

**Second National Ambulatory Primary Care
Research and Education Conference on
Patient Safety and Health Information Technology**

John M. Pascoe, M.D., M.P.H., Principal Investigator

Team Members:

Perry A. Pugno, M.D., M.P.H.

Burt Routman, D.O.

Wally R. Smith, M.D.

Academic Pediatric Association

Project Period: 02/01/2008 - 01/31/2009

Federal Project Officer: Robert Mayes

This project was supported by grant number R13HS017521
from the Agency for Healthcare Research and Quality.
The content is solely the responsibility of the authors
and does not necessarily represent the official views
of the Agency for Healthcare Research and Quality.

Second National Ambulatory Primary Care Research and Education Conference
on Patient Safety and Health Information Technology
Final Report/Summary

October 1-3, 2008
Renaissance Hotel, Washington, DC

A. Purpose

The purpose of this second national conference was to disseminate new research findings and educational programs regarding patient safety and health information technology (HIT) in ambulatory primary care settings. Program planning was a collaboration between the Primary Care Organizations' Consortium (see Appendix) and the Academic (Ambulatory) Pediatric Association (APA). The interdisciplinary Program Planning Committee included representatives from nursing, pharmacy, allopathic and osteopathic family medicine, general internal medicine and general pediatrics. This conference brought together patient safety/HIT investigators and educators as well as national leaders in primary care to promote interdisciplinary collaboration and facilitate the dissemination of research into educational programs.

B. Background

In 2000 The Institute of Medicine report To Err is Human¹ documented widespread patient safety problems in the United States' health care system. While the report described a number of safety problems in hospital care it did not address safety in ambulatory care in a comprehensive manner. Of course, at that time there were few data on patient safety issues in ambulatory primary care settings. Education programs to train young clinicians and allied health professionals in this content area were also rare.

In fall 2000 the Medical Group Management Center for Research, with support from the Agency for Healthcare Research and Quality and the Centers for Medicare and Medicaid Support held an interdisciplinary conference to develop an agenda for research in ambulatory patient safety. The conference proceedings, *An Agenda for Research in Ambulatory Patient Safety: Synthesis of a Multidisciplinary Conference*² described the large gaps in our knowledge of patient safety in ambulatory settings. This conference did not focus specifically on primary care, much of the patient safety content was focused on ambulatory surgical centers.

Since 2000 the Agency for Healthcare Research and Quality has begun to address the knowledge gaps in ambulatory primary care patient safety through its extramural grants program and in September 2003, under the auspices of the Primary Care Organizations' Consortium (PCOC) the first National Conference on Research and Education in Ambulatory Primary Care Patient Safety was convened in Chicago. Dr. John Hickner, American Academy of Family Physicians was the recipient of a small conference grant

and recruited nationally prominent primary care investigators and educators in this field to present at a two day conference, September 18 and 19.³

Of course, much has been accomplished in the area of ambulatory primary care patient safety since the September 2003 conference, especially in the field of health information technology (HIT) and patient safety, including electronic medical records, tracking the results of patients' tests and electronic prescribing (see AHRQ website and click "HealthIT"-slides were not available on the website at the time this report was submitted); a patient safety attitudes questionnaire has been developed for ambulatory settings⁴. In addition, AHRQ is having a national impact on children's health research⁵ and a global impact on the development of patient safety indicators.^{6,7}

Therefore, in early October 2008, another AHRQ funded patient safety meeting, endorsed by PCOC, was convened in Washington, DC. Unlike the first conference, this meeting included a specific focus on the contributions of HIT to ambulatory primary care patient safety (see meeting agenda in the Appendix).

C. Method

The meeting was endorsed by the Primary Care Organizations' Consortium (PCOC), a coalition of the major professional organizations involved with primary care physician education and research and the Academic (Ambulatory) Pediatric Association (APA). The APA is "dedicated to improving the health of all children and adolescents through leadership in education of child health professionals, research and dissemination of knowledge, patient care and advocacy, in partnership with children, families and communities". The APA has been an active member of the Primary Care Organizations' Consortium (PCOC) since its inception. PCOC is an ideal vehicle for dissemination of research findings and education programs in primary care patient safety/HIT. The consortium has a track record of success in the educational arena with national programs such as the Interdisciplinary Generalist Curriculum (IGC) Project⁸ and the Undergraduate Medical Education for the 21st Century Project (UME-21)⁹. PCOC members unanimously endorsed the First National Conference on Primary Care Ambulatory Patient Safety in 2003 as well as this conference.

