



A186 Development and Implementation of a Custom Paperless LIMS Serology Module

Anna Timanova, PhD, Kailin Len, MS, Tiffany Best, BS, Katherine Welch, MSFS, Lisa Gefrides, MS, and Roger Kahn, PhD, Harris County Medical Examiner's Office, 1885 Old Spanish Trail, Houston, TX 77054*

After attending this presentation, attendees will learn how to create their own customizable modules in LIMS. The creation of the Harris County Medical Examiner's Office serology modules will be used as a model to demonstrate how to create customized modules to record and maintain testing results. The validation and implementation of paperless serology modules as well as the increased data capturing capabilities that this type of system requires will also be discussed.

This presentation will impact the forensic science community by demonstrating that customizable modules can be created in-house for LIMS without the need for vendor intervention. It will also provide an example of how a laboratory might approach creating a paperless system for serology case notes and other documentation.

Laboratory Information Management Systems (LIMS) have been implemented in crime laboratories to different extents and with various levels of success. Maintaining a case file in an electronic format, thereby creating a "paperless system" is the future of laboratory documentation.

The ability of a LIMS system to respond to the specific needs of each crime laboratory and to record and report their findings electronically are of great importance. Therefore, a LIMS system must include characteristics such as security, flexibility, and customization.

Case management at the Harris County Medical Examiner's Office (HCMEO) is maintained in an electronic LIMS. The system has been implemented throughout the laboratory to track chain of custody of evidence and some sections also use it to maintain data and create reports. Its current use in the Forensic Biology Laboratory is limited to maintaining an electronic chain of custody of the evidence because an acceptable software solution for tracking serology and DNA casework has been implemented. The laboratory is moving towards a paperless case management system that requires new ways of capturing forensic biology processing and results.

In response to this need, a unique serology module customized for in-house serology testing within LIMS was created. This module consists of four separate forms designed to capture the analysis results for four different types of submitted evidence: (1) swabs from sexual assault kits; (2) swabs from non-sexual assault cases; (3) non-swab evidence; and, (4) known reference samples. These modules capture all data generated during testing, reagent lot numbers and expiration dates, samples for DNA extraction, witness verification steps, and anything else that is currently tracked in the case file. Upon completion of analysis, a report is generated which includes all data in a worksheet format which can then be stored electronically or printed whenever needed. The laboratory successfully validated these modules and they are currently in the final stages of casework implementation.

This serology module presents a step towards greater efficiency of evidence examination by creating a paperless case management environment. It provides an example of an irreplaceable tool for evidence processing in a fully computerized crime laboratory. The implementation of this module is expected to streamline serology evidence processing, provide standardization of case documentation, and enable faster case turnaround times.

In addition, the serology examination areas are being outfitted with computers on stands equipped with bleach-resistant keyboards and mice designed to ensure accessibility and proper ergonomics.

Serology, Paperless, LIMS