The Future of Health IT
Innovation and Informatics

5th Annual AMIA Health Policy Meeting (Invitational)

September 1-2, 2010
Hyatt Regency, Reston VA

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Agenda

Wednesday, September 1, 2010

7:00 am  Registration and Continental Breakfast (provided)

8:00 am  Welcome and Opening Remarks: Nancy Lorenzi, PhD, AMIA Chair and Ted Shortliffe, MD, PhD, AMIA President and CEO (Regency Ballroom B)

8:15 am  Opening General Session: Framing the Meeting - Julie McGowan, PhD, Steering Committee Chair and Caitlin Cusack, MD, Steering Committee Vice Chair

8:30 am  Plenary Session: Health Care Reform, HITECH, and the View from 2015

  • John Glaser, PhD, Siemens Healthcare

9:30 am  Break

10:00 am  Facilitated Interactive Breakout Sessions

  • Ensuring Resilience in Health Care and Health IT (Lake Fairfax A)
  • Facing Ethical, Legal and Social Challenges (Lake Fairfax B)
  • Sustaining Adoption and Innovation in Health IT (Tower Center/South Lakes)

12:00 pm  Lunch (provided) (Regency Ballroom B)

12:30 pm  Plenary Session: Addressing Fraud and Failures (Regency Ballroom B)

  • Mark Josephs, JD, Senior Trial Counsel/Trial Lawyer Civil Division, Department of Justice
Linda Connell, Director, Aviation Safety Reporting System (ASRS), NASA, Human Systems Integration Division

2:00 pm  Facilitated Interactive Breakout Sessions (participants continue in small group sessions from morning)

4:00 pm  Debate: The Stifling of Health IT: Informatics Research and Innovation (Regency Ballroom B)
  - Debaters: Don Detmer, John Halamka, Randy Miller, Don Rucker.  Moderator: Ted Shortliffe

5:30 pm  Adjourn (Participants have dinner on their own)

7:00 pm  Steering Committee Working Dinner

Thursday, September 2, 2010

7:00 am  Continental Breakfast (provided)

8:00 am  Plenary Session: Cybersecurity - Future Implications for Safe and Effective Health Care (Regency Ballroom B)
  - William (Curt) Barker – Chief Cybersecurity Advisor, NIST Information Technology Laboratory

8:45 am  Synthesis of Day 1 Breakout Sessions: Brian Dixon, Paula Soper, and Joe Hunt

9:15 am  Small Group Continuation and Synthesis of Discussions (Same groups/rooms as Day 1)

11:15 am  Large Group Summary Discussion: Identification of Common Themes (Regency Ballroom B): Julie McGowan, Ted Shortliffe

12:00 pm  Reflections, Next Steps, Wrap up: Julie McGowan, Ted Shortliffe

12:30 pm  Thank You and Adjourn: Julie McGowan, Ted Shortliffe

12:45 pm  Steering Committee Working Lunch and Debrief
Logistics

Hyatt Regency, Reston VA
1800 Presidents Street, Reston, VA 20190
http://www.reston.hyatt.com/ | (703) 709-1234

DIRECTIONS TO HYATT REGENCY RESTON FROM:

Washington Dulles International Airport (6.59 miles)
From airport take Dulles Access Road East toward Washington, DC. At Reston, use Exit 12, Reston Parkway / VA 602. Turn Left onto Bluemont Way. Turn right onto Presidents Street to our Northern VA hotel.

Ronald Reagan Washington National Airport / Washington, DC (22 miles)
Head North on the George Washington Memorial Parkway (crossing over into Virginia). Take the VA-123 exit toward Chain Bridge / McLean. Keep right at the fork to go on VA-123 S. Merge onto VA-267 W toward I-495 N / Dulles Airport (Portions toll). Take Reston Parkway / VA-602 exit- Exit 12. Keep Right at the fork to go on Reston Parkway / VA-602 N. Turn Left onto Bluemont Way. Turn right onto Presidents Street to our hotel in Northern VA.

Baltimore and Point North (55.11 miles or more)
Follow I-95 South to Washington, DC beltway then exit right (west) onto I-495. Follow I-495 across the Potomac River into Virginia and exit right onto Rt. 267-Exit 45A toward Dulles Airport / Dulles Toll Road. Take Reston Parkway / VA-602 exit-Exit 12. Keep Right at the fork to go on Reston Parkway / VA-602 N. Turn Left onto Bluemont Way. Turn right onto Presidents Street to our Northern VA hotel.

Richmond and Points South (115.20 miles or more)
Follow I-95 North to Washington, DC beltway (at Springfield), then exit onto I-495 (north). Follow I-495 to Rt. 267-Exit 45A, toward Dulles Airport / Dulles Toll Road. Take Reston Parkway / VA-602 exit-Exit 12. Keep Right at the fork to go on Reston Parkway / VA-602 N. Turn Left onto Bluemont Way. Turn right onto Presidents Street our hotel in Northern VA.

Leesburg and Points West (19.72 miles or more)
Two choices: (A) Follow Rt. 7 East to Dranesville and turn right onto Reston Parkway (Rt. 602). Proceed south approximately 3 miles. Hotel will be on the right. (B) Take Dulles Greenway Toll Road East past Dulles International Airport to Exit 12, Reston Parkway. Turn left onto Reston Parkway. Turn Left onto Bluemont Way. Turn right onto Presidents Street to our Northern VA hotel.
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Meeting Concept and Goals

In 2001, the Institute of Medicine (IOM) outlined a vision of 21st century health care that is safe, effective, patient-centered, timely, efficient, and equitable. Many aspects of this vision involve information technology, such as having access to comprehensive data on patients, systems that integrate evidence into practice, and the ability to highlight problems as they arise.

