CalPHIN
CALIFORNIA PUBLIC HEALTH INFORMATION NETWORK

Quarterly UPDATE

A PUBLICATION OF THE CALIFORNIA PUBLIC HEALTH INFORMATION NETWORK • VOLUME II • ISSUE I • WINTER 2006

CalPHIN Refresher

By Patrick Anderson, Acting Chief, Office of Informatics and Surveillance, CDHS/DCDC

The California Public Health Information Network (CalPHIN) is the State's strategic initiative to develop and implement an integrated and comprehensive public health data and information exchange network. The initiative itself will have a number of significant benefits, including the following:

- Improve the ability of public health programs to track the health of California's population
- Enhance the efficiency of public health professionals
- Improve the ability of public health professionals and agencies to make well-informed decisions
- Enable public health partners to effectively communicate and share information with each other

…continued on page 5

What's In This Issue

A Message From The Executive Staff	Page 1
CalPHIN Refresher	Page 1
WebCMR and ELR Update	Page 1
LIMS Update	Page 3
PHIN 2006 Conference Update	Page 6

A MESSAGE FROM THE CALPHIN DIRECTOR

By Mark Starr, NEDSS/CalPHIN Program Director, CDHS/DCDC

Welcome back to all of our readers and partners! It has been much too long since our last issue of this newsletter (over a year), but there have many exciting developments during that time. Updates have been provided on these efforts separately through various mechanisms (e.g., presentations, meetings, email), but we'll use this issue to provide information in one place on the various activities and key projects under the CalPHIN umbrella. The articles provide background information mixed with accomplishments and current status – they are a bit longer than usual, but more informative so that all of our readers will be on the same page. You'll read how our Division led the hugely successful implementation of "LIMS" across State public health laboratories in Richmond. You'll find that notable progress, and re-use of prior efforts, has been made on the "WebCMR" and "ELR" projects even in the face of a needed project freeze. You'll see interesting information from the recent national "PHIN Conference", and you'll learn about California's flavor of this, the "CalPHIN" Initiative. (Much more on this last item, including the CalPHIN Strategic Plan, can be found at: http://www.calphin.dhs.ca.gov/background/default.htm). Enjoy the updates and have a great Holiday Season!

WebCMR and ELR Update

By Mark Starr, Chief, Surveillance and Statistics Section, CDHS/DCDC

There has been a great deal of activity on both WebCMR (web-based provider reporting system) and ELR (electronic laboratory reporting) since our last CalPHIN Newsletter. Both of these projects are "alive and well" even though changes in software and compliance with state requirements resulted in significant delays (remember: "WebCMR" and "ELR" refer to the projects, not to any specific software). This article will describe what happened to the prior phase of these projects, how we responded and recovered from those challenges, and plans for the near future.

Preparation for WebCMR began in 2003 with the key activity of determining the requirements for such a system. The Division of Communicable Disease Control (DCDC) coordinated five regional meetings around California followed by eight working group teleconferences, involving over 40

…continued on page 2

WebCMR and ELR Update

continued from page 1

local jurisdictions, in order to build the requirements. Then a structured procurement process was conducted by our fiscal agent. In brief, this process included the formation of a State-Local Evaluation Team, issuance of an RFI (request for information), on-site demonstrations by identified vendors, an RFQ (request for quote) to two finalists, and the final determination by the Team in early 2004 to use the PHS3 software based on specified requirements and the need for PHIN-compliance.

Significant progress was made on implementation, configuration and local "readiness" well into 2005, including visits by project staff to nearly every local jurisdiction. There was clearly great potential in the software, but also frustrations, delays and challenges (with the software, interactions with the vendor, and with expanding requirements). The project staff and Steering Committee began to look at alternatives and contingencies in mid-2005. In the meantime, the State Department of Finance (DOF) tightened budget processes for IT projects in the Summer of 2005 leading to a California Department of Health Services (CDHS) review of existing projects in the Fall, which determined that specific additional project documentation and appropriate approvals were needed for WebCMR and ELR. The project was halted in November 2005 during final testing of PHS3 v.3.2, pending direction from DOF. This stoppage occurred after State testing, during which DCDC had determined that the software still did not meet requirements, but before local testing/ evaluation could be completed.

