

►► **CEO Summary:** *It is always challenging to ensure consistency and high productivity across the different labs in a consolidated lab organization. To help staff focus on quality and efficiency, Alverno Clinical Laboratories LLC uses Lean methods to improve quality and timely delivery of lab results in its regional core laboratory and the labs in the 27 affiliated hospitals in Illinois and Indiana. This strategy helped Alverno save almost \$11 million last year while turning out 14 million billable tests.*

Vance, CEO and President of the Alverno laboratory organization, has documented annual savings of \$10.9 million compared with what it would cost to run these 27 hospital labs without the consolidated approach and without emphasizing standardized “best work practices” across all laboratory sites.

One important factor in this success is because Alverno deployed and actively uses Lean and Six Sigma methods in 15 of its 27 hospitals. Another critical success factor is the non-stop management effort to improve communication among the different laboratory facilities. Alverno also uses an innovative charge-back system to fund laboratory operations. It is a particularly effective tool for

consolidated laboratory operation manages 36 sites, including 27 hospital labs, the central lab in Hammond, Indiana, and eight patient service centers.

“Last year we did about 8.6 million billable tests,” stated Vance. “With the addition of the hospital labs from Resurrection Health Care late last year, we are projecting that number to increase to 14 million billable tests as those laboratories are fully integrated into the Alverno lab organization. We believe our strategy of an integrated lab model is one key reason for our success.”

The decision to operate all the hospital laboratories using an integration strategy was decided very early. “Before the two original

Management Strategies to Share “Best Practices” Across All Lab Sites

Implementing Best Practices Across 27 Hospital Labs

NOWADAYS, HOSPITAL LABORATORY ADMINISTRATORS AND PATHOLOGISTS responsible for multi-hospital laboratory organizations are faced with several challenges. How should laboratory operations be consolidated and standardized across the different lab sites? Can laboratory “best practices” be introduced into each of the hospital labs in a way that makes the laboratory organization a national leader in operational performance and financial success?

A good place to look for answers to these and other laboratory management questions is **Alverno Clinical Laboratories, LLC**, and **Alverno Provena Hospital Laboratories, Inc.**, headquartered in

Hammond, Indiana. This laboratory organization is made up of a competitive, for-profit lab company (Alverno) and 27 hospital laboratories owned by three Catholic healthcare systems.

As one of the nation’s largest consolidated and integrated hospital lab organizations, Alverno is notable just for sheer size. Its 27 hospital labs are spread out across Indiana and Illinois. But equally notable are its management achievements.

Data from **Management Insight, Inc.**, a laboratory consultant in Michigan, show that Alverno’s collective lab organization has among the best turnaround times among 41 similar consolidated lab operations. Further, Cheryl L.

obtaining capital when laboratory equipment needs are identified.

► **Merger of Three Systems**

All of these results are possible because Alverno gets full support from the three Catholic hospital systems that merged over the past several years to form one of the largest hospital networks in the United States. In 2004, the **Sisters of St. Francis Health Services** (12 hospitals) in Mishawaka, Indiana, merged with **Provena Health** (six hospitals) in Mokena, Illinois. Last year, **Resurrection Health Care**, which runs eight hospitals in greater Chicago, joined the integrated labs. Now Alverno’s

Catholic health systems (the Sisters of St. Francis Health Services and Provena Health) merged, they undertook a due diligence project to decide if it made sense to put the labs into an integrated lab model for all of the hospitals from both systems,” Vance explained.

“At the time, both the Sisters of St. Francis and Provena Health each had an integrated laboratory organization. But internally, each of these two organizations had slowed their progress toward full integration,” she added. “Lab integration efforts were almost at a standstill at both health systems at the time of their merger.

“Post-merger, our team of lab managers was held responsible for the implementation

and quickly came to agreement to pursue the strategy of having one large integrated lab to serve both health systems,” explained Vance. “The two healthcare systems engaged lab consultants to investigate that laboratory business model, identify the potential cost savings, and evaluate the operational impact such an integration strategy would have on how labs delivered lab testing services.

► Proposal Calls for Core Lab

“Following their evaluation, these consultants met with the board of directors and recommended a single, integrated laboratory organization, with one large core lab, to serve the entire system,” noted Vance. “Once the board approved that plan, its decision helped bring the administration at each hospital into support for the laboratory integration strategy.

“In addition to Lean, we use many other management tools,” Vance explained. “We’ve always used the plan-do-study-act (PDSA) tool and have trained laboratorians in Six Sigma as well.”

“This support by the board and the individual hospital administrators was a key reason our lab integration program advanced rapidly,” recalled Vance. “Another factor that speeded the process was that we had an existing core lab, located relatively centrally, that was already built and had adequate capacity.

“In addition, it was our firm belief that most efficiency comes from a single location without building duplicate administrative space,” she added. “Further, with labs at many locations, there is the challenge of tracking specimens and handling add-on tests. Since we support a 24/7 lab operation that serves many different clinical sites, we intentionally wanted to concentrate testing at a central site.

