

Laboratory Information Systems: Case History

Breaking the Mold

Adapting a one-size-fits-all approach to LIS for a growing NYC medical lab requires a few adjustments.

By Kristoffer Stewart, Associate Editor

Off-the-shelf software suites may fulfill the expectations of many but every application of the technology is different, with no two organizations utilizing it in exactly the same manner. For those that require more than what's included in the box, the key to satisfaction often lies with a willingness to compromise and, sometimes, a leap of faith.



Most entry-level laboratory information systems (LIS) support basic functionality such as patient check in, order entry and results entry, physician and patient demographics, specimen processing and some reporting capability. In addition, they commonly support rule engines, HL7 interfaces with reference labs and electronic medical records (EMR), Web-based order entry/result inquiry and workload balancing, and should include a fully functional billing module. Arguably, the most vital function of any LIS is its ability to collect money for any billable service and to identify where the payment came from, with custom reports that track every detail.

When Shiel Medical Laboratory outgrew its legacy LIS the organization analyzed its previous system and generated a list of must-haves.

Making a Shift

Shiel Medical Laboratory has been in business since 1919, and is one of the country's oldest, continuously operating clinical laboratories and the largest privately-held lab in New York. It services private physicians, group practices, union and industrial accounts, long-term care facilities and home care agencies throughout the five boroughs of the city, as well as Nassau, Suffolk, Westchester, and Rockland counties, and northern and central New Jersey. Shiel maintains a fully operational client services department 24/7, and offers flexible report

distribution options such as courier service, remote printing and the AutoReach Laboratory Interface.

Shiel's management realized their legacy LIS was causing serious connectivity issues within their large physician client base, hampering the lab's performance. The advances of its competition and Shiel's own rapid growth were key drivers in the decision to replace the aging LIS. The lab sought a solution that would put them back on the leading edge of LIS processing and provide the unlimited connectivity they required for their physicians. After a year of due diligence, Shiel decided on a broad suite of scalable and flexible software modules that it felt covered all aspects of clinical laboratory work.

When Shiel CIO Aron Junger joined the company a decade ago, the lab was processing approximately 600 specimens a day — a virtual "mom and pop" medical laboratory. While searching for a solution in early 2001 and evaluating competing vendors and their products, a mutual acquaintance of the lab's CEO led them to a small developer of LIS software that was itself an up-and-coming business — New Jersey-based NetLIMS. "Our billing department was very unhappy with the capabilities of our legacy system," Junger says. "They thought they were losing a lot of additional billing opportunities because of the old system's limitations."

**For more information on
the AutoLims LIS suite**

While some at Shiel examined the LIS during the demo phase and saw challenges, others, such as Gitty Kohn, Shiel's vice president of billing and administration, saw an opportunity and an ideal set of circumstances. Where no billing module of any kind existed, one could be custom built from the ground up without the usual workarounds. "When we selected this company as our new LIS vendor, for me, one of the most attractive features was the absent billing module," Kohn says. "The vendor stated it would develop one according to my specifications. Most of the LIS solutions that we evaluated were missing features I felt were necessary to keep up with all the changes happening in the billing field."

The Short List



During the year-long selection phase, a committee that consisted of Shiel's CFO, CEO, billing manager, lab director and an IT manager, interviewed all of the major LIS vendors. Tod Schild, senior vice president of sales and marketing at Shiel says the vendor they ultimately chose emphasized the flexibility of the system and their ability to customize and build modules specific to the lab's insurance mix.

"What attracted us was the customization aspect and the relatively short time that could be done," says Schild. When seeking reimbursement from large healthcare organizations, he says, "You have to be able to go line by line — test by test — and be able to correctly apply what you're getting reimbursed for

and what you're not. This system allows us to get very specific and seek reimbursement for charges that we were denied in the past because we just didn't have the capability to track those charges down."

Kohn's list of "must-haves" addressed new billing regulations and several insurance contracts requiring sophisticated billing processes. "We had the top two LIS vendors come in and demonstrate their systems. As far as I was concerned, neither of them met the requirements I set for billing," she says. "Neither vendor was willing to customize the programs for us. That immediately ruled out both since it was billing that was driving the need for a new system."

NetLIMS, however, impressed Kohn with their programming savvy. "Even though they had no billing system in place, I was impressed with the overall lab program," she says. Several in-depth discussions with the vendor detailed exactly what Shiel required of the LIS solution. "Since none of the major systems out there totally met our needs, it seemed the best approach for us would be to start from the ground up and build a system to our specifications," she says.

A Fresh Start

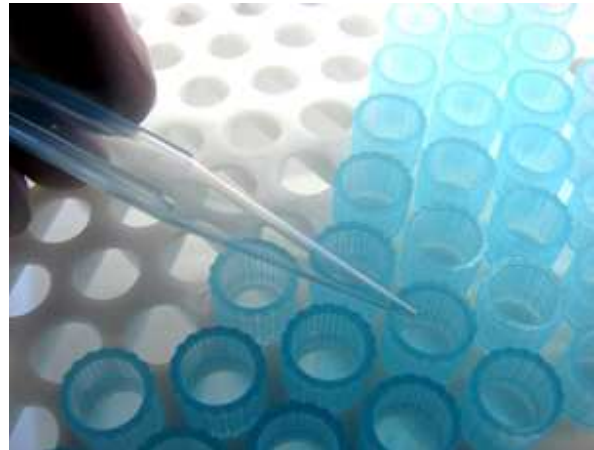
During the week-long demo phase, the selection committee commented on other functionality that was missing, such as remote printing. A few days later, the vendor added that feature. "They demonstrated an on-the-fly ability to learn a new technology or concept and add it into the system," says Junger. An outreach product for physicians accustomed to a shorter, more streamlined process was another functionality the vendor quickly built. "The order entry module was obviously very different because there's no such thing as a diagnosis code in Israel, where the product was made."

