



University of North Carolina Eliminate Errors While Saving Time and Money

Mapping a Better Future with the Leica BOND™ LIS Interface

When the University of North Carolina (UNC) Anatomic Pathology Laboratory was faced with the challenge of rapidly increasing specimen and Immunohistochemistry (IHC) workload without increasing staff numbers, they turned to Leica Microsystems' Workflow Consulting Team. The Leica team utilized Lean methods to help UNC evaluate their current workflow processes and define action steps they could take to streamline their workflow.

The Leica team led UNC through value-stream mapping, spaghetti diagrams and action item lists to help identify where effort and resources should be focused to produce the greatest rewards. UNC laboratory management decided to connect the Leica BOND instruments in their IHC laboratory to their Anatomic Pathology Laboratory Information System (Cerner CoPathPlus) with a new CoPathPlus-BOND interface. The goals of the interface implementation were to eliminate slide re-labeling, improve efficiency in loading the Leica BOND stainers, reduce overtime and make the Leica BOND III™ even easier to use.

Immediate Process Improvements

During the value stream mapping process, UNC discovered that histology technicians needed to label IHC slides three times throughout the process and that staff were spending a lot of time manually entering data into the Leica BOND system. However,

connecting Leica BOND to their LIS would mean labeling only once with no duplication of manual data entry.

The benefits were immediately obvious to Marilou Maglione, Assistant Administrative Director, Anatomic Pathology & Autopsy Services, UNC Healthcare: "The use of the orders interface seemed to be an elegant way to decrease errors, improve efficiency and save time. It makes the Leica BOND III truly 'walk-away' by allowing the instrument to associate the appropriate protocols with the slides. The slides never have to be re-labeled so QC is quicker and slides are in the hands of pathologists much faster."

UNC Health Care's Anatomic Pathology & Autopsy Services Medical Director adds: "The use of computer-driven labeling of immunostains has reduced the hand-labeling and superimposed sticker-labeling of immunostained slides. Computer-driven slide labeling thus reduces technical work and reduces labeling error rate."

"An elegant way to decrease errors, improve efficiency and save time"

Marilou Maglione, UNC Healthcare

Living up to Life

Leica

MICROSYSTEMS

Straightforward Implementation

Leica Microsystems' knowledgeable staff provided expert integration services that made implementation of the Leica BOND LIS interface as painless as possible. Marilou Maglione states: "Leica provided excellent support and coordinated well with our LIS vendor to make implementation very easy on us. Leica's LIS specialist is extremely knowledgeable about CoPath, so our questions about setup and dictionary entries were quickly answered. It was relatively painless to get the interface working."

Easy to use

The interface is extremely easy to use. The UNC laboratory has noted that the Leica BOND interface functions very much like the typical interface to a slide engraver (labeler) or cassette labeler. Since it is similar to a technology they already used, it made understanding the interface a snap for the technicians.

Savings

While quantifying the savings is challenging, data has shown that UNC reduced the turnaround time for IHC by 25.7 minutes per stain. Also, although time wasted tracking down labeling error was historically not well documented, it is clear that the Leica BOND LIS connection resolved most causes of labeling errors and saved a significant amount of technologist, supervisor and pathologist time. The value stream maps created before and after the interface clearly show the impact of the interface on overall turnaround time and reveal a significant decrease in the number of process steps.

Critically, any slide re-labeling creates an opportunity for misidentification and therefore misdiagnosis if the error is not caught in time; the Leica BOND LIS connection significantly reduces the possibility of a slide being re-labeled incorrectly because the Leica BOND IHC slides are pathologist-ready without any re-labeling.

As Marilou Maglione states: "As we minimize these opportunities for errors to occur in our workflow, we improve patient safety and also minimize the potential risk of expensive lawsuits that can result from labeling errors."

The Leica BOND LIS connection has also eliminated many processes leaving UNC laboratory management and staff very pleased with the current flow of work and the ability to reallocate the saved time to other important tasks. Since the LIS-BOND

interface was implemented, staff have been able to to reallocate their time to other tasks such as:

- Completing special projects
- Better maintaining the laboratory and equipment
- Cross-training other staff in IHC and providing more teaching opportunities
- Implementing new stains
- Reducing their overtime hours

"Time is always better spent when staff work on value-added tasks and doing things right the first time," says Maglione.

UNC Enjoys Reduced Costs While Delivering Better Patient Care

The Leica BOND LIS Interface connection has proven to be a great benefit to UNC's IHC workflow, management, staff and pathologists.

- **Time and money saved.** Tech time is extremely valuable so time saved is money saved! Time is much better spent on value-added tasks. UNC techs do not spend time on associating protocols for each slide loaded on to a Leica BOND or re-labeling slides with LIS labels to get the patient name and case number on the stained slides.
- **Errors eliminated.** Since implementing the interface, errors due to re-labeling slides have been eliminated! As no re-labeling occurs after the slides are stained, there is no opportunity to re-label a slide incorrectly.
- **Staining streamlined.** Because the Leica BOND instrument can read the LIS generated slide label and associate the appropriate stain protocol once the tray is loaded, the IHC staining process is now much easier. There are no errors due to techs associating the wrong protocol and the time saved is reallocated to other important tasks.
- **Cross training.** UNC can now cross-train other Histology Laboratory staff in IHC. Maglione notes that the easier an instrument is to use, and the more error-proof it is, the better results they can get with the same staff.
- **Patient safety improved.** The IHC laboratory at UNC has found a winning solution with the CoPathPlus to Leica BOND Interface cutting costs, freeing up staff time, eliminating errors and delivering better patient care.