scocitnews

The Steering Committee on Clinical Information Technology

Volume 2, Number 2, Fall 2004

From the Chairperson

By S. Andrew Spooner, MD, MS, FAAP
Chairperson, Steering Committee on Clinical Information Technology

This letter will be brief, mostly because we do not have a lot of room in the Steering Committee on Clinical Information Technology (SCOCIT) newsletter these days.

Due to the increasingly important role of information technology in pediatric practice, the content of our newsletters of late has been plentiful. The newsletters have been enthusiastically edited by SCOCIT members and expertly produced by the American Academy of Pediatrics (AAP). There is nowhere else one can read articles dedicated to pediatric information technology.

Membership in SCOCIT still costs $25 per year. If you have colleagues who are struggling to learn about new technology in pediatrics, tell them to join SCOCIT so they can get the newsletter. Not only will they get the world's only pediatric information technology content collection, they also will increase the ranks of SCOCIT. Why is a big SCOCIT good? Because if SCOCIT has a lot of members, then the AAP will begin to tailor more of its educational programming and advocacy efforts toward technology issues. Currently, SCOCIT has a membership roster of about 490. It needs to be bigger, because a lot more than 1% of pediatricians are concerned about how to best use technology.

Spread the word and share this newsletter. If your friends and colleagues like it, ask them to join SCOCIT. It is the best bargain in technology publishing today (if you are a pediatrician).

This will be my last "From the Chairperson." I have served on the Executive Committee of the Section on Computers and Other Technologies (SCOT), the Task Force on Medical Informatics (TFOMI), or SCOCIT since the fall of 1994. A lot has happened in the interim, but the accelerated pace of new developments promises that the best is yet to come. I plan to be part of SCOCIT to watch it happen. Will you?

inside this issue

A Bit of Pediatric Handheld History

By David C. Stockwell, MD
Newsletter Editor, Steering Committee on Clinical Information Technology

First, please help me introduce and welcome Dana A. V. Braner, MD, FAAP, who will serve as coeditor to this newsletter. Dr Braner is a pediatric critical care physician and an accomplished medical technology expert. We welcome his assistance and expertise.

When medical information originally became available for the handheld, it was limited to 1 or 2 commercial references and numerous titles of freeware. This freeware typically came from individual doctors who had an interest in handhelds, and the quality of the documents—as might be expected—varied significantly. Additionally, pediatric titles were very hard to find. There are few survivors of that age.

K2 Consultants was one of the first companies to publish medical handheld references. Now known as Skyscape (www.skyscape.com), K2 evolved into the major vendor for medical handheld references. K2 Consultants' first platform was the Apple Newton. As, essentially, the first mass-produced handheld, it had limited success but a devout following. K2 discovered that the *Griffith's Five-Minute Clinical Consult (5MCC)* was a perfect fit for a handheld platform. Today, there are numerous *5MCC* copycats. The first to model this successful format was *The 5-Minute Pediatric Consult.* One trip to Skyscape's Web site today will show that it has come a long way. There are hundreds of titles available in numerous specialties. Almost all of its references, including pediatric references, are available for either the Palm platform or Microsoft Pocket PC.

Another survivor of the early handheld days is the free reference MedCalc (www.media.ch/medcalc). This is an excellent reference that its physician author, Mathias Tschopp, MD, evolved from a resource with just a few formulae to one consisting of more than 75 medical formulae today. Medcalc's growth is attributed to its ease of use and the author's continual inclusion, in later versions, of e-mail suggestions from users.

Several of the early documents available for the medical handheld were written by individual physicians using a program called *iSilo* (www.isilo.com). One of the program's advantages allowed the user to hyperlink within a document and easily navigate among several topics within one medical reference. In addition, Web sites could be converted into an *iSilo* document. This allowed the early users to utilize HTML documents and readily place them on a handheld. These features are still available. More recently, several medical organizations are publishing their guidelines on this format. Medical references can be found at the Medical *iSilo* Depot (meistermed.com/isilodepot).

A few new trends also are worth mentioning. The National Guideline Clearinghouse (www.guideline.gov) is an excellent resource for the various medical guidelines published by medical organizations. All of the guidelines have a handheld version available for any PDA with a document reader.

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American Academy of Pediatrics
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The Steering Committee on Clinical Information Technology Announces New Executive Committee Members

Elections

Thank you to all Steering Committee on Clinical Information Technology (SCOCIT) members who participated in the electronic elections in March and April 2004. We had a response rate of 39%! (Our goal was 35%.)

The Steering Committee on Clinical Information Technology is pleased to congratulate the following newly elected members of the Executive Committee:

Kristin Benson, MD, FAAP (1st term)
Christoph U. Lehmann, MD, FAAP (2nd term)
Eugenia Marcus, MD, FAAP (1st elected term*)
Mark M. Simonian, MD, FAAP (3rd term)

These terms will begin immediately following the 2004 American Academy of Pediatrics (AAP) National Conference & Exhibition (NCE).

Appointments

Congratulations to the following SCOCIT members who were appointed to the SCOCIT Executive Committee by the AAP Board of Directors:

Gregg C. Lund, DO, FAAP (1st term)
Robert S. Gerstle, MD, FAAP (3rd term)
Kevin B. Johnson, MD, FAAP (2nd term)
Joseph H. Schneider, MD, MBA, FAAP (2nd term)

These terms began July 1, 2004.

The Steering Committee on Clinical Information Technology Leadership

Under the terms of the merger between the Task Force on Medical Informatics and the Section on Computers and Other Technologies, the SCOCIT Executive Committee votes to elect the SCOCIT chairperson. Dr Simonian was elected as the next SCOCIT chairperson and will take over for S. Andrew Spooner, MD, MS, FAAP, after the NCE. The Executive Committee also voted to elect Dr Schneider to the position of SCOCIT vice chairperson.

Edward M. Gotlieb, MD, FAAP, FSAM, SCOCIT Policy Committee chairperson, completed his final term on the SCOCIT Executive Committee as of June 30, 2004. Dr Gerstle was appointed Policy Committee chairperson as of July 1, 2004. We thank Dr Gotlieb for his years of dedicated service to SCOCIT.

Upcoming Executive Committee Vacancies

At its May 2004 meeting, the AAP Board of Directors approved a 10th position on the SCOCIT Executive Committee. The position will be a Board-appointed position, which will result in the Executive Committee being composed of 5 elected and 5 appointed members. Watch for more information on the nomination process for this position in November 2004.

*Dr Marcus was appointed to the Executive Committee in September 2001, following the resignation of Douglas Stetson, MD. Dr Marcus currently is completing the final year of Dr Stetson's term and is eligible to serve up to three 2-year terms of her own.

Executive Summary: Steering Committee on Clinical Information Technology Executive Committee

American Academy of Pediatrics Headquarters
Elk Grove Village, IL
April 17, 2004

The Steering Committee on Clinical Information Technology (SCOCIT) Executive Committee met in Elk Grove Village, IL, on April 17, 2004. The following recommendation was made:

RECOMMENDATION: That the SCOCIT bylaws be approved.

In addition, the SCOCIT Executive Committee discussed the following items:

- The Policy Committee provided a report on the status of SCOCIT statements in progress and statements due for revision/reaffirmation.
- Jan Ellen Berger, MD, MJ, FAAP, discussed her upcoming attendance at the National Council of Physician Executives annual meeting to discuss e-messaging.
- Edward M. Gotlieb, MD, FAAP, FSAM, provided an update on the Health Insurance Portability and Accountability Act of 1996 (HIPAA).
- S. Andrew Spooner, MD, MS, FAAP, provided an update on the National Health Information Infrastructure.
- Staff provided an update on the SCOCIT Policy Committee Proposal for the Development of American Academy of Pediatrics (AAP) Expertise and Leadership in Clinical Information Technology.
- The committee discussed the Kids First Pediatric Alliance Electronic Medical Record (EMR) Assessment and Findings Report and possible uses for this document.
- Stuart T. Weinberg, MD, FAAP, discussed his plan to develop a Web site for peer review of EMR systems.
- An update was given on the status of action items from the fall conference and meeting of the SCOCIT Executive Committee.
- Lewis C. Wasserman, MD, FAAP, discussed his plans for the Computer Lab at the 2004 AAP National Conference & Exhibition (NCE).
- The budget report was reviewed and approved. It was agreed that expenses related to the newsletter will be separated from other miscellaneous expenses on future reports.
- The membership report was reviewed and the committee discussed SCOCIT membership benefits and recruitment efforts.
- Mark M. Simonian, MD, FAAP, was elected as the next chairperson of SCOCIT. Joseph H. Schneider, MD, MBA, FAAP, was elected as vice chairperson. Drs Simonian and Schneider will begin the first of a possible two 2-year terms immediately following the 2004 AAP NCE.
- Dr Spooner provided an update on the efforts of the Health Level Seven (HL7) Pediatric Data Standards Special Interest Group (PDSSIG).
- The 2004 Byron Oberst Award winner was selected.
- Christoph U. Lehmann, MD, FAAP, reported on the status of abstract submissions for the SCOCIT program at the 2004 AAP NCE.
- Dr Simonian discussed the potential for cost savings by switching to an electronic distribution of the SCOCIT newsletter.
- Dr Simonian reported on the proposals submitted for the 2005 AAP NCE.
- Kevin B. Johnson, MD, FAAP, reported on his proposal to develop a speaker's kit and toolkit on EMRs.
- Dr Johnson provided an update on recent discussions about a potential public service announcement campaign intended to generate public pressure for physicians to invest in EMR systems.

