Setting the Next Informatics Agenda for Public Health

MAY 25–27, 2011 • SWAN AND DOLPHIN HOTEL, ORLANDO

CME/CE CREDIT
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QUALITY EDUCATION FROM

AMIA
INFORMATICS PROFESSIONALS. LEADING THE WAY.
Dear Public Health Colleague,

Welcome to PHI 2011, AMIA’s spring educational event aimed toward Setting the Next Informatics Agenda for Public Health. PHI 2011 is the national forum for organic collaboration, participation, and consensus on the future of public health informatics. We’re delighted to welcome you to Orlando for this ground-breaking meeting that relies on your input, your passion, your dedication to the field, and your vision of the future in order to reach its successful outcome!

Over the next two-plus days together, we will cover a vast range of subjects related to PHI, including ethics, technical frameworks, professional training and workforce development, research and evaluation, sustainability, information access, global e-health, HIEs, governance, and best practices. This is a particularly critical meeting as informatics is currently taking a front-and-center position on the national healthcare scene and is generating more interest and activity than ever before. A new generation of professionals, just emerging on the health IT scene, needs to become educated and engaged in informatics as its members plan their careers in health. Meanwhile, senior professionals are perhaps eyeing the next wave of health data management and digital health advancements with some degree of skepticism and reticence. That said, we PHI 2011 participants are riding the peak wave of positive change in public health and health care, and need to help others become more familiar and knowledgeable about public health informatics. Please share what you learn here with your colleagues and other professional associates in your work environment. Invite them to join you at the next AMIA meeting! (See back cover for more details)

If you are not yet a member of AMIA, please consider joining to stay abreast of educational tools, professional updates, research, and legislative and regulatory developments that affect informatics professionals.

I hope this meeting gives you ample opportunity to meet new peers to add to your network of informatics professionals and to gain greater understanding of topics that will help you do your job better, and to handle future challenges in your healthcare environment better.

With warm regards,

Barbara L. Massoudi, MPH, PhD
Chair, Scientific Program Committee

AMIA thanks PHI2011’s Corporate Sponsors

for their generous support of this event.
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Join the discussion of PHI2011 on Twitter!
#PHI2011@AMIAInformatix
### PHI2011 Program-at-a-Glance

#### Wednesday, May 25

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<td>7:30 – 8:30 am</td>
<td>Continental Breakfast</td>
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| 8:30 – 10:00 am  | Opening Plenary Session and Keynote Address
|                  | Sponsored by RTI International                                       |
| 10:00 – 10:30 am | Coffee Break                                                         |
| 10:30 am – 12:00 pm | Breakout Sessions A                                           |
|                  | Breakout A1 – Ethics                                                |
|                  | Breakout A2 – Technical Frameworks                                  |
|                  | Breakout A3 – Professional Training and Workforce Development       |
|                  | Breakout A4 – Research and Evaluation                               |
|                  | Breakout A5 – Sustainability                                        |
| 12:00 – 1:30 pm  | **STC Lunch-and-Learn**                                             |
|                  | *2001-2011 Examples and Lessons of Applied Public Health Informatics*|
|                  | *2011-2021 New Public Health Informatics Paradigms*                 |
| 1:30 – 3:00 pm   | Partnerships in Innovation (PII) Session A
|                  | PII-A1                                                               |
|                  | PII-A2                                                               |
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|                  | PII-A4                                                               |
|                  | PII-A5                                                               |
| 3:00 – 3:30 pm   | Coffee Break                                                         |
| 3:30 – 5:00 pm   | Breakout Sessions B                                                 |
|                  | Breakout B1 – Ethics                                                |
|                  | Breakout B2 – Technical Frameworks                                  |
|                  | Breakout B3 – Professional Training and Workforce Development       |
|                  | Breakout B4 – Research and Evaluation                               |
|                  | Breakout B5 – Sustainability                                        |
| 5:00 – 6:30 pm   | Poster Session 1 and Reception                                       |
| 6:30 – 7:30 pm   | Recommendation Synthesis                                             |

#### Thursday, May 26

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| 10:30 am – 12:00 pm | **Breakout Sessions C**  
Breakout C1 – Ethics  
Breakout C2 – Technical Frameworks  
Breakout C3 – Professional Training and Workforce Development  
Breakout C4 – Research and Evaluation  
Breakout C5 – Sustainability |
| 12:00 – 1:30 pm | **ISDS Lunch-and-Learn**  
*Advancing Surveillance Practice Through Research and Innovation* |
| 1:30 – 3:00 pm | **Partnerships in Innovation (PII) Session B**  
PII-B1  
PII-B2  
PII-B3  
PII-B4  
PII-B5 |
| 3:00 – 3:30 pm | **Coffee Break**                                                          |
| 3:30 – 5:00 pm | **Breakout Sessions D**  
Breakout D1 – Ethics  
Breakout D2 – Technical Frameworks  
Breakout D3 – Professional Training and Workforce Development  
Breakout D4 – Research and Evaluation  
Breakout D5 – Sustainability |
| 5:00 – 6:30 pm | **Poster Session 2 and Reception**                                        |
| 6:30 – 7:30 pm | **Recommendation Synthesis**                                               |

### Friday, May 27

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<td><strong>Breakout Summaries</strong></td>
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<td>9:30 – 10:00 am</td>
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<td>11:00 am – 12:00 pm</td>
<td><strong>Closing Session and Reactor Panel</strong></td>
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PHI2011
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**CME Information**

**Accreditation Statement**

The American Medical Informatics Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

**Designation Statement**

The American Medical Informatics Association designates this educational activity for a maximum of 15 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Disclosure of Financial Relationships with Any Commercial Interest**

As a sponsor accredited by the ACCME, the American Medical Informatics Association requires that everyone who is in a position to control the content of an educational activity disclose all relevant financial relationships with any commercial interest prior to the educational activity.

The ACCME considers relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

Faculty and planners who refuse to disclose relevant financial relationships will be disqualified from participating in the CME activity. For an individual with no relevant financial relationship(s), the participants must be informed that no conflicts of interest or financial relationship(s) exist.
Breakout Sessions Overview

The breakout sessions are the key part of this conference since it is the discussions that occur in these groups that will result in the new national agenda for public health informatics. Therefore, your active participation in the breakouts is essential. Breakout discussions will take place in four 90-minute sessions. Reports from the breakout groups will be presented in two plenary sessions on the morning of the third and final day.

The breakout tracks are designed to focus discussion on five key areas of public health informatics:

1. Ethics
2. Technical Frameworks
3. Professional Training and Workforce Development
4. Research and Evaluation
5. Sustainability

These tracks were selected after careful review of the 2001 recommendations and to partition the agenda creation work. The five tracks are designed to be comprehensive in their coverage of the scope of recommendations needed. We envision a number of cross-cutting themes to span each track. These include but are not limited to:

- Information Access
- Global eHealth
- Health IT initiatives (e.g. HIE)
- Governance
- Research Needs
- Good, Better, and Best Practices

Since there will not be time at this meeting for direct coordination among the five track breakout groups, duplicative recommendations from the breakout tracks will be combined after the conference as the agenda is prepared for publication.

