Newsbytes

How a geospacial tracking system is closing the distance at Michigan lab

July 2018—This summer, when the Michigan Medicine Department of Pathology moves the last of its laboratories to a new campus four-and-a-half miles from the existing University Hospital laboratories in Ann Arbor, it will kick its new PathTrack Lean-influenced real-time geospatial tracking system into high gear. Developing the system, which will monitor an anticipated 6,000 to 10,000 specimens every day, has been "a monumental effort," says Ulysses J. Balis, MD, director of the health system's division of pathology informatics.

As part of a three-year-long expansion project (see "For one laboratory, a workflow transformation," CAP TODAY, June 2018, page 1), the health system has been moving its non-stat labs, including microbiology, molecular, and anatomic pathology, except for frozen sections, to the new laboratory complex. At the same time, it started sending tissue biopsies and specimens to the new campus for processing and conversion to blocks and slides.

"Some of the slides generated may be returned to University Hospital, creating the need for bidirectional tracking," explains Dr. Balis. "PathTrack will oversee every aspect of this bidirectional tracking process, creating a virtual, real-time geospatial map and tracking history for all specimens generated and shipped by the department.

"After the department move is complete," he continues, "the implementation team anticipates continued development of the web-based PathTrack application, widening its reach to include all off-site clinics and, ultimately, all Michigan Medicine locations that generate specimens intended for pathology."

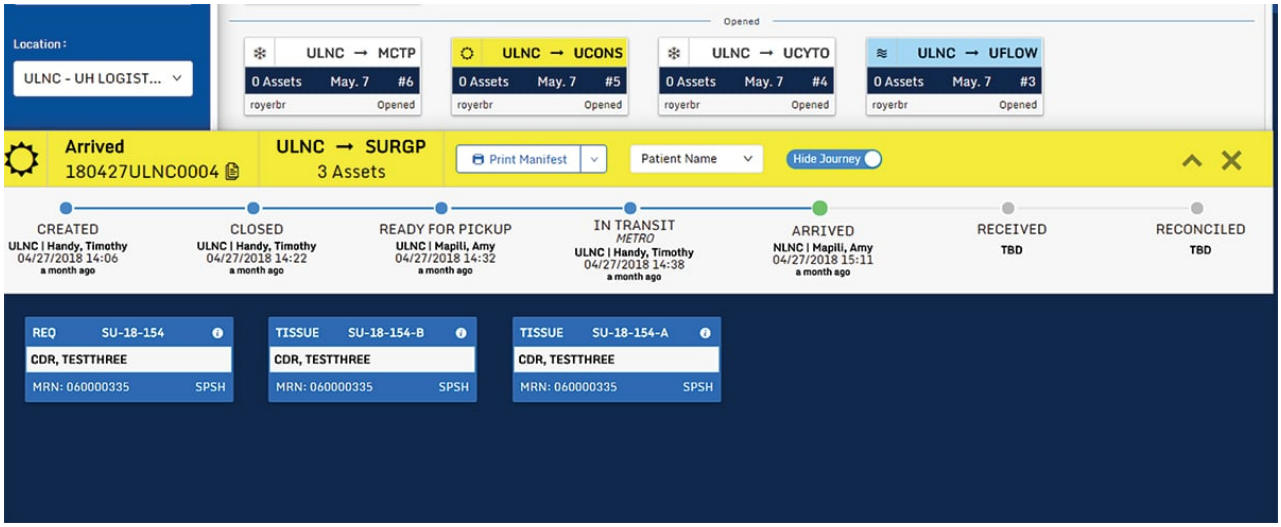
In the early phases of planning the laboratory relocations, the informatics team considered whether the health system's laboratory information system had the capability to track specimens (or patient assets, as they are termed, to encompass items like blocks and slides) in the manner it desired. A pilot test confirmed the team's concerns. "We found out quickly that the LIS wouldn't meet our needs. So we decided to build the application ourselves," says Amy Mapili, project manager for PathTrack. "We've integrated PathTrack to work seamlessly with the SCC SoftLab LIS, which is interfaced with Epic, the Michigan Medicine EHR."

"PathTrack is a bar-coded and very intricate, but elegant, mechanism, a little like FedEx's tracking system," says Charles Parkos, MD, PhD, chair of pathology at the University of Michigan Medical School. The application allows users to create virtual bins from which they can onload and offload assets in real time, minimizing the number of scanning points needed for tracking. "We've modeled our system after proven industry models," Dr. Balis explains, comparing PathTrack's process to that of loading pallets onto an aircraft.