The SCOCIT Executive Committee will meet next in San Francisco, CA, in October 2004, in conjunction with the AAP NCE.

For a complete set of minutes or further information on specific items, please contact Rebecca Marshall, health policy analyst, at 800/433-9016, ext 4089, or bmarshall@aap.org.

A Bit of Pediatric Handheld History

(continued from page 1)

Several medical journals have entered the mix as well. None will strike closer to home than *Pediatrics* (pediatrics.aappublications.org/misc/pda_services.shtml). Here, a handheld enthusiast can register to receive abstracts of each issue of *Pediatrics* and other AAP publications.

Although the early trend in handhelds was with freeware or nominally priced shareware, current medical text publishers are getting their well-known titles published in handheld format. Commercial programs may have started humbly, but they have evolved into a very mature market. There are a number of excellent resources available for a handheld; just be sure to look around.

While I maintain a Web site called Pediatrics on Hand (www.pediatricsonhand.com), I have no financial affiliation with any of the mentioned companies.

My Pediatric Handheld

By Jeffrey T. Corral-Ribordy, MD, MPH, FAAP
Member, Steering Committee on Clinical Information Technology

Handheld devices are becoming more commonplace and some would say necessary in the practice of medicine. The ability to access information quickly or write prescriptions without leaving the examination room is invaluable. In this article, I will discuss my experiences with handheld devices and how I have integrated them into my practice.

I obtained my first handheld device in residency—an HP Palmtop 100LX—but it rapidly became clear this device stretched the idea of a pocket-friendly device. I soon graduated to a Palm IIIx and then the Vx. Palms have always been the best choice for me due to the extensive medical software available and their compatibility with the Macintosh platform. These Palm devices did what I needed but quickly exhausted their memory capacities.

Soon, Palm began offering its own wireless service but, alas, not in our relatively isolated, rural area. For me, the only options for a wireless Palm were the just emerging smartphones—a personal digital assistant (PDA)/cell phone combination. This appealed to me, not just for the wireless connectivity but also for the idea of lugging around one less electronic device. My first smartphone was the Kyocera 6035. While bigger than either a Palm or cell phone alone, it met all my needs for function and ease of use. However, as this device was non-upgradeable, I ran into memory issues once again (it only contained 8 MB of RAM—one drug reference alone was 2 MB!).

I migrated to my current device in October 2003, the now-PalmOne branded Treo 600 ($449, www.palmone.com/us/products/smartphones/treo600). This combines a Palm PDA (144 MHz processor, 24 MB available RAM, SD expansion card slot [I use a 256 MB memory card], Palm OS 5.2.1 with a built-in QWERTY keyboard, 5-way button navigation, infrared port for beaming files, and a camera) with a digital cell phone.

A smartphone allows many functions to be performed easier. The integration between the Palm and phone is seamless. One can look up a contact in the address book (known as "Contacts" on the Treo) and select the phone number and it dials right away. While on the phone, Palm applications can still be accessed without interrupting the call. There is also a built-in speakerphone for conference calls or long periods on hold.

Another feature is the ability to send and receive e-mail. With the built-in keyboard, e-mail composition is easier than with Graffitti. There are third-party e-mail clients available for PDAs (Eudora, SnapperMail, etc) but I use the built-in Sprint e-mail program without difficulty. (Sprint gives you a free e-mail account.) For physicians who travel a lot or are in multiple offices, this is an elegant way to keep on top of e-mail. (So far, I have not received any spam on my Treo. It is only a matter of time, I'm sure.)

Web browsing is also a bonus. One can access the Internet with the built-in Blazer browser. Many sites, however, are not easily accessed with a PDA—pages can take a while to load or be difficult to navigate. Some Web sites are optimized (ie, simplified) for PDAs and lists can be found on the Internet. (Two that I use are *Brian's PDA Optimized Web Site List* [www.cantoni.org/palm/links.html] and pdaportal.com.)

One of the driving factors for obtaining a wireless device was that I also was interested in the (at that time) nascent field of e-prescribing. In April 2001, I started using a program called ePhysician, which allowed for a prescription to be written on the Palm and then sent wirelessly to any pharmacy with a fax machine. Prescriptions print out at the pharmacy with your name, office information, printed prescription instructions, license and Drug Enforcement Administration (DEA) numbers, and your signature (which was required at every sign-in). Patients could be entered manually or migrated (copied) from most practice management programs. You were able to make a list of "favorite" medications and template prescriptions to speed up the process. Usually, the prescription would arrive at the pharmacy within minutes. Initially, I used ePhysician with my Palm Vx, which necessitated running back to my office and syncing my Palm to the desktop to send the prescriptions. This was definitely not a time-saver. A wireless device is a necessity for e-prescribing.

Soon, like many technical companies, ePhysician went belly-up, but, remarkably, the program continued to work almost a year after humans stopped answering the phones at the main offices. The company's assets eventually were purchased by HealthRamp, and ePhysician was reborn as CarePoint (monthly fee, www.healthramp.com). Currently, e-prescribing is enabled but, hopefully, lab ordering and viewing will be arriving soon. While ePhysician was more of a PDA-based program (one could write prescriptions and only access wirelessly when needed to send), CarePoint is Web based. Lists of favorite medications and pharmacies are stored on the server (not using up your PDA's valuable RAM), so wireless access must always be available to use the program. This has obvious disadvantages but some advantages. When connected, you can search the database for medications not on your favorite list. You also can look up pharmacies anywhere in the country and send prescriptions with as little information as a pharmacy name and zip code. Any class of medication (except Class 2) can be sent wirelessly (at least in California!). Each patient has a library of past prescriptions that can be refilled with only a few steps.

Electronic prescribing can be a true time-saver; it cuts down on pharmacy calls (both to and from), makes refilling easier, and is convenient for patients. Most patients are very impressed when they ask, "When will you call in the prescription?" and I say, "It's already there!"

Do We Know How to Find You?

To provide important membership benefits to you, we need to have updated contact information on file. The Membership Information Change Form, located in the Member Center of the American Academy of Pediatrics (AAP) Web site (www.aap.org) under "Member Services," is available to provide you with an opportunity to view your address (including e-mail), demographic, and subspecialty information and update it at your own convenience. We understand that members are changing information more frequently. Now, each time you make a change, simply enter it into the form and our database will be updated the following day. This way, there will be no delay in receiving your member benefits, including this newsletter!

With 15% to 20% of our member contact information in a state of change at any given time, the online AAP Member Directory, available in the Member Center, should be *your primary resource* to locate colleagues. Quite simply, it has the most accurate, up-to-the-minute contact information available. To make sure your colleagues also can reach you, log on to the Member Center and make sure your contact information is correct.

Nanobyte
Want to get more involved with the Steering Committee on Clinical Information Technology (SCOCIT)?

- Visit our Web site at www.scocit.org.
- Participate in our discussion groups.
  - –scocit@LISTSERV.aap.org
  - –scocit-emr@LISTSERV.aap.org
  - –SCOCIT discussion board—on the SCOCIT page in the American Academy of Pediatrics (AAP) Member Center (www.aap.org)
- Visit the Computer Lab at the National Conference & Exhibition (NCE). (Want to get more involved? Contact Lewis C. Wasserman, MD, FAAP, at nce@wasserman.org to volunteer as Lab faculty.)
- Attend the annual SCOCIT program and business meeting at the NCE.
- Write a newsletter article—send submissions to dstockwe@cnmc.org.

☆☆☆ Committee Updates ☆☆☆

Technology Committee

By Kevin B. Johnson, MD, FAAP
Application/Technology Chairperson

The Technology Committee has been working on 2 very exciting projects aimed at improving electronic medical record (EMR) adoption. First, we have received preliminary approval to construct an EMR speaker's kit/toolkit combination for American Academy of Pediatrics (AAP) members. The speaker's kit will include information of interest to members still skeptical about the value of the EMR in their practices, while the toolkit will include information needed by members ready to purchase and install an EMR. The plan is to equip our members, many of whom are called on as consultants for their chapters or other groups, with slides, notes, handouts, and an updated version of the AAP monograph on practice management software. As components of the kits become available, they will be placed on the Steering Committee on Clinical Information Technology (SCOCIT) Web site for your constructive comments. Please keep an eye on the Web site.