Nearly a decade later, the health care environment is changing rapidly. The United States (U.S.) federal government is investing considerable resources to broaden the reach of health IT, in general, and electronic health records (EHRs), in particular. A national imperative exists to improve health care delivery and reduce health care costs. The force behind much of this rapid change has been the American Recovery and Reinvestment Act’s (ARRA’s) health IT stimulus provisions and the Health Information Technology for Economic and Clinical Health (HITECH) Act. Taken together, these policy vehicles, which include financial incentives aimed at spurring broader health IT adoption, have the U.S. health care sector poised on the brink of wide-scale implementation of health information systems to support patient care.

Advances in science, technology and medicine continue to abound. The mapping, sequencing, and analysis of the human genome are expected to allow us to identify which patients will respond to specific treatments. Stem cells offer the possibility of regenerating tissues and organs. Nanotechnology and new biomaterials are allowing us to create smaller, more effective devices and implants. Microelectronics, robotics, navigation techniques and new imaging modalities offer more potent and focused approaches to diagnosis and treatment. Convergence of devices, drugs, biologics and diagnostics is creating new possibilities for prevention, treatment and cure of chronic diseases.

An increasing number of businesses and organizations, including the federal government, are putting more of their data and processes online. And, with the continued emergence of next-generation web technologies, we are likely to see increasing levels of online collaboration and information sharing. For this reason, among others,
“cybersecurity”\(^1\)—from the networks themselves to the information stored in computer databases and other applications—is now a growing concern.

Meanwhile, our population and workforce are aging, and the Association of American Medical Colleges (AAMC) has warned of a deficiency of up to 125,000 doctors by 2025. And, AAMC is not the only group voicing concerns. The Health Resources and Services Administration (HRSA), a federal agency that works to improve health care access for the uninsured, has projected that the supply of primary care physicians will be adequate through 2020, at which point there will be a deficit of 65,560 physicians. The American Academy of Family Physicians (AAFP) estimates the need for almost 149,000 extra doctors by that year.\(^2\)

The U.S. is also projected to have a nursing shortage that is expected to intensify as baby boomers age and the need for health care grows. Compounding the problem is the fact that nursing colleges and universities across the country are struggling to expand enrollment levels to meet the rising demand for nursing care.\(^3\) In 2000, the national supply of FTE registered nurses was estimated at 1.89 million while the demand was estimated at 2 million, a shortage of 110,000 or six percent. By 2020, the shortage is projected to grow to an estimated 340,000. This shortage is not just in hospitals, but also in nursing homes, which project that they will need 66 percent more RNs in 2020 based on 1991 data.\(^4\)

With all this in mind, just how close can current efforts to broaden the reach of health IT (e.g., ARRA/HITECH) get us to the IOM’s vision of 21\(^{st}\) century care?

And what’s next?

Goals and Objectives

Each year, AMIA convenes its *Invitational Health Policy Meeting* to look at the cutting edge of health care and health IT policy. The overarching objective of this year’s meeting is to look into the future to:

- Identify potential future issues, especially those related to the convergence of health IT, clinical technologies, devices, innovations, and communications capabilities;
- Identify areas for further study and research; and
- Develop objective reports synthesizing conference outcomes to inform policymakers about the issues discussed and potential next steps.

During the meeting there will be an opening plenary session, followed by facilitated small-group breakout discussions that are crucial to helping participants reach the objectives of the meeting. Additional plenary

\(^1\) See [http://topics.nextgov.com/Cybersecurity/](http://topics.nextgov.com/Cybersecurity/).


\(^3\) See [http://www.aacn.nche.edu/media/factsheets/nursingshortage.htm](http://www.aacn.nche.edu/media/factsheets/nursingshortage.htm).

sessions will help to focus ideas, summarize results and formulate action items. Some anticipated outcomes and/or work products from the meeting include the following:

- A summary report with recommendations;
- A short-range action/research plan (2-3 years) that could be pursued by the participants and other stakeholders in order to address the issues, and/or;
- One or more manuscripts for submission to JAMIA or elsewhere.
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Breakout Session Descriptions and Discussion Questions

Instructions: Participants are asked to select one of three breakout sessions:

- Ensuring Resilience in Health Care and Health IT
- Facing Ethical, Legal and Social Challenges
- Sustaining Adoption and Innovation in Health IT

For each breakout session, we have created one or more scenarios to provide real life examples and depict relevant issues. Each breakout session will begin with preliminary remarks by the session facilitators who will describe the main objectives for the session and confirm the ground rules for the discussions. Specific questions are included for each breakout session in order to guide the interactions. During larger group plenary sessions, breakout session discussions will be summarized and common themes and topics across the sessions will be identified. Following the meeting, AMIA will synthesize the discussions and prepare a paper for review and consideration by the AMIA Board of Directors and for dissemination.

Breakout 1: Ensuring Resilience in Health Care and Health IT

Resilience has been defined as the “intrinsic ability of a system to adjust its functioning prior to, during, or following changes and disturbances so that it can sustain required operations, even after a major mishap or in the presence of continuous stress.” It is a quality that should be on the minds of all stakeholders in the U.S. health care system—from care providers, to researchers, to thought leaders, and policymakers—especially as billions of dollars begin to flow into the health care sector for the purpose of speeding the adoption of EHRs, health information exchanges (HIEs), and other forms of health IT. The recent Gulf Oil Spill, Hurricane Katrina, and H1N1 events provide a stark reminder that major disasters are always possible, even if the risk of occurrence is small.

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5 From Nemeth et al., “Minding the Gaps.”
This breakout session will address the degree of resilience that is present or lacking in the U.S. health care system and the nation’s approach to health IT. Participants will discuss the potential for and ramifications of possible failures in current approaches to health IT, along with ways to support robust plans and policies focused on preparedness and response. Furthermore, participants will consider the roles of various stakeholders in establishing, altering, guiding, following, and enforcing the policies needed to support resilient health IT systems.