The mission of PCOC is:

1. To advocate for the critical role of primary care in a high quality system of healthcare for the nation
2. To promote primary care physician careers appropriate to meet the health needs of the American public
3. To serve as a forum for member organizations to communicate and collaborate
4. To create and foster excellent, innovative educational and research programs across primary care disciplines

The Planning Committee Co-Chairs included: John Pascoe, MD, MPH, Professor, Department of Pediatrics and Chief, General and Community Pediatrics at Wright State University Boonshoft School of Medicine; Perry Pugno, MD, Director, Division of

Medical Education for the American Academy of Family Physicians; Burton Routman, DO, Professor and Chair, Family Medicine, Lincoln Memorial University, DeBusk College of Osteopathic Medicine, and Wally R. Smith, MD, Chairman, Division of Quality Health Care at Virginia Commonwealth University

Planning Committee Members included: David C. Dugdale, MD, Professor of Medicine, University of Washington; John Hickner, MD, MS, Professor of Family Medicine, The University of Chicago Pritzker School of Medicine; Kevin Johnson, MD, Associate Professor of Pediatrics, Vanderbilt University, Grace M. Kuo, PharmD, MPH, Associate Professor of Clinical Pharmacy, University of California, San Diego; and Judith Shaw, EdD, MPH, RN, Research Associate Professor of Pediatrics, University of Vermont College of Medicine.

Five excellent plenary speakers of national stature provided meeting participants with an overview of patient safety/HIT in ambulatory primary care and specific challenges/opportunities for investigators and educators. The plenary presentations provided a broad context for the reports of individual research/education projects and workshops in the concurrent sessions. The plenary speakers (in order of their presentations): Kevin Johnson, MD, Vanderbilt University, Paul Miles, MD, American Board of Pediatrics (due to death in his family, Dr. Miles asked Dr. Elder to present his remarks), Nancy Elder, MD, University of Cincinnati, David Bates, MD, Harvard University, Howard Teitelbaum, DO, PhD, Lincoln Memorial University (due to personal illness, Dr. Teitelbaum asked Dr. Routman to present his remarks). Additional sessions included concurrent research sessions, workshops and an education poster symposium on the final morning.

The Program Planning Committee met by teleconference three times prior to the meeting. Committee members were very pleased with the quality of the abstracts submitted/presented at the meeting. Only one submitted abstract was not accepted for the meeting because the topic was patient safety in the intensive care unit, unrelated to ambulatory primary care. Please note in the Agenda (found in Appendix A) that there were five concurrent sessions (75-90 minutes) to allow time for both education evaluation/research presentations and workshops. Moderators of the concurrent sessions included members of the Program Planning Committee, leaders from PCOC and Dr. Clese Erikson, Association of American Medical Colleges. Dr. Tina Cheng, APA President, was moderator for the education poster symposium the last morning. In the final session Drs. Hickner and Shaw led meeting participants in a discussion of major themes from the meeting and future directions for AHRQ and the primary care community in ambulatory patient safety/HIT. Immediately following the meeting there was a “debriefing” session with Program Planning Committee members and support staff during which meeting evaluations were reviewed.

Results:

October 1, 2008

During the first evening session participants were briefly welcomed to the conference by Dr. John Pascoe, Co-Chair, Program Planning Committee, Dr. David Meyers, Director, Center for Primary Care, Prevention and Clinical Partnerships, Agency for Healthcare Research and Quality (AHRQ) and Dr. Tina Cheng, Chief, General Pediatrics and Adolescent Medicine, Johns Hopkins University and President, Academic (Ambulatory) Pediatric Association (see Appendix for complete meeting agenda).

Following the words of welcome Dr. Jonathan White (AHRQ) presented “Patient Safety and HIT in Ambulatory Patient Care: the View from AHRQ”. Dr. White began by noting that Health IT is simply one strategy to improve the quality of primary care, it is NOT an end in itself and the mission of AHRQ is all about “developing the knowledge and getting it out there” to improve the quality of primary health care. Much of the remainder of his remarks was structured by the conference objectives:

- To understand the importance of patient safety from the perspective of the practicing primary care physician
- To understand the role of information technology in the improvement of patient safety
- To examine the importance of human factors in the development, implementation and evaluation of information technology
- To understand the educational issues which are vital to the creation of effective curricula in information technology and patient safety for clinicians and allied health professionals.

Though he acknowledged there are no data to support this statement, Dr. White stated that mis-information or lack of information is a very important cause of many “unsafe events”. Therefore, good “information tools” and good “information systems” contribute to the delivery of high quality care. Dr. White noted that Dr. Carolyn Clancy, Director, AHRQ likes to say that good information systems “makes the right thing to do the easy thing to do”.

