cocitnews

The Council on Clinical Information Technology

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From the Chairperson

By Joseph Schneider, MD, MBA, FAAP
Chairperson, Council on Clinical Information Technology

American Academy of Pediatrics and American Recovery and Reinvestment Act—Avoiding the Unexpected Consequences

The movie "Charlie Wilson's War" has a famous story about a boy and the consequences of getting a pony as a gift. For each seemingly good and bad event that occurs, the village Zen master says, "We'll see…," and the result is exactly opposite of what everyone expects.

The American Recovery and Reinvestment Act (ARRA) and Children's Health Insurance Program Reauthorization Act (CHIPRA) legislation that passed last year had a number of features that are seemingly good, but, in the words of the Zen master, "We'll see…." Following are a few examples of areas where the outcomes might be other than what we want to see for pediatricians and children, followed by a request for action.

A reduced focus on child-friendly electronic health records (EHRs):

The definition of "meaningful use" for Medicaid is potentially different for the 50 states, and compliance with the Medicaid program stimulus program is complex and run by the states. By the summer of 2010, EHR vendors are likely to have more adult physician business than they can handle because of the relative simplicity of the Medicare stimulus program. Vendor development and implementation efforts will focus on satisfying the needs of these new customers, particularly if they have to create 50 different reporting systems to satisfy each state's version of meaningful use. The risk to child-friendly EHRs has never been greater.

A "one-size-fits-all" approach to Regional Extension Centers (RECs)

These centers are designed to provide support to primary care physicians in the selection, implementation, and optimization of their EHRs. Having been to the planning session for the RECs in my state, it is fair to say that these are likely to be focused on adult medicine and adult-friendly EHRs. The thought that pediatric practices might have different work flows and EHR needs is foreign to many of the RECs as they are currently structured. As a result, they may try a "one-size-fits-all" approach. The risk to pediatric offices has never been greater.

Health Information Exchanges (HIEs) that exclude or expose confidential adolescent data

In a real-life example that occurred recently, an HIE made the decision to exclude adolescent data because of the complexities

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AAP and ARRA—Avoiding the Unexpected Consequences

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of handling confidentiality. Luckily, this was reversed by quick action by American Academy of Pediatrics (AAP) members in the Section on Adolescent Medicine and Committee on Adolescence, and a policy is being drafted with the Council on Clinical Information Technology (COCIT) to guide EHR and HIE vendors. However, there are more than 100 HIEs, and each is being developed differently. The risk to adolescent privacy has never been greater.

Health Insurance Portability and Accountability Act (HIPAA) penalties as an EHR adoption disincentive

For a small practice, the new HIPAA rules may have potentially devastating financial penalties for inappropriate release of protected health information (PHI). State Attorneys General now have the ability to bring HIPAA actions, and the only true protection appears to be encryption of all PHI, whether it is on your desktop office computer or a mobile device like a Blackberry or iPhone. The penalties for inappropriate release have been increased to where they can dwarf the ARRA incentives for EHR adoption, and the legal parameters are still not clear. All this could have a chilling effect on EHR adoption.

What can we do to avoid these unintended consequences?

The AAP, through COCIT and its many chapters, councils, committees, and sections is working on many of these issues. In COCIT and many other areas, your help is needed. There is an enormous amount to do to avoid the future that I have painted. For example, consider joining the COCIT Rapid Response Team Listserv® (contact Jen Mansour at jmansour@aap.org), which provides feedback on urgent issues. Get involved in your regional HIE, REC, or other activities and share the information with COCIT and the new Child Health Informatics Center as it develops. Get involved in other sections, councils, and committees and help them understand the importance of considering informatics in everything that they do.

There are many ways to help, and your COCIT leadership and the AAP are dedicated to addressing these issues. So, while I have painted an intentionally bleak picture, in the words of the Zen master, "We'll see…."

From the Vice-Chairperson

By Eugenia Marcus, MD, FAAP
Vice Chairperson, Council on Clinical Information Technology

The e-mail lists, Webinars, seminars, e-mails, and meetings are abuzz with 2 words: "meaningful use." Meaningful use is a 556-page document released by the Centers for Medicare & Medicaid Services (CMS) on December 30, 2010, that defines how an electronic health record (EHR) should function to allow the clinician to successfully document the care of a patient and allow the doctor and the patient to benefit maximally. For the doctor, it is important to have a full picture of the patient's care and to be able to retrieve essential information wherever it resides. This is what is referred to as interoperability. The doctor also needs to be able to aggregate data from the patients and use it to answer questions about disease and its prevalence in the community and in the practice, and evaluate the success with which the illness is treated and the patients are managed.

For the patient, it is important to be able to access the record from wherever the next point of care occurs. The patient also should have access to the record and be able to

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Interested in Joining COCIT?

To join COCIT, contact the AAP at 800-433-9016 and ask for Membership.
E-mail: membership@aap.org.

From the Editor

By Craig M. Joseph, MD, FAAP
Editor, cocitnews

It is hard to be a newsletter editor when your newsletter is published twice a year, but the news is changing almost daily. Do you include articles that are cutting edge when written, but might seem dated and maybe even humorous when published 2 months later? No one wants to be associated with a headline that says, "Dewey Defeats Truman!"

So, to avoid untimely news in our newsletter, I have decided to offer 2 possible scenarios that might have played out since the beginning of the year. I would ask our readers simply to cross out the paragraph that is incorrect, and pay close attention to the other paragraph. Thanks!

Option 1:

This has been an exciting year so far in the world of pediatric clinical informatics. The Office of the National Coordinator for Health Information Technology (HIT) published meaningful use guidelines to ensure that physicians seeking funds for HIT are deserving of those monies. Let me summarize those guidelines: Essentially, if you type on a keyboard while with a patient, you are meaningfully using HIT.

Option 2:

This has been an exciting year so far in the world of pediatric clinical informatics. The Office of the National Coordinator for Health Information Technology (HIT) published meaningful use guidelines to ensure that physicians seeking funds for HIT are deserving of those monies. Let me summarize those guidelines: Physicians must e-prescribe, securely communicate with patients over the Internet, send laboratory results to patients within 4.2 minutes of receiving them, meet 38 Physicians Quality Reporting Initiative (PQRI) measures each year, meet 12 Joint Commission Core Measures each year, inform patients of any overdue library books, and be able to electronically send accurate orders to Starbucks® for *both* lattes and mochas.