Scenario 1: An Evolving Health Care and Health IT Landscape

The year is 2010. Because of a number of current and contemplated approaches for accelerating health IT adoption in the U.S., health IT vendors are actively engaged in developing and launching systems to support health care improvement, and health care organizations are preparing to implement these systems. The Nationwide Health Information Network (NHIN) is one of several components of the national health IT strategy intended to provide a common platform for health information exchange (HIE) across diverse entities, within communities and across the country, helping to achieve the goals of the HITECH Act. Against the backdrop of ARRA and HITECH incentives, several federal agencies and private sector organizations are trying to exchange electronic health information securely and establish the standards and policies needed to do so. In addition, the federal government has initiated projects to address questions and concerns about IT usability and human factors, the security of cloud computing, enhanced broadband access, and the governance of the Internet. With the recent BP oil rig disaster, the reality of catastrophic events remains in the news.

The year is 2015. The nation has made progress toward greater adoption and meaningful use of health information technologies. Many primary care practices have adopted EHRs, although a significant number of other specialties have not. Care is provided via telemedicine technologies with periodic visits by physicians and/or qualified assistants and the occasional trip to a neighborhood clinic or regional hospital. The number of health information exchanges has grown, and several have developed sustainable business models that support operations without the need for public funds. The NHIN has a stable governance framework and enables interoperable exchange of data between federal agencies and several large care providers and HIEs. Despite progress, reports surface suggesting a number of challenges and major impediments in the form of overall policy, infrastructure, system and organizational failures, to the achievement of the intended goals and perceived benefits. For example, an increasing volume and diversity of health data from a growing number of sources (systems, devices, and organizations) remains largely unguided by regulation or policy. While HIEs and the NHIN have expanded, many smaller practices can only connect through limited, point-to-point interfaces with other local providers. Predicted health workforce shortages are worse than anticipated. There also appears to be conflicting guidance from multiple government agencies and states that leads to confusion on the part of health IT users. There are growing gaps in oversight, and there are few, if any, standards governing data collection and exchange to and from implantable and mobile devices as well as other new technologies that are interacting with EHRs and HIEs.
The year is 2025. There is a high level of adoption and use of health IT systems. Safety net, long-term care and rural providers, however, lag far behind. Additionally, because of dwindling public support and several highly publicized failures, continued growth and adoption of newer technologies has slowed. Several health IT systems, HIEs, and devices have been abandoned due to technical and organizational breakdowns. Despite challenges, there is now an incredibly diverse set of health information technologies in the marketplace, including but not limited to, nanotechnology devices, monitors and instruments implanted directly into patients’ bodies, pharmaceutical products with embedded radio frequency identification (RFID) tags, and home medical assessment kits for routine tests (e.g., blood and urine) and monitoring of physiologic characteristics (e.g., blood pressure, blood oxygen levels). Data collected and generated, including complete individual genomic data, are exchanged rapidly across the public Internet to a myriad array of recipients and data repositories, including clinicians, hospital systems, public and private insurers, researchers, and national as well as international public health organizations. The government’s efforts toward cloud computing have advanced but not to the stage originally anticipated. NIST’s Standards Acceleration to Jumpstart Adoption of Cloud Computing (SAJACC) project remains underway, although the need and ability of the health IT industry to adhere to Federal Information Security Management Act (FISMA) guidelines remains unclear.

Questions

- How is health IT contributing or not contributing to the resilience of today’s health care system? How will this change by 2015? By 2025 and beyond?
- What would the ramifications be if a malicious computer virus were released that exploits a vulnerability in a long established data or communications standard and leads to widespread (think nationwide or global) long-term system outages and loss of data?
- What other potential challenges might be evident as health care stakeholders become more interconnected and dependent on health IT systems and data to drive care and business practices?
- To what extent are there appropriate checks and balances in place to reduce the likelihood of a major catastrophic event and/or a series of smaller failures?
- What insight and lessons learned can be gained from prior technological and/or infrastructure failures to best prepare for their inevitability? What potential risks need to be considered? How can we begin to mitigate these risks?
- How can policymakers and officials in emergency management, public health, and private sector health care organizations work together to achieve a more resilient health care system – one better prepared to respond to failures and/or disasters given a reality in which providers are dependent on EHRs and other health information technologies to function?
- To what extent does the current legislative and regulatory climate sufficiently address issues related to the lack of standards in an era of increasing reliance on cloud computing, mobile devices and other technologies? What about the lack of needed personnel with cybersecurity and other technical expertise?
- To what extent can and should public policy related to the topics discussed above be addressed at the national level? State level?
How can federal and state agencies better coordinate efforts for oversight and governance of this expanding field? Which levels of government are and should be in charge of what?
Breakout 2: Facing Ethical, Legal and Social Challenges

The rapid growth of health IT is transforming the delivery of health care, and more health information than ever is available today and on the move among care providers, payers, researchers, and patients. Fueled largely by aggressive health IT initiatives on both the federal and state levels, this evolution holds much promise for improvements in health care quality and outcomes. But the transformation also brings with it numerous new and evolving ethical, legal, and social challenges.

This breakout session will tackle the growing array of ethical, legal, and social considerations likely to confront clinicians, patients, and policymakers. Topics of discussion will range from how changing technology is affecting ethical decision-making, to how new technologies or information exchanges might facilitate or reduce health care fraud, to how these issues are or should be approached by policymakers.

Scenario 2: Ubiquitous sensors, telemedicine, and managing the coming data supernova

The year is 2025. ARRA and HITECH were successful in terms of increasing the level of deployment and adoption of EHRs. In fact, due to immense technological innovations and entrepreneurship, wireless sensors and readers are widespread—including nanotech devices, monitors and instruments implanted directly into patients’ bodies, pharmaceutical products with embedded RFID tags, and home medical assessment kits for routine tests (e.g., blood and urine) and monitoring of blood pressure, blood oxygen levels, and so on. Much care is now provided through federally prescribed coordinated care entities. Other care is routinely provided via telemedicine technologies with periodic visits by physicians or qualified assistants, and the occasional trip to a neighborhood clinic or regional hospital. Information collected and generated in this sensor- and data-rich environment (including complete individual genomic data, which is now commonplace) travel via wireless radio frequencies across the public Internet to a host of recipients and data repositories: clinicians, hospital systems, public and private insurers, researchers, and national as well as international public health organizations.