On the other hand, Dr. White stated that “most of the commercial electronic medical records that are out there have not taken time to match up to your work flows and your actual information needs”. Information systems must deliver the “right information” in the “right way” because human factors are critically important for information systems to succeed in their goal of improving health care.

Dr. White encouraged participants from universities to collaborate with colleagues in communities where “everybody goes to get their care”. He noted a successful model for that collaboration with Dr. Kevin Johnson at Vanderbilt University. Dr. White discussed AHRQ’s investment in demonstration projects for HIT and improving the quality of care.

He emphasized that AHRQ is looking for projects that are “applied”. There are also smaller exploratory and development grants. The funding has three foci: 1) Improved medication management, 2) Patient-centered care, 3) Medical decision-making.

Dr. White ended by noting “it’s not about the technology”, it’s about “how we use these tools” to improve “the health of the people that we take care of”.

PLENARY SPEAKERS

The five plenary speakers reviewed challenges/opportunities in ambulatory primary care patient safety and health information technology. Dr. Kevin Johnson, Associate Professor of Pediatrics and Informatics at Vanderbilt University began by stating that recent advances in health information technology are poised to make a positive impact on pediatric patient care quality in “many fundamental ways”.

Focusing on prescribing errors, Dr. Johnson noted that the types of errors were “all over the map”. Preventable adverse drug events are probably less common in pediatrics than adult medicine. There are MANY things that can be done (only some involve computers) to improve medication patient safety in the ambulatory setting. American Academy of Pediatrics’ statement on patient safety included two main points: 1) Patient/parent education, 2) Obtaining weights on all children/adolescents who receive medication. Dr. Johnson also mentioned the Institute of Medicine’s recommendations that “health organizations should implement systems that enable providers to communicate patient specific medication information in an interoperable format”.

Dr. Johnson noted that a “likely but unproven” benefit of e-prescribing is eliminating illegible prescriptions and reducing drug-drug interactions” then Dr. Johnson described Vanderbilt’s RX Star e-prescribing system that he helped create. Dr. Johnson also briefly discussed his AHRQ project called “Show Your Work” –the clinician write at the bottom of the prescription how s/he calculated that dose. There is a 20% rate of error associated with manually “overriding” electronic e-prescribing, mainly due to “tenfold” errors-decimal point in wrong place, but “all sorts” of other errors occur.

Dr. Johnson’s main point: “there is a potential role that we can play merging what we are learning about patient safety, what we are learning about health information technology to improve how we prescribe”.

Dr. Johnson went on to mention a national project called “Safety Through E-Prescribing Tools” (www.pedstep.org). It is a project in partnership with the American Academy of Pediatrics (AAP) to build “knowledge bases we need to do pediatric rounding, pediatric compounding, dose limit checking through Web Services”. The AAP is working with HIT vendors on this project. Only one vendor has software that actually does pediatric dose calculations at this time (did not mention name of vendor).

Dr. Johnson then addressed the issue of medication adherence. He noted a “paper from Matsui” that identified four subgroups of families whose children have a chronic health

condition that struggle with adherence issues. The four subgroups: diabetes, asthma, transplantation and ADHD. Possible strategies to improve medication adherence identified by the Institute of Medicine (no data available at this time) include “better partnerships with patients”-that means better monitoring for side-effects, emphasizing why it’s important to adhere even when they are feeling well to continue to take their meds”. Dr. Johnson also noted the psychological and sociological issues that have to do with stigmatization of children on chronic medication.

Dr. Johnson then described a project called “My Medi-Health” that involves families in the medication dispensing and monitoring function for their children using the internet. From the beginning of the project families were involved to tell Dr. Johnson “what they need”. Schools have also become involved. Another project that examines the role for children in taking medication is called “Medi-Teddy”-an alert and reminder system for medication that goes with the child to school, camp, etc. This study involved a pager and the next study will involve text messaging. Dr. Johnson emphasized that “we need to add structure to our national databases that include medication information”.

Dr. Johnson believes that “we know that we have the ability to come with the right guidelines” for clinical care, but implementation is the main barrier-there is not enough time during clinical encounters. Dr. Johnson briefly described a software program called “Cliclate” that enables the clinician (or medical student) to generate a note by clicking boxes on the screen. Dr. Johnson cited an evaluation of “Cliclate” that demonstrated it improved open-ended questions, probably based on the way the screens were set up and the residents were comfortable with computers.

Dr. Johnson ended his comments by encouraging meeting participants to set up computers in their examination rooms and begin “the process of computer-based documentation in primary care”.