In January 2006, DCDC, with assistance from IT Services Division, completed the required Feasibility Study Reports (FSRs) for WebCMR and for ELR within two weeks. This normally requires many months, but we accomplished this quick turnaround largely by using draft FSRs that had been prepared by DCDC in 2003 in anticipation of moving WebCMR and ELR into a State environment. The final FSRs recommended the acquisition of "off-the-shelf" software and implementation using a phased-in approach. All approvals were obtained for the FSRs in the following two months. We were able to hire an overall (WebCMR and ELR) Project Manager, Mr. Lance Jackson, in late May and he has been working with core DCDC WebCMR/ELR staff and critical subject matter experts, CDHS IT experts, CDHS leadership, and DOF to assess the project and to get it moving forward again within the new structure.

In the Summer we began a review of available vendors, implementations in other states, and related information, and we also began an in depth review of our business requirements. We determined that there were four vendors with software that could potentially meet California's needs and, in the Fall, we completed a market survey process of those four software products, which included sessions in which the vendors were asked to demonstrate how their product accomplished major required functions.

Our requirements update is well underway, and we are re-engaging local partners. Significantly, we have been able to leverage many of our prior project efforts (e.g., infrastructure, equipment, security, requirements, disease plans, configurations/designs, lab preparedness with UC Davis, local "business readiness", training approaches, alerting, lessons learned, etc.) as we prepare to move forward with a different software solution. Final approvals of our recommendations on software, procurement and implementation are pending – once we have these we will be able to establish a timeline for these activities and the final rollout.

Our shared goal is still to implement the best course for a California statewide solution for WebCMR and ELR. We recognize the need for rapid resolution, procurement and implementation to meet state, local and emergency preparedness needs and mandates (and to come through with the "goods"!). For most jurisdictions the implementation of a core statewide system is still likely to be a more efficient and cost effective surveillance tool than individual disparate local systems (but we remain committed to coordinating with existing systems). We know that our communications have been largely limited in the past year to verbal updates to various local entities (e.g., California Conference of Local Health Officers [CCLHO], Communicable Disease Committee, Health Information and Data Committee, CCLHDM). We have recently added some email and teleconference updates, and this newsletter will be a critical part of re-establishing complete communications with our local partners regarding WebCMR and ELR.

DCDC and local health departments have a long history of collaboration on disease reporting and surveillance and, in more recent times, of supporting the use of modern technologies in these collaborations, including the use of AVSS-CMR (automated vital statistics system) which continues to be a valuable tool for disease reporting. We continue to work together toward the goal of interoperable standards-based systems consistent with the CalPHIN Initiative (see also articles on CalPHIN and Laboratory Management Information System (LIMS), another CalPHIN effort, in this issue), and WebCMR and ELR continue to be cornerstones in that effort. A great deal of credit and gratitude goes out to all of our local partners and, in particular, the state/local WebCMR Steering Committee for what has been accomplished so far in these projects. Their critical contributions of expertise, experience, perseverance and patience cannot be overstated. We would not be in the position we are today to be able to move forward with a new software solution without all of the contributions of many of you and the prior project efforts. We ask for, and look forward to, your continued support of these projects.

LIMS Update

By Chris Cruz, Laboratory Projects Manager, CDHS/DCDC

The California Department of Health Services (CDHS) has six main laboratory programs within five divisions in Prevention Services (excludes the Genetic Diseases Laboratory Branch): Laboratory Central Services, Viral and Rickettsial Disease Laboratory Branch (VRDL), Microbial Diseases Laboratory Branch (MDL), Environmental Health Laboratory Branch, Food and Drug Laboratory Branch, and Sanitation and Radiation Laboratories Branch. Some of these labs were previously operating their own separate Laboratory Management Information System (LIMS) and others had no LIMS at all. Under the leadership of the Division of Communicable Disease Control (DCDC), which includes two of these labs, a single unified LIMS was implemented in all six of these State labs over a one year time period – all of these labs are now using LIMS in production operations. This award-winning project was delivered on-schedule and in-budget, and it is fully embraced by the laboratories.

LIMS has the capability to support, document, and track receipt of packages or specimens that come into the CDHS laboratories, as well as those which leave the laboratories for other laboratories (requests, tracking and results). LIMS will also provide CDHS with the ability to interface with outside laboratory partners (public and private). To directly address this need, the LIMS has been closely integrated with another DCDC application, the MDL Extranet to provide “one stop shopping” for laboratories to submit requests and data, get results, and track testing of their specimens on-line via the Internet, and DCDC is now piloting Web-based access to MDL and VRDL for submitters. The combined effort of these two applications as an enterprise solution has created value by attaining a synergy for lab readiness activities that will make outside electronic interaction with our labs a reality and improve service and preparedness for all involved entities.