Users can check the status of specimens at any time through the "shipping manifest" created by the program. By tracking the location of each specimen, PathTrack decreases the incidence of lost or misplaced specimens. The laboratories' goal is zero loss of specimens, says Dr. Balis, and having a tool like PathTrack, which can correct errors as well as detect them, puts that goal within reach.

Improved workload planning is an additional benefit, Mapili points out. "With PathTrack, the laboratories can see what's coming, which tells them how big the next batch of specimens will be." For example, if it's known that a specimen is about to arrive, a pending batch with space for more specimens can be held. "A test might take a couple of hours to run, so waiting five minutes while a specimen comes is really helpful for patient care."

The amount of time wasted by conveyance was also scrutinized. "If you can spend less time having people or specimens moving around or being conveyed, you add value to the final product—in this case, the generated lab values," Dr. Balis notes. "Therefore, in designing the initial deployment conditions for PathTrack, we used Lean principles to determine the optimal number and locations of workstations and appliances such as printers and scanners to facilitate specimen tracking, without the scanning activities themselves becoming an undue burden."



By selecting a bin on the computer screen, PathTrack users can see which patient specimens are in that bin and its tracking history. This allows lab staff to provide clinicians with real-time feedback about specimens being processed.

Another Lean principle that was key to PathTrack's development was "pass no defects," Mapili says. "When a bin is first created, it's actually laboratory- and temperature-specific, so if I scan a specimen for AP that isn't [intended] for that lab, the system will give a red visual alert plus an audio alert that it was placed in the wrong bin, and it will prevent the operator from proceeding without removing that specimen." A halt becomes even more important when some labs are off site and some are on site, she adds. "You don't want to route a hematology specimen to another location. Then it could take an hour to get it back."

The gains achieved with the PathTrack project underscore the value of pathology departments having their own internal informatics development capability, Dr. Balis says. "We're hoping our experience will offer a compelling argument for other departments to staff with a critical mass of IT specialists who have enough local expertise dedicated to pathology such that they can internally implement needed informatics solutions on demand."—*Anne Paxton*

Inspirata purchases Caradigm

The digital pathology solutions and cancer informatics company Inspirata has acquired Caradigm from GE Healthcare.
The purchase includes the Caradigm Intelligence Platform and population health management software portfolio for data control, health care analytics, and care coordination and engagement across the health care enterprise.

Inspirata plans to use the platform to expand its flagship offering, Cancer Information Data Trust, which uses anatomic and molecular pathology reports, genomic test results, diagnostic images, clinical data, and other information to generate longitudinal views of oncology patients.

The Caradigm Intelligence Platform aggregates data from disparate systems, such as electronic health records; laboratory, billing, and pharmacy systems; payers; and health information exchanges.
In separate purchases announced earlier this year, Inspirata acquired the digital pathology software provider Omnyx from GE Healthcare, as well as the company Artificial Intelligence in Medicine.

Inspirata, 813-570-8900

NovoPath receives leadership award from Frost & Sullivan

Frost & Sullivan has bestowed on NovoPath the 2018 North American Enabling Technology Leadership Award.

"Over the last two decades, NovoPath's LIS software for AP, simply called NovoPath, has consistently garnered high

ratings from clients for its continual improvement and functional expansion, as well as its ease of use," according to a Frost & Sullivan press release. "NovoPath offers an array of modules inspired by client needs and a strong understanding of technology and market trends."

Among the value-added functionality in NovoPath is a Lean process-improvement module, which tracks specimens from entry to storage, as well as day-to-day activities, and highlights potential areas of improvement; an auto case distribution and staff scheduler feature; and the NovoNotifier patient report delivery system, which delivers patient reports to mobile devices and downloads and prints reports at client sites automatically upon release.

NovoPath, 877-668-6123

Data Innovations introduces new version of middleware

Data Innovations has launched version 8.16 of its Instrument Manager middleware product, which provides enhancements to the software's moving averages module and moving averages desktop.

"This update is an industry game changer," said Data Innovations president Premila Peters, in a press release. "For the first time, we are providing significant guidance and tools on how to set up moving averages."

A tool in version 8.16 calculates the mean or median, standard deviation, and number of results suggested for use for one data point or the "N" in the protocol being set up.

Among the enhancements in the moving averages desktop is a notification bar that provides the status of all protocols being actively monitored, regardless of whether they are being viewed on the desktop. "The desktop now has the ability to scroll backward in time to review moving averages/moving median points that have scrolled off the visual page and the ability to use time as the x-axis," according to the company's press release.

In parallel with the introduction of IM v8.16, Data Innovations created a repository of analyte/algorithm combinations from users of moving means/medians to provide peer-to-peer guidance.

Data Innovations, 802-658-2850

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