Questions

- What are the likely challenges and dangers for new forms of fraud or wrong-doing as we approach the era of ubiquitous wireless sensors and enormous interlinked data repositories?
- To what extent do clinical systems and related infrastructure need built-in fraud detection capabilities (e.g., coded directly into their software)?
- How will federal agencies coordinate policy and regulations regarding clinical data generated at home by patients or sensors, in hospitals or clinics, transmitted wirelessly across the public Internet, and ultimately used for a variety of purposes including but not limited to an individual’s care?
• What are some policy issues regarding balancing the need to protect individual information against misuse and the potential for breakthroughs achievable through research conducted using the vast quantities of clinical data that are likely to become available over the next decade?
• What are the ethical or moral principles that should guide policymaking for this approaching era of ubiquitous sensors, wireless communication and care delivery, and vast data repositories?

Scenario 3: Wireless enabled cloning

A team of researchers has been successful in cloning a human being based solely on a digital genomic file that they intercepted at random as it was uploaded wirelessly, in unencrypted form, from an individual’s laptop computer connected to the university network, allowing access to the personal health record that the individual maintains through an online service.

Questions
• What are the challenges (re: ethics, fraud and abuse) surrounding the increasing prevalence and use of genomic information?
• How can federal policy protect against fraud and/or misuse of clinical information generated by patients themselves and transmitted wirelessly across the public Internet or stored “in the cloud”?
• What new and emerging ethical issues will we need to address as technology and clinical care advance?
• What research is needed to be prepared for the potential misuse and fraud related to expanding availability and usefulness of genomic and other medical information?

Scenario 4: Ethical decision-making related to health care

The CEO of a large multinational corporation, in an effort to get her company as lean as possible in the face of a deepening global economic crisis, has directed her economic team to be aggressive about trimming the company's health care spending. The team has access to a database of employee health service and prescription claims (e.g., how often they are accessing care, what kind of care, what prescriptions they have, etc.) They also have access to the human resources department’s employee database, which contains information regarding age, location, and job performance. The team then uses analytical tools to merge and visualize employee information by age, performance, and health claims, and begins using this information to inform management decisions regarding promotions, early retirement offers, layoffs, and terminations. In one instance, the decision to close one manufacturing facility in particular over three fairly equal facilities was swayed when the economic team demonstrated that the plant to be closed had a larger “budgetary health care footprint” for the company.

Questions
• To what extent is this ethical behavior on the part of the corporation? The economic team?
• What information is it reasonable to expect that employers have about their employees’ health care details?
• What research has been or is being done to help assess how prevalent such practices might be?
• What is the role for federal policymakers to offer guidance in this area?
• To what extent are there appropriate checks and balances in place to mitigate wrongdoing?
Breakout 3: Sustaining Adoption and Innovation in Health IT

There are a number of current and contemplated models for financing health IT in the U.S., primarily in the form of incentives for meaningful use. There are also several payment initiatives underway to address new forms of health care delivery, such as Accountable Care Organizations (ACOs) and Patient Centered Medical Homes (PCMHs). However, it is not clear what potential impacts there may ultimately be on the broader adoption of health IT, especially among communities and stakeholders that the current funding models do not reach. There is the potential that this targeted and short-term focus (e.g., ARRA-HITECH) could be putting innovation and further advancements in health IT at risk—first, because vendors are likely to focus on making their EHRs meet meaningful use criteria, putting aside other types of development; second, because the increase in those adopting EHRs will put more strain on an already stretched workforce. Additionally, it is possible that vendors will focus attention toward shorter term implementations and away from innovation. As a result, there may be an increasing danger that broader adoption of, and true innovation in, health IT will falter. There are also uncertainties about how future financing options can accommodate evolving forms of health care practice and delivery, sites of care and/or technologies.

This breakout session will explore various issues related to financing in order to assure the broadest possible adoption of health IT, as well as for continuing the research, development, and basic science that underlie its advancement. Some general questions for this session include:

- How can we assure a healthy financing “lifecycle” for health IT research, innovation, development deployment?
- What are the policy issues and potential solutions that should be considered?

Scenario 5: Financing at a Rural Clinic

The clinic is a three-physician clinic specializing in OB/GYN located in a rural community of 25,000, and the only obstetrics service provider in the community. The community is served by a general service community hospital and is remote from and not affiliated with any major medical center.

The population of the community has a higher proportion over age 65 than the state average. At the same time, there is a growing immigrant community with higher birth rates. Health issues in the community include higher than average prevalence of chronic conditions, pregnancy-related issues, and work-related injuries.
Employment is primarily small business or agriculture related. Due to these factors, the clinic income is derived more from Medicaid, high-deductible individual insurance plans, and out-of-pocket payments than state averages. The amount of uncompensated care is higher as well.

The clinic is just able to cover its costs. It has acquired a basic accounting package to provide financial management and billing data but was ineligible for meaningful use incentives and does not have sufficient revenue to cover the cost of acquiring, implementing, and maintaining an electronic health records system.

Questions

- Where are the potential gaps in current incentives and grants (e.g., ARRA) for implementation of electronic health records (EHR), health information technology (HIT), and health information exchange (HIE)?
- What clinical specialties, patient populations, geographical considerations might be at risk or potentially overlooked?
- Is access to EHR/HIT/HIE capability of sufficient value that resources should be identified to ensure that health care providers are able to acquire, implement, and maintain an electronic health records system (i.e., should EHR/HIT/HIE be treated as a public good)?
- If so, what option would be the preferred method for providing the resources?
- If access to EHR/HIT/HIE is not of sufficient value to warrant such action, what impact is this likely to have on the community’s health? Should the government develop programs to address those impacts through other means?