Dr. Atul Butte, Stanford University, made a long comment regarding the relation between genetics (e.g., identifying a gene that predicts an adverse drug reaction) and quality/safety. He noted the “colliding directives” in medicine of “personalized medicine” and a quality approach like Southwest Airlines that “standardize the planes, the care, all the patients being treated the same”. Dr. Butte completed his comments with “how do we get a culture where geneticists, diagnosticians, quality of care folks and computer scientists work together?” and he noted, “Safety is a science”.

Near the end of a very stimulating discussion period following the presentations the issue of “usability” came up (again!). Dr. Johnson believes that “human factors’ approaches” have been incorporated into all the electronic health records (EHR) at this time, the problem remains integrating the EHR into workflow.

Dr. Johnson also noted that only 14% of clinicians use EHR and those are the folks that continue to give feedback-need feedback from more clinicians, including those who do NOT use EHR at this time to address workflow issues effectively.

October 2, 2008

Following welcoming comments by Dr. Janet Townsend, Professor Family Medicine, Albert Einstein School of Medicine, she introduced Dr. Nancy Elder, Associate Professor of Family Medicine at the University of Cincinnati College of Medicine. Unfortunately, Dr. Paul Miles, American Board of Pediatrics, was unable to present at this conference due to a sudden death in his family. Dr. Elder incorporated his slides/comments into her remarks.

Dr. Elder began with a statement of regret that Dr. Miles could not share the podium with her to share his considerable “expertise and wisdom”.

Quality is “the best science in the right context”. There are conflicting “pressures” to both change and at the same time remain the same for clinicians. See Dr. Miles’ slides on AHRQ website (healthit.gov) for a list of barriers to change.

For clinicians to develop a professional “culture” of safety, patient safety must become a core value and a core competency- competency and quality improvement in patient safety is now required for maintenance of board certification. In addition, implementing and maintaining ambulatory patient safety programs are “imperative” and some practices have actually hired individuals to run ambulatory patient safety programs rather than add that responsibility to physicians’/nurses’ /other clinicians’ long list of responsibilities.

Dr. Elder then began to describe her research in engaging patients as team members in the safety culture. The safety culture also requires leaders who are accountable, responsible, knowledgeable, vigilant and directly engaged. Blameless reporting systems and an openness to talk about errors are also critically important and difficult. Patient safety and high quality care are extremely important components of the patient (family)-centered medical home.

Patient safety and quality go “hand in hand” and systems as well as individuals are important in safety and quality in primary care. Dr. Elder then began to describe her research in medication prescribing and the testing process. Most errors are a result of “system dysfunction” rather than lack of knowledge or skills.

Dr. Elder mentioned the work of Pascal Carayan, a human factors engineer who identified five elements in the process of care: the clinician, the patient, technology/tools, the environment and the tasks. The elements of Pascal’s system can be improved to improve safety and the quality of care (e.g., upgrade improved technology).

Medication is an important part of providing primary care and one study found that 60% of errors that led to patient harm were medication errors. When we give out sample we lose the “double check” of the pharmacist. Dr. Elder enlists her patients to double check the pharmacist to make certain that what she is prescribing is what the pharmacist gives her patients. Dr. Elder mentioned the benefits (and problems) with electronic prescribing.

The overall testing process is very complex. The highest quality in the entire process is the actual performance of the test-very uniform and very high quality. Mistakes occur when tests go back to the office, then to the clinician who must make decisions and act on them (contact patients) and follow-up after patient has the results. Laboratory and x-ray results are the most common data missing during a clinician-patient encounter.

In a study by Dr. Elder and colleagues one half of primary care practices did NOT have a tracking system so they had no idea if a lab test that was ordered actually came back to them. Human factors investigators emphasize the importance of standardization to minimize errors. Dr. Elder noted that some primary care practices have a system to keep track of laboratory orders and another system to keep track of results and they are separate systems! Have the patient call the office for their results if they haven't heard in a specific time period (like a week).

Dr. Elder believes that neither paper nor electronic charts have been "fine tuned" to use them to their greatest extent to improve patient safety and the quality of care. Dr. Elder had some positive comments about the personal health record of the future (Google is working on one). Airplanes have one electronic system for all control towers, why can't medicine have an information system that can be shared across time/space/clinicians?

"Culture eats strategy for lunch" as an issue in organizational change. Thus to improve safety the culture MUST change as well as the process of care.

"Patient safety is indistinguishable from the delivery of quality care", but most clinicians continue to be more interested in "quality" and not very interested in "patient safety".

"The path of error is the path of truth" and changing that "path" will improve patient safety and the quality of care.

Discussion addressed a number of issues including the regulatory issue of the Food and Drug Administration regulating information technology systems because of their potential ability to "do harm" to patients. That is a debate in Washington, DC at this time.