We also have been working to develop a Web-based tool that allows our members to post and read reviews of many EMR systems. The goal is to launch this Web site at the fall AAP National Conference & Exhibition (NCE). Again, as we make progress on this endeavor, we will provide information on the SCOCIT Web site.

How can you help? We need you to provide content to the Web site as soon as it is launched. Imagine *Edmunds* with no cars…so, to make this site successful, as Dora the Explorer says, "We need YOUR help!"

Education Committee

By Mark M. Simonian, MD, FAAP
Education Chairperson

This issue is marking a sentinel event for me. The reigns of Education chairperson will be passed to Christoph U. Lehmann, MD, FAAP. Chris has done a spectacular job polishing the Abstract Program, which AAP NCE attendees will see this October. This will be another stellar program with new presentations and posters for all interested. This, again, will be followed by the wine and cheese event, crowned with the presentation of the best submission award. Included in this issue is a list of those presentations. Again, we all are behind Chris and his future programs for the NCE, starting in Washington, DC, in 2005.

Our newsletter has taken on a new master, David C. Stockwell, MD, and coeditor, Dana A. V. Braner, MD, FAAP. David continues to present a wonderful layout to review twice a year. If you missed a paper copy, we are duplicating it in PDF format in the Member Center under SCOCIT. Just click the left screen link and review some interesting issues. Expect many enjoyable topics in this newsletter. If there are other topics that you hope we cover in future issues, contact Dr Stockwell (dstockwe@cnmc.org) or me (mms88@pacbell.net).

The NCE program itself has been a challenge and I have enjoyed all the people I have worked with to promote and complete topics that you would like to see. We welcome Beverly Wood, MD, MScEd, FAAP, as the new NCE Planning Group representative for SCOCIT. Already, I can see that we will have a great partner from her enthusiastic ideas about future programs for SCOCIT.

My goal for the NCE programs and SuperCME has been to find out what you want to attend and supply good speakers. Using an online survey tool, we have had members choose and rank the programs that I submit to the programs committee. Our adept Webmaster, Stuart T. Weinberg, MD, FAAP, is developing a tool that should function as before but reside on our current SCOCIT Web site at www.scocit.org. We are looking at adding a couple of new topics, including mobile computing with tablets and other devices. The new survey site will be updated as new topics present so our members can feel that they have the latest technologies to review and choose. You can suggest topics through the survey or just contact Dr Lehmann or any Executive Committee member.

We are trying to build a session for the NCE based on the Pediatric EMR Documentation Challenge from the Towards an Electronic Patient Record (TEPR) conference. The EMR will be prominently mentioned in our section program (H program) planned for the next 2 years. This method of challenging vendors to display their product will be a boon for members looking to purchase this technology and allow the same vendors to learn what we need to complete our records. We are looking at sponsors and an agreement from the AAP leadership to host such an event in the future. Come to our program for complete discussions on the EMR.

You can expect to see a regular column in *AAP News* written by one of our Executive Committee members or by an invited guest. It will be an overview of a topical subject in information technology.

A large challenge, which I have not addressed successfully, is to develop a continuing medical education (CME) 1- or 2-day program on technology for the pediatrician. This requires substantial financial backing, and we are looking at options that will permit us to host one.

Last year at the successful Computer Lab, we attempted to videotape 2 sessions. There is more to creating a useful presentation than just videotaping it. Sound quality and video capture of the monitor made it impossible to stream on the Internet. There are plans to retry to capture one or two sessions with more advanced sound and video capture. This way, we can show how the labs provide useful topics in a non-CME venue with our experienced faculty. Part of our proposals to the AAP was to find another location for Computer Lab programs and technology demonstrations. We are still working on those points and, in the future, expect to have an alternate location and format for educating AAP members attending the conference.

We need your participation on the Member Center discussion group section of SCOCIT. Various topics have been populated from discussions on the e-mail list. Back and forth discussions work well in the e-mail list on the EMR, for example, but there is no ability to share the past points of discussion if you were not originally involved. With the discussion group, you can bring up points and get answers from any number of experts in our membership and all the information is archived for future reference. Dr Weinberg again is working to build tools that will allow members to review important points on the EMR. Please stay tuned.

I wish to thank all the members for their suggestions and participation. We are a larger and more representative group by your contributions. Special thanks go to our Executive Committee members and our chairperson, S. Andrew Spooner, MD, MS, FAAP, for a memorable experience. Finally, thank you for allowing me to serve you.

Policy Committee

By Edward M. Gotlieb, MD, FAAP, FSAM
Immediate Past Policy Chairperson

The original Task Force on Medical Informatics (TFOMI) first met on a frozen Chicago, IL, day in the early 1990s. The AAP created that task force to develop a plan to support the Council on Pediatric Practice (COPP) in that group's dealing with what it believed could only be a burgeoning of technological issues that would have an impact on AAP work. As a result of the meeting, James Lustig, MD, FAAP, and I were appointed as consultants to COPP to be its "back office" when information technology questions were raised in the course of their deliberations. The COPP was disbanded as part of the reorganization of committees and sections into action groups, but the needs of the AAP for timely technical advice continued to grow. We formed a Work Group (later renamed another Task Force) on Medical Informatics to deal with the increasing complexities of medical data privacy, standards for developing technologies such as EMRs and immunization registries, and government regulation of medical information—in particular, the Health Insurance Portability and Accountability Act of 1996 (HIPAA). The group developed programs to inform AAP members about incorporating practice management systems into their offices and how to prepare themselves to deal with the Y2K "Millennium Bug." We developed policy papers on patients' record privacy, an AAP response to developing HIPAA legislation, and pediatric requirements of EMRs.

Since TFOMI largely functioned as an AAP committee and served as a constituent member of the Pediatric Practice Action Group, the AAP charged us with piloting a merger with the Section on Computers and Other Technologies (SCOT) in preparation for a wider merger process throughout the AAP. A year-long process in preparation for this ensued, using methods developed in the Pediatric Leadership Alliance. A meeting in Atlanta, GA, in the summer of 2001, attended by Andy Spooner; Stuart Weinberg; Robert S. Gerstle, MD, FAAP; Becky Levin-Goodman; and I, hammered out the working agreement, which was submitted to and accepted by the AAP Board of Directors. In 2002, the merged entity, christened the Steering Committee on Clinical Information Technology (SCOCIT), met in Boston, MA, at the NCE.

Since the merger, TFOMI functions have been subsumed by the Policy Committee, and its many liaisons with external standards organizations have been handled by the Executive Committee. Over the first 2 years of SCOCIT, the Policy Committee has worked internally to ensure that SCOCIT be funded equitably by the AAP to have sufficient members, funding, and meeting time to continue its work. In the first 2 years, we have supported the publication of an AAP book on HIPAA implementation and, in the last few months, published papers in *Pediatrics* on telemedicine and e-mail communications. Over the last few months, the integration of what previously were 2 groups with rather different

cultures has allowed a collaboration of many SCOCIT members in the development of policy. Our committee is currently exploring a number of technology issues: the latest on getting EMRs functioning in pediatric practice, the legal and ethical issues of telemedicine, and the development of a Continuity of Care Record so that our patients' basic health information will be available to anyone treating them at any location and at any time of the day or night.

As our new Policy Committee chairperson, Bob Gerstle is particularly well situated, by virtue of his knowledge and temperament, to advance the care of children by exploring the expanding world of information technology, its implementation, and its regulation. I leave my position with gratitude for all of those who have participated in the work we all have accomplished.

The Perfect Combination: Professional Scribe + Electronic Medical Record

By Peter C. Kenny, MD, FAAP
Member, Steering Committee on Clinical Information Technology

Physicians investing in an electronic medical record (EMR) can receive considerable additional benefits by working with professional scribes. Scribes are very affordable members of the health care team. They are highly valued by physicians, parents, and patients. In our 8-pediatrician office, we all enthusiastically agree that scribes enable us to do a far better job treating patients, documenting our services, and getting paid fairly than we can possibly do by working alone. In an era of limited resources and declining reimbursements, we are confident that working with scribes saves us valuable time and reliably increases net receipts for our practice.

The Achilles' heel of any medical record system, written or electronic, is data input. Even the most intuitive and user-friendly EMR does not allow a physician to properly enter information while simultaneously listening attentively to the patient. It is not uncommon in a busy office to have parts of the visit undocumented whenever the physician decides to take care of the patient rather than take time to try to get every detail into the chart. As we know, services that are not documented are not compensated.