“In this first integration phase, we speedily implemented an acute care services lab at each of the 18 hospitals,” Vance noted. “The balance of clinical testing, along with microbiology, was performed at the core laboratory in Hammond, Indiana. All of this lab integration work was achieved in one year; during 2005.

“Once that major integration of lab testing across the 18 hospitals was achieved, our strategic focus then shifted to seeking the economies of scale inherent in such a consolidated laboratory model,” she continued. “As currently structured, each of our 27 hospital laboratories performs about 70% of the inpatient and outpatient specimens originating at that site. Specimens that do not need an immediate result are referred to the core laboratory, as is all molecular testing and microbiology testing.

“Next, with 27 hospital labs stretched across two states, we quickly recognized the importance of having consistent work practices in each lab facility,” observed Vance. “At the time of the Provena/St. Francis merger, three Provena hospital laboratories were actively implementing Lean quality management methods. It was clear from the early results generated by Lean that we should move rapidly to introduce Lean methods into the other hospital laboratories. To date, we have Lean procedures now running at 15 of our 27 hospital labs.

“In addition to Lean, we use many other management tools,” Vance explained. “We’ve always used the plan-do-study-act (PDSA) tool and have trained laboratorians in Six Sigma as well. We find that Lean helps eliminate waste, which then allows us to use Six Sigma to improve the process.

“As with any new operational approach, introducing Lean methods to laboratory staff can be both complicated and challenging,” noted Vance. “But the Lean introduction goes well, in part because we did it differently than most organizations do. It would be too costly to have a consultant

At-A-Glance | Alverno Clinical Laboratories, LLC

Core Laboratory: Hammond, IN

Participating Labs:

- Sisters of St. Francis Health Services (12 hospitals)
- Provena Health (6 hospitals)
- Resurrection Health Care (8 hospitals)

Alverno Clinical
Laboratories LLC

Annual Test Volume: 14 million

Outreach Volume: \$13 million

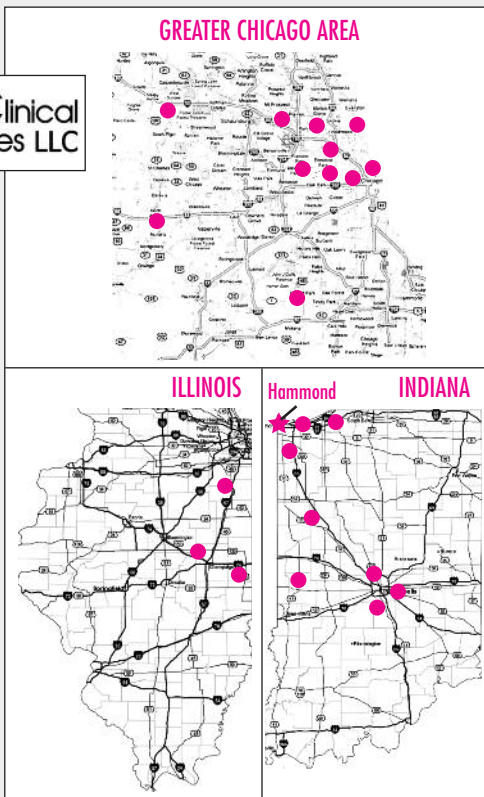
Pathologists: 55

Employees: 1,600

Web Site: www.alvernoclinicallabs.org

Now one of the nation's largest regional hospital laboratory organizations, Alverno Clinical Laboratories, LLC, includes a regional core laboratory, 27 hospital laboratories, and a network of patient service centers in both Indiana and Illinois.

The maps at right show the location of the Alverno Core Laboratory in Hammond, Indiana and most of the 27 hospital laboratories located throughout Indiana and Illinois.



instruct the staff in each of 27 hospital labs on how to use Lean methods.

“To make Lean part of our intrinsic operations, we brought in a consultant to do a ‘train-the-trainer’ process at one of our sites,” commented Vance. “As these individuals become knowledgeable and proficient in Lean methods, they were moved to other departments and other laboratory sites, where they trained colleagues. Now, within the Alverno laboratory organization, we have a surprisingly deep pool of skilled Lean practitioners.

“In parallel to this effort with Lean, during the past year, we expanded our quality department,” Vance said. “We started by sending three system quality directors to the **University of Michigan**

School of Engineering Lean program. Now, those three people in the organization are certified in Lean tools and techniques. Thus, our strategy was to use Lean consultants to develop our own skills in Lean management, then use these skills to train a growing number of staff members.

“This all happened with the full support from our hospital administrators,” she added. “They recognized the value of using Lean to reduce variation and have consistent quality and service at all of the locations. They knew that consistency and quality generates savings.

“Since introducing Lean, we have standardized our processes and showed those lab sites that have not yet implemented Lean the value of improving our metrics

in several areas. In particular, we do well in lowering turnaround time (TAT), improving service levels provided to our emergency department, and conducting morning draws.

“Reducing variation and having consistent service levels helped us produce other impressive results,” Vance continued. “Significantly, the added productivity allows us to reduce staffing through attrition or by reassignment to higher value services within the lab.