Scenario 6: Sustaining Innovation in Health Care Technology

On our current trajectory, the incentives involved with the ARRA/HITECH stimulus funding may have the unintended effect of impeding true technological innovation in health care, such that in ten years time there may have been no significant new advances in health IT. Imagine an alternative scenario: recognizing this risk of stunted innovation, the U.S. federal government convened a new public-private partnership focused on developing next-generation health care technologies. The high-risk/high-return effort—originally inspired by the U.S. military’s Defense Advanced Research Projects Agency (DARPA)—was chartered to focus solely on true innovation and breakthrough technologies and not on incremental advances. The partnership is now self-sustaining and features the collaboration of numerous prominent U.S. and international health care companies, hospitals, universities, and government agencies.

One company in the U.S. has capitalized on a number of breakthroughs based in large part on partnership-sponsored projects—other partnership members, in turn, have benefitted through shared research results and a profit-sharing agreement. For example, the company has developed an advanced suite of integrated computational tools to assess and model a patient’s genomic profile, medical history, and present condition and create models to predict future health possibilities, suggest strategies for treatment, and/or pinpoint lifestyle
changes that might mitigate any negative predictions. They then packaged this technology into a product that is leased to hospitals and health care organizations around the world to assist providers in coordinating the long-term wellness of their patients.

The partnership has resulted in numerous other breakthroughs and advances and has helped make the U.S. the global epicenter for health care technology innovation and high-quality health care.

Questions

- How real is the possibility that U.S. efforts aimed at health IT deployment and adoption and our relatively short-term focus on “meaningful use” will combine to distract stakeholders, (especially policymakers and technology companies) from supporting and aggressively pursuing continued innovations in health IT?
- What are the policy options for sustaining financial support for both the incremental advances needed in health IT research and the breakthrough innovations that we will need in order to achieve true next-generation health care?
- What types of policy and fiscal considerations are needed to address the current and likely increase in health care and technology-related workforce shortages?
- How can we assure that there will be organizations in the public and private sectors today willing to do high-risk/high-payoff research and look for breakthrough innovations in health care technology?
- Is there a different and/or more prominent federal government role in supporting breakthrough advances in health care technology than what we see today? If so, what models might be successful?
- To what extent do other countries have different/better models for supporting innovation in health care technology and how can we learn from their experiences?
- To what extent do other industries have different/better models for supporting innovation and discovery and how can we learn from their experiences?
Selected References

Breakout 1: Ensuring Resilience in Health Care and Health IT


Posner, RA. “From the oil spill to the financial crisis, why we don't plan for the worst.” The Washington Post. June 6, 2010; B01.

Breakout 2: Facing Ethical, Legal and Social Challenges


**Breakout 3: Sustaining Adoption and Innovation in Health IT**


Speaker and Steering Committee Biographies

Speakers

**William C. Barker** is Chief Cyber Security Advisor at the National Institute of Standards and Technology. He was also recently Chief of the Information Technology Laboratory’s Computer Security Division. Prior to that, Mr. Barker was Personal Identity Management Program Manager in the NIST Computer Security Division. From 1986 to 1997 he worked for Trusted Information Systems, where he was program manager for a number of Department of Defense efforts and was Vice President for Commercial Consulting. Prior to 1986, he worked for PE Systems, another Defense information assurance contractor, and for the National Security Agency. Mr. Barker has worked in the information assurance field since 1966.

**Linda Connell, RN,** is the Director of the NASA Aviation Safety Reporting System since 1997 and a Research Psychologist for NASA Ames Research Center since 1981. Ms. Connell has participated in numerous studies with domestic and international research teams exploring human factor issues in the aviation environment. Her recent focus is in aviation safety and the application of confidential reporting for safety improvements in numerous domains. Ms. Connell continues to evaluate aviation incidents on a variety of topics, including pilot/controller communication, emergency medical helicopter operations, aviation maintenance, cabin safety, and technology applications in aviation environments. Ms. Connell is a pilot and a Registered Nurse. She is a member of the International Confidential Aviation Safety Systems, Aerospace Medical Association, Human Factors Society, National EMS Pilots Association, Helicopter Association International, Aircraft Owners and Pilot’s Association, Experimental Aircraft Association, 99’s (Santa Clara Chapter), and other organizations.

**Don Eugene Detmer, MD, MA,** is Professor of Medical Education in the School of Medicine at the University of Virginia, co-chair of the Blue Ridge Academic Health Group, chairman of MedBiquitous, chair of the IOM Membership Committee, and visiting professor of CHIME, University College-London. He is the immediate past President and Chief Executive Officer of AMIA, past chair of the NCVHS, the Board of Health Care Services of the IOM, and the Board of Regents of the NLM. Don is an IOM member and a fellow of AAAS, ACMI, ACS, and ACSM (emeritus). Dr. Detmer’s research interests include contributions to national health information policy, quality improvement, administrative medicine, vascular surgery, sports medicine, and master’s level educational program for clinician-executives.

**John Glaser, PhD,** currently serves as chief executive officer (CEO) of the Health Services Business Unit of Siemens Health care, where he is responsible for heading Siemens’ global health care IT business, including product development, strategy, portfolio management, financial performance, and overall customer satisfaction. In this capacity, he leads over 4,500 employees, multiple health information system brands, a robust Global Services arm, and Siemens’ world-renowned Information Systems Center. Prior to joining Siemens, Dr. Glaser was Vice-
President and Chief Information Officer, Partners Health care, Inc. Dr. Glaser was the founding chairman of the College of Health care Information Management Executives (CHIME), and is the former chairman of the eHealth Initiative Board and the Board of the National Alliance for Health Information Technology. He is a former Senior Advisor to the Office of the National Coordinator for Health Information Technology (ONC). Dr. Glaser holds a PhD in Health care Information Systems from the University of Minnesota.

