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Welcome to the October edition of *PHINews*!

Welcome back to *PHINews*, PHIN's quarterly newsletter for PHIN partners and Centers for Disease Control and Prevention (CDC) affiliates. There has been a lot of activity **in and around** the PHIN community since we launched the premier issue of *PHINews* in June 2007:

- In July, PHIN and its partners released the PHIN Requirements V.2.0. See the PHIN website for more details: www.cdc.gov/phin.
- In August, the 2007 PHIN Conference was held in Atlanta, Georgia. Some of the most popular and talked-about sessions this year were the [vocabulary services](#) and [BioSense](#) sessions, as well the [PHIN open conversations](#)—all featured in this edition of *PHINews*.
- The National Center for Public Health Informatics (NCPHI) welcomed its new director, Dr. Leslie Lenert, MD, MS. Read an in-depth interview with Dr. Lenert in this issue's feature [Q&A with Dr. Leslie Lenert](#).
- *PHINews* is going interactive! Look for an upcoming new thread on the [PHIN Collaborative Forum](#) devoted to *PHINews*. Please stop by when you can to let us know how to feature you in *PHINews* and in the *Spotlight* section of our website.

In and around PHIN



PHIN headquarters, Atlanta, Georgia

- The PHIN Vocabulary and Messaging team participated in the biannual Health Level 7 (HL7) Working Group meeting hosted in Atlanta, Georgia the week of September 16, 2007.

In and around PHIN (*continued*)

On the PHIN site

www.cdc.gov/phin

PHIN Vocabulary

PHIN Spotlight: *Wyoming's Rapid Communication*

- The [Cooperative Agreement to Support State Assessment Initiatives](#) entered its fourth year of funding (September 2007-August 2012). Florida, New Mexico, Missouri, New Hampshire, Virginia, Arkansas, Illinois, Rhode Island, and North Carolina are funded in this funding cycle.
- In September 2007, [Dr. Robert Martin](#) became Associate Director for Integration of Public Health and Health Care initiatives within the Coordinating Center for Health Information and Service at CDC. Dr. Martin will provide leadership in policy and program development related to the exchange of health information between clinical care and public health.
- The updated lead, varicella, and tuberculosis Case Notification Message Mapping Guides and the PHIN Notifiable Condition Message Specification are now posted on the PHIN website: www.cdc.gov/phin/resources/guides.html.
- Over 1,267 attendees joined sponsors National Center for Public Health Informatics (NCPHI) and the National Association of County & City Health Officials (NACCHO) at the August 27-29, 2007, PHIN Conference in Atlanta, Georgia: [Harmonizing Public Health Voices in National Health IT](#).
- [Marjorie Greenberg](#) chaired the monthly teleconference of the [World Health Organization Family of International Classifications \(WHO-FIC\) Planning Committee](#) on August 9, 2007. Principal topics included the planning meeting with the International Health Terminology Standards Development Organization (IHTSDO) and the annual WHO-FIC Network Meeting.
- On July 26, 2007, [John Abellera](#) (CDC) and [Nancy McQuillen](#) (California Department of Health) presented to the [American Health Information Community's \(AHIC\) Population Health and Clinical Care Connections](#) workgroup regarding meeting recommendations for automated electronic case reporting.
- Over 70 CDC personnel and CDC partners attended the July 24, 2007, [PHIN Vocabulary Access and Distribution System \(VADS\) 2.2](#) webinar to learn about new features and functionality and to view live application demonstrations.

PHIN Vocabulary: Shared language, meaningful conversations

by Jay Jones and Mamie Jennings Mabery



In one health agency database, epidemiologists categorize male patients as "male/patient." Simple enough, right?

Well, not exactly.

At another agency, identical patient data is labeled "man/patient."

Ambiguity in concepts and terminology creates problems in human conversation and understanding. But when ambiguous vocabulary is loaded into a computer application, it can render the data useless to almost everyone except its author. And without a common vocabulary, it is virtually impossible to exchange precise electronic communication across applications and comprehensively analyze the data.