Maybe the news turned out to be something in between these options. Let's hope so!

From the Vice-Chairperson

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comment on the opinions in the record and add observations. For the patient, there should not be any dropped pieces of information. The 556-pages (double-spaced with wide margins) have multiple additional functions that an EHR must be able to do for the physician to be able to use it meaningfully. There are financial incentive awards for the physician to adopt and use this new tool.

Physicians who already have an EHR should be on top of their vendor to meet the specifications. If they need to upgrade to meet all the features, demand that this is done. Especially make sure your EHR is certified.

Certification is essential for the physicians who are deciding to acquire an EHR. At the moment, the Certification Commission on Health Information Technology (CCHIT) is the only certifying agency, although the Office of the National Coordinator of Health Information Technology (ONC) is holding out that there might be others. The Certification Commission on Health Information Technology has built its prowess over the past 4 years and is well-schooled in defining functionality and testing it; thus certifying it. So, the first thing is to look for an EHR that is CCHIT certified and has the child health add-on. After that, check out the EHR's ability to connect to a Health Information Exchange (HIE) and/or registry if one exists in your community. If there is not an HIE, or the EHR does not have the ability to connect yet, it is important that you get a commitment from the company that it will connect in time for you to get the benefits of the EHR stimulus program. Lastly, explore the reporting system in detail. Of course, focus on the ease of entering data, but also focus on ease of getting information out. Get, in writing, that the vendor will meet the full requirements of the meaningful use program, and put some financial penalties in the contract for nonperformance.

This is huge and it is important for you to come off the fence and begin the transition to 21st-century medicine.

Mobile Technology—A New Armamentarium for Clinicians?

By Pradeep Alur, MD, FAAP
Council on Clinical Information Technology Member

Personal digital assistants (PDAs) are part of everyday life of clinicians; however, their use has largely been limited to information retrieval despite their multifunctional capabilities. With the advent of PDA and cell phone hybrids, and smartphones, which have a built-in wireless broadband feature, they have tickled the imagination of the clinicians. In this article, we will discuss how the clinicians around the globe have exploited mobile technology creatively both for academic and clinical care purposes.

Let us first discuss how the mobile technology is deployed for clinical care. Short messaging service (SMS) is a very useful feature with which a user can send a message of up to 160 characters to a cell phone very quickly. This can happen asynchronously (the receiver need not perform any action to receive the message). Hence, it saves time. Following are a few examples of creative use of this feature.

Diabetic Care

1. Short messaging service was used to send patient-specific recommendations to a group of adult patients with diabetes after they sent daily reports on glucose, diet, and exercise to the clinician. Researchers Kim and Jeong noted that HBA1c decreased 1.15% at 3 months and 1.05% at 6 months respectively.
2. The accurate prevalence of the hypoglycemic episodes in children with type 1 diabetes was not well known. Researchers in Scotland used diary, SMS, and computer-based recording by the patients. There were 37 subjects between the ages of 7 and 18 years (705 recorded days). Recording of the hypoglycemic instances was 95% with SMS, compared to 65% with diary and 89% with computer respectively. There was a mean of 5.2 hypoglycemic episodes/month, and 18.2% had more than 10 episodes/month. This study highlighted that hypoglycemia was 3 times more prevalent than previously reported.
3. Sweet Talk, a text-messaging support system designed to enhance self-efficacy, facilitate uptake of intensive insulin therapy, and improve glycemic control in pediatric patients with type 1 diabetes, showed improvement in self-efficacy and adherence in children aged 8 to 18 years with diabetes. Other researchers also have found that cell phone SMS users sent more blood glucose results than e-mail users in a pilot study involving adolescent patients with diabetes.
4. In a recent systematic review (May 2008), authors concluded "…text message interventions can improve clinically relevant diabetes-related health outcomes by increasing knowledge and self-efficacy to carry out self-management behaviors."

Some companies have integrated glucometers, sphygmomanometers, and weighing machines with cell phone technology containing a GSM/CDMA chip, which can wirelessly transmit the results to the Web server and automatically incorporate the results into the personal health database (MedApps, Inc). Since the younger generation has a penchant for mobile technology, we may be more successful in improving their care by exploiting their use and knowledge of the medium.

Obesity Management

1. A recent study found that SMS- and multimedia message service (MMS)-based obesity management improved weight loss in a study group compared to the control group at the end of 4 months. The study group received daily messages, and 92% of the intervention group said it would recommend this intervention to friends.
2. In a recent study, Hurling et al concluded, "A fully automated Internet and mobile phone-based motivation and action support system can significantly increase and maintain the level of physical activity in healthy adults." The intervention group, which used Internet and mobile phone technology, lost more body fat and had increased moderate physical activity than the control group.
3. In another study of adults, who were followed for 1 year, the study group that received SMS about staggered food reduction and tailored advice lost more weight (4.5 kg vs 1.1 kg) and lost more waist circumference (6.3 cm vs 2.4 cm) than the control group.

Other Chronic Conditions

1. Scherr et al studied the effect of home-based telemonitoring in a randomized prospective controlled trial using mobile phone technology on the outcome of patients with heart failure after an episode of acute decompensation. Members of the study group were monitored for 6 months, while the control group

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received only medication intervention. In the control group, 33% were either readmitted to the hospital or died compared to 17% in the study group. The study group also experienced shorter duration admissions.

2. Mobile phone-based blood pressure (BP) monitoring system consisting of Bluetooth-enabled BP instrument, cell phone, and fax-back physician's report data server reduced hypertension in a small group of 33 patients with diabetic hypertension who were uncontrolled before the intervention.
3. The CAMP (care for asthma via mobile phone) initiative, which was developed in Taiwan, uses mobile phone technology to give patient-specific feedback on their peak flow meter results. Several authors have published feasibility studies, which demonstrated a significant benefit in improving the compliance with medications in patients with asthma.