The afternoon plenary session was moderated by Burt Routman, D.O, Professor and Chair, Family Medicine, Lincoln Memorial University, DeBusk College of Osteopathic Medicine. He introduced David Bates, M.D., Professor of Internal Medicine and Health Policy and Management at Harvard University. Dr. Bates comments focused on "key areas of safety outside the hospital". Dr. Bates primarily focused on medication use and test follow-up because "that's where our group has done a lot of work".

He noted that in primary ambulatory care, the "feedback loops are long", the care is "episodic" and the "signal to noise ratio is low", that is, when a patient complains about something "it's not something really serious like cancer". In addition, there are limited

resources for “redundancy”, so if a primary care clinician missed something it will probably “slip through to cause problems”.

Some characteristics of the primary care visit (presumably with adults). It lasts an average of 12 minutes. The first interruption by the clinician is after 18 seconds and 75% of patients leave with unanswered questions. Three quarters of primary care visits are concerned with starting or continuing a drug. Dr. Bates leads the research “strain” for the World Alliance for Patient Safety. A summary of global evidence on patient safety research is now available on the World Health Organization’s (WHO) website. A set of global priorities have been established and it is obvious that is a global problem, it is NOT unique to the United States. An adverse event occurs in about 10% of hospitalizations in the developed world. The magnitude of the patient safety problem is “about as big outside the hospital as inside the hospital and that could be actually shifting as we continue to push people out of the hospital”.

Key areas of ambulatory patient safety include: 1. Follow-up post discharge, 2. Medication safety, 3. Follow-up of abnormal test results, 4. Ambulatory surgery. Looking at the Harvard Risk Management Foundation data for malpractice, the top is “diagnosis related cases”—usually cancer or heart disease, then medication toxicity. Fifty eight percent of malpractice cases involved some form of laboratory testing.

“Doing outpatient patient safety research is a lot harder in many ways than doing inpatient research”. For example, IRB issues are “a lot worse”. Doing research in primary care practices sometimes it’s “not clear exactly what IRB you should talk to”. Documentation in the paper record is usually “very bad” and attempting to contact patients regarding adverse events can be “really tricky”.

Dr. Bates described his group’s experience with adverse drug events (ADE) studies. The Improving Medication Prescribing Study found 21 non-preventable ADEs for each 100 patients and 12 preventable ADEs for each 100 patients. When patients were called there were eight times as many ADEs as documented in the charts, thus patients are experiencing a lot that never makes it to their charts. In a pediatric study of 1800 patients there was a three percent preventable ADE, usually related to parent administration of the medication. Another study found an average 1.9 ADEs per resident month in nursing home, with 27% preventable ADEs. A fellow of Dr. Bates found a 19% rate of ADEs immediately post-discharge for 400 inpatients. Depending on the study, ADEs in the outpatient setting account for one half a percent to 21% of inpatient admissions.

Dr. Bates briefly moved on to test results with data on sharing results of abnormal pap smears and mammograms in primary care. Some primary care practices continue to not have a system to notify patients even if screening tests for cancer are abnormal.

Dr. Bates then turned to strategies that seem to have the “highest benefit” in our efforts to improve ambulatory patient safety and he began with e-prescribing, including allergy notification and drug-drug interaction. Of course, correct dosing is also an important issue. Post-discharge strategies include better discharge planning. Having a pharmacist

call patients 3 to 5 days post discharge decreased ADEs to 1% (11% in control subgroup) in one study. Ambulatory medication reconciliation is a Joint Commission requirement and lots of work needs to be done here. Inaccurate ambulatory medication lists always adversely affects inpatient reconciliation and that mistake is propagated for all admissions until the ambulatory list is corrected. Dr. Bates' group has been working on information technology tools to assist clinicians with medication reconciliation, including clinicians having access to data bases such as SureScripts and RxHub.

Dr. Bates then discussed an information technology tool to assist with lab results follow-up, "Results Manager" that aggregates results and prioritizes them "according to degree of abnormality". Pushing a button creates a letter regarding the abnormal results to a patient-VERY popular with busy clinicians!

Dr. Bates ended with a summary of "frontiers" in this area of research including identifying some of the best approaches to problems that exist using data from electronic health records, make contacting patients more "streamlined". There is an ongoing study that employs a computer to contact patients who have been started on a new drug with a set of questions. Saves clinicians' time and drives down the cost of this process.

Other areas that Dr. Bates' mentioned as being worthy of additional research included: identifying and disseminating prevention strategies, safe use of medications, using hand-held computers in the ambulatory setting, and universal registry tools. Dr. Bates ended his remarks with a brief description of the six "high performing health care system initiatives" that are now underway at his institution.