Standard vs. non-standard vocabularies

A public health vocabulary consists of concepts and codes used to represent public health processes and activities. Public health professionals in the US currently use standard or non-standard, locally created vocabularies to communicate with one another and across systems and organizations:

- **Non-standard vocabularies** are created unilaterally by public health professionals and used between one or more organizations. (Although non-standard vocabularies may work adequately for very small public health communities, they have an extremely limited use.)
- **Standard (controlled) vocabularies** are built based on public health community consensus and are released as new versions with incorporated changes at specified times. Systematic Nomenclature of Medicine (SNOMED) and Logical Observation Identifiers Names and Codes (LOINC) are examples of standard vocabularies.

“. . . create a bridge between the informatics people and public health practice.”
Dr. Rita Altamore
Epidemiologist
Washington

Dr. Rita Altamore, epidemiologist for the State of Washington, says that “people sometimes need to be persuaded to use a standard vocabulary.” This is especially true, she says, for managers of legacy systems who might not see the value in replacing their existing vocabulary.

On the PHIN Collaborative Forum

[Main Page](#)

The main page of the forum. If you're not a member, e-mail a request to phin@cdc.gov.

[Requirements](#)

Ongoing discussion of the PHIN Requirements V. 2.0

[Messaging](#)

Forum devoted exclusively to PHIN messaging and the messaging implementation guides.

Shared language *(continued)*

But Altamore, who has been a part of the PHIN community since its inception, works with her colleagues who are developing PHIN applications and systems to understand and communicate the primary benefits of using a standard vocabulary in new and legacy systems: The ability to analyze future data; the ability to map and access the vocabulary; and, most importantly, the ability for systems and people to engage in conversation using a common language.

Remember these dates

- 11/2/07—11/05/07
PHIN exhibit at
HRSA's *Promoting HIT
Adoption in the HRSA
Community:
Success Through
Collaboration*,
Arlington, Virginia.
- 11/08
BioSense Roundtable
Washington, DC
- 11/10/07—11/14/07
PHIN exhibit at
American Medical
Informatics
Association in
Chicago, Illinois,
booth #416.
- Partner calls are on
the first Wednesday of
each month.

PHIN vocabulary services

Given that one of PHIN's main goals is improving the capacity of public health to use and exchange information electronically, PHIN Vocabulary Services strives to provide resources to make standardized public health vocabulary easily accessible.

PHIN Vocabulary Services works with Standard Development Organizations (SDOs) such as HL7 and the Health Information Technology Standards Panel (HITSP) to identify and help create standard vocabularies specific to public health.

The group has created a web-based vocabulary application that allows users to view, search, and share the vocabulary used in PHIN.

PHIN VADS provides standard vocabularies used by CDC programs and its partners all in one place, and includes

over 267 value sets (subsets of one or more standard vocabularies for a specific purpose) and almost 700,000 concepts based on recommendations from Consolidated Health Informatics (CHI). Users can download the vocabulary in tab-delimited, Excel, or XML formats from the PHIN VADS site: <http://www.cdc.gov/PhinVSBrowser/StrutsController.do>

Creating a bridge

When asked to describe her main role at Washington State, Dr. Altamore feels that she strives to "create a bridge between the informatics people and public health practice."

PHIN Vocabulary Services is helping her achieve that goal.

For more information:

- <http://www.cdc.gov/PhinVSBrowser/StrutsController.do>

Want to get involved?

Because of increasing requirements for vocabulary standards adoption, PHIN has established the Public Health Vocabulary Community of Practice (PHVCoP). PHVCoP members come from CDC programs, state and local health departments, federal agencies, and anywhere people in public health work with vocabulary and want to share ideas about vocabulary challenges and solutions.

Members are epidemiologists, informaticists, laboratorians, program managers, analysts, and application developers. Monthly meetings are in the Atlanta area, but many members attend virtually via webinar. If you'd like to find out more, contact PHVCoP@cdc.gov.



Open conversations produce long-term results

by *Christine Van Roosen*

At the 2007 PHIN Conference, 70 state and local public health partners joined CDC and WHO colleagues in five open conversation groups to identify actions for moving partnerships forward and build on the practices, tools, activities, processes, and 2006 PHIN Conference open conversation results that will contribute to PHIN's continued success.



