department of the US Army or the US Army Service at large.

SOR—strength of recommendation

LOE—level of evidence

Jon O. Neher, MD, University of Washington, Editor

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