Each breakout session has facilitators and members of the scientific program committee for coordination. In addition to running the breakout sessions, a member of the facilitator team will also present a summary of the group’s recommendations in the plenary sessions on the final day of the conference. Also, each breakout track has a number of invited experts. These individuals have specific expertise in their corresponding breakout domains and have agreed to attend all the breakout sessions for that track and contribute actively to the development of recommendations.

Since time for discussion at this conference is limited, the Scientific Program Committee members and facilitators for each track worked together prior to the meeting to create a framework for discussion and topic areas for recommendations. Each framework includes a brief description of what is included in that topic area, its current status, problems and gaps that have been identified, a description of the ideal or goal, and areas where recommendations might be considered. The frameworks also contain an approximate schedule of what will be discussed in each of the four sessions for that topic. In general, the first breakout will be used for a discussion of the
framework itself, and the remaining three sessions for development of recommendations. Part of the last session will also be used for summarizing the prior discussions and preparing for the plenary report of that track.

Copies of the frameworks for the five breakout topic areas are available at the registration desk. You should use them as guides to determine which breakout sessions to attend. You are not obligated to attend all four breakout sessions in the same track – only the facilitators and invited experts need to do that. Please attend specific sessions where you believe you can make a contribution.

**TRACK DESCRIPTIONS**

**Ethics**

Attention to ethical, legal, and social issues (ELSI) has never been more important for public health informatics. While this view has, generally, been recognized for clinical and hospital-based practices, the role of ethics presents a valuable opportunity to influence and guide the development, use, and evaluation of information technology in epidemiology and public health. Indeed, it could be argued that because of the importance of health IT in protecting and improving the health of populations, ethical and related issues are as significant here as anywhere else in the health professions. As ever, privacy and confidentiality enjoy at least the perception of first-among-equals status for the many ethical issues raised by public health informatics. But privacy is closely tethered to other values and issues, many of which are at least as important:

- **Informed or valid consent:** Many people choose to share their health information for the sake of research and, in any case, we have a long tradition of public health surveillance that uses personal health information with the implied consent of free people in civil society.
- **Secondary use of data:** From meta-analysis to data mining, existing collections of health information are or will be essential to public health and epidemiology. Indeed, it could be argued that it would be morally irresponsible not to use such information for public health.
- **Decision support:** Pandemic modeling and next generations of population-based decision support are data-intensive, and striking a balance among (i) appropriate uses of decision-support tools, (ii) privacy interests of individuals during ubiquitous surveillance and (iii) whether and when consent is required during (evolving) emergencies.
- **Framed this way, the importance of ethics for public policy becomes obvious.** This track will explore a wide variety of ethical, social, and legal issues with the goal of advancing understanding, improving practice, and guiding policy. Cross-cutting themes will be of exceptional interest in the ethics track. Issues to be addressed include:
  - **Privacy, confidentiality, and security**
    - Research vs. surveillance
• HIPAA
• State and provincial law

• Valid consent
  • Disclosure of risks to data collection and analysis
  • Challenges for marginalized and traditionally under-represented populations
  • Concept of “group (or community) consent”

• Secondary use of data
  • Data for “meaningful use” under ARRA
  • Consent-privacy tension
  • Limits to secondary or tertiary use (e.g. genetic data, racial data)

Technical Frameworks
At the AMIA 2001 PHI conference, two tracks focused on core health information technology: Standards and Vocabulary; and Architecture and Infrastructure. We have learned much over the past decade and perhaps the most important lesson is that there is a specific public health value chain that links information technology operations to informatics support of public health practice to program and technology effectiveness. We know now that technical architectures that do not support the overall public health value chain have limited effectiveness and have finite lifetimes. Any technical framework must be sustainable in the larger realm of data and systems interoperability and reuse.

We have defined “technical frameworks” to span the entire “informatics stack”, from back-end hardware, technical architectures, and data standards; to middleware domain-specific applications, knowledge management and decision support; to core end-user needs, including effective user-centered design. We will discuss what has been developed over the past decade, and describe specific successful models, such as health information exchange and the NHIN, and what is left to do.

We will also examine specific cross-cutting themes which are central to the area of technical frameworks.

• Sustainability—What technical solutions facilitate or hinder sustainability? What is the impact of federal and state initiatives (e.g. Meaningful Use, CDC next-generation PHIN, CMS quality eMeasures) on the development of sustainable technical frameworks?
• Secondary Use—The ability to use and reuse data captured at the point of care is essential. What technical frameworks support secondary use with the associated privacy and confidentiality issues? Can public health build upon work done by ONC (e.g. NHIN) and other agencies? What technologies are not compatible?
• Open Source—Also related to sustainability is the development of open-source solutions and emergence of crowd-sourced solutions. How does the need to preserve the spirit and vibrancy of the open-source community match with the need to safeguard protected health information and program governance?
Professional Training and Workforce Development
With the rapid rise in the use of electronic storage, access, and transference of information within and across public health programs and structures, there is a need for trained professionals who manage these data systems from a population perspective. Since the establishment of an agenda for public health informatics training in 2001, numerous programs offering degrees and certificates in public health informatics have been established and public health informatics competencies have been developed and vetted. Even with these major accomplishments, there remains a need to build public health workforce capacity in informatics. Additionally, while the development and implementation of the public health informatics competencies has encouraged new public health informatics curricula in continuing education and academic educational programs, this training has been insufficient to meet the needs of the workplace. These needs include both the numbers of individuals who are prepared in public health informatics, and the depth of their training in specific competency domains. This track will focus on the following questions within these areas:

• Public Health Informatics Competencies:
  ▪ How to ensure that public health informatics competencies remain “state of the art”?
  ▪ What public health informatics competencies are needed for public health front-line and management staff?

• What public health informatics competencies are needed for a global health community?

• Are established public health informatics competencies appropriate for the informatics challenges in developing and low-resource countries?

• Education and Professional Training Program Development:
  ▪ How to integrate public health informatics competencies into established certificate and degree granting academic programs?
  ▪ How to develop additional academic programs using the public informatics competencies?
  ▪ How to develop additional continuing educational training programs using the public health informatics competencies?
  ▪ How to implement competency-based training programs that focus on specific areas of need, such as: leading-edge approaches to disease detection, health and risk communications, workforce development, standards and interoperability, and best practices to combine the domains of health information science and technology with the practice and science of public health?
  ▪ How to develop the evidence base to document the benefits of competency-based training and education of the public health informatics workforce?
• Workforce Development:
  ▪ How to participate in the development of the professionalization of public health informatics workforce?
  ▪ How to ensure public health professionals have basic competencies in informatics?

**RESEARCH AND EVALUATION**

Innovations and rigorous evaluation will be critical to moving the public health informatics agenda forward over the next decade. In public health informatics, there are unique questions and methodologies to address the population, prevention, and community focus of public health. Policy, legal, and governmental issues may influence public health informatics research. We will discuss and provide suggestions for the following:

• Research needs, gaps, and priorities
• Applied and academic PHI research
• Evaluation models and best practices for public health informatics evaluation
• Research partnerships between public health practice, academics, and health informatics programs
• Translation of PHI research into practice, and dissemination of results to both the academic and public health practice communities
• Incorporating best practices of community-based participatory research into PHI

• Producing the next generation of public health informatics researchers
• Current and future funding for public health informatics research and evaluation

**SUSTAINABILITY**

Sustainability is a process whereby a public health activity or process achieves a state where it is prioritized, maintained, and supported over the long term, based on its delivery of measurable, quantifiable, beneficial, clinical, economic, or social outcomes. By and large, the sustainability of PHI is tied to its value as a strategic contributor to this process.