The current MDL Extranet/LIMS activities by DCDC are focused on connecting hospital labs and local public health labs to the system and ensuring the appropriate HL7, LOINC and SNOMED codes are mapped according to the Association of Public Health Laboratory (APHL) and the Centers for Disease Control and Prevention (CDC) Standards (see also articles about “PHIN” elsewhere in this Newsletter). There are 38 local public health labs and 450 clinical labs including hospital labs that we are targeting; we will probably connect 10 local public health labs and about 40 hospital labs in this year’s effort. This also includes participation in the Public Health Laboratory Interoperability Project (PHLIP) which involves the exchange of key electronic influenza information to the CDC and other states. The following is a progress report on the activities of PHLIP.

California is one of six pilot states (with VA, NE, MN, IA, and CO) selected to participate by the APHL in PHLIP with the CDC. This PHLIP initiative has two major pilot project phases scoped out over a 13 month period that began in October 2006. The goal of the Phase One pilot is to stand up a messaging interface between the six participating public health laboratories and the CDC Influenza Branch for the exchange of influenza related result data and a test and result order exchange by utilizing existing technologies and tools. The goal of the Phase Two pilot will be to identify and address the architecture requirements and components necessary to document and construct a prototype for a laboratory data exchange router. This prototype would be designed based on the business needs of the lab community at the private, local, state and federal levels to accomplish data exchange between disparate health information systems.

I am proud to announce that California has successfully implemented the first Phase One milestone of this project by sending an electronic HL7 2.3.1 Test Result Message containing influenza result data from our virus lab utilizing the CA LIMS via PHINMS (Public Health Information Network Messaging System) to the CDC/NCID (National Center for Infectious Diseases) Influenza Branch, and receiving a returned message from the CDC acknowledging its acceptance. This is an important milestone for California and public health because it is the first time that the CDC has received an HL7 generated message from a state and the first time that our virus lab has sent a successful HL7 message to an outside entity.

The next Phase One milestone will be to send an HL7 2.5 Test Result Message to the CDC and the six other participating pilot states by January 15, 2007. From all indications, the CA PHLIP team feels that it can meet this milestone as well. Hopefully, at the end of this pilot, California will have the ability to ramp up a reliable influenza result exchange between our state lab, other participating state labs and the CDC allowing rapid exchange of influenza lab data, which would be even more valuable in the event of an influenza pandemic.

As always this milestone could not have been achieved without the hard work and dedication of the PHLIP team. This includes Paul Duffey of the MDL, David Cottam of the VRDL, and Andrew Sinyaver and Lee Jardin of the LIMS Service and Support team.

CalPHIN Refresher

continued from page 1

In general, successful implementation of the CalPHIN initiative will enhance the ability of the State's public health practitioners to share critical public health data and information. The CalPHIN initiative encourages building upon existing capabilities while minimizing additional organizational structures and bureaucracy. The CalPHIN initiative starts with a focus on communicable disease management while maintaining a sense of the broader need to facilitate information-sharing and enable all public health programs and jurisdictions to access critical information.

CalPHIN is More than a One-time Technology Project. CalPHIN is not simply a one-time technology system development project. Rather, CalPHIN must be understood far more broadly, as a dynamic and multifaceted initiative for change in the management and administration of public health programs in California. In short, it is an integral part of the ongoing evolution of public health business practices across the United States. CalPHIN comprises technology, governance, and business process components, as depicted in Figure 1.

The technological components of the CalPHIN initiative build upon industry data and system standards as well as on the CDC's ongoing NEDSS and PHIN efforts. Figure 2 on page 5 depicts at a high, conceptual level, the technical aspects of the CalPHIN initiative.

The vision for CalPHIN's supporting technology includes a variety of data sources; standard data definitions; clear specifications and processes to exchange data; an interoperable network, including individual and integrated disease information systems; data access and visualization capabilities; and underlying data content, data exchange, and other standards, including privacy and security principles. Building a public health data exchange and information network does not mean that all information will be made available to everyone. The sharing of confidential information must consider the "need to know," based on the type of information, the legality of making the information available, the programs and departments involved, and the sensitivity of the information itself.

