

Receiving Is Believing

ROI is the best kind of lab result. Lab managers who lobby for increased lab IT should know what types of return on investment to expect from an organization's financial investment.

By Kerry Foster and Ginger Wooster

While laboratory information systems (LIS) vary in scope and functionality, for the most part, an LIS should generate a return on investment (ROI) for the purchaser by saving time, reducing costs, minimizing errors and increasing revenue. But, lobbying for a new or replacement LIS and convincing management of that ROI remains a challenge for many laboratory managers.

Fortunately, more and more clinicians realize the value of information systems and are embracing electronic medical records (EMR) over the traditional paper records. From the laboratory manager's perspective, an increase in EMR system installations should make it easier to justify the need for and the installation of an LIS or an LIS replacement. The relationship between the LIS and the EMR is a concrete one: Without a lab system, there is no way to electronically populate the EMR with lab results.

With a fully integrated LIS, lab results and patient data flow bidirectionally, eliminating manual entry into the EMR. Also, EMR interfaces allow order entry from remote locations, and providers can view results without

contacting the lab, which eliminates time-consuming phone calls. This will ensure that the testing laboratory electronically receives the necessary billing and clinical information, and in many cases, samples will be delivered, already bar coded and ready to run.

As for billing and reimbursement, some LISs offer a billing interface that will drop clean lab charges directly into the EMR or billing system. This reduces errors by eliminating the need to hand-key charges and ensures that complete charge information is captured.

Overall, an LIS eliminates a lot of manual entry, which is where organizations run the risk of reporting errors. One of the most important areas of return is in risk management and reducing the organization's exposure to medical error. Any opportunity to reduce risk by reducing the likelihood of clinical errors, legibility errors, missing lab results and long turnaround times is an opportunity that should be considered from the outset.

Recapturing Revenue

One area where LIS users should expect to see an immediate return is in additional revenue that stems from reducing the number of write-offs due to improper diagnosis coding. An LIS should screen ICD-9 codes, testing frequency and experimental procedures during order entry and should flag all potential reimbursement issues. If a problem is identified, the LIS should generate an ABN (advance beneficiary notice) and assign the appropriate modifiers if the ABN is signed or not. Users should expect that rules-based technology will determine whether to add or suppress billing/CPT codes to reflect the testing performed and then automatically drop the billing record into the patient's account.

Brenda Seely, the laboratory director for DeKalb Memorial Hospital in Auburn, Ind., can speak to the benefit of reducing write-offs. DeKalb Memorial is a 46-bed rural hospital doing about 300,000 tests per year. The organization handles a sizable amount of outreach with labs in smaller towns, and with nursing homes, doctors' offices and home draws. In fact, about 60 percent to 65 percent of its testing is outpatient testing. Seely says that one of the biggest reasons for installing an LIS "was the medical necessity screening and the rules-based technology that could identify and track problem orders. The result browsers we set up in the LIS caught the problem orders before we sent them to billing and reduced our errors for write-offs by 30 percent."

More Missing Money

Another area where revenue can be realized is in missed billing. Many lab charges for pap smears or add-on tests, such as urine cultures, manual differentials, Taxo A, sensitivities and micro IDs, are missed due to inefficient paper processes for charge entry. Also, due to insurance company contracts, tests can be routed to the wrong lab, and that

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reimbursement is lost. A rules-based technology built into an LIS flags these errors for review.

For many healthcare organizations, there is a lot of potential revenue tied up in the accounts receivable department due to improper diagnosis codes and other billing errors that result in denied claims. Not only are revenue delayed and cash flow affected, but billing and laboratory personnel are kept busy rectifying each claim. With an LIS, many of these errors can be identified during order entry, and these delays and inconveniences can be reduced or even eliminated.

Lynda Carroll is the laboratory supervisor for Family Care Center of Arlington in Jacksonville, Fla. In 2002, Family Care was a two-site, multipractice (family, internal medicine and pediatrics) medical group with 21 physicians and one lab. Today, Carroll's lab serves six sites and 37 physicians. "The medical necessity screening and CPT coding we do at the point of order entry in our LIS has reduced the number of days our claims are in accounts receivable from 45 days to 28 days," Carroll says.

Reduce FTE Expense

One of the most recognized returns on an LIS investment is the reduction of FTEs (full-time equivalents) and/or being able to redirect those FTEs to additional work.