Incomplete documentation and undercoding of services that are rendered is very common in paper-based pediatric offices. Unfortunately the problem of undercoding due to incomplete documentation is not automatically solved with electronic records. For example, a typical medical complaint may involve a child with a sore throat and mild fatigue. At a superficial glance, this visit might be predicted to require a Problem Focused (PF) or Expanded Problem Focused (EPF) level of medical service. However, how often in the course of the visit does the parent also ask the doctor for advice about the child's poor appetite? How often does the pediatrician review the status of the child's chronic conditions such as asthma or eczema? How often does the physician at least consider the possibility of malignancy in the differential diagnosis? Finally, during the examination, how often does the parent ask the doctor to "just check that mole" or look at "the ankle he twisted last week"? Whether the office record system is paper or electronic, many of these elements of the visit simply will not be recorded by the busy physician and, therefore, will not be coded, will not be billed, and will not be paid.

The professional scribe is an excellent solution to the problem of incomplete documentation, inaccurate coding, and inadequate reimbursement. In our office, we find that complete documentation with accurate coding more than pays for the scribe's salary. The purpose of the scribe is *not* to allow the physician to see more patients per day. The scribe's function is to allow the physician to focus on the patient while being confident that thorough, unbiased documentation of all the medical services provided has been recorded in the record.

Parent and patient acceptance of the scribe in the examination room has consistently been very high in our office. Parents and patients are told that they can ask at any time to see the physician without a scribe present in the examination room. I receive a request to see the patient alone, at most, once per week. Instead of requesting to see the doctor without the scribe, parents instead seem to be more appreciative of having the physician's full attention throughout the visit. Physicians in our office find that the scribe is particularly helpful for long, complicated visits and for visits with children with chronic conditions.

The physician/scribe/EMR team is an affordable win-win situation for everyone in our practice. I highly recommend that fellow pediatricians jump in and try this combination of skill and technology in their practices.

Observations on Health Informatics

By Kristin Benson, MD, FAAP
Member, Steering Committee on Clinical Information Technology

I am trying to use some of the new terms and comments I have come across to communicate better in health informatics. How am I doing?

Perhaps we need to *reformat a matrix of things* in pediatrics, according to the *usability of the approach.* Are we *satisfying* with quality improvement (QI) or maybe just undergoing *performance metrics? Change is constant,* and *process, entity, and utility components* are on the way. *Safety is a system property,* and depends on the *scalability of approach.* Our practice is a *truth source* and we need to *leverage the power* of our *skill sets* and use patients as *co-informants. Human consensus reality* only goes so far. We need *fast science* to *harness the data.* You will come to agree that it is time for *digital knowledge representation.* But *logic is complicated. For most domains, there are at least an infinite number of irrelevant truths that can be deduced. Stealth learning* is the *new normal. The bottleneck is the interface. We have all sorts of information technology, just no information.* Perhaps we need a more *mature executions environment.* We may notice *unaligned incentives.* Does *technology make up for adversity,* or will we find *no public cohesiveness?* Of course, we must try to be *evolutionary and not revolutionary,* remembering that *M is for mobile and modular. Synonymy is a strange thing.* And *if privacy is the problem, speed is not the answer.* But do we really want an *electric page turner* instead of a searchable database? Statisticians say that *randomness is predictable if you know the formula.*

Informaticists say *the best way to predict the future is to invent it.* Perhaps the best advice we have is that *if a problem cannot be solved, enlarge it.* I hope this helps!

Nanobyte

Ever get frustrated by trying to convert pounds/ounces to kilograms for drug calculations? Sure, you could do the math on your calculator easily enough, but what if you just happened to be sitting in front of a Web browser at the time? If you were, you would go to www.google.com and type

4 lb 5 oz in kg

Then hit return. It would immediately provide this answer in kilograms. If your Web browser has an always-open Google search box, this is easier than finding a calculator. The Google calculator does a lot more than this (try "102.3 f in c"). See www.google.com for more information.

2004 American Academy of Pediatrics National Conference & Exhibition

The following National Conference & Exhibition (NCE) sessions are sponsored by the Steering Committee on Clinical Information Technology (SCOCIT).

Saturday, October 9, 2004

9:30–11:30 am **S123: Electronic Medical Record and Office eTools**
David M. Paperny, MD, FAAP, FSAM
Joseph H. Schneider, MD, MBA, FAAP

11:45 am–12:45 pm **X149: Meet the PDA Expert: "Beam Me Up, Scotty"**
Joel F. Bradley, Jr, MD, FAAP

1:00–3:00 pm **S153: Electronic Medical Record and Office eTools**
David M. Paperny, MD, FAAP, FSAM
Joseph H. Schneider, MD, MBA, FAAP

Sunday, October 10, 2004

9:00 am–5:30 pm **H209: Steering Committee on Clinical Information Technology** (See SCOCIT Program schedule, p 8.)

Monday, October 11, 2004

3:45–5:45 pm **S385: Future Office 2004: PDAs, Tablets, and Wireless Applications**
S. Andrew Spooner, MD, MS, FAAP
David C. Stockwell, MD

Tuesday, October 12, 2004

9:30–11:30 am **S417: Future Office 2004: PDAs, Tablets, and Wireless Applications**
S. Andrew Spooner, MD, MS, FAAP
David C. Stockwell, MD

1:00–3:00 pm **S450: Using the Internet to Maintain Competency and for Self-education**
Hank Bernstein, MD, FAAP
S. Andrew Spooner, MD, MS, FAAP

Other Clinical Information Technology–Related Sessions

Monday, October 11, 2004

11:45 am–12:45 pm **X346: E-mail Communication With Patients and Colleagues**
S. Andrew Spooner, MD, MS, FAAP

Coming to the National Conference & Exhibition? Visit the Computer Lab!

By Lewis C. Wasserman, MD, FAAP
Computer Lab Director

The Steering Committee on Clinical Information Technology (SCOCIT) would like to invite you to a whole new Computer Lab. At the 2004 American Academy of Pediatrics (AAP) National Conference & Exhibition (NCE), we will have a world-class faculty and a redesigned Lab, which will include more software, more Web sites, and more hands-on material than ever before. Our faculty will be available to answer questions and help guide you through whatever information technology (IT) challenge you are facing. Discussion topics will focus on electronic medical records, PDAs, digital prescribing, and a host of other topics. Please check the Computer Lab schedule at www.scocit.org, under Education, for session descriptions, and plan to visit us in the exhibit hall at the NCE this October in San Francisco, CA.

Lectures this year will kick off with a discussion of AAP multimedia projects, such as *Pediatrics in Review* and CompuPREP, then move on to e-mail, Internet, and a dozen more timely topics. While you are at the Lab, you may play with our computers and PDAs, visit dozens of professional Web sites, be introduced to the newest AAP software titles, and even get a peek into the Pediatric Exam Room of the Future (Now).
The Steering Committee on Clinical Information Technology is pleased to present a number of educational sessions and the Computer Lab at the NCE. Please see our Web site, www.scocit.org, for further information.

2004 Computer Lab Schedule

(Please visit our Web site at www.scocit.org for session descriptions.)

Saturday, October 9, 2004

11:00 am–12:00 noon **AAP Multimedia Projects**
Dana A. V. Braner, MD, FAAP

12:00 noon–1:00 pm **Using E-mail to Communicate With Physicians and Patients**
Phil Goldstein, MD, MPH, FAAP

1:00–2:00 pm **Infogenetics**
Virginia Proud, MD, FAAP

2:00–3:00 pm **Using a PDA as a Patient Information Tool**
Joseph Schulman, MD, MS, FAAP

3:00–4:00 pm **The PDA Is Dead**
Geoffrey Bird, MD, FAAP

Sunday, October 10, 2004

11:00 am–12:00 noon **Databases: A Painless Introduction to Why and What You Should Know**
Joseph Schulman, MD, MS, FAAP

12:00 noon–1:00 pm **EMR**
Barbara Byrne, MD, FAAP

1:00–2:00 pm **Using Information Technology to Reduce Medical Errors in Pediatric Practice**
Geoffrey Bird, MD, FAAP

2:00–3:00 pm **Continuity of Care Record (CCR)**
Alan Zuckerman, MD, FAAP

3:00–4:00 pm **PubMed Tips and Tricks**
Linda Milgrom

4:00–5:00 pm **When PubMed Is Not the Answer…**
Maryanne Blake

5:30–7:00 pm **President's Reception**

Monday, October 11, 2004

11:00 am–12:00 noon **Using Multimedia in Your Practice**
Dana A. V. Braner, MD, FAAP

12:00 noon–1:00 pm **Digital R_x**
Alan Zuckerman, MD, FAAP

1:00–2:00 pm **Computerized Provider Order Entry (CPOE)**
Barbara Byrne, MD, FAAP

2:00–3:00 pm **PDA-Based Prescribing for the Practicing Pediatrician**
Phil Goldstein, MD, MPH, FAAP

3:00–4:00 pm **Online References**
Virginia Proud, MD, FAAP

American Academy of Pediatrics Web Site Redesign

by Jim Nauta
American Academy of Pediatrics Division of Internet Services

Web sites have evolved over the years from simple information pages to interactive sources of data and transactions, but this evolution has been haphazard. Many organizations just keep revising what they already have without ever taking a hard look at how it is organized or if it really serves the needs of the site visitor as they think it does. When approaching the issue of redesigning the American Academy of Pediatrics (AAP) Web site, we wanted to make sure that we followed accepted guidelines for information architecture and design implementation. We went back and started at the beginning by examining the existing architecture, navigation, and functionality of the site, and then began the redesign based on the results of that research. We contracted with the design firm Forum One Communications for the information architecture design of the site. This process began by conducting focus groups of members, health professionals, and parents, and conducting an online Web-based survey of site visitors. The results of this research revealed several fundamental changes that would be necessary. The existing navigational structure of the site closely mirrored the departmental structure of the AAP, which had no value or meaning to most site visitors. This made it difficult and frequently time-consuming to find the information being sought. We also needed to create a site that is more public facing, providing AAP-branded health information to consumers as well as members and other health professionals in a well-organized, easily navigable layout. Members were looking for a place to send their patients for reliable health information. Parents were looking for detailed and easy to find health information on a variety of topics.