Camera

Some clinicians have successfully harnessed the digital camera-enabled mobile technology for improving the cardiac resuscitation, including use of defibrillators in simulated patients remotely. Others have noted that hospital discharge video instructions on cell phones were more effective than a paper-based format. One study looked at the use of the mobile phone camera to assess emergency ear, nose, and throat (ENT) radiological investigations. Six ENT surgeons and 5 specialist registrars made correct diagnoses in all 154 cases in one study. The images were taken and transmitted by cell phones, and video telephony also was used to assess the accuracy of needle placement in thoracentesis; video telephony improved the accuracy and success rate in thoracentesis.

Podcast

Creating audio-video material for the mobile phone can help in patient education as well as resident/medical student education. Ear, nose, and throat surgeons created videos of actual pediatric ENT surgical procedures and added audio for patients/parents to download onto their mobile phones, which was used to augment the parents' education about the procedures. Several hospitals have created podcasts of educational and orientation materials to help residents and students. Johns Hopkins Hospital and ReachMD have made continuing medical education credits available as podcasts. Brock and Smith analyzed the role of educational videos on PDA in 51 adult patients with human immunodeficiency virus. They reported statistically significant ($P < 0.05$) improvement in knowledge of disease, medications, and medication adherence.

The author of this article created animations with audio commentary to enhance parents' understanding about patent ductus arteriosus, a common premature infant problem in the neonatal intensive care unit (NICU). The majority of parents preferred PDA animation to a paper-based format and needed less assistance compared to paper/printed format.

A pilot project evaluated the potential of PDA technologies to improve the oral health of people with mild to moderate intellectual disabilities and a long-standing history of poor oral health self-care. Oral health video and audio materials were prepared and transferred to PDAs. About 40% of patients achieved improvement in at least 3 areas of oral health. A recent article describes the methods to create and distribute these podcasts.

Nursing educators investigated whether PDAs would enhance students' pharmacological and clinical contextual knowledge. Students using the PDAs demonstrated a moderate increase in their mean score, which was double the increase in the control group (pharmacological and clinical contextual knowledge). A study of the use of PDAs to enhance undergraduate clinical nursing education concluded, "Results of this study support PDAs as an effective student learning resource, especially for reference materials… Students made substantial use of their PDAs and health team members, while decreasing reliance on textbooks and clinical faculty."

The author himself successfully conducted a pilot study at National University of Singapore involving wireless-enabled PDAs. Medical students were given PDAs with required reading material for the NICU rotation as well as the schedules. Instructors did interactive teaching sessions with students. No paper formats were used. The author also carried out end-of-the-posting examination utilizing the wireless-enabled PDAs that students had. Students submitted online anonymous feedback using wireless PDAs.

In essence, more and more evidence is emerging that supports the role of mobile technology, including PDAs in both patient education and in improving clinical outcomes. Our research shows that PDAs can play a significant role in enhancing health literacy of our patients, especially those who have to overcome the language barriers or learning disabilities.

Full references are available on the COCIT Web site. Selected references include the following:

- Krishna S, Boren SA. Diabetes self-management care via cell phone: a systematic review. *J Diabetes Sci Technol*. 2008;2:509-517
- Haapala I, Barengo NC, Biggs S, Surakka L, Manninen P. Weight loss by mobile phone: a 1-year effectiveness study. *Public Health Nutr*. 2009;12:2382-2391. Epub 2009 Mar 27
- Alur P, Cirelli J, Goodstein M, Bell T, Liss J. Role of handheld PCs in disease comprehension by parents in the NICU. Poster presentation at: PAS-SPR conference; May 2009; Baltimore, MD

A Health Insurance Portability and Accountability Act Security Manual Is Your Friend

By Alice A. Loveys, MD, FAAP
Council on Clinical Information Technology Member

If your practice has a single computer in it with electronic patient health information, the practice is required by law as specified in the Health Insurance Portability and Accountability Act (HIPAA) to have a HIPAA Security Manual. Many practices are under the misconception that this only applies to those practices with an electronic medical record system.

As I evaluate practices for electronic health record (EHR) readiness, I always ask to see their HIPAA security manual. Inevitably, they run and bring me their privacy manual. The privacy section of HIPAA drew the most attention when HIPAA was first released. Recommendations for security of electronic patient information were published later. Even though most practices have electronic practice management systems, they have not yet completed their SECURITY manuals. (Don't worry, I don't work for the government and I'm not turning anyone in.)

However, completing this manual is a **great** first step in part of the office assessment. Templates are available through the American Academy of Pediatrics Member Center Web site (http://www.aap.org/moc/hipaa/security.htm).

The manual is practical on many levels:

- It could save you money! Part of doing the manual is documenting a hardware and software inventory. When moving to an EHR, you may NOT have to upgrade equipment, but you don't know unless you know what you have.
- It can increase staff involvement and confidence! You must document training for staff on office policy on passwords, e-mail, Internet use, and the handling of suspected breaches.
- It could save your practice (and, again, **save** you **money**)! One of the most heartbreaking calls I get is, "Our server crashed and we have a backup from August" (it is now January). "Is there any way to recover the data?" Unlikely.
- The HIPAA Security Rule does not tell you how often you have to back up your data or how, but it does require you to specify how often you will. How much data can you afford to lose? A week's worth? A day's worth? 15 minutes' worth? It is strongly recommended that you **test** the data. The next most heartbreaking call is, "We were backing up our data and the files were there, but, when we went to restore the data, they were 'corrupt.'" A backup is not complete until the data are tested!
- It could save you money, as auditing will go from complaint driven to a proactive model.

The Department of Health and Human Services (HHS) has published an interim final rule that strengthens enforcement of the HIPAA privacy and security rules. The actions were mandated under the Health Information Technology and Clinical Health (HITECH) Act within the American Recovery and Reinvestment Act. The interim final rule was effective on November 30, 2009.

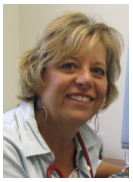
"This interim final rule amends HIPAA's enforcement regulations, as they relate to the imposition of civil money penalties, to incorporate the HITECH Act's categories of violations, tiered ranges of civil money penalty amounts, and revised limitations on the Secretary's authority to impose civil money penalties for established violations of HIPAA's Administrative Simplification rules (HIPAA rules)," the rule states. "This interim final rule does not make amendments with respect to those enforcement provisions of the HITECH Act that are not yet effective under the applicable statutory provisions. Such amendments will be subject to forthcoming rulemaking(s)."

