2018 CSHEMA Innovation Award
Process Improvement: Successfully designed or re-engineered program
Pre-Inspection Report

The Problem

In late 2016, while providing Risk and Safety Solutions with input on the development of a cloud-based inspection app, lab safety professionals at UC Davis described another problem they were facing in laboratory inspections. The six inspectors, who together perform about 80 lab inspections a year at UCD, were spending 45 minutes to an hour before each inspection combing through six different safety applications to gather information in preparation for the inspections. This included things like workers’ required training and Personal Protective Equipment (PPE), which hazardous chemicals were in the lab, if their chemical inventory had been certified as required, which findings the inspectors had noted during the last inspection and if and when they had been corrected. In addition, there was a lack of standardization between the inspectors, which caused inconsistencies in how each lab was evaluated.

The Solution: Pre-Inspection Report

Much of the information the inspectors were looking for is housed within the following Risk and Safety Solutions’ applications, which were already being used by many of the labs at UCD.

- LHAT – The Laboratory Hazard Assessment Tool, which evaluates labs for potential hazards and also recommends PPE.
- CIS – The Chemical Inventory System, which facilitates the collection and storage of information related to chemical types and amounts within campus laboratories and facilities.
- LMS Training – A learning management system.
- Profile – An application central to many of our systems because it houses information about people, places, groups and locations.
- SIT – An online Safety Inspection Tool.
- BIO – Biosafety Information Online, which automates the Biological Use Authorization process.
- Risk and Safety Solutions had developed business intelligence dashboards and reports for several of these systems, which allowed users to analyze data pulled from the applications. Using the
same technology – Microsoft SQL Server Reporting Services – we developed the Pre-Inspection Report.

The Pre-Inspection Report displays detailed data for a lab and includes:

- List of delegates, lab members and lab locations and anyone who has been added to that lab specifically in the last year
- Details of past and future inspections
- LHAT certification, completed lab-specific training and identified hazards in the lab
- Required PPE
- CIS Certification and active chemicals per location
- Active BUAs and biological responses from LHAT
- Information on high-hazard chemicals used in the lab, including whether compressed gases, oxidizing acids, hydrofluoric acids or picric acids are present

The Pre-Inspection Report provides information on the Principal Investigator, his/her Delegate and members of his/her lab. It also displays details on previous inspections and required training.
Scrolling down, the report displays chemicals found in the lab and their associated hazards.

Further down is information about hazards associated with the lab, use authorizations, and (not shown here) required PPE for each lab member.
Cost and Method of Implementation

The Pre-Inspection Report took about 2.5 months of one developer’s time at a cost of approximately $19,200. It is available to all 10 UC campuses, which equates to a cost of about $1,920 per campus.

Becky Grunewald, manager of the UCD Laboratory Safety Review Program, played a significant role in the development of the Pre-Inspection Report.

“It saves our inspectors time,” she said. “We estimate about 800 hours a year because they were spending about an hour to prepare (for the lab inspections). It’s also better for our customers having our inspectors coming to the inspection prepared, so it was a win-win.”

Now inspectors can quickly search for a lab, call up all the pertinent information and easily print the report as a PDF to take along to the inspection.

Labs often prepare for their annual inspections by having the department’s safety representative conduct a run through of the actual inspection. Soon after the release of the Pre-Inspection Report, Risk and Safety Solutions created a Pre-Inspection Report for Safety Professionals. The Pre-Inspection Report for Safety Professionals mirrors the Pre-Inspection report, providing Department Safety Coordinators and other safety professionals the ability to view important lab and safety-related data only for Principal Investigators and labs that they are responsible for.

Applicability at Other Institutions

The UCD lab inspectors were the first to use the report, but since then it has been adopted by lab inspectors at UC Berkeley, UC Santa Cruz, UC Merced and UC Riverside.

Recently, Risk and Safety Solutions began offering its products and services commercially to academia and the healthcare industry. Because the Pre-Inspection Report pulls information from several of our existing apps, any organization using those apps could also use the Pre-Inspection Report or have a similar report customized for the needs of their campus or hospital. One of our clients, the University of Hawaii at Manoa, has expressed interest in developing a similar pre-inspection report.