How the site should be reorganized based on the information architecture document became a task for the Web Site Redesign Committee, made up of AAP staff. Forum One came in several times to meet with the group and go over new ideas and designs. The involvement of this group was critical to achieving acceptance for a new architecture that would serve the needs of the AAP as well as site visitors. As the new design began to take shape, it became apparent that we would need to create several cross-functional teams to design, manage, and update content. Web site information would no longer fit neatly into one department or division.

After the information architecture was finalized and approved, it became the task of Internet Services to build the new site. This turned out to be a very involved and time-consuming process. Most of the documents on our site used Server Side Includes (SSI), which made the navigation easier to modify, but there were totally new categories, style sheet issues, documents to be moved and relinked, and programming involved. Style sheets were a huge issue. Migrating from a site that rarely used them to a site where they were standardized across all pages was not possible. There were a lot of existing pages that looked really bad using a standardized style. We came up with a 3-choice scenario. A page could use the standard style sheet, a customized style sheet, or no style sheet at all. This solution was pretty much required unless we wanted to go in and tweak every page to look right with the standard style sheet, and we did not want to do that several thousand times.

Creating the new Health Topics area of the site became a huge task of identifying and categorizing thousands of electronic AAP documents. Although the information already existed, it had never been identified and categorized into one resource. Again, this could not have been done without the assistance of many AAP staff to identify and categorize these documents. As the health topic areas grew from about 20 to more than 70, it became impossible to manage all the individual pages with changes coming in every day. In a matter of 1 week, with assistance from our database administrator, we created a database and structure for the health topic pages. Then the content from these 70+ health topic pages was imported into the database and one general query was written to retrieve and display information for all of the pages. It was difficult to come up with a standardized layout to which everyone could agree, but it was the key to effectively reigning in this new category that was quickly exceeding our capacity for manual page editing.

The Member Center (formerly known as the Members Only Channel) was another challenge of the redesign process. Over the years, we had gathered many ideas and comments related to the Member Center and had a pretty good idea of how we wanted to proceed, but the content in the Member Center was not well organized, and it also used frames, which no longer fit in the new design. We made copious use of extended search and replace to bring the Member Center into conformance with the rest of the site. The final design of the Member Center implemented a lot of ideas from our members such as easier access to specific areas, integration with the overall navigation of the AAP site, and better search functionality.

As we went through the implementation phase, we continued to solicit feedback and testing from staff and members. The comments and ideas were invaluable to the ultimate goal of a user-friendly, well-organized site. Just watching someone try to complete a task through navigation or searching is very eye-opening. Things you would never catch as a developer are seen immediately when you watch a new user on your site. An example of this was the What's New page of the Member Center. We came up with a nice tabbed page scenario to make What's New available without cluttering up the actual Member Center home page, but very few saw it as something clickable. Adding drop-shadow shading to the tab and adding a link to What's New under Key Resources solved this particular problem.

A major enhancement to the site, which actually occurred during the redesign process but before implementation, was the Verity Ultraseek search engine. This search engine integrates content from many AAP sites into one integrated search index. The flexibility and power are quite amazing from the front end, and even more amazing with the back-end configuration and reporting tools.

The next step in the redesign is to implement a new content management system. We will be using Commonspot by Paperthin. This will greatly simplify the work-flow management for the site and provide unique interactive features.

Steering Committee on Clinical Information Technology Program for Section Members

Sunday, October 10, 2004

9:00 am **The Electronic Medical Record: The Whole Truth—a Panel Discussion**
Eugenia Marcus, MD, FAAP
Joseph H. Schneider, MD, MBA, FAAP
David M. Paperny, MD, FAAP, FSAM

12:00 noon–1:30 pm **Steering Committee on Clinical Information Technology (SCOCIT) Business Meeting and Lunch**
(catered event—ticket required for lunch)

2:00–4:45 pm **SCOCIT Scientific Abstract Session**
(Note: underlining denotes presenting author.)

2:00 pm **A Computerized Program to Determine Standardized Drug Concentrations for Continuous Medication Infusions**
Elora Hilmas, PharmD, BCPS[1]; Mohamed Gaffoor, MD[2]; LeAnthony Mathews, RN[2]; Vinay U. Vaidya, MD.[2]
[1]Pharmacy, University of Maryland Medical System, Baltimore; [2]Pediatrics, University of Maryland School of Medicine, Baltimore.

2:15 pm **Evaluating a Diabetes Prediction Tool With Continuous Glucose Monitoring**
Victoria L. Franklin, MRCPCH[1]; Alex W. Wilson, CStat[2]; Richard A. Butler, PhD[2]; Stephen A. Greene, FRCPCH.[1]
[1]Maternal and Child Health Sciences, Ninewells Hospital and Medical School, Dundee, Scotland, United Kingdom; [2]Departments of Computing and Engineering, Robert Gordon University, Aberdeen, Scotland, United Kingdom.

2:30 pm **Safety in Pediatric Oncology: Provider Order Entry**
George R. Kim, MD[1]; Allen R. Chen, MD[2]; Robert J. Arceci, MD, PhD[2]; K. Michelle Kokoszka, RN[2]; Denise Daniel, RN[2]; Christoph U. Lehmann, MD.[1]
[1]Division of Health Sciences Informatics, Johns Hopkins University School of Medicine, Baltimore, MD; [2]Division of Pediatric Oncology, Johns Hopkins University School of Medicine, Baltimore, MD.

2:45 pm **Comparison of a Computerized Program for Management of Pediatric Diabetic Ketoacidosis to a Conventional Paper-Based Clinical Pathway**
Keisha G. Crawford-Bell, MD; Wynne Morrison, MD; Vinay U. Vaidya, MD.
Pediatrics, Division of Critical Care, University of Maryland Medical Center, Baltimore.

3:00 pm **Reducing Physician Errors: Web-Based Infusion Medication Calculator**
Renmeet Gujral, PharmD[1]; Michael A. Veltri, PharmD[1]; John S. Clark, PharmD, MS[1]; Coda L. Davison, MPA[2]; Christoph U. Lehmann, MD, FAAP.[2]
[1]Division of Pediatric Pharmacy, Johns Hopkins Hospital, Baltimore, MD; [2]Department of Pediatrics, Johns Hopkins University, Baltimore, MD.

3:15 pm BREAK

3:30 pm **Learning From Errors in Ambulatory Pediatrics (LEAP)**
Julie J. Mohr, MSPH, PhD[1]; Carole Lannon, MD, MPH[2]; Kathy Thoma, MS[3]; Donna Woods, PhD[4]; Eric Slora, PhD[3]; Mort Wasserman, MD[3]; Lynne Uhring, MD.[3]
[1]Department of Medicine, University of Chicago, IL; [2]Pediatrics, University of North Carolina, Chapel Hill; [3]Pedatric Research in Office Settings (PROS) Network, American Academy of Pediatrics; [4]Northwestern University, Chicago, IL.

3:45 pm **Automated Surveillance of Pneumonia in Neonates Using Natural Language Processing of Radiology Reports**
Eneida A. Mendonca, MD, PhD[1]; Janet Haas, RN,MS[2,3]; Elaine Larson, RN, PhD, FAAN, CIC[3]; Carol Friedman, PhD.[1]
[1]Biomedical Informatics, Columbia University, New York, NY; [2]Epidemiology, New York-Presbyterian Hospital, New York, NY; [3]School of Nursing, Columbia University, New York, NY.

4:00 pm **Wellcaretracker—Linking Child Care Centers With Medical Homes—A Technology-Based "Push" Strategy to Improve Immunization and Health Screening Completeness**
Jerold M. Aronson, MD, MPH, FAAP; Stuart T. Weinberg, MD, FAAP. ECELS, Healthy Child Care America, PA Chapter, American Academy of Pediatrics, Media, PA.