Today the convergence of healthcare reform, fiscal crisis, and downsizing of government at all levels, challenges transformation, prioritization, and support of sustainable public health practice, programs, research and learning. Public health practice exists within a community of health and human service, where it can partner in building ‘health capital’ within that community to achieve sustainability. The concept of ‘health capital’ is the realization of beneficial outcomes derived from the multiplicative effects of leveraging partners and assets within a community. Beneficial outcomes include improved health and welfare of the community and individual; evidence-based care; support of public health priorities and agenda; cost reduction; improved efficiency of clinical and public health practice; improved organizational capacity; improved informa-
tion and knowledge exchange; financial sustainabilty and support of business cases for public and private organizations, as well as enabling entities within the community.

The challenge and opportunity for PHI in the next decade will be to recast itself as a strategic partner, the contributions of which are transformative in nature, and which apply innovative approaches to the application of information technology and science to building ‘health capital’ within a community of care. This track will focus on setting the strategic agenda for the role of PHI over the next decade in fostering and supporting transformation and sustainability of public health practice, programs, research, and learning.

Included in this track:

- Review of short list of use cases of informatics approaches to supporting sustainability of public health programs (Good/Better/Best Practices)
- Identification of the strategic roles and initiatives for informatics in applying innovative information science and technology to supporting transformation of the role of public health as a strategic, value-added partner in regional HIE
- Enabling partnerships, collaboration, knowledge exchange, and collective problem-solving across the community of care
- Identifying, creating, and implementing opportunities for shared and reusable services across the community of care
- Improving health and welfare of the community and individual
- Supporting evidence-based care
- Supportive of public health priorities and agenda
- Cost reduction
- Improved efficiency of clinical and public health practice
- Improving organizational capacity
- Improving information and knowledge exchange
- Supporting financial sustainability and the business cases of public and private organizations and other enabling entities within the community.
Wednesday, May 25

8:30 – 10:00 am  **Opening Keynote**  *Sponsored by RTI International*  **Room: Swan 6**

William A. Yasnoff, MD, PhD

William A. Yasnoff, MD, PhD, is an Arlington, Virginia-based physician and computer scientist. He is currently a managing partner of National Health Information Infrastructure (NHII) Advisors, a health information technology consulting firm. He served as Senior Advisor, NHII, to the U.S. Health & Human Services Department, from 2002-2004.

Thursday, May 26

8:30 – 10:00 am  **Guest Keynote**  **Room: Swan 6**

Seth Foldy, MD, MPH

Seth Foldy, MD, MPH, is the Director of the Public Health Informatics and Technology Program Office at CDC. Dr. Foldy has chaired health informatics committees for national associations of both local and state health officials, and has served on the boards of the eHealth Initiative, National eHealth Collaborative, and the State Alliance for eHealth. He helped form the Joint Public Health Informatics Taskforce, linking several associations to accelerate and harmonize electronic information system development.

In medical practice, Dr. Foldy developed patient screening and clinical support tools for occupational, environmental, and community health. For the City of Milwaukee, he explored public health uses of Regional Emergency Medicine Internets that culminated in a rapidly deployed four-state system for detecting possible cases of SARS (the Severe Acute Respiratory Syndrome). Dr. Foldy was cofounder and chief medical officer of the Wisconsin Health Information Exchange, which now links 44 hospitals across Wisconsin and helps track—in real time—the impact of influenza H1N1. He helped clinicians at Emory University and the CDC develop tools that help assess individual needs for medical attention during the H1N1 pandemic. He helped author state health information technology plans in Arizona, Michigan, and Wisconsin, and co-chaired the WIRED for Health board that recently completed Wisconsin’s state-level health information exchange plan.
### PHI 2011
#### Program Chronology

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Crowd Trial - Improving Public Health with the Wisdom of Crowd
A. Chen, Healthline Networks Inc.; I. Lichtenfeld, First Life Research Ltd.

With large populations sharing experience with medications online, either openly or in their social networks, the wisdom of the crowd has perhaps become a proxy of post-market clinical trial of medication therapies. This presentation proposes the “Crowd Trial” as a new element for public health monitoring and reporting. Unlike highly regulated formal clinical trials, the crowd trial is taking place spontaneously in real time and all the time at a very large scale. Knowledge from the crowd trial has the potential to significantly impact public health. Two innovative companies, First Life Research Ltd (FLR) and Healthline Networks Inc., are collaboratively building web-based products that will enable the public to access drug safety- and public health-related knowledge generated from the “Crowd Trial” for most FDA-approved medications. FLR will lead content analysis and knowledge-generation efforts, while Healthline will lead product generation and commercialization efforts. Billions of user-generated content from social networks, forums, and blogs are monitored and analyzed continuously for gaining collective intelligence important to the public health. The collaboration project is funded in part by the Israel-U.S. Bi-national Industrial Research and Development Foundation (BIRDF).

A Health Security Card for Disasters and Public Health Emergencies
J. James, M. Johnson, American Medical Association

The Center for Public Health Preparedness and Disaster Response (CPHPDR) at the American Medical Association completed the first of a three-year $1.3 million grant from the CDC to develop a health security card with essential health information to identify individuals and meet immediate health needs in a disaster or public health emergency. In 2010, we have gained consensus on a minimum set of data elements, completed a literature review and environmental scan of existing portable technologies, and finalized a community strategy to engage at-risk populations. The AMA is holding focus groups around the country to determine the best technology for adoption. Utilizing Participatory Management (PM) theory, a series of community-based discussions (five individuals/group) will be conducted in 10 geographically distributed areas (e.g., FEMA regions) to evaluate the usability, cost, and technical feasibility of various options for a health security card. Focus-group data will be presented and reviewed by a multidisciplinary team of Core Collaborators (CC) (i.e., federal liaisons, public health officials, health information technologists, emergency preparedness experts). A Health Security Card (HSC) will be selected and a prototype product(s) will be announced at a national stakeholder meeting in September 2011.
Stronger Health Systems and Improved Health Outcomes through Effective Health Information Systems

K. Chester, Public Health Informatics Institute; D. Lubinski, PATH

With the movement toward ePublic Health, health information systems (HIS) will play an increasingly important role in the development of stronger health systems and improved health outcomes. Because an HIS must support the information and workflow needs of its constituents, understanding how individuals will use the system to perform their job tasks is a critical first step in designing an effective system. Developed by the Public Health Informatics Institute (PHII), the Collaborative Requirements Development Methodology (CRDM) has been used successfully, both domestically and internationally, to create common functional and technical requirements for improved HIS. This presentation will demonstrate how CRDM and the Systematic Architected Rational Approach (SARA), developed in partnership with PATH, were used to create requirements for a logistics information management system that supports the distribution of drugs, vaccines, and basic medical supplies. The methodologies were applied across four countries, Kenya, Rwanda, Vietnam and Senegal, using collaborative workgroup meetings and in-country site visits to create and validate common requirements for LMIS.