PHIN communication

According to our partners, PHIN needs to deepen partner relationships, engage partners in generating measurement criteria and compliance strategies, and continue face-to-face meetings like the annual PHIN conference. Partners advocated that CDC enhance PHIN communications materials; clearly define PHIN [mission, goals, terminology]; develop a communication toolkit for sharing and leveraging

common messages, successes, and good practices; and expand the PHIN Collaborative Forum via technology-enabled tools, calls, asynchronous threads, and blogs and expanding routine communication channels, venues, and opportunities.

PHIN technical assistance

Partners identified grant guidance, national standards, and technical assistance as key to increasing electronic health information exchange capacity. They stressed collaboration for showcasing good practices and defining PHIN certification and functional interoperability, and advised continuing monthly partner calls and the collaborative forum, building on calls to augment support activities, and developing a technical guide for software specification discussions. Education ideas included PHIN University, an active PHIN education community of practice, and co-developed learning modules. Partners' sustainability recommendations included PHIN's assured funding, business cases to document PHIN's value, and clarification of PHIN's importance to key personnel.

PHIN governance and national initiatives

Partners agreed that effective PHIN governance—supporting PHIN's concepts, business, and technical aspects—will contribute to its cohesiveness, development efforts, and coherence with ongoing national initiatives. They advised developing governance definitions and processes to assure common understanding; shared governance to support the business and technical alignment needs for fulfillment of PHIN requirements; a representative steering committee with decision-making authority and senior programmatic management and information technology (IT) / informatics leadership; clear business processes; consistent meaning/messages; and strong state and local governance to assure good national governance.

Open conversations *(continued)*

PHIN collaborative development

PHIN must articulate the “business of public health informatics,” define public health functional priorities, create a functional framework for IT planning and decision making, formulate PHIN-related privacy policies, and facilitate cross-jurisdictional data sharing, according to partners. Agreed-upon, enforced standards for functionality, data collection, and vocabulary must be promoted to key stakeholders to facilitate information sharing and enable public health entities to identify the right vendors or develop PHIN-related standard applications and services in-house. Partners advised a shared agenda for public health informatics research, discussion, and knowledge-sharing using agreed-upon standards.



Global public health informatics and PHIN

To meet Public Health Emergencies of International Concern reporting requirements, CDC partners with WHO, the Gates Foundation, the Department of Defense, and CSTE. Partners said the US public health community needs education to understand international public health vocabulary and messaging standards and system compatibility and procedures, definitions, data permissions, sharing, surveillance, and response issues. Partners also observed that collaboration supporting global public health informatics initiatives must fund and support productive, global interoperability; identify common business activities; develop convergent technology; leverage Regional Health Information Exchanges (RHIOs) to connect with the international community; and explore transnational goals, strategies, and applications.

For more information:

- Full, detailed open conversation results are available on the [PHIN Collaborative Workspace](#).

Q&A with Dr. Leslie Lenert, NCPHI Director

by *Christine Van Roosen*, photographs by *Scott Wilson*

Dr. Leslie Lenert assumed leadership of NCPHI in July 2007. In a conversation with *PHINews*, he talks about his personal motivations, management and planning styles, and the NCPHI and PHIN transition to a science and services role in the emerging national public health grid.



Can you tell us a little about what drives you? For example, how did you develop your interests in decision sciences and biomedical informatics?

I was always interested in how computers could be used in different contexts. I got started doing data analysis and writing programs for 3D visualization of experimental data and developed a forecasting program to interpret data, reject faulty or erroneous drug concentrations, and recognize changes in someone's physiology. The program combined drug level data with population information data to try and estimate the best possible individual drug dose. We conducted a trial to test my program against a drug-dosing service—showing how the program recommendations successfully compared with those of an experienced pharmacokinetic software user.

So I got hooked on the idea that computers could solve both calculating problems and some of the practical knowledge- or experiential-based problems in medicine. Stanford also exposed me to decision analysis, the basic tenet of which is that there is a difference between a good decision and a good outcome of a decision. This was a life-changing perspective for me.

Where are decision modeling and analysis heading, and how will these changes apply to our work at NCPHI?

We need to look more at informing human decisions. If I were to forecast a trend in decision analysis, it would be moving toward more sophisticated representations of the world—with multimedia and complexities—and integrating them with decision-tree-like models.

