More Labs Turning to Data Analytics
To Improve Operations and Population Health

Data analytics took baseball by storm a little more than a decade ago. It is among the reasons why the perennially broke Oakland Athletics contend for a pennant nearly as often as the cash-laden New York Yankees.

The trend of using software to minutely crunch numbers is now beginning to take hold in places where chemistry is something that occurs at a test bench rather than in a clubhouse. In the lab setting, data analytics is being used for issues ranging from operational tweaks to population health initiatives, and it is creating a boon for the companies that offer suites that focus specifically on lab operations.

Viewics, a California firm that was formed only five years ago, has seen its client roster increase about sixfold over the past 18 months and its workforce multiply fivefold over the past year. It offers a variety of software products specifically aimed at clinical laboratories and anatomic pathology practices.

“They’re one of the couple of big players in the lab space,” said Barry Portugal, president of Health Care Development Services Inc. in Nokomis, Fla. “They offer exceptionally valuable information.” He also mentioned that another big player is Visiun Inc. in Ann Arbor, Mich.

Portugal’s firm began offering benchmarking data for laboratories back in the mid-1980s, but with personal computing just in its infancy, most of the number crunching occurred via written questionnaire.

Financial, Operating Environment Creates Need

According to Portugal, the need for rapid data analytics has become critical in the lab space. The reasons are numerous, but the biggest one is reimbursements are continually being ratcheted down or moved from fee-for-service to managed care rates by both government and private payers and the growth of accountable care organizations. In such an environment, the demand for actionable information that can make an operation more efficient and therefore improve the bottom line has grown tremendously.
Moreover, the operational dynamics of labs have also changed.

“You have hospital consolidations that result in lab integrations, with many different testing platforms, and you can do far more tests on a single machine than you could in the past, while the number of machines has decreased,” Portugal said. Yet just five years ago, the vast majority of hospital labs could not calculate the cost of performing a specific test.

That approach appears to be changing rapidly. “I would assume all labs all do basic [analytics] at this point,” said Shahrzad Grami, a data and processing manager for Health Diagnostic Laboratory (HDL), a firm itself that barely existed five years ago.

The Richmond, Va.-based HDL, which performs about 200,000 tests daily, uses data analytics to determine if its test platforms are operating at peak effectiveness and to study ordering trends among clinicians for its new tests, among other uses. “I’ve seen decisions change” as a result of studying the order data, Grami observed.

Rapidly scrutinizing provider behavior is one of the benefits of using data analytics. “If a physician or customer is exhibiting odd behavior and their ordering volume has dropped off 30 percent all of a sudden, this is a good way to get in front of the issue and talk with them before they go off to [another lab],” said Tim Kuruvilla, Viewics’s vice president of sales and marketing and one of the company’s co-founders.

Viewics’s software does more than that, however. It allows users to determine times of day when test arrivals are at their peak in order to schedule employees more efficiently. It can help weed out errors in the ordering or testing process and can also determine how long it takes to process a specific test.

Cottage Health, a three-hospital system in the Santa Barbara area of California and one of Viewics’s customers, used to have a member of its IT staff devote about half of their time to pulling out data and creating reports just for Pacific Laboratory Services, its in-house lab. Now, they spend perhaps 5 percent of their time on that task.

Portugal noted that one of his clients, a multihospital system in the Midwest, used data analytics to determine the level of productivity at its labs and found vastly differing levels between them.

“By employing the analysis of their lab data analytics, they were able to reduce staff by at least three to four [full-time employees] by changing their workflow. They would not have been able to do that in the past,” he said.

Data analytics are also useful in reducing unnecessary and duplicative testing, as well as blood management. In some instances, large hospitals or hospital systems can reduce their blood use by 20 percent or more and potentially save millions of dollars a year, according to Portugal.
Also Useful for Population Health

Data analytics can also be used for population health measures, which in turn can be used to demonstrate the “value-over-volume” paradigm shift being experienced by the laboratory sector.

HDL, for example, uses data to rate the health of the patients being treated by the physicians who purchase their testing services, which focus primarily on wellness measures. The doctors receive an annual report that compares the health levels of patients being treated by one physician in a practice versus another, using the lab’s well-known green/yellow/red reporting metrics.

“We want to give them a sense of how they’re doing,” Grami said.

Another example of how this is being used is at the Joint Venture Hospital Laboratories (JVHL), a network of more than 120 hospital-based laboratories in Michigan and Ohio. JVHL collaborated with Medivo, a New York City-based laboratory data analytics firm. They focused specifically on 75,000 diabetic patients and their frequency of testing for blood sugar levels, and used testing data to construct the management climate for the disease.

The rate of noncompliance at the start of the collaboration ranged between 54 percent and 74 percent, depending on the physician group, and only about a third received proper follow-up care based on American Diabetes Association guidelines.

Although JVHL has been providing data to its members since it was formed in the mid-1990s, it is beginning to put it together and present it in a way that would compel improved health among the patients who are being tested.

“We’re trying to look at data that drives accountability,” said John Kolozsvary, JVHL’s executive director. However, Kolozsvary added that JVHL has yet to reach a level of granularity that would allow its members to create ground-shaking operational efficiencies.

For those labs that do decide to use data analytics, it is not an inexpensive move. Although Kuruvilla said that pricing ranged widely depending on laboratory size and that Viewics’ pricing is structured as a subscription and does not require capital costs, he did not disclose specific numbers. Portugal said installing a suite and reporting dashboards runs between $40,000 and $150,000.

As a result, Portugal noted that lab executives need to make sure that employing data analytics to improve the bottom line should be focused on operational, service, and financial performance elements.

In other words, Moneyball for the national pastime, and money for the laboratories.

Takeaway: Data analytics can potentially be used to streamline laboratory operations and improve the bottom line, as well as help prove the value-versus-volume case that needs to be made to both payers and providers.