The Common Ground Project: Transforming Public Health Information Systems

N. Buchanan, D. Robic, Public Health Informatics Institute

In the 21st century, public health agencies must operate together as an enterprise to address informatics challenges such as determining the best way to collect and manage data for pandemic response and chronic disease intervention programs. The technology that enables such cohesive data management is created after a collaborative requirements gathering process uncovers commonalities across workflows in many siloed (sic) public health programs. Common Ground, a Robert Wood Johnson Foundation-funded program, operated by the Public Health Informatics Institute, dismantled such silos in chronic disease and emergency preparedness programs. Public health practitioners working together identified and defined common workflows and documented information system requirements that support data-sharing across programs. The Public Health Informatics Institute’s Collaborative Requirements Development Methodology (CRDM) is a strategy to reduce technology failures and give public health practitioners an opportunity to more effectively articulate their needs to software vendors and assess available technology products.
Collaborative Approaches to Improve the Adoption of Vocabulary Standards to Meet Public Health Needs

M. Winarsky, Centers for Disease Control and Prevention (CDC); S. Ganesan, Northrop Grumman; S. Mottice, Utah Department of Health; C. Staes, University of Utah; W. Xu, Utah Office of Public Health Informatics; R. Rolfs, Utah Department of Health; E. Husting, Centers for Disease Control and Prevention (CDC); M. Pray, Northrop Grumman

Vocabulary standards play a key role in public health interoperability, including Public Health Case Reporting (PHCR), Case Notification, Electronic Lab Reporting (ELR), Syndromic Surveillance and Immunizations. This presentation will describe the collaborative approach to improve the adoption of vocabulary standards through partnerships, including: CDC, State Public Health Departments, Standards Development Organizations (SDO), Healthcare Providers, CDC Centers of Excellence (CoE), and public health informatics communities of practice or workgroups (e.g. Case Reporting Standardization Workgroup (CRSWg), Vocabulary Messaging Communities of Practice, CDC/CSTE ELR task force). The following initiatives and solutions illustrate efforts to engage the workforce to develop and evaluate systems that meet public health needs: (1) Harmonization and adoption of vocabulary standards related to ELR and PHCR, (2) Development of ELR knowledge base, (3) Maintenance of Notifiable Condition Mapping Table, (4) PHIN VADS, the CDC vocabulary server that has been in use since 2004 to develop, distribute, and maintain the public health value sets associated with HL7 messaging on implementation guides. (PHIN VADS web services could be utilized for integrating PHIN VADS application and content with EMR and public health surveillance applications), and (5) Public Health Informatics knowledge exchange. These collaborative efforts allow the public health community to leverage existing resources and solutions.
Population Health Reporting Conformity Using ICD-10-CM
S. Steindel, retired

On October 1, 2013, all medical claims data submitted under HIPAA change from ICD-9-CM Volumes 1-3 to ICD-10-CM and ICD-10-PCS. Our partnership explores the public health client’s business requirements involving ICD-10-CM/PCS and curriculum changes recommended for academic programs in public health informatics, based on industry-accepted accreditation standards for health information-related professions. ICD-10-CM has expanded to provide a level of detail sufficient for many public health requirements in describing clinical disease, with approximately three times the number of codes. In the code space of great interest to public health, the injury, cause and place (E&V) codes, the expansion is approximately 15 times. Existing academic programs in Health Information Management and new programs in Health Informatics at the graduate levels will help meet these needs for professionals trained in the complexities of ICD-10-CM. To effectively prepare public health data reporting and analysis systems and applications, and to map and interpret the new code sets, both retraining programs and academic programs in public health informatics are urged to ensure adequate depth of preparation in ICD-10-CM. Public health organizations should consider appropriately trained health informatics and information management personnel for positions. We finally explore expansion of the client’s needs toward data exchange.

Collaborating to Improve Syndromic Surveillance: The Indiana Public Health Emergency Surveillance System
B. Dixon, Regenstrief Institute; R. Gentry, Indiana State Department of Health

The Indiana Public Health Emergency Surveillance System (PHESS) program began as an informatics project to streamline reporting of syndromic data from hospital emergency departments across Indiana. The state health agency and a health information exchange collaborated to develop, implement, and manage PHESS. The project brought together two organizations with similar goals and complementary strengths. As their relationship matured, the collaboration spurred additional innovative approaches to syndromic surveillance, as well as new initiatives designed to enhance population health in Indiana. Such collaboration and innovation may serve as a model for other states, where independent organizations may be working to solve public health challenges, including those related to syndromic surveillance, meaningful use, and clinical data exchange.
The BioSense Redesign Collaboration—Engaging the Public Health Community
B. Massoudi, RTI International; T. Kass-Hout, CDC

The CDC BioSense Program was conceptualized and developed after 9/11, with funding mandated by Congress, for early detection and assessment of bioterrorism-related illness. The resulting information system was developed and implemented with insufficient public health and preparedness stakeholder involvement, and as a result, adoption of the information system within states and localities has been limited. New leadership within the BioSense Program has spurred the development of an updated vision for the program—to contribute to nationwide and regional situation awareness for all hazardous health-related events and to support national, state, and local responses to those events. By integrating local and state-level data into a cohesive “picture,” the BioSense Program will improve its utility for state and local users. This new vision is consistent with the 2006 Pandemic All Hazards Preparedness Act (PAHPA), and the 2007 Homeland Security Presidential Directive (HSPD-21), both of which call for regional and nationwide public health situation awareness, through an interoperable network of systems, built on existing state and local situation awareness capability. Of immediate importance for public health authorities is getting ready for implementation of the Medicare and Medicaid Electronic Health Records Incentive Programs for syndromic surveillance. The BioSense Program redesign is in alignment with this initiative and providing public health authorities assistance in acquiring, processing, analyzing, and sharing this new wave of healthcare information.

A. Kanter, Columbia University; H. Fraser, Partners In Health; J. Payne, D-Tree International; A. Wang, Intelligent Medical Objects

Mobile maternal health projects extend the reach of public health interventions for women and children who might not otherwise benefit from high-quality information and data-driven decision support. Many organizations use these tools, but despite significant overlap in content and approach, work is proceeding largely in parallel. The Maternal Concept Lab (MCL) addresses barriers to reuse/interoperability of tools.
by collaboratively establishing a common language to communicate maternal health information. The effort focuses initially on mobile systems that connect to OpenMRS. The Millennium Villages Project (MVP) and the Columbia International eHealth Lab (CIEL) developed the concept dictionary that forms the core of MCL’s platform. CIEL benefits from a royalty-free partnership with Intelligent Medical Objects (IMO), which provides core mappings from the CIEL concept dictionary to SNOMED CT, ICD-10-WHO, and other standard reference terminologies. CIEL has worked with MCL to incorporate all concepts used by Partners in Health, AMPATH, MoTeCH and other participating MCL organizations into the shared concept dictionary. The collaboration between CIEL, IMO, and MCL and use of a common concept dictionary reduces effort and enables the sharing of data, reports, and best practices among healthcare organizations, maximizing the benefit of mobile information systems and improving maternal health.