Q&A *(continued)*

We collect data for the purpose of taking an action or making a decision about an action, and we need to be conscious about how the data we collect is used to help people make emergency, surveillance, or public health practice decisions. We're always trying to inform decisions, refine plans, and ask ourselves: "What do we do tomorrow based on this data?," for example, "Do we go into schools and tell them to reinstitute PE programs?"

We also need to look at how the data would potentially bias decisions as it comes in. From a public health perspective, it's about doing the best for the society-at-large. We have to be willing to take more of a population-based approach.

Where is NCPHI going as a center?

Inside CDC, we're heading towards a matrixed organization, where program teams cut across divisions with funding streams.

The biggest external challenge for the center right now is making sure public health is integrated with the National Health Information Network (NHIN). How are we going to do that? It's really about the software installation that we'll have in hospitals or RHIOs. I believe that we're only going to get one box, and that it has to do both NEDSS and BioSense; provide real-time data on the state of the system; do automated reporting; and be something that the hospitals want to install that *will be useful to them*.

We want them to be motivated to do their reporting and work collaboratively with us—not just working to specifications or as a result of a vested, financial self-interest, but rather because they believe the data is useful to them and because it's part of their workflow. We need to create systems where people say, "I'm involved with this because I believe in what it's doing, it helps my workflow, and it helps us do things that we couldn't do before."

Would this reporting be linked to operations or infrastructure within each hospital or RHIO?

Yes. We've already done experimentation with automated case recognition and case form completion tools that link with BioSense in a single system. This becomes the *de facto* "local public health installation." We don't need to control that installation. What we do want to do is help manage the process of creation, so they are all interoperable. We will contribute components where it makes sense. We will allow people to do what they want. We're targeting making it worth the investment for them.

" For me, a culture for collaboration means that even though we're helping them with money and resources, we're still meeting them half way. That's the right thing to do."

**Dr. Leslie Lenert
NCPHI Director**

Q&A *(continued)*

When we look at your career, the theme of succeeding through a “culture of collaboration” comes up over and over again. What are some of the most effective management techniques and methods you’ve used to reach consensus? How will you use these at CDC? With partners?

We want partners who are building the national health information network, and we want to figure out to work well with them—just like the local public health departments that build out the public health information network.

For me, a culture for collaboration means that even though we’re helping them with money and resources, we’re still meeting them half way. That’s the right thing to do. They’re out there in the community on the front lines, and we have to listen to them. That’s just my way of doing business. When I have collaborators, I only offer people deals that are in their own interest. We have to find a way to frame what we’re doing, so it’s in peoples’ best interest to collaborate with us. We’re doing that with money right now, but I’m hoping that we can do that more with social mechanisms and culture, setting up the right context for things like software development and open source activities.

“We’re not setting the priorities; what we’re doing is empowering the community to work together.”

**Dr. Leslie Lenert
NCPHI Director**

How do you envision these groups working collaboratively? Through online communities? Additional meetings?

That’s where I see the real change in PHIN. It won’t just be us telling you how you should work. It will be us coming together to figure out how to work together. I’m thinking that PHIN should be a practical meeting, in addition to presenting excellent science.

People have to take the time to work in communities of practice; set goals for those communities; build things that are of use; and manage that process throughout the year, both online and maybe with a mid-year meeting for the group to do a mid-course correction. Then they need to come back and talk about what the coming year will be about and how to work together. Part of this is sharing the year’s achievements and cross-pollinating in different areas.

Some of this collaboration might be done through user groups, or even super user groups, where community members write macros, for example. We might ask, “What are the macros that EpiInfo needs to be more useful right now? And how do we get an API that would allow us to do that?” Or suppose the Fulton County Department of Health Wellness’s Office of Epidemiology had the resources and really wanted to build this one thing: How could we support them in a community, get them plugged into other people, let them work on it for a year, and then give them a ready means to disseminate their results, so that if they were doing something useful to the group at large, their work scaled, too?

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Q&A *(continued)*

If we create an open source environment and the partner builds a program module, that should be both sharable and distributable within the community, and all community members should be working on it. We can provide the framework to make that happen, rather than just throwing software over the fence or building things and having our users tell us how to rebuild or rewrite the next generation. It can be much more participatory than that. It becomes a disseminated environment. We're not setting the priorities; what we're doing is empowering the community to work together.