John D. Halamka, MD, MS, is Chief Information Officer of Beth Israel Deaconess Medical Center, Chief Information Officer at Harvard Medical School, Chairman of the New England Health care Exchange Network (NEHEN), Chair of the U.S. Health care Information Technology Standards Panel (HITSP)/Co-Chair of the HIT Standards Committee, and a practicing emergency physician. As CIO at Harvard Medical School, he oversees all educational, research and administrative including all electronic courseware development. As Chief Information Officer at Beth Israel Deaconess, he is responsible for all clinical, financial, administrative and academic information technology serving 3000 doctors, 12000 employees and one million patients.

Mark Josephs, JD, is an attorney at the Office of Consumer Litigation at the United States Department of Justice, where he prosecutes health care fraud. Among his recent health care fraud cases, he was co-counsel in the criminal prosecution of Pfizer for off-label marketing of the arthritis drug Bextra, a case in which Pfizer paid the largest criminal fine in United States history. Mark also was co-trial counsel in the fraud prosecution of a dietary supplement company, Berkeley Premium Nutriceuticals, in which the owner received a 25-year prison sentence. Prior to law school, Mr. Josephs was a legislative assistant to Senator Wyche Fowler, Jr., focusing on health care issues. Mr. Josephs received his JD from Northwestern University School of Law and his BA from the University of Michigan.

Nancy M. Lorenzi, PhD, MLS, MA, is a Professor of Biomedical Informatics at the Vanderbilt University School of Medicine and Clinical Professor of Nursing at the Vanderbilt University School of Nursing. Dr. Lorenzi is an Assistant Vice Chancellor for Health Affairs with a major focus on informatics, quality, strategy and transformation. She was President of the International Medical Informatics Association (2004-2007) and is currently the Chair of the Board of Directors of the American Medical Informatics Association (2010-2011). Within the Department of Biomedical Informatics Dr. Lorenzi is the Director of the Implementation Sciences Laboratory. The Implementation Sciences Laboratory is a community of scholars interested in achieving implementation goals for information-based systems to support operations, research, and education in complex health care organizations. Dr. Lorenzi is known nationally and internationally for her work in transformation and managing technological change in health care organizations.

Randolph A. Miller, MD, is the Donald A.B. and Mary M. Lindberg University Professor of Biomedical Informatics, Medicine and Nursing at Vanderbilt University Medical Center. Dr. Miller completed clinical training at the University of Pittsburgh in 1979 in Internal Medicine, and as a faculty member there developed Quick Medical Reference (QMR) as a microcomputer-based successor to the INTERNIST-I diagnosis program. His 1994 move to Vanderbilt has afforded him the opportunity to develop a combined academic unit and clinical informatics service
that develops and evaluates biomedical software applications. Dr. Miller is Editor in Chief of the Journal of the American Medical Informatics Association (JAMIA), and joined the Editorial Board of the Annals of Internal Medicine in July, 2000. He was elected President of the American Medical Informatics Association (AMIA) for 1994-95. His interests include development and evaluation of medical decision support systems and their corresponding knowledge bases; clinical terminology systems; ethical and legal implications of developing and using clinical information systems; and, institutional-level informatics initiatives.

Donald W. Rucker, MD, is Vice President and Chief Medical Officer at Siemens Medical Solutions. Dr. Rucker leads efforts to coordinate the diagnostic and healthcare IT product portfolios with emerging market opportunities as well as today’s challenging reimbursement environment. He has been heavily involved in the policy outreach around modern imaging such as cardiac CT scans and virtual colonoscopy. Dr. Rucker came to Siemens from Beth Israel Deaconess Medical Center in Boston where he was the first full-time Emergency Department attending and from Datamedic Corporation where he co-developed the first Microsoft Windows based electronic medical record. Dr. Rucker serves on the Board of Commissioners of the Certification Commission for Healthcare Information Technology. He has served on numerous medical advisory boards including the Medicare Evidence Development & Coverage Advisory Committee. Dr. Rucker is on the clinical faculty at Penn and practices Emergency Medicine part-time at the University of Pennsylvania Presbyterian Medical Center as well as Pennsylvania Hospital. Dr. Rucker is a graduate of Harvard College and the University of Pennsylvania School of Medicine with Board Certifications in Internal Medicine and Emergency Medicine. He holds a Masters in Medical Computer Science and an MBA, both from Stanford.

Edward H. Shortliffe, MD, PhD, is President and CEO of the American Medical Informatics Association (AMIA), based in Bethesda, MD (2009-present). He is also Professor, Biomedical Informatics, at the School of Health Information Sciences, UTHealth, in Houston, TX. Previously he served as founding dean of the University of Arizona’s medical campus in Phoenix (2007-2008), Professor of Biomedical Informatics at Arizona State University (2007-2009), Professor and Chair of the Department of Biomedical Informatics at Columbia’s College of Physicians and Surgeons (2000-2007), and Professor of Medicine and of Computer Science at Stanford University (1979-2000). He received an AB in Applied Mathematics from Harvard College in 1970, followed by a PhD in Medical Information Sciences in 1975 and an MD in 1976 (both at Stanford). During the early 1970s, he was principal developer of the medical expert system known as MYCIN. Dr. Shortliffe is an elected member of the Institute of Medicine (IOM), the American Society for Clinical Investigation (ASCI), and the Association of American Physicians (AAP). He has also been elected to fellowship in the American College of Medical Informatics (ACMI) and the Association for the Advancement of Artificial Intelligence (AAAI). He is a Master of the American College of Physicians (ACP) and is Editor-in-Chief of the Journal of Biomedical Informatics. In addition, he received the Grace Murray Hopper Award of the ACM (1976), the Morris F. Collen Award from ACMI (2006), and was a Henry J. Kaiser Family Foundation Faculty Scholar in General Internal Medicine (1984-1989).
Invitational Policy Meeting Steering Committee