“By using Lean to create a uniform work flow across all laboratories, we’ve realized substantial benefit from standardizing equipment platforms in hematology, chemistry, and immunology at all locations,” she said. “Another benefit of standardized equipment and using Lean work flow is that we can now more easily move staff as needed among different lab facilities to support leaves or vacations.

► Flexible Staff by Design

“Over the next year or so, we plan to train a pool of technologists or technicians to be able to work in any of our facilities instead of just one. Then we will use this pool of staff (who would agree upfront) to move from lab location to lab location as needed.

“We know from our own internal work with models of productivity specifically in technical areas, that our staff productivity is very high compared with similar operations in other labs,” Vance explained. “Our productivity metrics are used to identify best practices at different lab sites and compare this performance to other sites. Where we spot the opportunity for improvement, we send in a Lean team to help that lab’s staff identify opportunities to improve and further standardize work flow by incorporating Alverno’s internally developed ‘best practices’ techniques.

“All this work on staff productivity helps us to operate efficiently,” she added. “For example, in 2005, when the two

organizations came together, we were projected to have reductions of 34.5 full-time equivalent (FTE) staff. As it turned out, we were able to accomplish almost all of those reductions through attrition. We started with 1,198 employees in 2005 and added more lab facilities when Resurrection Health merged with us in December. Now we have 1,600 employees, but have maintained increased productivity across this larger number of lab sites.

► More In-House Testing

“Another benefit from our Lean implementation is an expanded in-house lab test menu,” stated Vance. “In the 30 months since the September 2005 formation of our integrated laboratory organization, we have introduced more than 120 new assays, performed at the core lab facility. This has reduced the cost of send-out testing while improving the turnaround time for reporting results to ordering clinicians.

“Collectively, these management strategies helped us save almost \$11 million as of the end of last year,” Vance commented. “These savings are based on the original projections the consultants gave us when Alverno’s integrated laboratory organization was formed. It was estimated that, by the end of year two, savings from lab consolidation and standardization would total \$3 million. The actual savings were \$10.9 million at the end of 2007, paired with measured increases in the service performance of our different laboratory sites.

“We have documentation that our labs’ service metrics to other clinical departments are among the best in the nation,” continued Vance. “Consultant Thomas Joseph of Management Insight, Inc., was asked to evaluate our turnaround times for emergency department testing for troponin and for our morning draw testing.

“He compared our performance to that of 42 other hospitals that similarly

utilize a core lab model like us,” she commented. “Almost across the board, our hospital labs were in the upper quartile. So, we are doing something right. For our labs to be among the best performers when benchmarked against other external integrated labs was significant. Our board of directors was very pleased to learn that information.

“One significant challenge we face every day is having a consistent management approach in each facility,” Vance continued. “Of course, Lean helps us address that problem, but obviously, communication is critical when you have so many labs over such a large area. To ensure that communication is getting down to all levels, we have a monthly newsletter and quarterly town hall meetings with all staff. Also, we conduct one-day meetings with all site leaders every month.

“We know from our own internal work with models of productivity specifically in technical areas, that our staff productivity is very high compared with similar operations in other labs,” Vance explained.

“Alverno also had a system quality team of three directors who are Lean certified,” she added. “Often one of these three individuals heads up the quality or best-practice initiatives. We also use our monthly site leader meetings to share ideas and improved processes. These are ways that we disseminate our best practices throughout our laboratory system.

► Pillars of Service Identified

“Further, during training and development and in every staff evaluation, we hold staff accountable for their results,” Vance continued. “Each lab department sets goals and objectives each year, then managers help every staff member hit his or her targets. Another step we take is to

look for the most qualified individuals to move into leadership positions. Having seniority or good clinical skills is not an automatic qualification to be an effective leader.

“We also manage to the core values of our health system, which works well. We emphasize the pillars of service that the board has identified,” observed Vance. “Those pillars are service, quality, stewardship, people, and growth. Under each pillar, we aim for continuously improved outcomes.

“Under quality, for example,” noted Vance, “a staff member would indicate that he or she has made a commitment for TAT for ED and for morning draws. Under stewardship, we would aim to show productivity increased as compared with other sites or we would show how each facility is performing, relative to its budgets and compared with the organization’s budget.

“Given that we have so many labs over such a large area, it was important to have a consistent management approach in each facility,” Vance continued. “But also, because we’re such a new organization, we can prioritize our standards and establish timelines that other, older organizations may struggle to implement. When we made the decision to have standardized equipment, that triggered standardization, wherever possible, for all of our policies and procedures as well. And, we take full advantage of the ability to standardize whenever we can.”

THE DARK REPORT observes that Alverno clearly is using all the tools available to optimize efficiency. Lean methods have helped the company standardize operations across 27 hospitals in two states. Lean makes it easier to ensure that each lab follows the same processes. Alverno’s success at benchmarking and achieving operational performance that places it in the upper quartile is further validation of this strategy. **TDR**

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