The HITECH Act increased civil monetary penalties for privacy and security violations. In the rule, the HHS established 4 categories of violations: did not know, reasonable cause, willful neglect that was corrected, and willful neglect that was not corrected. Penalties range from $100 to $50,000 for each violation, with a cap of $1.5 million for all such violations of an identical provision in a calendar year.

The HITECH Act's privacy and security provisions became effective on February 18, 2009. Consequently, the interim final rule distinguishes between violations occurring before and on or after that date "with respect to the potential amount of civil money penalty and the affirmative defense available to covered entities," according to the rule.

The interim final HIPAA enforcement rule, published October 30, 2009, in the *Federal Register*, is available at gpoaccess.gov/fr/index.html.

Field of Dreams: Building a State Immunization Information System so That Everyone Will Come



By Susan J. Kressly, MD, FAAP
Council on Clinical Information Technology Member

Most physicians recognize the inherent value in immunization information. Many states have recognized the return on investment of a State Immunization Information System (SIIS) regarding patient quality, public health information, and reduction in duplicative services. So why do many states, despite the assistance of AIRA (American Immunization Registry Association), struggle with physician use of a SIIS?

In February 2008, I had the opportunity to present at a Centers for Disease Control and Prevention stakeholders' meeting dedicated to "removing physician barriers to SIIS adoption." They discussed miniscule monetary awards as well as statewide legal mandates as 2 potential ideas. Since I was one of only 2 physicians in the room who practice in an independent practice, it will come at no surprise that they had no real understanding of the costs to a practice associated with using office staff to enter immunization data on the SIIS Web site by hand on a regular basis. Ask our colleagues who practice in the state of New York who now have been mandated to participate in the New York SIIS.

The voice of the American Academy of Pediatrics (AAP) has repeatedly stated: If you build the system right, every physician will use it. It will save physicians time and money in their office if implemented correctly. Ideally, the SIIS should be real time, bidirectional, and seamlessly integrated within an electronic health record (EHR). Historical immunization information should be available to the physician at the click of a button. Reporting to the registry should be done as part of the EHR itself, with zero additional work to office staff. Both of these functions should occur in real time.

For several years, the Pennsylvania SIIS struggled with physician buy-in. There were little meaningful data in the SIIS. Many were frustrated with the inflexibility of the state system to the point that Philadelphia and Pittsburgh built their own registries. The tide has begun to change. As the standards are now mature and robust enough to implement an ideal registry, Pennsylvania is one of the first states to implement a real-time, bidirectional interface. (Currently, New York City and Kansas have similar registries in use, and several other states are in the early stages of implementation.)

How does this really look? If a new patient presents in my office without immunization historical information, I can hit a "synch with state registry button," and all the registry information is displayed in a way that I can analyze it and use it to populate my EHR. This step is important, as there is often an 8% to 10% decay of the data as they have been hand-entered into the system in the past. My EHR tracks all the immunizations recorded into my system behind the scenes, and, every 20 minutes, that information is sent to Harrisburg. The 500 H1N1 vaccines that were administered to my patients over a very short period were reported to the state within minutes of administration, and my office staff did zero work to make that happen. It all happened "under the hood."

Pennsylvania is working with several large pediatric-friendly EHR vendors to integrate their systems as well. Within the next 6 months, we expect to markedly increase the use of the SIIS, which then increases the robustness and accuracy of the data. With American Recovery and Reinvestment Act (ARRA) funding, many states will qualify for additional funds for such "meaningful use" of health information technology. Work with your AAP state chapter to push your SIIS to adopt what is possible. Build it right. We will come.

Designate Your Friends of Children Fund Contribution for COCIT's Activities!

Do you know that you can designate your tax-deductible Friends of Children Fund contribution to specific programs or even a section or council? You can donate online at http://www.aap.org/donate/fcfdonate.htm. Toward the bottom of the form, where it says, "Please apply my gift to:", select "a program of my choice" and type "COCIT" in the text box. Donations received in this manner will supplement your Council on Clinical Information Technology (COCIT) dues and allow COCIT to continue ongoing programs or launch new programs. We appreciate your support!

The Consumer Electronics Show 2010

By Mark M. Simonian, MD, FAAP
Council on Clinical Information Technology Immediate Past Chairperson

The Consumer Electronics Show (CES) is held annually in Las Vegas, and, this year, attracted more than 100,000 attendees, including yours truly. I returned after 3 days of walking the miles of crowded hallways with some new discoveries and a lot of hands-on experiences with the technologies that could be in your office in the coming years.

Row after row of cameras, smartphones, and computer monitors beckoned the technology buyers and distributors, showcased by scantily clad showgirls or monogrammed salespersons. Most of the electronics would be for current or future sales to the general consumer. I used a little imagination and wondered how there might be medical application for the pediatrician's office.

It was amazing how the hardware was blending the communication features through the Internet like you see with smartphones, yet these were TVs, cameras, home theaters, and refrigerators. Most vendors, like Sony, Panasonic, Visio, Nikon, Canon, and more, did not just show devices but built-in tools to link to the Internet and many services through home or business, and wired and wireless networks. Future refrigerators, for example, will be able to page and notify you when there are power outages or temperature fluctuation (or keep inventory)—expensive add-on devices some offices use today will be the standard in the future.

A major theme from many vendors promoted 3-D for TV screens, projectors, cameras, and other hardware for the general public. We have arrived at the processing power and distribution techniques to create and present the images with readily available glasses. By applying these tools, it may be easier to present the examination via telemedicine than in a physician-patient in person encounter. With a 3-D picture or video, a remote examination would *better* represent the values needed to make an assessment or record it for transmission to subspecialists.

At the exhibit hall at the Washington, DC, National Conference & Exhibition (NCE), I saw a demonstration of a small, portable attachment to your Welch Allyn otoscope to examine and take photos of the ear, which can be helpful to document and instruct parents. Currently, these seem out of reach for most offices for occasional use (>$1,500). One vendor at the CES showed a hardware and software solution that can be linked to a computer or monitor to examine the skin, eye, or ear for under $300 (640X480 resolution, or double the cost for twice the resolution), capture the picture, measure the lesion, and save for your record. I ordered one and hope to bring it to the next NCE in San Francisco, CA.