At Family Care Center, Carroll was no stranger to lab information systems. Before replacing an earlier system in 2002, she worked with a system that lacked an interface to her reference lab. The organization processed about 150,000 tests with 14.3 FTEs. But by the time Family Care had grown to 37 physicians in six sites in 2005—and replaced its LIS—the organization was processing more than 250,000 tests with only 12.5 FTEs.

Instead of having to visit every site once every two weeks to review and sign off on quality control, Carroll says, "Quality control is a one- to three-hour a week review for me—from my computer and my own desk—for four offices. This has saved me between five hours and eight hours each week." Also, reference lab paper work and data entry used to require 40 hours of labor a week, and these were eliminated when Family Care Center established reference laboratory interfaces with their new system.

LIS users should expect savings from the system's ability to eliminate a number of manual processes, reducing labor expenses and mitigating the risk of error. An interface to the billing system, which eliminates manual data entry in the billing department, is just one example, and frankly, is the tip of the iceberg.

Within the lab, electronic interfaces between the EMR, the practice management system, analyzers and reference lab(s) allow data to flow between systems and eliminate substantial and duplicate manual entry of demographics, insurance, orders and results. Through these interfaces or by using a Web-based lab portal, electronic results can be

reviewed remotely. This eliminates faxing, filing and the numerous phone calls back to the lab to retrieve misplaced paper results.

Louise Rodatz-Ristick is the laboratory manager for Salem Township Hospital, in Salem, Ill. The lab serves the hospital and a network of clinics scattered throughout southern Illinois. "We have a very large outreach program, and testing is ordered via our LIS. We don't have to interpret poor handwriting from paper requisitions, and we get the right coding on the order the first time. I can review incoming orders and adjust scheduling accordingly. Having our Web-based order entry frees up FTEs for additional work or adding new tests."

New Testing Revenue

One area frequently missed in ROI calculation is additional testing that can be added because laboratory personnel have been freed up from manual administrative and clerical tasks. At Salem Hospital, Rodatz-Ristick reports being able to "add revenue with a new instrument that gave us six additional tests we weren't doing before."

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Chris Gallinger is the laboratory manager for Associates for Women's Medicine, an OBGYN practice with three locations located in Syracuse, N.Y. She describes her pre-LIS environment as "crazy, with all our paper and manual logs. Actually, it was our practice administrator who drove us towards the purchase of our LIS. We went live in late 2005 and are now processing more patients with half as many FTEs. We are looking at doing more tests because we have the extra time to do them."

Using the analytical data mining capabilities of an LIS, users can identify in-house tests that can be preformed more cost effectively at the reference lab. Order entry rules allow users to automatically route poorly reimbursed tests to an outside lab if payers reimburse less than it costs a lab manager to perform the tests in-house.

Additional Savings

Carroll of Family Care Center of Arlington says that "with our old LIS and without an interface to our reference lab, we would draw samples on Monday and have complete results back to the physicians on Thursday or Friday. Today, we draw today and have results back by

noon." In a hospital setting, this means contributing to a reduction in patient bed days and increased efficiency in the emergency department.

There also may be savings in other consumable supply costs, such as the cost of sample cups/aliquot tubes used on instruments. If the instrument reads bar-code labels and the specimen can be placed directly on the instrument, this cost is greatly reduced. In addition, users should quantify the cost of wasted phlebotomy tubes due to duplicate orders and/or incorrect tubes drawn.

Rodatz-Ristick of Salem Hospital also reports easier inspections, due to documentation of quality control in the LIS. "The Levey-Jennings graphs shows our QC and notes of all changes are available in the comment field. Through the data browser, it's easy to pull up the necessary changes and comments. It has eliminated the manual search for reports and has even helped us improve our inspection score because everything is automatically documented."

One of the biggest difficulties in helping laboratory managers justify an LIS purchase is access to historic data. Many organizations don't keep track of the information, and the amount of write-offs due to medical necessity

seems to be one of the toughest figures to track down. However, once the cost savings and increased revenue are identified, users can compare these against the cost of the LIS. They can amortize the cost of the LIS over at least five years and possibly longer with LIS vendors who regularly include upgrades.

Information systems can reduce errors and increase productivity, and that is a win-win for both healthcare staff and their patients. When information technology can add to that demonstrated cost reductions and increased revenues, it represents an investment that generates a strong return.



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