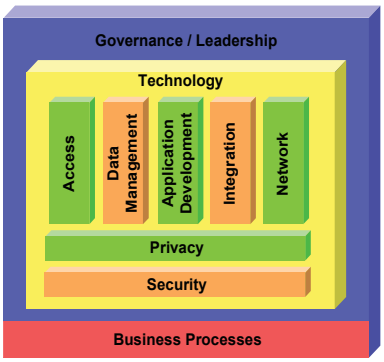
Figure 3 on page 5 illustrates the major benefits of CalPHIN to significantly improve public health decision-making, and improve the efficiency of public health management and administration.

The governance components of CalPHIN will facilitate successful implementation of the CalPHIN initiative. Such a structure will provide the opportunity to enhance communication, establish and promote guidelines and policies that expedite decision-making, promote data stewardship, and foster coordination and cooperation. The responsibility of the CalPHIN governance component is to obtain the commitment and support of key stakeholders, develop appropriate change management and problem resolution processes, and promote the awareness of the CalPHIN initiative throughout the State.

The business process component of CalPHIN will insure that the implementation of the CalPHIN initiative will support the business needs of Public Health in California and encourage and facilitate the implementation of cross-program solutions. Such solutions will be sufficiently flexible to meet shared business needs of multiple public health stakeholders.

Together, the components of the CalPHIN initiative will promote effective communication, enable the coordination of IT development efforts, support the integration of relevant public health information systems, and facilitate electronic sharing of critical data at key decision points. This will provide public health decision-makers with quality information needed to provide services that protect and improve the health and quality of life of all Californians.

…continued on page 5



Governance/Leadership: Defines roles and responsibilities to provide centralized leadership with authority and responsibility
Access: Defines roles, policies, standards, and technologies that provide a framework for electronic delivery of information and services
Data Management: Defines roles, policies, standards, and technologies for data definition, design, management, and administration
Application Development: Defines roles, development methodologies, technology standards, and technologies that define how applications are designed and cooperate
Integration: Defines how functional areas, application systems, and business requirements tie together. Defines components that create an integration environment between applications and network communication mechanisms
Network: Includes network infrastructure for the computing environment. Defines roles, policies, standards, and technologies that manage the communications infrastructure
Privacy: Defines roles, policies, and procedures to address privacy issues (focuses on prevention of unauthorized viewing or access to confidential information)
Security: Defines roles, standards, policies, audits, and business process reviews to ensure security
Business Processes: Defines streamlined, coordinated business processes

Figure 1. Source: CalPHIN Executive Summary, June 2003.