Reporting functions were also adapted to the lab's liking, says Junger. "The vendor duplicated copies of our reports into the system exactly as those we had been using. They also set it up to generate not only the text but also the image of the page." Junger says the pricing of the product was substantially less than the competitors', further helping the decision. "We structured a contract that specified what we still needed from the system," says Junger. "There were a lot of safety nets built into the contract when we signed it, but it was still a leap of faith."

Shiel finalized the contract for the AutoLims LIS and implementation and support services on Sept. 11, 2001. Kohn says the development of the new billing module didn't hold up the implementation. "The work began in earnest in early 2002 and the lab system went live prior to the billing module going live, which was completed in early 2003." According to Junger, some of the system interfaces were ready for go-live, while others such as the reference lab interface required post-implementation work. "Instrument interfaces, for example, went quickly and smoothly," says Junger. "But the reference lab interface was an incredible challenge and, in fact, with our previous vendor, our first reference lab interface failed." Successive interface development proceeded with fewer issues and once the infrastructure was in place, "the system did everything we needed."

Results

According to Kohn, Shiel is now interfaced through the new LIS to all of the major insurance carriers for sending claims and receiving payments electronically. "The vendor delivered every interface I sent them in a relatively short time," says Kohn. "The system now enables us to complete more work with fewer staff. Additionally, much of the work that was done manually is now handled by the billing system and this translates into shorter days in A/R."



Schild says the new LIS helps him to quickly redirect his sales reps' efforts wherever he sees a need. "I can quickly get a breakdown of insurance summaries and identify which may not be a good account for us. It allows me to immediately identify the strengths and weaknesses of a particular account. We're capturing at least 10 percent more in reimbursements from our insurance providers."

Schild says the legacy system hampered them with limited lab processing capabilities and lacked client connectivity technology. It also had an inefficient billing module and provided limited flexibility for customization. "Our new LIS significantly improved all of these activities, helping us better serve our clients and making us a better, more profitable lab," says Schild.

The most notable feature of the new LIS in Schild's opinion is the Web-based AutoWeb module. It provides clients with an interface that allows them to obtain lab results on their patients via the Internet. "It's an extremely user-friendly access tool and we have doctors who rely on it heavily."

In addition, a variety of sales representative monitoring tools are available via AutoWeb. These tools assist Schild and his representatives to track new and existing clients, including specimen count and test statistics as well as pending results. "The system allows sales reps to review the accounts they manage, plug in specific dates and get a summary report of all specimens that have yet to be reported for any date range. They can then notify the lab to prioritize processing of these specimens."

AutoLims' XML/XSL technology enables the lab's sales team to customize requisitions and results reports to gain new accounts, as well as the ability to incorporate graphs, pictures, instrument printouts and cumulative reports. Additionally, several tools allow them to monitor and grow existing accounts. "It's one thing to get a physician to agree to set up an account," says Schild. "It's another to get them to actually send you specimens, or the right specimens."



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CIO

AutoWeb allows Shiel's reps to regularly view the specific number of requisitions and number of tests per requisition that a client sends in. In addition, the AutoCommissions function enables them to view the type of insurance an account uses or any bad debt that may exist. With this information, they can point the clients in a better direction, thereby increasing their profitability. "AutoCommissions also enables us to deselect any less-profitable accounts, helping to increase our bottom line," says Schild. "These tools help us grow our existing business and keep our laboratory financially viable."

Schild says their new LIS is increasing the lab's competitiveness in the New York market and helping Shiel to outperform its competition. "The vendor designed from the ground up what we consider to be a superior and flexible system," says Schild. "For us, it has brought all phases of laboratory operations under a single umbrella." The new LIS provides technical lab operations, client and lab connectivity, ancillary lab operations — including logistics and supply inventory — instrument interfaces, referral labs, physician practice management and EMR systems, and client and sales monitoring functions. Additionally, it provides support for the complicated and constantly changing medical and insurance billing requirements of today's healthcare environment.

Moving Forward

Schild, Junger and Kohn expect to continue improving the functionality of the new LIS. "We're upgrading to the latest version and we're very excited because it's going to add to the capability we now have," says Schild. The pathology capabilities are what Schild is most looking forward to. "Currently, our pathology reports really aren't that competitive because a lot of the specialty pathology labs offer the photomicrographs and have better report formats," says Schild. "We expect the upgrade to give us the edge that we need to be even more competitive and to surpass some of our pathology competitors." The upgrade is expected to take approximately three months to complete.



"We have great pathologists and we're hoping to improve our market share in the pathology market," says Schild. "Currently, our medical laboratory provides a range of services but we want to focus more on pathology, gastro and urologists. That's what the upgrade to the new system will allow us to do."