Comments from the two discussants followed, Dr. Carol Forster is a pharmacist/pediatrician at Southern California Kaiser Permanente Medical Group, Mid-Atlantic Region and the regional "patient safety officer" for her group. Dr. Forster reported that 100,000 clinicians and other members of health care teams within her group use an electronic medical record to care for 8.7 million individuals across the United States. The system integrates pharmacy, lab, referrals, billing and scheduling.

Dr. Forster agreed with Dr. Bates that medication errors are a large part of patient safety in ambulatory settings for her Medical Group whose members write millions of prescriptions each year. She notes that physician "alerts" do not always stop an incorrect prescription, pharmacists are key to identifying inappropriate prescribing practices. Dr. Forster was encouraged that different groups are observing similar problems and she is optimistic that, working together, solutions to the problems will be found.

Janet Marchibroda, MBA, is Chief Executive Officer of the E-Health Initiative based in Washington, DC. Ms. Marchibroda presented a "policy review" of some of Dr. Bates' remarks. Ms. Marchibroda that, while the federal government spends "billions of dollars" on drug safety, "very little of it actually supports research in the primary care environment. I think we need to fix that". She predicted that "we will see bonuses for those that e-prescribe". She mentioned AHRQ's "Effective Health Care Program" and

also touched on the “privacy issues” involved in sharing patient information. She believed that in 2009 we need to “take a broader view at the policy landscape around how we pay for healthcare, how we deal with privacy, how we address the workflow issues”.

In response to an audience question Dr. Bates noted that “only 3-4% of providers are using what they defined as a fully functional interoperable electronic health record”. “Islands of progress” include Massachusetts where about two thirds of ambulatory providers are using electronic health records. Dr. Bates predicted that “with e-prescribing things will go really fast”. He was more pessimistic on early adoption of patient information sharing. Ms. Marchibroda noted that “for the first time we are seeing returns on investment to various stakeholders”. While “we are making progress” Ms Marchibroda noted that the “biggest challenge” is “lack of a sustainable business model”.

Discussion ended with exchange regarding new models of clinician reimbursement to foster the development of “medical homes” in addition to the information technology needs to support teams of clinicians creating “medical homes” for their patients. Dr. Bates also noted that “personal health records” and “clinical data exchange” will both be critically important issues in the future. Ms Marchibroda called for a “national dialogue on privacy”.

October 3, 2008

The last plenary session focused on medical education issues. The moderator was Niraj Sharma, M.D, Director of the Harvard Brigham and Women’s and Boston Children’s Hospital’s Medicine Pediatrics Residency Program. Following welcoming comments he introduced Dr. Burt Routman, Professor and Chair, Family Medicine, DeBusk College of Osteopathic Medicine. Dr. Routman was a “stand-in” for Dr. Howard Teitelbaum, also from the DeBusk College of Osteopathic Medicine who was ill during the conference.

Dr. Routman began by emphasizing the increase in clinical experiences for medical students during the first two years of medical school compared to 30 years ago when he was a student. Dr. Routman briefly discussed the use of simulated patients during the first two years of medical school at DeBusk College of Osteopathic Medicine.

Before students begin their clinical rotations they must review a list of “sound alike” drugs. DeBusk College of Osteopathic Medicine has a family medicine clinic in the same building where students attend lectures, so beginning the second year they rotate with family physicians at the clinic. The clinic has electronic medical records, but only the staff family physicians actually enter patient data. Students are expected to tell the family physicians what to enter for patients that they saw together with the family physician. Students are also taught to comply with the World Health Organization’s hand hygiene guidance during their clinical encounters.

Additional topics taught to students include medication reconciliation and the identification and management of influenza.

Dr. Routman then briefly discussed topics from a medical student course on “Essentials of Patient Care”. These included patient/physician communication, professionalism, patient dissatisfaction and strategies to avoid “wrong patient, wrong site, wrong procedure”.

In summary, students must be taught universal precaution protocols and experience simulated clinical situations early in medical school to avoid risks to their patients’ safety throughout their medical careers.

The first discussant was Dr. Bruce Gould, Associate Dean for Primary Care at the University of Connecticut and Director of Connecticut’s Area Health Education Center (AHEC). Dr. Gould’s remarks focused on issues related to introducing Quality Improvement (QI) in a medical school curriculum. When third year students are in their primary care internal medicine rotation they participate in a project that lasts a year. At the end of the year there is a “Dean’s Symposium” on patient safety and quality the students present posters to the Dean of University of Connecticut Medical School. Students receive gift certificates for top three posters and an awards supper for all students at the end of the poster session.