4:15 pm **Evaluation of 2 Online Pediatric Diagnosis Systems**
S. Andrew Spooner, MD, MS; Scott C. Russell, MD.
Pediatrics, University of Tennessee Health Science Center, Memphis.

4:30 pm **The Standard Sharable Active Guideline Environment**
Robert M. Abarbanel, MD, PhD[1]; Nick Beard, MD, MSc[1]; James R. Campbell, MD[2]; Stanley M. Huff, MD[3]; James G. Mansfield, PhD[4]; Eric Mays, PhD[1]; Mark A. Musen, MD, PhD[5]; Prabhu Ram, PhD[1]; Sidna M. Scheitel, MD[6]; Samson W. Tu, MS.[5]
[1]Health Informatics, IDX Systems Corporation, Seattle, WA; [2]Internal Medicine, University of Nebraska Medical Center, Omaha; [3]Medical Informatics, Intermountain Health Care, Salt Lake City, UT; [4]Apelon, Inc., Ridgefield, CT; [5]Stanford Medical Informatics, Stanford University, CA; [6]Primary Care Internal Medicine and Health Care Policy and Research, Mayo Clinic, Rochester, MN.

4:45–5:30 pm **Reception/View Posters**

Content Submission

Would you like to contribute to this newsletter? Articles should be approximately 500 to 1,000 words in length. Submit articles to David C. Stockwell, MD, newsletter editor, at dstockwe@cnmc.org.

Watch the Steering Committee on Clinical Information Technology (SCOCIT) Web site at www.scocit.org for information on submission deadlines for the Spring 2005 issue.

Poster Presentations

P1

Utility and Feasibility of Using a Personal Digital Assistant (PDA) Database for ED Patient Follow-up

Abu NGA Khan, MD, MS[1,2]; Rajesh Geria, MD[2]; Antonios Likourezos, MA, MPH[2]; Giora Winnik, MD[2]; Steven J. Davidson, MD, MBA.[2]
[1]Pediatrics, Morgan Stanley Children Hospital, Columbia College of Physicians and Surgeons, New York, NY; [2]Emergency Medicine, Maimonides Medical Center, Brooklyn, NY.

P2

Personal Digital Assistant (PDA) Database With Actual Signature of the Supervising Physician—An Innovative Procedure Evaluation Logbook for the Residents

Abu NGA Khan, MD, MS.
Pediatrics, Morgan Stanley Children Hospital, Columbia College of Physicians and Surgeons, New York, NY; Emergency Medicine, Maimonides Medical Center, Brooklyn, NY.

P3

Use of a Personal Digital Assistant (PDA) as a Tool for Research Data Entry

Abu NGA Khan, MD, MS[1,2]; Joshua Frank, MD[3]; Rajesh Geria, MD[2]; Steven J. Davidson, MD, MBA.[2]
[1]Morgan Stanley Children Hospital, Columbia College of Physicians and Surgeons, New York, NY; [2]Emergency Medicine, Maimonides Medical Center, Brooklyn, NY; [3]Pediatrics, Maimonides Medical Center, Brooklyn, NY.

P4

Discharge Analgesic Prescription Errors in Pediatrics: A Preliminary Study of 105 Patients

Benjamin H. Lee, MD, MPH, FAAP; Peter Pronovost, MD, PhD; Eric V. Jackson, MD; Myron Yaster, MD, FAAP.
Departments of Anesthesiology/Critical Care Medicine and Pediatrics, Johns Hopkins Medical Institutions, Baltimore, MD.

P5

Informatics-Based Approach for Evaluating PNP Student Performance

Ritamarie John, RN, MSN, PNP[1]; Karen Desjardins, RN, MS, MPH, ANP, GNP[1]; Melinda Jenkins, RN, PhD, APRN-BCa[1]; W. Dan Roberts, RN, MS, ACNP[1]; Suzanne Bakken, RN, DNSc.[1,2]
[1]Columbia University School of Nursing, New York, NY; [2]Department of Biomedical Informatics, Columbia University, New York, NY.

P6

Assessing the Culture of Safety in a Children's Hospital

Gitte Y. Larsen, MD, FAAP[1,2]; Mary Jo C. Grant, PNP, PhD[1]; Amy E. Donaldson, MS.[2]
[1]Pediatric Critical Care, Primary Children's Medical Center, Salt Lake City, UT; [2]Pediatrics, University of Utah, Salt Lake City.

P7

Using the Continuity of Care Record to Share Immunization and Growth Records

Alan E. Zuckerman, MD.
Pediatrics, Georgetown University School of Medicine, Washington, DC.

P8

Use of a Novel Pediatric Body Composition Technique for Assessing Body Fatness in Infants

Kenneth J. Ellis, PhD[1]; Manjiang Yao, MD, PhD[2]; William C. Heird, MD[1]; William W. Wong, PhD[1]; Alessandro Urlando, MS[2]; Roman J. Shypailo, MS.[1]
[1]Department of Pediatrics, USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX; [2]Life Measurement, Inc., Concord, CA.

P9

Web-Based Eligibility Survey for the Intranasal Flu Vaccine

Marc J. Starer, MD, FAAP[1,2]; Janet Rahelich, RN.[1]
[1]Pediatrics, Timber Lane Pediatrics, South Burlington, VT; [2]Pediatrics, Univerity of Vermont College of Medicine, Burlington.

P10

The Pediatrician's Office as a Primary Community Resource for the National Center for Missing and Exploited Children (NCMEC) and the Amber Alert System

Peter A. Feinstein, MMS, MD, FAAOS[1,2]; Michael W. Harris, MD, FAAP.[3]
[1]Orthopedic Surgery, John Heinz Institute of Rehabilitation Medicine, Wilkes-Barre, PA; [2]Orthopedic Surgery, Wilkes-Barre General Hospital, Wilkes-Barre; [3]Pediatrics, Wilkes-Barre General Hospital, Wilkes-Barre.

P11

Readability of Electronic Responses of Clinicians to Consumers Perinatal Health Care Questions

Gregg C. Lund, DO, FAAP[1,2]; Jullie Stones, BS, MBA[1]; Elmer Bernstam, MD, MSE, MS.[2]
[1]Department of Information Services, Pediatrix Medical Group, Sunrise, FL; [2]School of Health Information Sciences, University of Texas Health Science Center at Houston.

P12

Comparisons of Internet Usage Characteristics by Youth Self-Reported Depressive Symptomatology

Michele L. Ybarra, PhD[1]; Kimberly J. Mitchell, PhD[2]; Cheryl Alexander, PhD.[3]
[1]Internet Solutions for Kids, Inc., Irvine, CA; [2]Crimes Against Children Research Center, University of New Hampshire, Durham; [3]Population and Family Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

P13

Utilizing the World Wide Web to Write a Textbook to Enhance Faculty Professional Development

Loren G. Yamamoto, MD, MPH, MBA, FAAP.
Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, Honolulu; Emergency Department, Kapiolani Medical Center for Women and Children, Honolulu, HI.

P14

Improving Immunization Compliance Using a Web-Based Tracking System

Wen Hsin Shen, MD[1]; Adrian Zai, MD-PhD.[2]
[1]Department of Pediatrics, MetroHealth Medical Center, Cleveland, OH; [2]Laboratory of Computer Science, Massachusetts General Hospital, Boston.

Standardization—Computers to the Rescue?

By Christoph U. Lehmann, MD, FAAP, (Member, Steering Committee on Clinical Information Technology), and Marlene R. Miller, MD, MSc, FAAP

If you knew, based on reliable evidence, that medication A is the best treatment for condition X, you most likely would not treat just half of your patients with disease X with medication A and the other half with other treatments. However, if you take health care professionals as a group and evaluate treatment choices, we unfortunately do just that. Only a fraction of our patients may receive the treatment suggested by evidence-based trials. In a survey of pediatricians (88% aware of the guidelines) the adherence to asthma management guidelines was only 39% to 53%.[1] Treatments vary from physician to physician and vary, even over time, with one physician. One recent article looking only at reasons why health care professionals do not adopt simple attempts at standardization, namely clinical practice guidelines, found myriad "reasons" to explain this lack of providing current evidence-based care.[2] Lack of agreement, lack of self-efficacy, and lack of outcome expectancy were among the most common barriers.[1] Overall, health care, in comparison with other high-risk industries like aviation,[3] suffers from a lack of standardization and, not uncommonly, this oversight translates into quality and safety concerns for our patients.