You've worked collaboratively and successfully with on-the-ground emergency responders, engineers, physicians, computer scientists, military personnel, and community organizations to address emergency health data transfer and management issues in "real-time" projects like Wireless Internet Information System for Medical Response in Disaster (WIISARD). To what extent will your management approach at NCPHI be defined or influenced by these types of cross-disciplinary "living lab" experiences?

This is why I want to do a matrixed organization. The power of it is much better than being siloed in a laboratory. It takes a supportive organization to make it work, but projects can really thrive in this environment. NCPHI has to be willing to support interdisciplinary



Photograph courtesy of PHIN Conference 2007

projects. They borrow from everybody and then give to everybody.

With WIISARD, engineers worked in interdisciplinary teams, so they got real-world experience. You showed them what they had to do—made them part of the process. While we were building WIISARD, the engineers participated in exercises alongside

the first responders: They followed them around to test their gadgets long before we actually handed the device to a first-responder to use. Being in the field, the engineers saw exactly what their device was supposed to do, so when they were building it, they built something that actually worked, rather than imagining what might work in that situation. They still need advice on how to build things, but if they understand the actual public health delivery system they're working in, it's much more effective.

Q&A *(continued)*

It seems that since you've gone through the process, you really know how collaboration works.

Yes, collaboration really comes from having the same goals. If we can engage with partners and say, "Here are the things that we think you need. Hopefully you've had input on this list, this is why these things will get you to where you need to go, and here's some of the money that will help you to get it done," I hope we can find the right path.

We'll continue to be part of communities of practice, contributing to things that we don't actually control. We'll find projects that are bigger than we are that somebody else is in charge of and contribute both expertise and funding (probably more in the expertise area as time goes on). For example, we contribute both expertise and money to the Public Health Laboratory Interoperability Program (PHLIP), a consortium working on data communication standards for public health labs. We funded part of PHLIP—and we participate in it and lend expertise—but it's actually controlled by the Association of Public Health Laboratories (APHL).

Are there other standards that we'll be working with or towards?

All the AHIC standards. We are going to try to work in a more organized fashion to try to shape the standards. We would love to help increase the voice of public health with our partners, as well. The broader the voices and the more organized we can be early in the process, the better the product will be.

Can you talk about the upcoming role of multicultural automated computer-assisted interviewing, natural language processing, geofencing and electronic quarantine, GIS-based systems, and mathematical modeling and simulation?

These are services that we're proposing that CDC might create, so that other people can put them into their computer programs. We would not become a purveyor of computer programs, but you might come to us when you have a document and you need a service that would tell you where the action was happening in the document.

For example, you take a news story without a mark-up as to where the event is taking place, send it to us, and get an XML mark-up of location in a standard coded format that you could then take to your GIS system and put the story on a map someplace. The idea is that you might have to keep that software yourself, or we – or one of our partners – might maintain it.

"I would say we need to take a long-term strategy, recognizing that public health and CDC are likely to be here this year, next year, or 10, 20, or 100 years from now, and that we will have the same issues."

Dr. Leslie Lenert
NCPHI Director

Q&A *(continued)*

That's what we mean by "the grid": The idea that I would create an application that was all about my workflow, but that I would have access to services that could be anywhere on the grid.

Personal health records, individual emergency data, and lab records seem destined to become the "data lynchpins" supporting the emerging public health grid. Are there other key data elements that will help the grid to work effectively?

The only other key element might be vaccine data, but that's really a part of the personal health record.

What other aspects of your experiences in internal medicine and health services research will help to guide you as you lead NCPHI?

There isn't a day that I don't rely on the experiences I've learned in the last nine years: watching people, seeing what they're telling me, processing that in view of their body language, and asking "What is it they're really saying?"

When you're a physician, you're trying to look at the person in the whole context, trying to understand what their values are, how well they understand you, and what they're not telling you. I have to rely on those skills. Part of me runs towards a more "paternalistic" approach, making sure that I work with patients to give them not necessarily what they ask for, but what I though experience and careful listening perceive as their needs.

We have to look and see what our future is—What are we really building out for? What are the risks we face today? Tomorrow?—and then determine how we can best build to meet both today's and tomorrow's needs at the same time. The risks may actually be changing over time. I would say we need to take a long-term strategy, recognizing that public health and CDC are likely to be here this year, next year, or 10, 20, or 100 years from now, and that we will have the same issues.