CalPHIN Refresher

continued from page 4

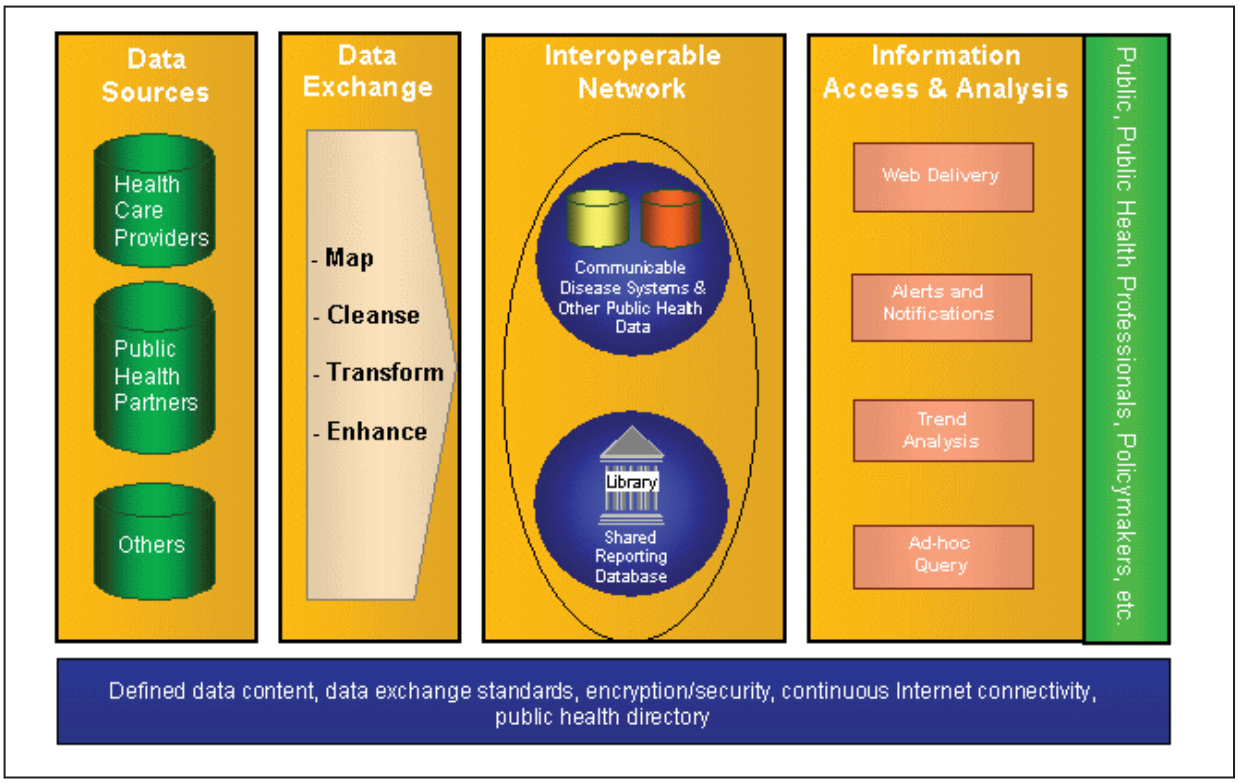


Figure 2. CalPHIN Technical Aspects. Source: CalPHIN Executive Summary, June 2003.

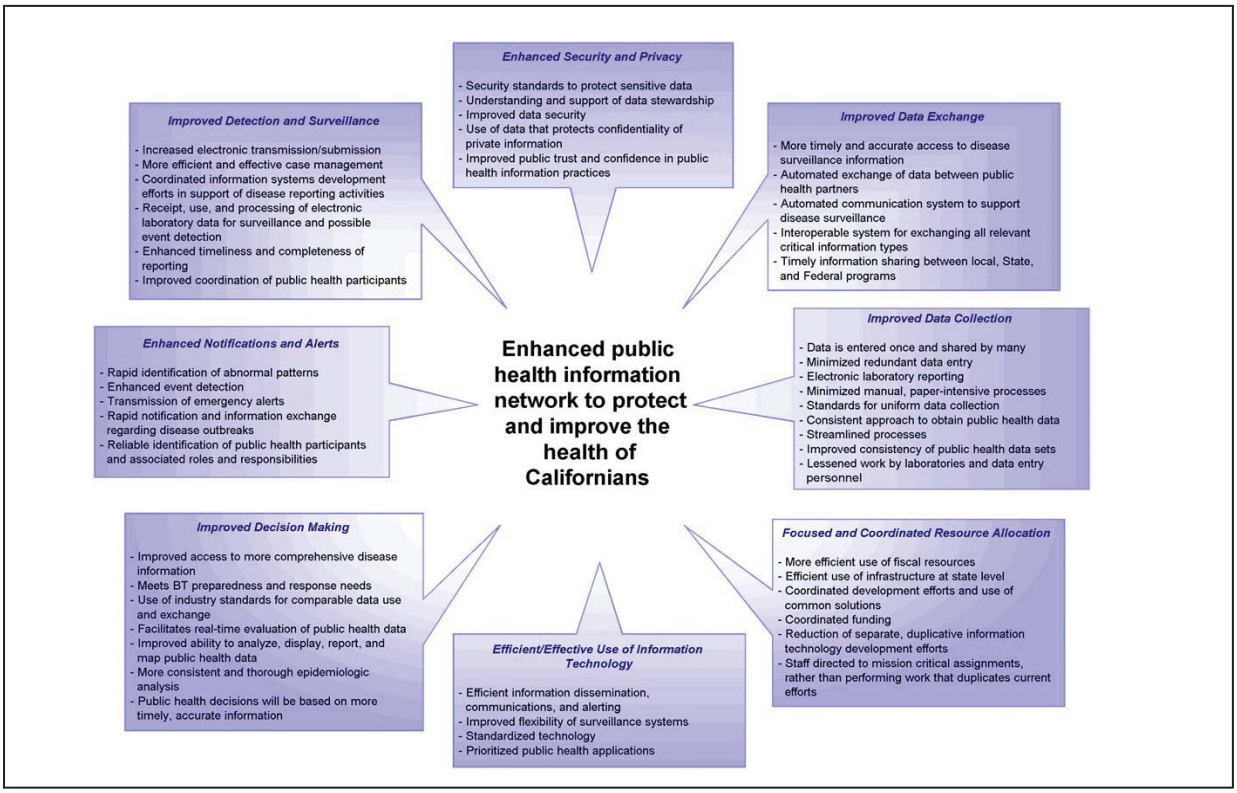


Figure 3. Source: CalPHIN Executive Summary, June 2003.