E-book readers have been around for a couple of years now. At least 6 new vendors were there demonstrating their products with new features, along with add-on products like cases of every kind to keep them safe and clean. Some models suggest expanded features, including links to the Web. They could be used to access patient information that could be shown in the office in a size that is readable for parents, grandparents, and adolescents. Some cost less than current tablets, often under $500, are easily customizable, and might be used to collect and show information that could be linked to your practice management, electronic health record, or Web site. Why are these better? They have a larger form factor than smartphones, are lightweight, are more durable than current electronic devices and tablets, and they could provide a multifunction tool for education and information collection. Costs are still too high, but they have potential. **David Paperny, MD, FAAP,** has shown how similar tools can be a big advantage in collecting information and providing education for patients.

The latest netbooks were there, from many vendors, with increased function at low cost ($250-$450). I looked at them to see how they might be used in the office to collect or show information, but found the screens (at 9-10 inches) were too cramped when you used the screen keyboards to fill in forms. Some of the e-book readers mentioned already-used buttons outside the screen to manipulate the screen content, although it is unclear if this would be easy for novice users just coming into the office. With a large portion of the younger public becoming familiar with texting or operation of newer phones, something in that format would be easier to use. I also looked at the add-on vendors who created protective covers. This may allow these to be used safely if dropped, but the verdict is still out. If they can be packaged and be as solid as smartphones, which tolerate falls well, then they may be a realistic entry device rather than paper for surveys and registration. Current options are online submission or software solutions that read scanned forms. Right now, paper still rules because of cost, ease of creation, and distribution (but the gadgets are fascinating and show more features at lower cost).

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The Consumer Electronics Show 2010

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Kiosks have been around for years and show promise as a tool for registration and collection of other information like surveys and history taking. There are cost considerations, and the space requirements are significant. There was one vendor that pushed the curve with applications that were more interactive, which, eventually, could supplement registration staff to ask questions and collect information. The vendor used a large touch screen with projection- and movement-monitoring technology to detect the person in front of the screen, answered questions based on the screen location touched, and provided multiple answers with a video (not static) screen. It was interactive and was as close to a simulation of a real person as I have seen.

Touch screen was the other technology most vendors were adopting because the screen-technology costs have dropped dramatically. Everything from smartphones, cameras, and television and computer screens promoted touch entry. For those with less confidence in their typing and keyboard skills, this is becoming affordable and gives the user more options.

I plan to write more about the CES technology and its potential on the California Chapter 1 Blog at http://www.aapca1.org/chapter-blogs/category/health-tech. You can check out some of the technology described in the following links or write me at msimonian@aap.net.

Links

- Dino-lite (www.bigc.com)
- Entourage Edge (http://www.entourageedge.com/devices/entourage-edge.html)
- David Paperny, MD (http://xnet.kp.org/permanentejournal/winter04/model.pdf)
- Touchscreen technology (http://www.elotouch.com/Solutions/Medical/patients.asp)

Electronic Health Records in Primary Pediatric Care

Electronic health record (EHR) systems are computer applications that provide access to and control over patient data. Similar to paper records, these systems have additional functions, including decision support and automatic reporting. This module will discuss the benefits and barriers to adoption of EHR systems; develop a plan to address the technical, organizational, and economic challenges in EHR implementation; evaluate specific EHR products in terms of vendor stability and interoperability; and identify resources that can be helpful in choosing a specific EHR product.

For more information, visit www.pedialink.org.

COMMITTEE UPDATES

Education Committee

By Kristin Benson, MD, FAAP
Council on Clinical Information Technology Education Committee Chairperson

Although we cannot predict the impact of health care reform on our practices, we can be sure things are changing. As 2010 rolls out, it is time to consider your vision of the future. As pediatricians, we are key players in understanding how preventive care and screening can be done efficiently and effectively. We are key in the transformation of primary care practices to the Medical Home model, and we are key in the role of "primary care researchers." It is the research agenda for primary care that is glowing brightest in my rose-colored "crystal ball."

The idea of using large data sets from practices for research is not new. However, consider the possibilities. For example, the American Academy of Pediatrics (AAP) recommends the use of a validated developmental screen for preventive care visits at the 9-month, 18-month, and 30-month visits. The definition of "validation" is that the test (in this case, a parent questionnaire) measures what it is intended to measure. In a statistical sense, validation is frequently established by showing correlation with an already-established test. In a recent study of 53 low-risk children at age 24 months, the Ages and Stages Questionnaire did not correlate significantly with the Bayley Infant Development II scale in 2 of the 4 domains (problem solving and fine motor).[1] In a study of 110 children aged 4 to 31 months referred for physical therapy services, only 25% were identified by both the Peabody and the Bayley scales.[2] The "gold standard" Bayley II scale was standardized using only 1,700 subjects. Imagine pooling data from the PROS network, or even the entire AAP, to find the fewest number of criteria that would most accurately predict children in need of intervention. The number of children used to develop our current screening tools would be dwarfed in a short time. With appropriate outcome measures, the screening questionnaires could be continually improved, based on how these children actually do, along with more accurate normative scales.

The health care community has embraced the concept of "evidence-based medicine." Yet, where is the evidence? Even guidelines that are "evidence based" often fall into broad categories of "good," "fair," or "weak" evidence, with no defined means to collect better data.

If statistics is a scientific way to approach uncertainty, data from our practices can whittle away the uncertainty. A *P*-value is the likelihood that a given outcome in a random sample could be explained by chance alone. The higher the number of subjects ("n"), the more accurate the prediction. With logistic regression, the amount of variation because of each variable in the model can be determined. Again, the higher the "n," the more accurate the model. With computers, variables can be analyzed by the thousands with the press of a button. Pick your variables, collect standardized data, get a high enough "n," continuously refine the model, and…BINGO! Uncertainty shrinks! Medicine becomes less of a guess. We all become researchers as we practice with computer-aided analysis at the point of care.

The explosion of scientific research using structured data from electronic health records exists only in our crystal ball. We are struggling at the very beginning of this process. At best, we are looking at e-quality measures as they converge on available guidelines. It is a time to work in our own organizations, locally and nationally, to make better care happen with health information technology (HIT).

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Do We Know How to Find You?