**Direct Experience with Open Source in Public Health Informatics**

*B. Lee, Deloitte; T. Savel, CDC*

As the benefits of open-source software (OSS) become more apparent with increasing user demand and decreased budgets for licensing and support, public health needs to integrate OSS licensing and best practices into its own portfolio of software that is developed to meet the needs of its workforce. CDC’s Informatics Research and Development lab has worked directly with its commercial partners to develop software in an open-source manner to allow for increased collaboration, decreased cost, and serendipitous reuse within the public health community. Some projects misuse the OSS label, but the informatics lab has direct experience in developing systems and prototypes using viral (GPL, LGPL, etc.) and non-viral (Apache, BSD, MIT) licenses that are able to be easily used and supported within the community due to its OSS nature. Open source is not merely a project manager’s tag but a method of software development that needs to become integrated into public health software development practice.
### Schedule of Events

**3:00 – 3:30 pm**
**Coffee Break**  
Room: Swan Foyer

**3:30 – 5:00 pm**
**Breakout Sessions B**
- Breakout B1 – Ethics  
  Room: Mockingbird 1
- Breakout B2 – Technical Frameworks  
  Room: Swan 7
- Breakout B3 – Professional Training and Workforce Development  
  Room: Swan 8
- Breakout B4 – Research and Evaluation  
  Room: Swan 9
- Breakout B5 – Sustainability  
  Room: Swan 10

**5:00 – 6:30 pm**
**Poster Session 1 and Reception**
See page 30 for posters.  
Room: Swan 5

**6:30 – 7:30 pm**
**Recommendation Synthesis**  
Room: Mockingbird 1

### Thursday, May 26

**7:30 – 8:30 am**
**Continental Breakfast**  
Room: Swan Foyer

**7:30 am – 5:00 pm**
**Registration Open**  
Room: Mockingbird Corner

**8:30 – 10:00 am**
**Plenary Session and Keynote Address**
Seth Foldy, CDC  
See page 12 for more information  
Room: Swan 6

**10:00 – 10:30 am**
**Coffee Break**  
Room: Swan Foyer

**10:30 am – 12:00 pm**
**Breakout Sessions C**
- Breakout C1 – Ethics  
  Room: Mockingbird 1
- Breakout C2 – Technical Frameworks  
  Room: Swan 7
- Breakout C3 – Professional Training and Workforce Development  
  Room: Swan 8
- Breakout C4 – Research and Evaluation  
  Room: Swan 9
- Breakout C5 – Sustainability  
  Room: Swan 10

**12:00 – 1:30 pm**
**ISDS Lunch-and-Learn**
*Advancing Surveillance Practice Through Research and Innovation*
Panelists: David Buckeridge, MD, PhD, McGill University; Bill Lober, MD, MS, University of Washington; Laura Streichert, PhD, MPH, ISDS  
The International Society for Disease Surveillance (ISDS), a nonprofit organization dedicated to improving population health by advancing the science and practice of disease surveillance, will lead discussion of how public health informatics is creating new opportunities for collaboration and innovation in surveillance research and practice.  
Room: Swan 6

**1:30 – 3:00 pm**
**Partnerships in Innovation (PII)**
*Session B details follow on p. 21.*
The PHLIP Assistance Team Approach & Aspects of Meaningful Use: Experience from the Alabama State Public Health Laboratory

L. Cohen, TSJG; K. Higginbotham, Alabama Department of Public Health; M. Meigs, P. Zarcone, APHL

This paper describes the processes and products achieved through the collaborative efforts of the Association of Public Health Laboratories (APHL) and the Centers for Disease Control and Prevention (CDC) joint project; the Public Health Laboratory Interoperability Project (PHLIP). PHLIP is an effort to support automated electronic data exchange between State Public Health Laboratories (SPHLs), CDC, and additional clinical partners. The PHLIP initiative has implemented its methods by employing two technical PHLIP Assistance Teams (PATs) to bolster in-house capabilities in areas of terminology, technical architecture, and project management within the State Laboratories, either virtually or through hands-on support. The Alabama SPHL and its work with the PAT is a model that other health arenas can reference as an example of collaborative efforts facilitating the adoption of standards for electronic information transmission. Real-world illustrations of how to effectively implement an innovative approach to achieve interoperable data exchange within the confines of the state, as well as a detailed synopsis of the status of the Alabama PHLIP electronic laboratory surveillance message (ELSM) will be discussed. Also, future directions of PHLIP and implications from the changing standards of Meaningful Use regulations will be presented.
Public–Private Partnership Enables Rapid Development of Syndromic Surveillance Standards for Meaningful Use


Promoting the effective use of health information technology to improve population health is a pillar of current U.S. healthcare reform efforts. Under the Health Information Technology for Economic and Clinical Health (HITECH) Act, Electronic Health Records (EHR) Incentive Programs seek to enhance a range of clinical and public health activities, including public health surveillance, through technology certification based on policy objectives that support “Meaningful Use.” As of August, 2010, however, the lack of appropriate standards for syndromic surveillance prevented EHR vendors from developing technologies to meet the business requirements of public health authorities. Recognizing this critical gap, the International Society for Disease Surveillance (ISDS), the Centers for Disease Control and Prevention’s BioSense Program (CDC), and HLN Consulting, LLC developed an innovative partnership to rapidly develop the necessary public health syndromic surveillance (PHSS) standards. Supported by BioSense, ISDS led a consensus-driven process to recommend PHSS business requirements and standards. With the analytic and technical expertise of ISDS members, CDC and HLN, this public–private partnership rapidly documented core PHSS business processes, described basic data transmission and reception requirements, characterized a minimum data set, and developed an HL7 2.3.1 and 2.5.1 Messaging Guide for Syndromic Surveillance.
Public Health Alerts for Electronic Medical Record Systems (EMRS)

N. Mishra, N. Garrett, Centers for Disease Control and Prevention; M. Dente, General Electric Healthcare; F. Rachman, A. Hamilton, Alliance of Chicago Community Health Services

Electronic medical record (EMR) systems have the potential to alert clinicians of emerging health conditions deemed important for public health at the time of need. Anonymous patient data containing information on specific symptoms, demographics, and location can be leveraged to deliver a public health alert at the point of care. The Centers for Disease Control and Prevention, General Electric, Alliance of Chicago, and the Chicago Department of Public Health are piloting a system that will enable targeted delivery of public health alerts through an EMRS directly to the point of care. National and local public health alerts are created and maintained within a Public Health Alert Repository System (PHARS). When a patient presents to a clinic and his/her EMR is provided with information including the reason for his/her visit and chief complaint, the information is sent as an anonymous patient profile to PHARS, which parses the data and applies algorithms to see if there are any public health alerts that match the anonymous patient profile. If there is a match, the public health alert is sent back to the EMR and appears in the patient’s EMR indicating to the provider that there is a public health event that might be applicable to the patient.