But we still need to build to meet our needs today. We would be remiss if we didn't think about the 2-year, 5-year, and 10-year outcomes, and make sure that we're on the right path for those.

For more information:

- Dr. Lenert's biography is available here: www.cdc.gov/ncphi/news/director-appointed.html.



Leveraging partnerships to enhance training

by *Lourdes Martinez-Cox*



Malcolm Knowles, a pioneer in the field of adult education, identified basic characteristics adult learners possess. Among those characteristics Knowles identified, relevancy and practicality are two that support the new BioSense training approach.

BioSense is the nation's real-time electronic biosurveillance system designed to detect and monitor disease outbreaks and bioterrorism events. As the program has been updated and enhanced, there is ongoing need for training new and experienced users. A reevaluation of training needs was conducted in order to ensure training was offered at the right frequency and designed for various experience levels.

As a result of identified needs, an opportunity to forge collaboration with Georgia State University (GSU) was identified in order to design interactive and engaging training materials that would increase the utility of the BioSense application. Two online training courses will be produced by instructional design students at GSU. The courses will offer new and experienced users opportunities to practice skills related to BioSense and will be designed in short units to accommodate the learner's schedule and learning preferences. The partnership also creates an opportunity for GSU graduate students to design a product that will be implemented in a real-world environment upon completion.

Another training product resulting from a partnership is the patient traceback tip sheet and video simulation. Based on information gathered from BioSense users, brief and simple tools for this topic were created. Both the tip sheet and the video simulation are designed to assist public health and hospital partners in reidentifying a patient, using the traceback feature of the BioSense application when a public health investigation is necessary. Pilot reviewers from Arizona, Oregon, and Georgia volunteered their time to review materials and provide suggestions for improvement. The wealth of information obtained from the reviewers not only enhanced the final product, but also served to strengthen relationships and promote communication with BioSense users.

Leveraging partnerships *(continued)*

A target date of November 2007 has been established for release of the patient traceback tip sheet and video simulation. Both will be available within the BioSense application in the help section, as well as, on the BioSense website.

Partnerships will continue to be one of the primary sources to accomplish BioSense training goals and drive future product development. Upcoming projects currently being discussed include collaboration with an academic group that is pioneering training for bioterrorism and emergency preparedness in 3D virtual environments; podcasts for quick updates on new application releases; and more engaging webinars designed to involve the learner's critical thinking skills. A new training sub-page will soon be added to the BioSense website to alert users about these tools and other training related news.



For more information:

- Please e-mail Lourdes Martinez-Cox at LMartinezCox@cdc.gov for training tools or training requests.
- Learn more about BioSense at www.cdc.gov/biosense.

PHIN community remembers Don Nestor

by David Groves

The PHIN community lost a valuable member of its team on August 18, 2007. Donald A. Nestor, a consultant to NCPHI and an employee of Science Applications International Corporation (SAIC), passed away after a long illness. He was 52 years old.

From 2003 until March 2007 Don was project manager for the PHIN certification team at CDC. He was a regular speaker at the annual PHIN conference on the topic of PHIN certification and worked tirelessly with public health jurisdictions across the country advancing the adoption of PHIN functional requirements and technical standards. More recently Don was a member of the PHIN Deployment team supporting the implementation of CDC developed solutions and technologies in state and local public health organizations.



Under Don Nestor's leadership the PHIN Certification team was tasked by CDC to both enable and track the adoption of PHIN interoperability requirements in state, local, and territorial public health agencies nationwide. Processes and tools were created to support these efforts and made available to partner organizations via the PHIN website. Among Don's many achievements was the development of functional self assessment tools (FSAT) that could be easily used to gauge an organization's readiness to pass the certification requirement in each of six functional domains of public health information management.

Don Nestor understood the importance of this work and its implications for public health preparedness. Despite his long struggle with cancer, surgeries, chemotherapy, and debilitating pain, Don continued to work and to care for this important goal until his death. CDC and SAIC will miss Don's enthusiasm and warm-hearted, professional nature. His contributions to the development of PHIN and his personal commitment and sacrifice in advancing the public health mission will be long remembered.

For more information,
contact phin@cdc.gov

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