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Unified AP/LIS—‘one system, with one database’



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It’s widely thought that no information system exists in which anatomic and clinical pathology data are combined in one patient file. But Curt Johnson begs to differ. Orchard Pathology, says Johnson, vice president of marketing and sales at Orchard Software, is in fact one such system.

“Can you go into one patient file and find all the laboratory data? That’s one of the keys,” he says. “You don’t want integration. You don’t want an interface. You want one patient file, one database. That becomes difficult, and that, I don’t believe, I’ve seen from anybody but us.”

X-Cell Laboratories of Western New York began, last June, using Orchard Software’s Orchard Pathology AP/CP computer software system to improve its pathology workflow and reporting capabilities, says general manager Mike McLaughlin.

X-Cell, a specialty lab that provides anatomic pathology and supplemental sexually transmitted disease testing, has Orchard Pathology configured to the lab’s unique workflow. All versions of Orchard Pathology allow users to access AP, CP, and molecular test results and patient information through a single database. “It’s really two software products that work hand in hand with one another to manage the front- and back-end processes,” McLaughlin says. Orchard’s Copia outreach and electronic medical record connectivity system controls the front and back ends, while Orchard Pathology manages all the laboratory data.

“It’s very sophisticated, and there is a lot of flexibility,” McLaughlin says. “With Orchard Pathology and Copia, there is no ‘out-of-the-box.’ It’s designed from the ground up, based on the customer’s needs.”

The ability to consolidate AP, CP, and molecular test results in one database is becoming increasingly necessary with the convergence of clinical, anatomic, and molecular laboratories and because of the government’s push for EMR adoption, Johnson says. He calls Orchard Pathology a “complete system” for AP and CP. “It is one system, with one database, with everything designed as all-inclusive—not integrated, not interfaced.” Most companies that sell AP, CP, and molecular systems do not provide one entwined document containing all of a patient’s data, Johnson claims. Instead, with most other laboratory systems, the test results reside in separate databases that must be interfaced. “If you’re in the AP system, you can’t see the CBC,” Johnson says. “If you’re in the hematology department, and you’re looking at the CBC, you can’t see whether or not they’ve ordered a bone marrow or have done a biopsy. With our system, you can.”

Orchard Pathology organizes test data discretely, into fields, meaning the data can

be mined. “We knew that structured data were going to be important because we already interfaced so many EMRs because of our physician office lab background,” Johnson says. “We knew that the anatomic pathology data had to be structured because we’d gone through the same thing when we did microbiology.”

Orchard expects EMRs and the convergence of clinical, anatomic, and molecular labs to be the “way of the future,” Johnson says, and thus it made sense for the company to build a complete diagnostic system upon the same database as Orchard Harvest LIS. Orchard began offering the system in 2006 as Orchard Pathology. In this unified AP/LIS, all test data are accessible in one report. “It’s quantifiable, it’s codified, and it’s discrete,” he says. “So we have a real advantage when it comes to the pathologist being able to integrate their work into other systems.”

Says X-Cell’s McLaughlin: “Everything [in the system] is really designed to be a mineable data point. You can customize your reports the way you want them to be; you can mine the data out of Orchard Pathology that you want to mine, how you want to mine it.”

The ability to automate manual lab processes with Orchard Pathology is a chief reason X-Cell adopted the system, McLaughlin says. For example, the lab’s former software system could not manage reflex human papillomavirus testing for the cytology department. “We were managing it all manually,” he says. “So when a Pap smear was abnormal, and the customer had ordered a reflex HPV, we were holding the Pap smear result manually.” The department would manually create worklists for the reflex HPV, and then manually combine the HPV and Pap test results to send to the lab’s customers. The problem? “They don’t want to get their Pap smear and then two days later get the HPV, which makes them have to pull the patient’s chart twice,” McLaughlin says. “They want to get the Pap with the HPV reported together at the same time.” Manually managing this process was tedious, especially as test volumes grew. And because people make mistakes, X-Cell’s customers would sometimes get a Pap test result without the HPV result, or vice versa.

Orchard Software helped X-Cell to automate this tedious, often error-ridden, manual process. The company worked with McLaughlin and his staff to configure Orchard Pathology so that when one of the lab’s customers orders a reflex HPV test, a Pap test is run, and if the Pap test result is abnormal or ASC-US (atypical squamous cells-undetermined significance), the software system automatically places an order for that reflex HPV test onto the lab’s worksheet.

“It took some time, some testing, and effort, but it works very well. And you don’t miss things,” McLaughlin says. The system knows it holds that Pap test, and it doesn’t report that result until the HPV result is ready. It “then releases the two results together—page one is the HPV and page two is the Pap. If there are other tests ordered on that particular patient, those results are reported independently as soon as they are released.”

But being able to configure the software means it can take a lot of time to set up the system. It took about a year and half for X-Cell—working with Orchard—to fully install and implement the Orchard Pathology package. And, McLaughlin notes, as is the case with any sophisticated system, there is a learning curve. “You really have to spend a lot of time thinking about your workflow and begin to develop an understanding of how you’re going to integrate the software into your workflow and make it do what you want to get the biggest bang for your buck.” The complexity of the installation at X-Cell may have made Orchard realize what its AP system was capable of doing, McLaughlin says. “The bottom line is that it is very good software, but it does require a lot of work.”

While Orchard Pathology's single-database structure and broad range of capabilities mean that installation and training can be a long process, Johnson says the software's benefits far outweigh the setup time. "As the outside forces on the laboratory say 'You must continue your integration' and 'We're going to move forward with an electronic medical record' and 'Everyone has to be able to communicate and exchange information,' we are already doing this with discrete data."

Brendan Dabkowski is CAP TODAY associate editor.