Los Angeles County Public Health Disease Case Management:
Empowering Users with xRM and mHealth Solutions

A. Tomines, County of Los Angeles Department of Public Health; C. Wilson, Information Strategies, Inc. (InfoStrat)

The County of Los Angeles Department of Public Health (LADPH) is exploring more efficient and effective ways to monitor and protect the health of its 10 million citizens. An area of special interest is communicable disease case management, where timely response and situational awareness are critical, but are complicated by paper-dependent systems and work handoffs. Using Microsoft-based technologies, LADPH is re-engineering communicable disease case management by: 1) developing an application to provide casework automation, 2) employing mobile (mHealth) solutions to support casework in the field, and 3) enhancing situational awareness for cases and outbreaks. LADPH has deployed a Microsoft platform that enables rapid development of electronic data collection forms that are easily customized to address evolving needs, and automatically generates and routes case assignments and notifications.
with user-configurable, event-driven workflows. LADPH is leveraging the mobile capabilities of the same Microsoft platform to document interventions in real-time and real-place (by logging GPS coordinates) with case reviews and follow-up tasks queued for appropriate action before the case worker leaves the field. To enhance situational awareness, LADPH is integrating other technologies, such as dashboards and mapping, to provide seamless reporting and visualization of cases and outbreaks for improved response and planning.

**PII-B3**

**Room: Swan 8**

**Emerging Themes, Strategic Goals and Priorities for Advancing Public Health Informatics**

*D. Ross, Public Health Informatics Institute*

How will public health transform itself in an era of health IT and health reform? How will it ensure its credibility and value as a data-exchange partner and curator of population health data? This session highlights common public health informatics themes and priorities emerging from three related initiatives: the e-Public Health initiative; the Institute of Medicine report, For the Public’s Health; and the Consensus Framework for Advancing Public Health Informatics. The e-Public Health initiative is engaging leaders within and outside of public health to envision the role of information and IT in the future; in particular, how the public health system can coalesce around the informatics priorities critical to its future value as an intermediary and guardian of population health. The IOM report highlights the needs for more consistent population health status measurement, and a broader range of health indicator data. The Consensus Framework was developed by the Joint Public Health Informatics Taskforce, a collaborative of seven public health associations seeking to enhance public health effectiveness through informatics. The Framework includes four overall goals, with associated objectives and strategies. This session distills the common themes and priorities identified across these initiatives to highlight future directions for public health informatics.
Universal Public Health Node: A Model for Collaborative Transformation, Improvement and Interoperability of Public Health and Clinical Practice Through Health Information Technology

I. Gotham, R. Block, L. Le, K. Bailey, New York State Department of Health; D. Whitlinger, New York eHealth Collaborative; D. Porreca, Western New York Clinical Information Exchange (HEALTHeLINK); S. Studier, Taconic Health Information Network and Community; K. Schubes, K. Schmit, New York State Department of Health

Since 2005, New York State (NYS) has committed to invest nearly $1 billion from public and private sources to advance a strategic approach to transformation of health care and public health through adoption and use of health Information Technology (IT). These efforts have resulted in a public–private collaboration and common governance structure; establishment of a statewide health information exchange (HIE) architecture (the Statewide Health Information Network for New York (SHIN-NY); development of a statewide strategic and operational plan and policy guidance for health IT and HIE; and instantiation of interoperable public health information exchange within the SHIN-NY via a Universal Public Health Node (UPHN). UPHN is an innovative informatics approach to collaborative transformation, improvement and interoperability of both public health and clinical practice through health IT. This panel presentation will include the NYS health IT policy executive; regional Community HIE partners, statewide E-Health collaborative executive and principal informatics architects. It will present perspectives on building health information infrastructure to support health reform goals, supporting clinicians and consumers with information at point of care, advancing care coordination, strengthening public health surveillance and response utilizing the UPHN infrastructure and enhancing quality and outcome measures.
The Connecticut Health Information Network
R. Aseltine, University of Connecticut Health Center

In an effort to facilitate data integration and dissemination, the University of Connecticut Health Center and Akaza Research embarked on a partnership in 2004 to devise novel solutions to address the barriers to accessing health data collected and maintained by Connecticut’s state agencies. This partnership focused on addressing challenges to the integration of disparate data sets containing no unique numeric identifiers, and to disseminating data for research purposes in a manner that would not compromise individual privacy. Following a comprehensive needs assessment, the UCONN Health Center and Akaza Research broadened their collaboration to include UCONN’s Department of Computer Sciences and Engineering and Department of Statistics at its Storrs campus. Faculty in these departments collaborated with CHIN’s director, a health policy research, and developers at Akaza Research to devise: (1) a canopy clustering algorithm used for probabilistic integration of multiple datasets without numeric identifiers; (2) development of a multifaceted data dissemination strategy as a means of mitigating disclosure risk. This presentation provides insight into the collaborative partnerships between academic health centers and industry around health information exchanges and research informatics.

A Partnership Between Government and Healthcare for Electronic Death Registration: Utah’s Killer App
J. Duncan, Utah Department of Health; J. Tripp, Intermountain Healthcare

The Utah Department of Health (UDOH) and Intermountain Healthcare, a large, not-for-profit, integrated healthcare delivery system based in Salt Lake City, Utah, have partnered to develop the capability for Utah physicians to sign death certificates from an electronic health record (EHR). This use of an EHR to report cause of death to public health authorities, the first in the nation, will result in more complete and timely reporting of death information by largely replacing the paper death registration process for physicians. Interoperability between Intermountain’s EHR and UDOH’s Electronic Death Entry Network (EDEN) is the result of a two-year collaboration between teams from UDOH and Intermountain, led by a steering committee composed of representatives from both organizations as well as the Utah Funeral Directors Association. The project included efforts to develop functional requirements, modify existing systems at UDOH and Intermountain, and implement messaging based on HL7 standards. The message implemented in this interface, which went active in January, 2011, has been proposed as the HL7 draft standard for cause of death reporting.
Formulating and Refining a Public Health Informatics Structured Technology Evaluation Tool
T. Savel, CDC; B. Lee, Deloitte; S. Foldy, CDC

Efficient public health practice requires that its workforce is able to quickly and easily integrate technology into its processes in order to meet its demands. While many evaluation frameworks exist to measure the efficacy and impact of public health and surveillance systems, no such specific framework exists for evaluating individual hardware, software, and networking technologies for their potential impact to public health use cases and processes. Although IT analysis firms exist (e.g., Gartner, Forrester), their analysis rarely evaluates public health impact. Public health practice can frequently benefit by integrating specific tools that although not designed for health may be useful if integrated into health processes. The CDC’s Informatics Research & Development Unit, with its partners, is developing a structured technology evaluation framework that seeks to provide quantitative measures of how suitable a technology is for use by public health workers. We reviewed existing evaluation frameworks and incorporated techniques to identify major functionality domains that are weighted according to the importance to the overall value of the technology compared to its peers. Initially, we identified general non-functional dimensions of cost, installation, use, stability, performance and support, while the domain functionality dimension will be defined on a category-by-category basis.
Improving Patient Safety through Proactive Consumer Engagement with Electronic Health Records
G. LeFever, A. Arcona, Health IT Consortium at TCC; S. Peng, Sentara Healthcare