The second discussant was Dr. Cliff Yu, Associate Professor of Pediatrics at Uniformed Services University of the Health Sciences and Director of the National Capital Consortium Pediatrics Residency Program. Dr. Yu began by noting that residency directors tend to react to what the Residency Review Committee mandates. One of the six core competencies is practice-based learning and improvement. Dr. Yu reported that most residencies address this competency by having resident attend faculty meetings that address QI issues. Residents do not seem very interested in these meetings.

In resident continuity clinics they must work on a QI project one week out of the month for an hour before their clinic time. One group of residents examined the health needs of children whose parent was hospitalized with a war-related injury. At the end of the year residents present their projects to the pediatric faculty for feedback. Dr. Yu then described the patient safety implications of the 80 hour work week for residents.

Dr. Yu stated that all children (up to 18 years old) who are admitted to the hospital ward now wear wrist bands that trigger alarms if they leave the unit unless deactivated by a staff member (often their nurse). Dr. Yu also discussed other ambulatory safety issues such as medication reconciliation and dosing as well as conscious sedation for procedures. Dr. Yu encouraged the development of a patient safety OSCE for students/residents.

The discussion addressed issues related to faculty development in this area. Dr. Routman noted that the contact faculty at each site where students rotate are paid a small stipend for providing support for student QI projects. Dr. Yu noted that including a meal with faculty development is helpful to attract participants. Dr. Gould noted that feeding faculty at a workshop is NOT a big draw in Connecticut. Dr. Routman reported that they go out

to the sites where physicians work to provide faculty development and that is “working pretty well”.

Concurrent Sessions: Please see Appendix for titles and abstracts of papers presented in concurrent sessions. Content of concurrent research sessions included children’s health, medication safety, electronic medical records and test follow-up. A poster symposium on the final morning focused on innovative curricula in primary care ambulatory patient safety. Workshop topics included electronic medical records and Medicaid enrollment, physician practice patient safety assessment, improving testing procedures in primary care practice and an overview of a curriculum to develop a “culture of safety” during early years of medical training.

Summary/Future Directions

Judy Shaw, EdD, MPH, RN began this session noting the high quality of all the presentations as well as the informal networking that occurred during the conference. Dr. Shaw noted that very few smaller practices have adopted electronic health records (EHR) at this time. Vermont child health clinicians might be an appropriate starting point for examining how to assist smaller practices moving toward using EHR because it is a small state and clinicians “talk to each other”. Vermont also has a history of statewide quality improvement in child health.

Dr. Shaw also raised the issue of clarifying the patient’s role as clinicians move toward use of an EHR. She encouraged members of the audience to engage “young people in medicine” in thinking about strategies to implement EHR in primary care practices. The medical profession needs to think carefully about including the skills/issues addressed at this meeting into the process of “maintenance of certification” for clinicians.

Dr. Shaw encouraged us to think about partners in this endeavor, including government, regulatory agencies, Medicaid, private insurance companies—all stakeholders in patient safety and high quality health care. Dr. Shaw concluded her comments focusing on the future and encouraging us to think about transforming medical education (including the education of allied health professionals) to address issues of quality improvement/patient safety within the curriculum for students through residency/post-graduate training.

John Hickner, M.D. began by noting his comments are “content oriented” and proceeded with “Hickner’s Top Ten”.

1. Patient safety is obviously part of the national health care quality agenda and the Joint Commission requirements include patient safety now.

2. Maintenance of certification requires patient safety activity. Topic areas include medication safety, diagnosis and testing, documentation/information availability, transitions of care, ambulatory surgery and health literacy. The American College of Obstetrics and Gynecology and the American Board of Medical Specialties have been champions in this area. For younger clinicians-in-training patient safety is now often part of system-based practice and practice-based learning, this is new since the first meeting in 2003.
3. Unfortunately, there is little evidence that supports specific strategies to improve patient safety. Dr. Hickner reported he was “quite distressed” to hear from Dr. Nancy Elder, one of the plenary speakers, that EHR may not be that helpful in tracking tests. During Dr. Hickner’s workshop no one had evidence that EHR was improved outcomes regarding tracking tests. Dr. Hickner pointed out that patient safety is really about “prevention”.
4. Health information technology (HIT) is only part of the solution and we are early (Model T stage) in its development as a patient safety tool.
5. Related to number 4, the important elements of “safety culture”, teams and human factors have taken a “back seat to technology” recently. Of course, HIT will never be sufficient without attention to the human factors as well.
6. There is “potential conflict” between personalized medical care and standardization that occurs with electronic health records. The challenge is to achieve safety and quality, which requires some standardization and also meet the individual patient’s needs. Dr. Hickner noted that “industry” has come up with a concept of “mass customization” and he encouraged audience members to read about this concept.
7. Dr. Hickner noted that regional health information systems are developing “pretty slowly” and one of the workshop presenters (Dr. Cauley) suggested that the main barriers are not related to privacy issues as much as “will and trust and the desire to do this”. While there are models around the country, such as Indianapolis and Austin, there are many issues to work on here.
8. Dr. Hickner reflected on Dr. Bates’ comments. What is the best way to detect problems? Better classification approaches are important. For example, do near misses correlate with harm? If yes, what kind of near misses can help us understand events that actually cause harm. This touches on the bigger issue of identifying effective prevention strategies that decrease the likelihood of patient harm.
9. What is the role of “Medical Home” in patient safety? This is particularly important for primary care clinicians. This needs to be a major focus of primary care research.
10. There are “lots of wonderful islands of activity in safety and health information technology”. Dr. Hickner challenged the audience to think about the best forum to “get the word out”.