PHIN 2006 Conference Update

By Nancy McQuillen, Data Architect, CDHS/DCDC

The Centers for Disease Control and Prevention (CDC) hosted the fourth annual Public Health Information Network (PHIN) stakeholder's conference in Atlanta on Sept. 25th – 27th. This year's theme was "fostering partnerships for a health-e tomorrow." Several California state and local public health representatives and vendors attended the conference. As usual, a massive amount of information was presented, both by the CDC and by state and local health departments. New this year was increased emphasis on collaboration with several national organizations, five of whom presented their PHIN-related activities and agendas during the opening plenary:

- Association of Public Health Laboratories (APHL)
- Association of State and Territorial Health Officials (ASTHO)
- Council of State and Territorial Epidemiologists (CSTE)
- National Association of County & City Health Officials (NACCHO)
- National Association for Public Health Information Technology (NAPHIT)

The plenary presentations and most of the additional conference presentations (approximately 130 in total) are posted on the conference website at http://www.cdc.gov/phin/06conference. All stakeholders interested in or impacted by PHIN standards and the PHIN certification process are strongly encouraged to peruse the conference website and learn from the experiences of other jurisdictions. The following are just a few selected high-level information items relating to significant changes or progress since the last PHIN conference in May of 2005:

PHIN functional certification. Compared to the early days of the National Electronic Disease Surveillance System (NEDSS) and PHIN, there is increased emphasis on functional requirements (operational capabilities of jurisdictions), in addition to technical requirements such as HL7 message conformance. The PHIN certification process now requires that partner jurisdictions (grantees) complete functional self-assessment tools (FSAT spreadsheets) in the following six areas:

- Early Event Detection (EED)
- Connecting Laboratory Systems (CLS)
- Outbreak Management (OM)
- Countermeasure and Response Administration (CRA)
- Partner Communications and Alerting (PCA)
- Cross-Functional Components (CFC).

Health Level 7 (HL7) v.2.5 for Public Health. In prior years CDC's NEDSS and PHIN standards have specified the use of HL7 v.3.0 for messaging within the public health community (e.g. between public health jurisdictions and programs). HL7 v.2.x was specified for messaging from laboratories and health care providers into the public health community, due to the large installed base of v.2.x users in the U.S. in hospitals, clinical labs, etc. HL7 v.3.0 is a more robust standard but is a relatively immature standard, and there have been ongoing challenges in implementing v.3.0 messaging.

The CDC has now released a position statement supporting the use of HL7 v.2.5 as the current standard for public health messaging. Specifically, this change requires that National Notifiable Disease (NND) messages be submitted to CDC in HL7 v.2.5 format, not the HL7 v.3.0 format. The CDC statement emphasizes that this decision "enables the standards to be implemented by a wider user base than was possible under the previous guidance," and moves public health into alignment with the implementation guidance of the Health Information Technology Standards Panel (HITSP) on the use of HL7 v.2.5 format as the national standard for public health entities to receive electronic messages for biosurveillance and electronic laboratory reporting.

The HL7 v.3.0 implementation guides that were formerly posted at the CDC PHIN website (www.cdc.gov/phin) are being rewritten as v.2.5 guides and should be posted soon (in early 2007).

NCPHI reorganization. The CDC has reorganized to consolidate informatics activities into a new National Center for Public Health Informatics (NCPHI). The acting director of the center, Robert Martin, Ph.D., delivered a keynote plenary presentation entitled "Informatics at CDC and the State of PHIN". In comments on the history and future of PHIN, Martin stated that the major activity and focus in PHIN year 4 (the current year) is to "align PHIN goals with the National Health IT (HIT) initiative."