The ONC established five Community College Consortia to address the growing demand for health IT professionals who are equipped to support the nation’s transition from paper medical records to electronic health records (EHRs). As a consortium leader, Tidewater Community College (TCC) received $16 million to coordinate implementation of a research-based curriculum across 22 colleges in the mid-Atlantic and Northeastern regions. Based on industry feedback, TCC consolidated the ONC curriculum into a two-track training model. Patient safety is addressed in the ONC/TCC curriculum from a traditional hospital-based perspective. Despite a decade of focus on safety, hospital-based initiatives have been slow to achieve intended goals. Annually, 200,000 U.S. hospital patients die as a result of preventable medical harm. EHRs have the potential to improve patient safety. However, the extent of improvement is dependent upon the level of active consumer participation. Therefore, expanding EHR training to incorporate a broader public health approach is essential to maximize opportunities for safe care. Sentara Healthcare and TCC are collaborating to expand the ONC/TCC training using a public health approach. In partnership, TCC and Sentara Healthcare will present innovative strategies to promote safe care through EHR training programs and consumer-based safety education in ambulatory settings.
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<td>5:00 – 6:30 pm</td>
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<td>Mockingbird 1</td>
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**Friday, May 27**

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<td>Mockingbird Corner</td>
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<td>8:00 – 8:30 am</td>
<td>Breakout Summary – Ethics</td>
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<td>11:00 am – 12:00 pm</td>
<td>Closing Session: What’s Next for the PHI 2011 Recommendations?</td>
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### Poster Session 1, Wednesday, May 25, 5-6:30 pm

| Board 1 | Development of Design Specifications for the BioSense Surveillance System Redesign: A User-Centered Approach  
M. Ashok, R. Furberg, R. Sembajwe, RTI International; J. Brownstein, Children’s Hospital Boston; B. Massoudi, RTI International |
| Board 2 | Science 2.0 Solutions for Developing National Surveillance Tools  
E. Beckjord, University of Pittsburgh; L. Rutten, P. Courtney, SAIC-Frederick Inc.; R. Moser, B. Hesse, National Cancer Institute |
| Board 3 | Standards and Interoperability of Public Health Information Systems—A Public Health Case Study  
E. Cahill, X. Deng, M. Gaffney, Centers for Disease Control and Prevention |
| Board 4 | Identification of Patients Pre-disposed to Clostridium Difficile Infection Through an Electronic Surveillance Application  
P. Cooper, Augusta Health; A. Heuer, UMDNJ; C. Warren, University of Virginia |
| Board 5 | Academic/Industry Partnership for Rapid Implementation of a Clinical Data Warehouse Using Cloud-Computing Infrastructure  
J. DeShazo, Virginia Commonwealth University; M. Hoffman, Cerner Corporation |
| Board 6 | The Epidemiology Survey Data Collection User-defined Platform in China  
H. Ge, Z. Zhao, Chinese Center for Disease Control and Prevention |
| Board 7 | The Use of Open-Source Electronic Health Records for Chronic Disease Management  
J. Goldwater, N. Kwon, A. Muckle, A. Nathanson, K. Cornejo, A. Brown, NORC |
| Board 8 | Information Needs Related to Immunization: A Qualitative Study  
R. Hills, D. Revere, B. Reeder, B. Lober, University of Washington |
| Board 9 | Local Health Departments’ (LHDs) Meaningful Use Capacity, Needs, and Barriers: Findings from the NACCHO Meaningful Use Readiness Survey  
V. Holley, G. Shah, V. Rogers, National Association of County and City Health Officials |
| Board 10 | Federal–State Partnership to Train Public Health Informaticians on Solving Real-world Problems  
V. Kuruchittham, Centers for Disease Control and Prevention; M. LaVenture, Minnesota Department of Health; L. Franzke, H. Tolentino, D. Koo, Centers for Disease Control and Prevention |
| Board 11 | Virtualized Informatics Lab for Public Health Informatics Research  
D. LaValley, Northup Grumman; T. Savel, CDC; B. Lee, Deloitte |
| Board 12 | Using HIT Adoption Stories Web-tool to Improve Implementation and Standardization of HIT Systems in Public Health  
H. Lehmann, Johns Hopkins University; N. Arzt, HLN Consulting; A. Orlova, Public Health Data Standards Consortium; D. Chertcoff, HLN Consulting; V. Hohner, Fox Systems; W. Scharber, Registry Widgets |
| Board 13 | PHLIP Assistance Teams—Targeted Technical Assistance for National Standards Adoption  
D. Mason, L. Cohen, The St. John Group; P. Zarcone, M. Meigs, APHL |
| Board 14 | Public Health Laboratory Interoperability Project (PHLIP) Methodology, Vocabulary, and Technical Tools  
U. Merrick, A. Leslie, iConnect Consulting; M. Meigs, P. Zarcone, APHL |
| Board 15 | Global Public Health Grid (GPHG) Roadmap Development  
M. Mirza, CDC; M. Kratz, University of Michigan; V. Kumar, Medical College of Georgia; A. Gundlapalli, University of Utah; T. Wuhib, CDC |
| Board 16 | Public Health, Syndromic Surveillance and the Medicare and Medicaid Electronic Health Record Incentive Programs: Exploring the Feasibility of Syndromic Surveillance Using Ambulatory Care Data  
A. Nathanson, P. Soper, NORC at the University of Chicago |
| Board 17 | Use of Advanced Text Analytics and Automated Reporting to Improve Emergency Preparedness and Response  
M. Nguyen-Choi, Booz Allen Hamilton; D. Kennedy, Centers for Disease Control and Prevention; K. Decker, Booz Allen Hamilton; J. Crockett, Centers for Disease Control and Prevention, B. Koogler, Booz Allen Hamilton |
Poster Session 1, Wednesday, May 25, 5-6:30 pm continued

Board 18  Bridging Information Studies and Public Health Curricula with a Public Health Informatics Specialization  
C. Pepper, Texas A&M University; G. Harmon, The University of Texas at Austin; T. Halling, Texas A&M University; R. Nauert, Texas State University

Board 19  Master Patient Index Information Supply Chain: Trust of Linkage Elements in the Chain  
G. Rehwoldt, University of Utah; W. Xu, Utah Department of Health; S. Narus, University of Utah

Board 20  Distributing Countermeasures and Reporting their Utilizations through an Integrated Informatics Approach: Countermeasure Tracking Systems  
M. Renshaw, S. Sapkota, S. Dulin, Centers for Disease Control and Prevention; G. Faler, Northrop Grumman Information Technology; B. Erickson, Centers for Disease Control and Prevention; S. Waite, L. Han-Lee, U. Andujar, SRA International Inc. Contracted to CDC; J. Tropper, B. Nichols, Centers for Disease Control and Prevention

Board 21  Effect of a Computerized Rule to Promote Smoking Cessation Treatment in Hospitalized Patients  
J. Sanchez, R. Sidlow, Jacobi Medical Center

Board 22  VIVO: A Tool for Collaboration in Public Health  
N. Schaefer, University of Florida; K. Holmes, Washington University in St. Louis School of Medicine; M. Conlon, C. Vivo, University of Florida