To ensure that your contact information is kept up-to-date (so your colleagues can find you), please take the time to log in to the Membership Information Change Form on the Member Center Web site at www.aap.org/moc. Under "Member Community," click on "Update Contact Information." If you prefer to contact us by phone, you can do this by calling 866-THE-AAP1 and providing one of the AAP customer service representatives with your updated address information.

Education Committee

(continued from page 10)

The Council on Clinical Information Technology (COCIT) offers a suite of talks at the National Conference & Exhibition (NCE) every fall, designed to help you attain your vision in the crystal ball. My best pick of the 2009 NCE was the talk by Alexander Fiks, MD, and Robert Grundmeier, MD, who explained how they are using electronic data for quality reporting and research at the University of Pennsylvania/Children's Hospital of Philadelphia (CHOP). Reference this in your copy of the NCE proceedings. The Council on Clinical Information Technology has also provided a tutorial for HIT implementation via PediaLink. We are working hard to represent pediatrics on a myriad of national standards and regulatory committees. As Education Chair of COCIT, I welcome your submissions to the NCE in the areas of e-research and e-quality reporting. We need to share successes and failures, and learn from each other. The AAP has provided support by forming a Center for Child Health Informatics. Help us attain a rosy vision in our crystal ball for pediatrics of the future!

References

1. Gollenberg AL, Lynch CD, Jackson LW, McGuinness BM, Msall ME. Concurrent validity of the parent-completed Ages and Stages Questionnaires, 2nd Ed. with the Bayley Scales of Infant Development II in a low-risk sample. *Child Care Health Dev*. 2009;Dec 16 [Epub ahead of print]
2. Provost B, Heimerl S, McClain C, Kim NH, Lopez BR, Kodituwakku P. Concurrent validity of the Bayley Scales of Infant Development II Motor Scale and the Peabody Developmental Motor Scales-2 in children with developmental delays. *Pediatr Phys Ther*. 2004;16:149-156

SAVE THE DATE:

Peds-21 to Feature Health Information Technology and Quality Improvement

Friday, October 1, 2010
San Francisco, CA

The American Academy of Pediatrics holds a premier symposium, Pediatrics for the 21st Century (Peds-21), 1 day before its National Conference & Exhibition (NCE). Peds-21 is designed to address emerging issues that will affect the practice of pediatric care in the 21st century. Each symposium focuses on a specific topic and features a keynote speaker of national or international stature. In 2010, the focus is on health information technology and quality improvement.

Learning Objectives

Participants will

- Understand how the use of electronic health records (EHRs) can contribute to quality improvement efforts.
- Understand recent national efforts to increase adoption of EHRs and how they may contribute to improved health care quality.
- Use the information available in EHRs to plan and accomplish quality improvement in practice.
- Envision how health information technology, including telemedicine, personal health records, health information exchange, etc, will influence changes in the delivery of health care.

Application Committee

By Michael Leu, MD, FAAP
Council on Clinical Information Technology Applications Committee Chairperson

Over the last year, we have had a lot of excitement with the Child Health Informatics Center (CHIC) coming into existence, and a lot of work to do. I would like to introduce some Council on Clinical Information Technology (COCIT) members (and their interests) who are taking a role in the Applications Committee (in alphabetical order):

- **Louis Appel, MD, MPH, FAAP,** is the Chief Medical Officer and Director of Pediatrics at People's Community Clinic in Austin, TX. Dr Appel provides primary pediatric care at the Clinic and oversees the clinical programs. Louis has expressed an interest in immunization systems and clinical tools, including interactive asthma action plans. He is currently reviewing one such plan in use in Minnesota.
- **Allen L. Hsiao, MD, FAAP,** is the Chief Medical Information Officer at Yale-New Haven and Yale-New Haven Children's Hospitals, and an Assistant Professor of Pediatrics. He is a practicing emergency medicine physician. Allen has expressed an interest in iPhone application development, health information exchanges, and strategic planning.
- **George R. Kim, MD, FAAP,** is serving on the COCIT Executive Committee and is a Research Associate in Pediatrics (Neonatology) and Health Sciences Informatics at the Johns Hopkins University School of Medicine. He was a coeditor of the recently published text, *Pediatric Informatics: Computer Applications in Child Health.* George is interested in helping out with CHIC-related topics, including the model electronic child health record format and the definition of pediatric "meaningful use."
- **Sheryl Morelli, MD, FAAP,** is a primary care pediatrician and informatics physician at Seattle Children's Hospital. She is a Clinical Associate Professor of Pediatrics at the University of Washington School of Medicine, and on the Board of Directors of the Wonderland Development Center, a nonprofit early intervention agency for infants and toddlers with developmental delays and disabilities. Sheryl is interested in developmental-behavioral pediatrics and the development of more efficient processes for developmental surveillance.
- **Stephen J. Morgan, MD, FAAP,** is a primary care pediatrician in Salem, MA, and an informatician for Partners Healthcare. He is on the executive board for the American Medical Informatics Association (AMIA) Primary Care Informatics Working Group. Stephen is interested in the linkage between clinical decision supports and quality measurement.
- **Frederic Serota, MD, JD, FAAP,** has been in private practice since 1982. He completed his pediatric training with additional training in bone marrow transplantation at Children's Hospital of Philadelphia. He received his JD from Temple University School of Law in 1992. He has used electronic medical records for the past 3 years, and his practice is currently level III-certified by the National Committee on Quality Assurance (NCQA) physician-practice connections for medical home (PPC-MH) criteria. Fred has graciously agreed to review the new PPC-MH criteria.
- **Chris Stone, MD, FAAP,** is currently an Assistant Professor of Pediatrics and General Internal Medicine practicing at Children's Mercy Hospitals & Clinics in Kansas City. Chris is interested in attention-deficit/hyperactivity disorder and is currently evaluating the new toolkit created by the American Academy of Pediatrics (AAP).
- **William Zurhellen, MD, FAAP,** is a primary care pediatrician at Putnam Valley Pediatrics in New York. An AAP member since 1981, he has had extensive experience with numerous committees related to health information technology, quality improvement, and practice management. He currently serves as the AAP representative to the Physicians Electronic Health Record Coalition (PEHRC). He co-authored the second edition of *Computers in the Primary Care Office*, and designed and programmed PEDIBase, an integrated electronic health record and medical home management system.