Ideas/recommendations from discussion that followed Drs. Shaw and Hickner's comments:

- Come up with a process that would result in different groups using the same language/template for patient safety/quality initiatives/studies
- Tie or “wed” this type of meeting to another meeting that is already occurring such as Academy Health or the Annual AHRQ meeting (Dr. Carolyn Clancy was called by Dr. Pascoe re: a primary care “track” for AHRQ Patient Safety Conference and she thought it was a good idea- “unbridled enthusiasm” was her response). This obviously needs to be included in the planning process for the next meeting. Another meeting idea-have a focused one day ambulatory primary care “pre conference” before the larger AHRQ Patient Safety Conference.
- There was also a high level of interest in reaching out to discipline specific meeting (e.g., family medicine, general internal medicine, general pediatrics, allied health) and present patient safety related topics at those venues.
- Strong statement to reach out to families, purchasers, and policy makers and not simply “inform ourselves”. Transparency, safety, value and quality are all important issues for stakeholders in patient care. “Safety, Quality and the Medical Home” was suggested as a meeting that would attract a wide audience.
- Strategically it's critically important to link safety, quality and outcomes.
- The National Business Group on Health just published a paper on “a business case for maternal and child health” that emphasized the “business case for prevention”.
- The Primary Care Organizations Consortium is a logical choice to convene a conference on “Safety, Quality and the Medical Home”

Respectfully Submitted,

John M. Pascoe, M.D., M.P.H.
Co-Chair, Program Committee
Professor of Pediatrics
Wright State University
Past-President, Academic Pediatric Association
July 2009

References

- ¹To Err is Human: building a safer health system. Linda T. Kohn, Janet M. Corrigan, and Molla S. Donaldson, editors; Committee on Quality of Health Care in America, Institute of Medicine. Washington, D.C.: National Academy Press, 2000.
- ² “Conference Synthesis: Research Agenda for Ambulatory Patient Safety” Hammons et al, 2001. Accessed from <http://www.ahrq.gov/About/cpcr/ptsafety/ambpts1.htm> on June 22, 2009.
- ³National Ambulatory Primary Care Research & Education Conference on Patient Safety, Proceedings from the 2003 conference, held September 18-19, 2003. AHRQ 1 R13 HS014122. <http://www.aafp.org/ptsafetyconf.xml>
- ⁴Modak I, Sexton JB, Lux TR, Helmreich RL, Thomas EJ. Measuring safety culture in the ambulatory setting: the safety attitudes questionnaire – ambulatory version. JGEN Intern Med. 2007 Jan;22(1):155-6.
- ⁵Schultz D, Seid M, Stoto MA, Burstain JM. The Agency for Healthcare Research and Quality’s Children’s Health Research Portfolio. Matern Child Health J. 2008 Nov 15. [Epub ahead of print]
- ⁶Meyer GS, Battles J, Hart JC, Tang N. The US Agency for Healthcare Research and Quality’s activities in patient safety research. Int J Qual Health Care. 2003 Dec; 15 Suppl 1:i25-30.
- ⁷Drosler SE, Klazinga NS, Romano PS, Tancredi DJ et al. Application of patient safety indicators internationally: a pilot study among seven countries. Int J Qual Health Care. 2009 Apr 24. [Epub ahead of print]
- ⁸David AK, Kahn NB, Wartman SA, Wilson M, Kahn RH. Lessons from the Interdisciplinary Generalist Curriculum project. Acad Med. 2001 Apr;76(4 Suppl).
- ⁹Pascoe JM, Cox M, Lewin LO, Weiss BD, Pye KL. Report on Undergraduate Medical Education for the 21st Century (UME-21): A National Medical Education Project. Fam Med. 2004 Jan;36 Suppl.