Standardization affects many areas of medicine and is continuing to expand with the growth of evidence-based medicine and efforts at measuring, reporting, and improving quality. As an example, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has mandated the use of standardized concentrations in continuous medication infusions.[4] Overall, we successfully have adopted and accepted standardization in many aspects of our lives; it allows us to buy equipment that can be plugged into any electric outlet or be connected to other machines and it determines our behavior in traffic. Unlike other industries such as banking, standardization has taken a limited hold in medicine. When attempts are made to apply more standardization to medicine, our reluctance and resistance (especially on part of the physicians) remain high. We tend to think of standardization as a threat to the exercise of individual judgment and creativity. Our fear of "cookbook medicine" and the perceived loss of our treatment freedom are major obstacles in the implementation of standardized treatments in medicine. However, with the growth of patient safety and reporting initiatives over the last years, we can no longer avoid the clear call to make sure that we consistently deliver high-quality and safe care.

Standardization reduces variation in clinical treatment and patient outcome, thus improving the quality of patient care and making it safer as well by reduction of potential errors. Using computerized reminders to achieve standardization to clinical practice guidelines improves outcomes even though reminders of accepted clinical standards are often ignored by physicians.[5] Standardization reduces waste, makes treatment predictable and controllable, and defines clear responsibilities for all team members.

Computers and medical informatics applications have the potential to introduce standardization into the practice of pediatric medicine. The following are just a few of the many ways computers can be used to standardize the practice of medicine. Use clinical information tools to: (1) remind physicians of recommended actions, (2) include preventive measures and immunizations in standardized order sets in physician order entry systems, (3) remove items from inventory of information systems that have been shown to not be beneficial or, worse, harmful to our patients, (4) add predefined items that contain recommended doses, and (5) trigger alerts when patients are receiving care that is outside recommended guidelines. Pediatric patients experience a 3 times higher rate of adverse drug events than adults,[6] in part due to the unavoidable need for weight-based dosing covering a wide spectrum of "typical" weights for children.[7] Computers have the ability to standardize the process by which we determine the appropriate dose for our patient by allowing physicians to select a per-kg dose, which is translated (calculated) by the computer in a total dose.

Clearly, standardization has its geographical and political boundaries. Standard of care may vary between different health care systems and countries due to a variety of financial, population-specific, or ethical reasons. Nevertheless, standardization should not be limited to a single department or hospital. If experts can agree on the optimal approach, hospitals within a region or country should be able to share a standardized approach. Indeed, institutions and policy makers and large health care purchasers are clamoring for dissemination of best practices so that

(continued on page 10)

Standardization—Computers to the Rescue?

(continued from page 9)

all patients can benefit from advances in care models. (I regularly receive a copy of a book on clinical evidence that is distributed for free to physicians in the United States by a large insurer.)

The desire to standardize across local boundaries is a frequent theme in questions on the NICU-Net for information on protocols and standardized approaches to neonatal problems.[8] The Internet, and information technology in general, has greatly facilitated rapid communication among physicians and the ability of these physicians to discuss and share standardization tactics across regions and institutions. For some types of safety concerns, such as medication ordering and parenteral nutrition ordering, information technology, unlike us humans, can do the same task without variation every time it performs the task, based on the guidelines contained in its program. Information technology is not susceptible to fatigue and mathematical errors. Based on the alarming findings in a recent study on the ordering of parenteral nutrition in North Carolina,[9] the author suggests the elimination of paper forms and the use of electronic ordering to generate parenteral nutrition orders. But why stop there? Making applications, such as a parenteral nutrition program, available through the Internet as Web-based applications[10] allows institutions to standardize care without great effort. We must make the paradigm shift and stop seeing the Internet and associated information technology as just another information resource. The Web is no longer just a repository for the latest clinical guidelines and recommendations,[11] but has become an application platform for health care tasks, and we must focus our efforts to increase standardization and maximize safety by expanding medical Web-based applications.

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Maintenance of Certification and Information Overload: The Information Technology in the Program for Maintenance of Certification in Pediatrics

By George R. Kim, MD, FAAP
Member, Steering Committee on Clinical Information Technology

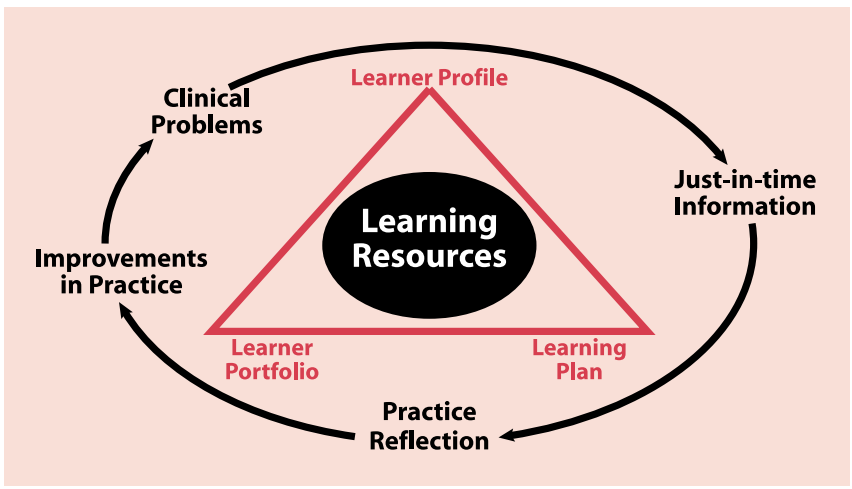
The growing complexity of the maintenance of certification in pediatrics will require increasingly sophisticated forms of information technology to help practitioners (and lifelong learners) manage and communicate the data and information associated with the process. This brief overview examines the current state of maintenance of certification in pediatrics and some of the tools currently available and in development to help practitioners.

It is no secret that the certification of pediatricians in the United States has changed dramatically in the last 16 years. Since 1988, the process has evolved from permanent certification (through the traditional series of written and oral examinations) to time-limited certification of 7 years progressing toward an ongoing formal 4-part program of certification maintenance. This evolution is the product of efforts of the American Board of Pediatrics (ABP) to meet the specifications of the Maintenance of Certification Model created by the American Board of Medical Specialties (ABMS). This model has been adopted by all recognized medical specialty boards[1] in response to public demand for accountability of competence of practitioners in a rapidly changing health care environment.[2] Currently, about half of US board-certified pediatricians are on time-limited certification, the other half having achieved certification prior to 1988.

What Is the Current Form of the American Board of Pediatrics Maintenance of Certification Model?

The American Board of Pediatrics 4-part Program for Maintenance of Certification in Pediatrics (PMCP) is based on the ABMS model.[3] Within the current framework, diplomates of the ABP with time-limited certification must, within the specified time period (7 years from last certification), provide evidence of the following:

- **Professional standing** in the form of current valid, unrestricted licensure
- **Lifelong learning and self-assessment** in the form of participation in ABP-approved Knowledge and Decision Skills programs
- **Cognitive expertise** in the form of a passing score on an ABP-administered, closed-book examination at designated computer testing centers
- **Satisfactory performance in practice** in the form of ABP-developed, anonymous peer/patient surveys and participation in an ABP-approved quality improvement program[4] to maintain certification for the next time period, in which a new cycle of the PMCP begins



*Pedia*Link Conceptual Model

So, What Does This Have to Do With Information Technology?

The overload created by the increased complexity and diversity of information documentation needed to maintain certification will require tools on the part of both diplomates and certifying organizations (such as the ABP) to store, manage, and communicate it in a timely, organized manner. Diplomates will need support to assess their learning needs, online resources to fulfill those learning needs, and information tools to manage and demonstrate their progress in lifelong learning and practice improvement. Certifying organizations will need more sophisticated data management tools to track information from diverse sources (licensing boards, professional educational resources, patients, peers, and diplomates) in a secure, reliable, and valid manner to meet the public demand for accountability.

Many of the formal activities in which diplomates will participate to fulfill requirements (formal knowledge assessment, closed-book proctored examination, and peer/patient surveys) will be online. It is estimated that about 20% of all continuing medical education (CME) credits are earned via electronic media.[5] While the ABP has created or is in the process of creating these activities, it may recognize specific programs and activities sponsored by other professional education organizations (such as the American Academy of Pediatrics [AAP]) as also meeting the requirements. As a designated organization, the AAP has been developing, in partnership with the ABP, eligible continuous professional development

(CPD) programs and tools to help members organize, manage, and communicate information about their participation in and completion of these activities.

How Can the American Academy of Pediatrics Help Navigate Through This?

The AAP currently has 3 main applications that apply directly to PMCP.

- **The Pediatrics Review and Education Program (PREP The Curriculum®),**[6] the popular, structured, sequential, year-long learning activity, satisfies the requirements for Knowledge Self-Assessment. It needs to be done only once in the 7-year period. PREP® is built on ABP content specifications and provides similar preparatory experience as the ABP Knowledge Self-Assessment for the proctored examination. Currently, there is no available Decision Skills Self-Assessment (from either the AAP or ABP), the first module planned for release from the ABP in 2005.
- **The Education in Quality Improvement for Pediatric Practice (*e*QIPP)**[7] program is an online quality improvement activity for analyzing and identifying opportunities for practice improvement. It is currently the only program that satisfies requirements for Practice Performance. Future applications and modules to meet the requirements for PMCP currently are under development by the AAP and ABP.
- ***Pedia*Link**[8] is an online portal for CPD which has been under development by the AAP for several years that helps members focus and manage their self-directed learning. Through the development of individualized learning profiles, plans, and activities, a user engages in the process of reflective learning with the ultimate goal of practice improvement. The interface also grants access to various online publications (with subscriptions), education and quality improvement modules (on topics such as asthma and attention-deficit/hyperactivity disorder), and tools to record and document credits earned in CPD activities.