PHIN alignment with NHIN. In 2004 President Bush announced support for the implementation of nationwide electronic health records and data exchange capabilities by the year 2014. Legislation and funding have followed, and tremendous emphasis has been placed on this activity within the clinical world of U.S. healthcare. Starting in 2005, but more prominent in the 2006 conference,

…continued on page 7

PHIN 2006 Conference Update

continued from page 6

the National Health Information Network (NHIN) -- a major architecture initiative of the national HIT agenda -- is having a major impact on the future of PHIN. A host of new acronyms and efforts related to the HIT and NHIN agenda appear within the PHIN conference sessions, including:

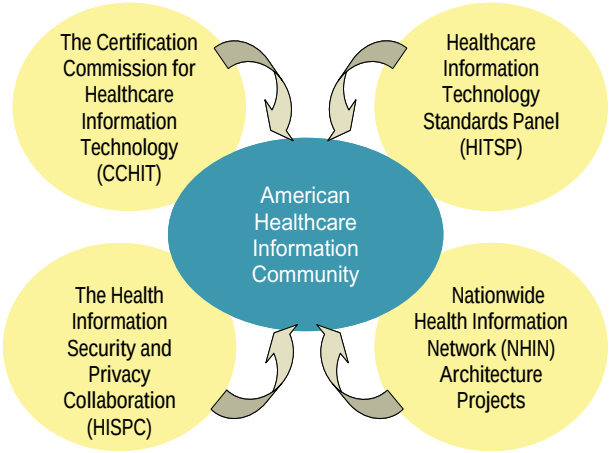
- American Health Information Community (AHIC)
- Certification Commission for Healthcare Information Technology CCHIT)
- Healthcare Information Technology Standards Panel (HITSP)
- Health Information Security and Privacy Collaboration (HISPC)
- Regional Health Information Organizations (RHIOs).

The diagram within this article summarizes the relationship between AHIC and its four direct supporting efforts (i.e. CCHIT, HITSP, HISPC, and NHIN). "RHIOs" represent the regionalized consortiums working toward the NHIN. Several RHIOs are developing prototype NHIN architectures. CalRHIO is an organization supporting the collaboration of multiple California RHIOs. Recent plans and summit presentations are posted on their website at http://www.calrhio.org/.

Biosurveillance is one of the top three "use cases" planned by this consortium of AHIC efforts. Most of the speakers in the PHIN sessions (e.g. the panel on RHIOs) encouraged public health to "get to the table" where standards are being set for NHIN interoperability. A major theme is that PHIN will need to be harmonized and aligned with NHIN standards.

NAPHIT for CIOs and IT. The National Association for Public Health Information Technology (NAPHIT) is a relatively new organization, launched in 2002 to engage IT leadership from state and local health departments, as well as vendor organizations and other partners involved in IT activities related to PHIN and national HIT initiatives. All jurisdictions who have the need for better PHIN-related education, communications and planning activities with IT and data center staff are encouraged to join this organization. For information contact NAPHIT President, David Taylor (dtaylor@naphit.org).

Feedback sessions on the future of PHIN. At this year's conference, the CDC hosted two specific sessions to solicit state and local partner advice on the future of PHIN. One was entitled the "PHIN Open Conversation" session, where groups divided into six focus groups to brainstorm action items to improve PHIN success in the future. An external company was engaged to facilitate these focus group sessions.



Source: HITP Interoperability specifications: EHR, BIO, and CD Executive Summary. October 20, 2006, Version 1.0.

The condensed output of the sessions is to be posted to the PHIN conference website. The second feedback-oriented session was held to discuss the presentation entitled "PHIN Requirements Reorganization Status" (posted under Day 2 presentations), including the need to better reflect public health processes within the PHIN certification requirements, and to define measurable and certifiable requirements. A series of national meetings and conference calls is continuing this discussion of PHIN requirements.

CalPHIN Newsletter

MANAGING EDITOR: Mark Starr, mstarr1@dhs.ca.gov

ASSISTANT EDITOR: Linda Sandoval, lsandova@dhs.ca.gov

CalPHIN Newsletter is published quarterly and welcomes contributions from readers describing relevant activities, organizations or initatives. Please submit proposed articles to the Assistant Editor via email.

Headquarters: 1616 Captiol Avenue, MS 7300, P.O. Box 997413, Sacramento, CA 95899-7413 • (916) 552-9700 • (916) 552-8973 (FAX)