Meryl Bloomrosen, MBA, is AMIA’s Vice President for Public Policy and Government Relations. In addition to overseeing and providing lead staff support for AMIA’s Invitational Policy Meeting and Hill Day activities, Ms. Bloomrosen oversees several contracts and grants, and provides support for AMIA’s ongoing efforts on clinical decision support (CDS) and informatics workforce development. Prior to her position with AMIA, Ms. Bloomrosen was a Vice President at the eHealth Initiative (eHI) and the Program Manager of the Connecting Communities for Better Health Program, a HRSA-funded, and multimillion dollar cooperative agreement. Earlier in her career, she was a senior policy analyst at the Prospective Payment Assessment Commission (ProPAC-now MEDPAC) where she researched topics such as DRGs, severity and risk adjustments and quality of care. She has a certificate in health information management from the U.S. Public Health Service, an MBA in information systems from George Washington University and is currently enrolled in the Graduate Program in Biomedical Informatics at the Oregon Health & Science University. She has completed the Medical Informatics MBL/NLM Course Fellowship program at the Marine Biological Laboratory, Woods Hole, MA.

Yvette Bolla, RN, MSN, is a Public Policy Analyst for the American Medical Informatics Association (AMIA), with a focus on promoting legislative and policy initiatives to foster improvements in health IT initiatives and adoption. Before joining AMIA, Yvette served as a full-time instructor, Nursing Informatics, at the CWRU Frances Payne Bolton School of Nursing, Cleveland, Ohio. Yvette also worked as a Lead Clinical Analyst, Research and Outcomes, for a new electronic health record initiative at University Hospitals of Cleveland and as a Clinical Nurse at Rainbow Babies and Children’s Hospital, Cleveland, Ohio, in the care of adult cystic fibrosis patients. Yvette has also worked in science journalism, marketing, grant writing and public relations for non-profit science organizations, including serving as a speech writer for the Director of the National Science Foundation (NSF).

Caitlin M. Cusack MD, MPH, Steering Committee Vice Chair, Principal at Insight Informatics, is a board certified and licensed obstetrician gynecologist with 8 years of direct clinical practice. She has broad experience in health IT including as a user, researcher, project manager, and consultant. While practicing medicine, she used EpicCare systems extensively to document ambulatory care for her patients, and was trained on other health care systems. Following completion of her Master’s at Harvard’s School for Public Health, she became a physician executive at a major health IT vendor where she participated in the development of a women’s health module for their EHR. While a Senior Analyst at the Center for IT Leadership (CITL) at Partners Health care in Boston, Mass., she was the project manager for a number of projects. She has provided health care consulting services at Booz Allen Hamilton, CITL, and the National Opinion Research Center (NORC) at the University of Chicago where she managed federal contracts, including for the Agency for Health care Research and Quality’s (AHRQ) National Resource Center for Health IT (NRC).

Brian E. Dixon, MPA, is a Health Information Project Manager with the Regenstrief Institute, Inc. Mr. Dixon has primary responsibilities in the area of health information exchange, including research and development projects involving the Nationwide Health Information Network (NHIN). Mr. Dixon further manages a variety of projects for
the Indiana University Center of Excellence in Public Health Informatics, including projects associated with biosurveillance, decision support, and knowledge management. Previously, Mr. Dixon developed technology for Regenstrief and the Indiana Network for Patient Care (INPC), including tools supporting the standard clinical vocabulary LOINC®, technology supporting the automated electronic reporting of reportable conditions to public health agencies, and tools for querying large clinical data repositories. Mr. Dixon earned his Bachelor of Arts Degree in computer science from DePauw University and his Master of Public Affairs degree from Indiana University. Mr. Dixon is currently completing his doctorate in health informatics at Indiana University-Purdue University Indianapolis (IUPUI).

Melissa Goldstein, JD, is an Associate Research Professor of Health Policy and Health Sciences at The George Washington University Medical Center, where she teaches courses in health information technology policy, bioethics, and public health law, and conducts research on the legal and policy aspects of health information technology. Professor Goldstein is a former Director of the Markle Foundation's Health Program, where she managed the Policy Subcommittee of Connecting for Health and other policy aspects of the Foundation's work in health information technology. Ms. Goldstein has also worked as a legal consultant to President Clinton’s National Bioethics Advisory Commission and as a White House Fellow and domestic policy advisor to Vice President Al Gore. Professor Goldstein graduated Phi Beta Kappa from the University of Virginia, received her law degree from Yale Law School, and completed a post-doctoral fellowship in bioethics and health policy at Johns Hopkins and Georgetown Universities. Professor Goldstein also recently served as a member of the AHRQ Ambulatory Safety and Quality Program on Improving Quality through Clinician Use of Health IT Special Emphasis Panel.

Kenneth W. Goodman, PhD, is founder and director of the University of Miami Bioethics Program and its Pan American Bioethics Initiative and co-director of the university’s Ethics Programs, including its Business Ethics Program. The Ethics Programs have recently been designated a World Health Organization Collaborating Center in Ethics and Global Health Policy, one of six in the world and the only one in the United States. Dr. Goodman is a Professor of Medicine at the University of Miami with appointments in the Department of Philosophy, Department of Epidemiology and Public Health, Department of Electrical and Computer Engineering, School of Nursing and Health Studies and Department of Anesthesiology. He chairs AMIA’s Ethics Committee and co-founded AMIA’s Ethical, Legal and Social Issues Working Group. He is a Fellow of the American College of Medical Informatics, the only philosopher or ethicist to be elected. He edited the first book on ethics and health informatics, and his research has emphasized issues in health information technology, including bioinformatics, and evidence-based practice.