  The *Pedia*Link conceptual model (see Figure) is centered on the learner and learning resources. The learner creates a learner profile of professional learning needs derived from practice (clinical problems) and from online self-assessment tools. The learning plan links the learner's professional learning needs based on the profile to specific learning resources and other information through links and reminders. Participation in learning activities specified by the plan and active assessment of practice change (practice reflection) is documented in the learner portfolio as a way to monitor progress (improvements in practice) and to determine further professional learning needs.[9]

How Are We Going to Keep Track of All This?

To facilitate electronic communication of information about members' participation in PMCP-eligible activities, the AAP and ABP jointly have been developing applications using Web services and XML-based standards to ensure secure, seamless, and automatic transfer of member-specific information from one organization to another.[10] When completed, educational organizations in general (such as the AAP) will be able to transmit CME information directly to certifying organizations (such as the ABP) on completion of learning activities, without need for direct intervention by users.

Establishment of health care information networks such as the National Healthcare Information Infrastructure (projected for widespread deployment of health information technology within 10 years)[11] and information standards (such as the comprehensive set of health information interoperability standards recently adopted by the Consolidated Health Informatics Initiative),[12] combined with increasing cooperation among professional education societies and certification organizations,[13] will promote development of interagency applications similar to the described AAP-ABP interface. In the near future, it may be possible to facilitate all PMCP-related information automatically, thus reducing human error.

- Professional standing information can be updated and transmitted (on application for PMCP by a diplomate) from state boards to the ABP via TCP/IP using a Health Level Seven (HL7) standard.
- Participation in and completion of Knowledge and Decision Skills activities can be transmitted from the AAP to the ABP using Web services and common XML schemas (as described).
- Test performance results can be transmitted from a Thompson/Prometric test site to the ABP using a secured Simple Object Access Protocol (SOAP).
- Peer/patient survey responses can be collected via Web forms and telephone surveys. Practice data can be automatically collected from a practitioner's electronic medical records with personal health information removed for use in practice improvement modules. All such data, once collected, can be processed, transformed, and shared by the ABP and diplomates simultaneously using XML-based technologies.

OK…What's Next?

The goal of designing and implementing such information and communication tools is to help pediatricians to do the following while reducing information overload and additional time burden:

- Demonstrate competence in the care of children.
- Facilitate practice monitoring and improvement.
- Promote practitioners' lifelong reflective learning effectively.
- Bring the best knowledge to application in clinical problems.

The desired outcome resulting from all these endeavors is the improved health and well-being of children. Information technology should support and simplify the physician's role as an information manager for patient care as well as for his or her own professional data.

So, what is in the future? Much of what has been presented is already available or will be available in the next few years. Although there has been a marked increase in the adoption of information technology into work flow of pediatricians,[14] there is still much to be done and more questions to ask and answer.

- How can pediatricians incorporate information resources and evidence into practice work flow?
- What sorts of tools do pediatricians need to optimize care and maximize their lifelong learning?
- What more can organizations such as the AAP and ABP do to support pediatricians in this regard?
- How can we make the transition from medical student to resident to practicing physician a seamless continuum?
- How will this change pediatric practice and outcomes?

The PMCP probably will continue to evolve as the demand for quality and competence increases. The tools to manage the information involved also will evolve. Professional education organizations such as the AAP will need buy-in and feedback to direct and improve the development of tools and interfaces such as *Pedia*Link to meet the professional development needs of practitioners in the 21st century.

If you are interested, this is probably a good forum from which to start the dialogue.

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scocitnews

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A Tour of the Steering Committee on Clinical Information Technology Web Site

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The Web site for the Steering Committee on Clinical Information Technology (SCOCIT) continues to evolve, containing information that the committee hopes will be valuable to SCOCIT members, American Academy of Pediatrics (AAP) members, other pediatricians, and the public at large. Following are a few current and planned features of the Web site.

Domain Name Update

One of our recent core changes that occurred in March was to obtain the scocit.org domain name, switching from the aapscot.org and scocit.aap.org domain names. We recommend that you update your bookmarks to www.scocit.org—although the former domain names have been retained and will continue to work in the near future.

Announcements and Recent News

Most of the content on the home page of the Web site is composed of recent news and announcements that are displayed as soon as they are entered into a Web-based database (MySQL). This allows for timely updating of the Web site with minimal knowledge of HTML, a date stamp that documents when the item was posted, and automatic removal from the site using PHP scripts and an ending date field.

General Steering Committee on Clinical Information Technology Information

Both a flyer and brochure in Microsoft Word format are available online, describing the mission, goals, and activities of SCOCIT, along with instructions on who is eligible to join SCOCIT and how, to share with those who may be interested. Additional membership benefits, a list of SCOCIT members serving as contacts for their local chapters, and a history of Byron Oberst Award recipients also are posted.

When SCOCIT was first formed, 3 broad areas were identified in the mission of the steering committee—educational responsibilities, government and regulatory initiatives, and applications/technology initiatives. The SCOCIT Web site details various activities in each of these areas.

Education

The Steering Committee on Clinical Information Technology is committed to offering and highlighting educational programs to general pediatricians concerning the uses of computer and other technological applications in pediatrics. Toward this end, there is an online educational survey that is used periodically to reassess members' interests in various topics. As the National Conference & Exhibition (NCE) approaches each year, the Web site will feature a list of SCOCIT-sponsored sessions, a detailed description of the day-long SCOCIT Program, and a complete list of topics with descriptions being presented at the Computer Lab.

Government/Regulatory

The Steering Committee on Clinical Information Technology and its predecessors, the Section on Computers and Other Technologies and Task Force on Medical Informatics, have been responsible for representing the AAP on various issues concerning the use of information technology, several of which have taken the form of policy statements. The SCOCIT Web site provides a direct link to these specific statements.

Especially recently, there have been several government initiatives underway concerning information technology. The AAP in general, and SCOCIT in particular, are involved with these initiatives, such as Health Level Seven (HL7), the Pediatric Data Standards, and the Continuity of Care Record (CCR). Links that describe these efforts are included on the SCOCIT Web site.

Applications/Technology

Keeping up with the latest and greatest innovations is a challenge in the ever-changing world of information technology. As SCOCIT attempts to keep abreast of state-of-the-art applications, we are developing online tools to help SCOCIT members contribute their own reviews and opinions on various applications with which they have had firsthand experience.

By far, the greatest number of questions fielded at the Computer Lab concern the process of selecting an electronic medical record (EMR). This topic also generates a great deal of interest on the SCOCIT e-mail list, so much so that SCOCIT Chairperson S. Andrew Spooner, MD, MS, FAAP, compiled and posted on the SCOCIT Web site an "Electronic Medical Record FAQ," which summarized many of the issues that commonly arose, along with several suggestions. There is also a link to the 2004 Towards an Electronic Patient Record (TEPR) Conference, where several systems were evaluated with a "TEPR Pediatric Challenge" that was developed with the assistance of several SCOCIT Executive Committee members.

Given the importance of the EMR in pediatrics, SCOCIT has determined that an online method of providing user feedback, reviews, and opinions on various pediatric EMR solutions would be a valuable resource to all pediatricians faced with the challenge of evaluating and selecting an EMR solution. It is hoped to have this resource up and running by the fall NCE.

It should be noted that there are currently some other bulletin boards out there that discuss EMRs. One in particular for physicians only is at www.docsboard.com, and another is at www.emrupdate.com. Also, the SCOCIT e-mail list provides communication among SCOCIT members for a variety of issues concerning EMRs and specific applications.

Members Only Area

The SCOCIT Web site has its own members-only area, which contains primarily online back issues of newsletters and an occasional smattering of resources such as PowerPoint presentations and liaison reports. Currently, we are determining the pros and cons of maintaining this portion of the Web site versus posting these materials in the AAP Member Center area for SCOCIT.

The Pediatric Focus

It is easy to be overwhelmed with the amount of information on the Internet concerning medicine and information technology. Other professional associations have provided online resources to assist their specialties, such as the American College of Physicians Computers in Medicine site (www.acponline.org/computer/cim.htm) and the American Academy of Family Physicians Computerization site (www.aafp.org/x384.xml).

The Steering Committee on Clinical Information Technology strives to be your center of resources for issues related to the pediatric implementation of clinical information technologies, and we invite your comments and suggestions to provide valuable online resources to support this mission.