New Strategies for Achieving Uniformity for Test Orders and Results

By Curt Safranek, IT Specialist, and Steven Hinrichs, M.D., Director

Secretary of Health and Human Services, Michael Leavitt has made health informatics one of the most important agenda items for his administration. That emphasis is being seen in many ways including the creation of a national organization focused on creating electronic medical health records called the American Health Informatics Community. Many people have criticized the United States health care system for not taking advantage of the technology available today. While most people carry credit cards that can be used around the world, our medical records are largely kept on inaccessible paper forms in many different offices. While some people argue this is necessary for security reasons the most relevant comparison is in the banking industry, where high value transactions are taking place every second, every day throughout the country. The new concept is that if a laboratory test result is not available to the physician or medical provider in a timely fashion, and if that data cannot be appropriately shared with those authorized people who make decisions about health care, it should not have been performed in the first place.

The epidemiology section of the Nebraska Department of Health and Human Services under the Direction of Dr. Tom Safranek has led the country in many respects with its early participation in the National Electronic Disease Surveillance System or NEDSS. The Nebraska Public Health Laboratory has been a partner in that effort with the creation of electronic systems for moving data into a secure data mart that allows authorized individuals to receive reports electronically. The impact of this system has been significant as regional public health officials in the state are now able to see the information the same day it is generated rather than when the mail or fax system delivers the result.

As a result of these successes, the NPHL was invited to join a national effort to accelerate the use of electronic data exchange. The effort is called the Public Health Interoperability Project (PHLIP) and is a joint partnership between the Association of Public Health laboratories (APHL) and the Centers for Disease Control and Prevention (CDC). The goal of the project is to address a very significant problem in the laboratory system and medical informatics in that different terms or vocabulary are being used for the same concept or test type. While coding systems have been created to address this problem, the coding system itself has is complex so that differences arise even when the same test is being coded. The problem is obvious to most laboratorians who have grown accustomed to using either EIA or ELISA for a microtitre based test for antibodies or antigens depending on the situation. In addition we know that some people call the confirmatory test for antibodies to HIV the Western blot test and another group calls it the Immunoblot confirmatory test. Terminology varies widely even in public health, where a recent survey showed that 10 of 12 public health laboratories used different words or codes for the same test type. The issue is less obvious but even more complex for the new molecular tests such as PCR or rapid antibody detection tests using lateral transfer or antibody concentration methodologies. One group has advocated for a negative HIV quantitative RNA assay to be reported as “less than 50 copies detected” (the level of detection for the assay), while others recommend reporting as “negative” or “no RNA detected”.

To address this problem, the PHLIP effort brought representatives from six state public health laboratories and the CDC together to reach consensus on the most important tests being performed. At one level, the project is an experiment because the traditional way to address these types of problems has been either to generate high level rulings from one over arching administrative entity or create a drawn out process where participants discuss the various alternatives without a defined endpoint. It was generally accepted that if these alternative approaches were effective for this type of task, the problem would have been addressed many years ago after it first became apparent. It was recognized that the effort must remained focused and not attempt to extend to case reporting or epidemiology investigations.

A sense of urgency was added to the activity based on the need to close the gaps in capability for mounting an effective response to a possible influenza outbreak. At the same time the team began working on harmonizing elements critical for electronic exchange of laboratory data including message structure and process.

The validity of the strategy has been realized through the achievement of the first set of goals for the project, that being the creation of a common set of vocabulary for achieving test ordering and reporting for all of the different tests that are used for influenza detection. The data package is undergoing peer review by external experts in preparation of posting the recommended terms for laboratory tests and results for public comment.

There are several benefits that this project will bring to Nebraska. Most importantly, as more laboratory information systems become capable of transferring data electronically, there will be an increasing demand for uniformity in data elements. When a laboratory information specialist establishes the code and process for entering test orders and results into their system, they will be able to go to the look up tables provided by the CDC and APHL and select the recommended codes and vocabulary for each test type. This will not only result in considerable time savings on the part of the laboratory but will also facilitate the reporting into local and state programs. It is expected that achieving uniformity in laboratory data standards will eventually allow the patient greater access to their own health information.