Joe Hunt, MPH, serves as the Associate Director, Tracking and Evaluation Program, Indiana Clinical and Translational Sciences Institute, Indiana University School of Medicine. In that capacity, Mr. Hunt is responsible for evaluating and tracking efforts of the Indiana Clinical and Translational Sciences Institute (ICTSI) as part of the IU School of Medicine. This includes developing policies and procedures used in evaluating and tracking the CTSI programs. Prior to joining the ICTSI, Mr. Hunt worked at the Indiana State Department of Health for over 30
years. At the ISDH he served in several capacities including responsibilities to manage and direct activities in the
areas of policy, strategic planning, epidemiology, information technology, the state public health laboratories,
public health preparedness, and vital records and public health statistics. He was also responsible for monitoring
health policy issues at the national and state levels for the purpose of formulating agency positions on policy
issues of public health significance. Mr. Hunt has served as adjunct faculty at Indiana University since 1993,
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Gail Keenan, PhD, RN, Associate Professor, is the Director of the Nursing Informatics Initiative at the University Of
Illinois, Chicago College Of Nursing. She is a charter and governing member of the CIC’s (Big 10 Universities)
Clinical Nursing & Health Informatics Doctoral Education Consortium and is a faculty member in the UIC 10 x10
Program. Her academic career for more than a decade has focused on education and research supporting the
creation and use of a workable standardized plan of care (POC) component for electronic health records (EHRs).
She serves as the current President and CEO of HealthTeam IQ, LLC, and is active in a number of professional
organizations. She recently served as the Chair (2005-2008) of the American Nurses Association Committee on the
Nursing Information Infrastructure (including a focus on use of standardized terminologies). Dr. Keenan is
currently the Chair of the AMIA Clinical Information Systems Work Group (CISWG), a member of the AMIA Public
Policy Committee (PPC), and a member of the AMIA Nursing Informatics Work Group (NIWG) and its policy sub-
groups.

Julie J. McGowan, PhD, MLS, MA, Steering Committee Chair holds academic appointments in the IU School of
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faculty member of the School of Informatics, and is an Affiliated Scientist at the Regenstrief Institute. Recipient of
a number of federal grants and contracts and author of numerous peer-reviewed publications, her research
interests include evidence utilities in decision support, evaluation of HIT/EHR and RHIO implementation and
outcomes, public health informatics and syndromic surveillance, and tools and outcomes of medical informatics
education and educational technology. She has been actively involved in public policy relating to health
information technology since the early 1990s and is currently serving her fifth year as Chair of the Public Policy
Committee of the American Medical Informatics Association.

Sandi Mitchell, RPh, MSIS, has, over the past 20 years, worked as a clinical healthcare informatician in academic
medical centers including The Johns Hopkins Hospital and the University of Pittsburgh Medical Center
Transplantation Institute. In 2010, she received the American Society of Health System Pharmacists Fellowship as
national leadership recognition. Understanding the lack of informatics readiness within the clinical environment,
Mitchell received her Masters of Informatics and Library Science in 1984. As an enthusiastic educator at the
University of Maryland College of Pharmacy, she learned as much about human factors as the students learned
about pharmacy informatics. This lead to serving as a founder and Chair for the American Medical Informatics
Association (AMIA) Pharmacoinformatics Working group. This working group was successful in getting the
American College of Pharmacy Education standards to include informatics in the core curriculum. Mitchell is excited about the potential of healthcare moving into an exceptional era of informatics and clinical sharing between clinicians and patients in many new paradigms.

David Padgham, MLS, joined AMIA as a public policy analyst in May 2010, bringing with him more than a decade's worth of experience in technology policy. Previously, he was policy director for the High Performance Computing (HPC) Initiative at the Council on Competitiveness, where he worked to promote greater use of HPC in support of innovation in the U.S. private sector. Before joining the Council, he was an associate program officer at the National Academies' Computer Science and Telecommunications Board (CSTB) and a policy analyst with the Association for Computing Machinery (ACM). David holds a master's degree in library and information science from the Catholic University of America in Washington, D.C., and a Bachelor of Arts degree in English from Warren Wilson College in Asheville, North Carolina.

Douglas Peddicord, PhD, is President of the Washington Health Strategies Group of Oldaker, Belair & Wittie and provides lobbying and government relations services to a variety of health-related organizations. Following a career as a clinical psychologist, he came to Capitol Hill as an American Association for the Advancement of Science (AAAS) Congressional Fellow in 1994. Having been involved with health information policy issues – from privacy, interoperability and HIT implementation to EHRs, PHRs and the evolution of a national health information infrastructure – ever since, Dr. Peddicord has represented AMIA in Washington since 1997.

Paula Soper, MS, MPH, PMP, has more than 15 years of experience in public health, health IT and project management. She served as a Senior Advisor to the American Health Information Community's (AHIC) Population Health and Clinical Care Connections Workgroup and a member of the Biosurveillance Workgroup. She worked in the Office of Health Care Reform in the Clinton White House and was the founding President of the American Immunization Registry Association. Ms. Soper was a National Library of Medicine Informatics Fellow at the Johns Hopkins University School of Medicine, and holds a Master of Public Health in Maternal and Child Health from the George Washington University, Master of Science in Health Sciences Informatics from the Johns Hopkins School of Medicine, and is a doctoral candidate in health policy and management at the Johns Hopkins Bloomberg School of Public Health, with an emphasis in health informatics. She is also an adjunct faculty member in health care management and informatics at Chancellor University. She holds a PMP credential from the Project Management Institute.

Freda Temple, MLS, has served as a consultant to AMIA since 2007, assisting AMIA staff in editing manuscripts for publication, and in planning and implementing meetings sponsored by the organization. Ms. Temple has over 25 years of professional experience in the fields of health education, information management and communication. As a senior manager at Aspen Systems Corporation, she managed large, multi-faceted AIDS and cancer education programs for the Centers for Disease Control and Prevention, the National Institutes of Health, and the World Health Organization. She is an experienced technical writer with expertise in translating technical information into reader-friendly language for print and web products. Her publications include reports, articles, white papers,
manuals, conference materials, briefing books, strategic plans and proposals. She received a Masters in Library Science from the University of Michigan.