Committee members have taken on small opportunistic projects as noted above, as we discuss possible initiatives to undertake over the coming year. I am pleased that such a diverse and capable group of experts is working with me to determine how best to foster the creation of applications to support pediatrics!

American Academy of Pediatrics National Conference & Exhibition 2009 Education Session Report From Washington, DC

By George R. Kim, MD, FAAP
Council on Clinical Information Technology H Program Chairperson

Scientific session, Byron Oberst presentation, and Expert Panel on Health Information Technology (HIT) and the Medical Home provide a growing forum on pediatric HIT adoption.

The Council on Clinical Information Technology (COCIT) 2009 National Conference & Exhibition (NCE) Education/Scientific Session (H Program) was held Sunday, October 18, 2009, at the Walter E. Washington Convention Center in Washington, DC.

The morning Scientific Session of platform presentations provided a forum on a wide range of mature informatics research projects, ranging from pediatric-specific clinical decision support applied to pediatric quality and safety to disaster management planning and deployment for children. The Best Paper/Presentation award went to **"Unintended Consequences of Weight Based Dosing Causing Medication Errors in Computerized Physician Order Entry,"** by Eric Tham, Teresa Fisher, Amy Poppy, Marguerite Swietlik, Lalit Bajaj, Daniel Hyman, and David Kaplan from the University of Colorado Denver School of Medicine and The Children's Hospital, Denver/Aurora CO. In addition to the 9 selected presentations, we had a record number of posters (21) on clinical pediatric informatics topics.

The noontime presentation was by Byron Oberst Award winner **Stephen M. Downs, MD, MS, FAAP,** Director of Children's Health Services Research and Associate Professor of Pediatrics at the Indiana University School of Medicine, Associate Director for Decision Science at the Regenstrief Institute for Health Care, and member of the American Academy of Pediatrics (AAP) Partnership for Policy Implementation. Steve's eloquent presentation outlined the challenges of translating clinical practice guidelines into computerized decision support (CDS) and focused on the need to prioritize guidelines for conversion. The "Downs Formula" for prioritization, as it was named during other sessions, is:

Priority for (a specific) CPG translation =
Problem Severity x Problem Frequency x
Recommendation Evidence x
Recommendation Feasibility.

The afternoon expert panel focused on HIT and the Medical Home. Panelists **Christoph Lehmann, MD, FAAP** (Director of Clinical Information Technology, Johns Hopkins Children's Center, member COCIT Executive Committee and American Medical Informatics Association [AMIA] Board of Directors), **Kevin Johnson, MD, MS, FAAP, FACMI** (Vice Chair of Biomedical Informatics at Vanderbilt University, 2008 Byron Oberst Awardee), **Janet Marchibroda** (Chief Healthcare Officer from IBM and NCE plenary speaker, former CEO eHealth Initiative), and **Alan Zuckerman, MD, FAAP** (Cochair of the Interoperability Working Group of the Certification Commission for Health Information Technology), spoke on many aspects of the Medical Home and pediatric HIT, including interoperability, meaningful use, and certified electronic health record (EHR) products for pediatrics, and the effect and implications of current legislation (American Recovery and Reinvestment Act of 2009, Health Information Technology and Clinical Health Act, Child Health Insurance Reauthorization Act) on the adoption of HIT (especially of EHRs) in US pediatric care. The well-attended session generated lively discussion among, numerous questions for, and debate with, the speakers that continued well beyond the allotted time.

Thanks to Beki Marshall and our panel of judges (Kris Benson, Mark Del Beccaro, Willa Drummond, Chris Lehmann, Mike Leu, Gregg Lund, Mark Simonian, Andy Spooner, David Stockwell, and Alan Zuckerman) for their enthusiasm in making this our best H Program to date.

Materials from the H Program are posted on the COCIT Web site (http://www.aapcocit.org/cocit_tasks.php?task=education). We hope you will join us for the next COCIT Educational Program at the 2010 AAP NCE on Sunday, October 3, 2010, in San Francisco, CA!

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American Academy of Pediatrics National Conference & Exhibition 2009 Education Session Report From Washington, DC

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Council on Clinical Information Technology Chair Joseph Schneider, MD, MBA, FAAP, congratulates 2009 Byron Oberst Winner Stephen M. Downs, MD, MS, FAAP.
(Photo courtesy Kris Benson, MD, FAAP)

Council on Clinical Information Technology National Conference & Exhibition Education Session Chair George Kim, MD, FAAP, congratulates 2009 COCIT Best Paper/Presentation Winner Eric Tham, MD, FAAP.
(Photo courtesy Kris Benson, MD, FAAP)

Please Welcome Our New Members!

The following individuals joined the Council on Clinical Information Technology between June 15, 2009, and February 15, 2010:

Deborah L. Ainsworth, MD, FAAP
Washington, NC

Ken Bates, Jr, MD, FAAP
Hickory, NC

Steven R. Boas, MD, FAAP
Glenview, IL

Frederick P. Boehm, MD, FAAP
Bend, OR

Francis D. Chan, MD, FAAP
Loma Linda, CA

Ruby R. B.Chang, MD, FAAP
Leverett, MA

Sandy L. Chung, MD, FAAP
Fairfax, VA

Sumon K. Das, MD, FAAP
Camden, NJ

Brian P. DuMais, MD, FAAP
Mokena, IL

Daniel J. Feiten, MD, FAAP
Centennial, CO

Caraciolo J. Fernandes, MD, FAAP
Houston, TX

Laura S. Fitzmaurice, MD, FAAP
Kansas City, MO

Richard Flaksman, MD, FAAP
Marion, OH

Robert J. Fortuna, MD, FAAP
Penfield, NY

Robert T. Fostakowsky, MD, FAAP
Oxnard, CA

Walter A. Hoerman, MD, FAAP
Rochester, NH

James L. Kay, DO, FAAP
Irvine, CA

John C. Kim, MD, FAAP
Colorado Springs, CO

Joseph A. Ley, MD, FAAP
Kingsport, TN

Bruce J. Man, MD, FAAP
Leominster, MA

Suzanne L. McNulty, MD, FAAP
Mission Viejo, CA

Susan R. Mims, MD, FAAP
Asheville, NC

Ruben J. Nazario, MD, FAAP
Fairfax, VA

Snezana N. Osorio, MD, FAAP
New York, NY

Christopher B. Peltier, MD, FAAP
Loveland, OH

Stephanie L. Perlman, MD, FAAP
New York, NY

Alan Pinto, MD, FAAP
Yorktown Heights, NY

Claudia C. Prose, MD, MPH, FAAP
Chapel Hill, NC

Jay S. Rabinowitz, MD, FAAP
Parker, CO

Melinda M. Rathkopf, MD, FAAP
Anchorage, AK

Juan J. Reyes, MD, FAAP
Lauderdale Lakes, FL

Jane C. Rider, MD, FAAP
San Angelo, TX

Tristy S. Shaw, MD, FAAP
Redondo Beach, CA

Sonja S. Short, MD, FAAP
Eagan, MN

Nancy M. Silva, MD, FAAP
Tampa, FL

Leslie K. Skinner, MD
Fairhope, AL

Jill S. Stoller, MD, FAAP
Woodcliff Lake, NJ

Barbara Szajda-Tcheng, MD
Los Angeles, CA

Vidhu V. Thaker, MD, FAAP
Irvington, NY

Giannina Tierney, MD, FAAP
Falmouth, MA

Steven H. Todman, MD
Fortville, IN

Richard C. Wasserman, MD, FAAP
Burlington, VT

Elizabeth H. Watts, MD, FAAP
Fairfax, VA

Albert A. Wolf, MD, FAAP
Pittsburgh, PA

Clifford L. Wu, MD, FAAP
Longview, WA

Content Submission

Would you like to contribute to this newsletter? Articles should be approximately 500 to 1,000 words in length. Submit articles to Craig Joseph, MD, FAAP, newsletter editor, at craig.joseph@epic.com.

Watch the Council on Clinical Information Technology (COCIT) Web site at www.aapcocit.org for information on submission deadlines for the fall 2010 issue.

COCIT LISTSERV® E-mail Discussion Lists

Get Involved—Join the COCIT Rapid Response Team (COCIT-RRT) E-mail List today!
The COCIT-RRT list has been established to involve COCIT's membership in responding to requests for feedback and comments from the Certification Commission for Health Information Technology, the National eHealth Collaborative, or pending legislation. To subscribe, send a message to listserv@listserv.aap.org with SUB COCIT-RRT in the message body.

COCIT Announcements E-mail List
All COCIT members are automatically subscribed to the COCIT-NEWS e-mail list. This list was created for announcements and newsletter distribution. If you have an announcement you would like posted on the list, please send it to cocit-news@listserv.aap.org. If you would like to be removed from this list, please send a message, with UNSUB COCIT-NEWS in the body of the message, to listserv@listserv.aap.org.

COCIT (General) E-mail List
Most COCIT members also participate in this list, which encourages open discussion of items of interest to COCIT members. Discussions may include topics such as EMRs, Practice Management Software, hardware, and other topics related to clinical information technology. To subscribe to the list, send a request with SUB COCIT in the message body to listserv@listserv.aap.org. If you already subscribe to this list and would like to send a message to the list, send your message to cocit@listserv.aap.org.

COCIT AAP-EProducts E-mail List
There is an additional Listserv specifically for a discussion on the development of AAP electronic products and Web services. Members of the AAP Electronic Products team also have subscribed to this list so that they can keep COCIT members posted on new product development and get feedback from you. To subscribe to the new list, send a message to listserv@listserv.aap.org, with SUB AAP-EPRODUCTS in the body of the message.

COCIT-RES E-mail List
The COCIT-RES list has been established to encourage open discussion among Resident members of COCIT on health information technology issues faced during residency. To subscribe, send a message to listserv@listserv.aap.org, with SUB COCIT-RES in the message body.

COCIT-HOSP E-mail List
The COCIT-HOSP list has been established to encourage open discussion among hospital-based COCIT members on health information technology issues faced in your institutions. To subscribe, send a message to listserv@listserv.aap.org with, SUB COCIT-HOSP in the message body.

For all of the e-mail lists mentioned above:

Digest Version: If you would like to participate in a list, but wish to limit the number of e-mails you receive, try the digest version. Send a message to: listserv@listserv.aap.org and, in the body of the message, enter the following text: SET [listname] DIGEST MIME NOHTML where [listname] is the name of the list (without the brackets).

To withdraw from a list, send a request with UNSUB [listname] in the message body to listserv@listserv.aap.org, where [listname] is the name of the list (without the brackets).

You must send these commands from the e-mail address under which you are subscribed.

AMERICAN ACADEMY OF PEDIATRICS CALL FOR ABSTRACTS

for the
American Academy of Pediatrics National Conference & Exhibition
October 2-5, 2010
San Francisco, CA

SUBMISSION DEADLINE: April 16, 2010

Section and Council programs provide a forum for the discussion of clinical matters or research related to a particular subspecialty or special interest area. Submissions by American Academy of Pediatrics (AAP) members and nonmembers are welcome; participation is open to health professionals in any field. (However, some sections require a sponsor for any papers whose authors do not include a member of the Section.)

The following Sections and Councils accept abstracts for presentation at the AAP National Conference and Exhibition. Abstracts are not accepted for general pediatrics or for other pediatric subspecialties or special interest areas not listed below.

- **Adoption and Foster Care**
- **Breastfeeding**
- **Cardiology and Cardiac Surgery**
- **Clinical Information Technology**
- **Community Pediatrics**
- **Critical Care**
- **Emergency Medicine**
- **Epidemiology**
- **Health Information Technology and Quality (Peds-21)**
- **Hospital Medicine**
- **Injury, Violence, and Poison Prevention**
- **Medical Students, Residents, and Fellowship Trainees**
- **Medicine-Pediatrics**
- **Orthopaedics**
- **Osteopathic Pediatricians**
- **Perinatal Pediatrics**
- **School Health**
- **Sports Medicine and Fitness**
- **Surgery**
- **Transport Medicine**
- **Urology**

Submit electronically at http://aap.confex.com/aap/2010/cfp.cgi.

Questions? Contact abstracts@aap.org or 847-434-4079.