Board 23  From Data to Dynamic Dashboards: Applying Data-Mining Tools and Business Rules to Visualize Useful Information  
J. Schindler, R. Son, F. Grant, Northrop Grumman Corporation

Board 24  Completeness of the Health Information Technology Reference-based Evaluation Framework for Evaluating Electronic Health Records in Community Health Settings  
P. Sockolow, Drexel University
Poster Session 1, Wednesday, May 25, 5-6:30 pm continued

Board 25  Public Health & Electronic Health Records Meaningful Use  
S. Tandon, K. Stevens, C. Vu, Centers for Disease Control and Prevention, Division of Informatics Practice, Policy & Coordination; N. Garrett, Centers for Disease Control and Prevention

Board 26  A Framework for Evaluating Development Tools for Rapid, Low-cost Visualization of Public Health Data  
N. Tucker, University of Texas

Board 27  The Development of Infectious Disease Surveillance Enterprise Framework  
Z. Zhao, H. Ge, Chinese Center for Disease Control and Prevention

Poster Session 2, Thursday, May 26, 5-6:30 pm

Board 1  Using Competencies to Guide the Development of an Online Public Health Informatics Course in a School of Public Health  
J. Bondy, University of Colorado Denver; R. Hills, University of Washington

Board 2  Triangulating Perceptions of Public Health Surveillance and Health Information Exchange  
B. Dixon, Regenstrief Institute

Board 3  Utilizing a State Health Information Exchange for Physicians Reporting to a Population-Based Central Cancer Registry  
E. Durbin, University of Kentucky

Board 4  Internet Technology Application for Tobacco Cessation: Evaluation Essentials  
N. Fahrenwald, South Dakota State University

Board 5  Leveraging Mass Online Communities For Public Health  
J. Girotti, R. Berlin, B. Schatz, University of Illinois Urbana-Champaign

Board 6  Improving Secure Access to Utah Public Health Data for Research  
S. He, C. Staes, University of Utah; S. LeFevre, K. Marti, I. Thraen, Utah Department of Health; W. Xu, Utah Office of Public Health Informatics; S. Narus, University of Utah
Poster Session 2, Thursday, May 26, 5-6:30 pm  

Board 7  
Do Interactive Voice Response Systems as a Patient Follow-Up Approach Increase Patient Satisfaction?  
S. Houser, M. Ray, University of Alabama at Birmingham; R. Maisiak, Maisiak Consulting; A. Panjamapirom, J. Willig, University of Alabama at Birmingham; G. Schiff, Brigham and Women’s Hospital; T. English, C. Nevin, E. Berner, University of Alabama at Birmingham

Board 8  
A Framework for Modeling Data Elements Used for Public Health Case Reporting  
J. Jacobs, University of Utah; S. Ganesan, Northrop Grumman Consultant to CDC; R. Altamore, Washington State Department of Health; J. Abellera, Centers for Disease Control and Prevention; C. Staes, University of Utah

Board 9  
Evaluation of a Portable Health Information Kiosk (PHIK) to Assess Cardiovascular Risk in Diverse Settings in India  
A. Joshi, UNMC; M. Arora, P. Gupta, Center for Public Health Informatics; R. Satpathy, Asian Institute of Public Health; P. Panigrahi, Center for Global Health and Development

Board 10  
Open-Source Spatio-temporal Epidemiological Modeling for Public Health  
J. Kaufman, S. Renly, S. Edlund; M. Davis, J. Douglas, IBM Almaden Research

Board 11  
Achieving Millennium Development Goals 4 and 5 through Health Information Systems Designed for Scale and Sustainability  
D. Lubinski, PATH; H. Mwanyika, Ifakara Health Institute; R. Gakuba, Ministry of Health, Rwanda; J. Grevenendonk, PATH; K. Chester, Public Health Informatics Institute; R. Anderson, K. Wilson, PATH

Board 12  
LRN LIMS Integration—Progress in Laboratory Data Exchange  
E. Meeks, Centers for Disease Control and Prevention

Board 13  
Developing the National Public Health Surveillance and Biosurveillance Registry for Human Health: Lessons Learned and Implications for Public Health Informatics  
P. Mehta, Centers for Disease Control and Prevention
Board 14  Model Practices in Implementing and Integrating Health IT Infrastructure: Lessons Learned from 10 Case Studies of Local and State Public Health Agencies
A. Nathanson, P. Soper, NORC at the University of Chicago

Board 15  Visualizing the Convergence of Two Disciplines: 40 Years of Design Methods and Public Health Informatics
J. Pina, M. Clarkson, R. Hills, B. Reeder, G. Demiris, University of Washington

Board 16  Reportable Lab Results (RLR), a Public Health Objective of Meaningful Use Requirements: LTIAPH’s (Laboratory Technical Implementation Assistance for Public Health) Approach to Electronic Lab Reporting (ELR)
S. Remala, The St John Group; W. Kennemore, APHL; P. Zarcone, APHL

Board 17  Building Foundational Competency in Health Information Systems in South Africa: A Pilot Training Course in the Eastern Cape Province
J. Richards, J. Hillman, CDC; N. Jacobs, CDC-South Africa

Board 18  User Requirements for a User-centered Design (UCD) Redesign of a Public Health Surveillance System: BioSense
R. Sembajwe, T. Farris, L. Rojas-Smith, B. Massoudi, M. Ashok, R. Furberg, A. Casoglos, RTI International

Board 19  Rapid 3D GIS Modeling in Disaster Response: The Deployment of the Canadian Cholera Field Hospital in Haiti in 2010
A. Shabah, University of Montreal

Board 20  Collaboration of the Public Health Community to Improve HL7 Messaging Quality and Interoperability
R. Sharma, Centers for Disease Control and Prevention (CDC); P. Zarcone, M. Meigs, Association of Public Health Laboratories; J. Lipsky, V. Nwadiogbu, M. Ayers, M. Pray, Northrop Grumman Consultant to the CDC
Board 21  
**Breaking the High-Use Cycle: Informatics Capabilities to Identify and Manage High-Service Utilizers Within the Kansas Medicaid Population**  
T. Shireman, University of Kansas Medical Center; B. Ellis, Kansas Health Policy Authority; L. Waitman, University of Kansas Medical Center

Board 22  
**Improving Health Research Through a National Data Stewardship Policy**  
C. Stephan, MU Informatics Institute

Board 23  
**Public Health Laboratory Interoperability Project (PHLIP)—Innovations in Electronic Messaging**  
J. Vaughan, TSJG; M. Meigs, P. Zarcone, Association of Public Health Laboratories

Board 24  
**Improve Vocabulary Authoring Capability to Meet Public Health Needs**  
M. Winarsky, Centers for Disease Control and Prevention (CDC); M. Pray, S. Ganesan, O. Eady, P. Dutta, V. Fernandez, S. Keller, C. Lester, Northrop Grumman

Board 26  
**Public Health Informatics Advances Use of Mathematics in Sexually Transmitted Diseases Control**  
K. Zhao, F. Qiu, G. Chen, Georgia State University
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