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“We knew the value of the Dimension Vista systems and the new test capabilities with the LOCI technology. So, the big motivation for us was the ability to do more tests onboard, consolidate our tests to one instrument, and increase our test capacity overall without adding staff.”

Jerry Jordt
Director of Clinical Laboratory Services
Garden City Hospital

Garden City Hospital is a medium-sized general hospital in the Detroit metropolitan area with 323 licensed beds. The facility emphasizes medical training and teaching, employing 25 interns, 25 medical school residents, and a nursing program. The hospital's laboratory performs about 1.8 million tests annually. “Two years ago in January,” says Jerry Jordt, Director of Clinical Laboratory Services, “we started an outreach program for about 55 doctors, which has helped fuel a 20 percent growth rate in our testing volume.”

A heritage of technological advancements

Dimension® systems, with 20 years of innovation, have an enduring history at Garden City Hospital. “Years ago,” notes Don DuMouchelle, primary operator for the main chemistry analyzers, “we started with the Dimension® AR system, then went to the Dimension® XL system, the Dimension® RxL system, and the Dimension® RxL Max® system. Now, for the past year, we've had two Dimension Vista® 500 systems.”

“The main thing that keeps bringing us back to Dimension systems is customer satisfaction,” says DuMouchelle. “We've always had a good experience with the Dimension analyzers we've had.”

“I think the Dimension systems have grown as we have grown,” adds Jordt. “They have evolved with our lab. Even though our test volume has grown dramatically, we actually have been able to manage the additional changes without adding more staff.”

“Unlike some of the other analyzers out there, which I felt have been more of a repackaging of the same technology, the Dimension Vista Intelligent Lab Systems were, and continue to be, the only ones with new technology that has added value to the instruments,” Jordt says. “It's not just another box that looks nice. It actually does something different for us.”

“We have so many more tests now on the Dimension Vista 500 systems,” says DuMouchelle. “We have 62 methods onboard the new analyzers, and we can run more than 90 percent of our requested tests from a single tube with the Dimension Vista 500 systems.”

“We also run 95 percent of our Core Lab test volume on the Dimension Vista 500 systems,” adds Jordt.

An intelligent lab system revolutionizes the way a lab functions

Dimension Vista 500 Intelligent Lab System

Case Study

Answers for life.

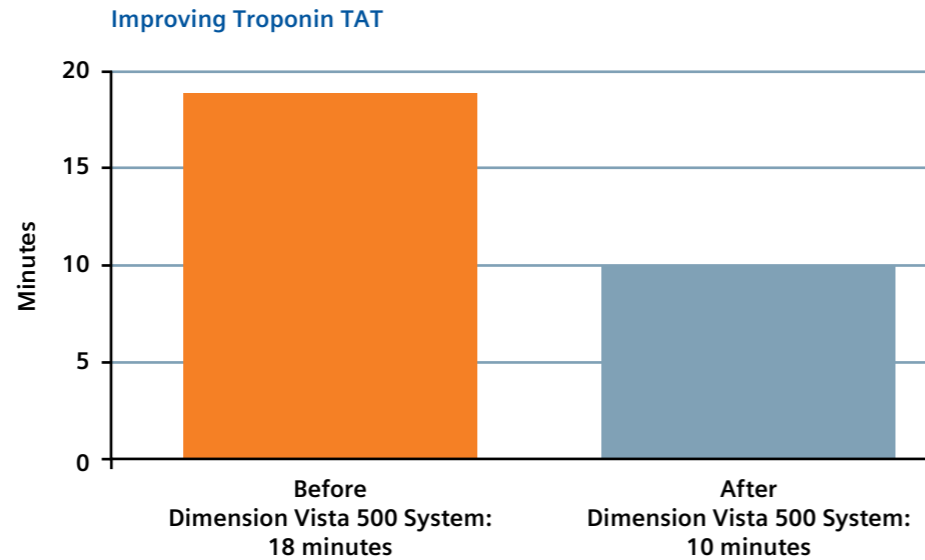
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Shorter TAT with fewer instruments

The hospital needed to do more with less, especially when the recession hit Detroit — the epicenter of the country's automotive industry. "Our focus was on consolidation," DuMouchelle says. "With the adoption of the Dimension Vista 500 systems, we are now able to do chemistry and immunoassay testing, but also electrolyte and plasma protein testing via nephelometry — all on one platform."

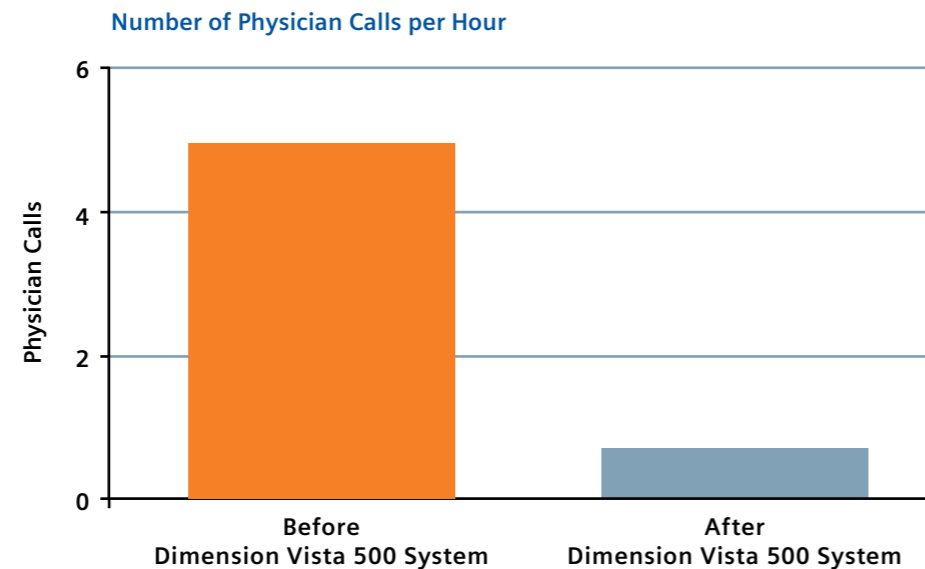
"We consolidated other instrumentation down to just one system, and it is still faster than the old systems," says Andy Mazzara, Core Laboratory Coordinator at the hospital.

The new systems easily handle the lab's workload demands. "The TAT for some of the tests on the Dimension Vista 500 is much faster," says DuMouchelle. Troponins used to run in about 18 minutes. Now, they run in 10 minutes. The ER doctors like that a lot."



"The Dimension Vista 500 systems are helping contribute to better patient care," says Mazzara. "They get the ER doctors their Troponin results faster, and, based on concurrent Troponin results, they are able to discharge the patient quicker. It speeds up the whole process."

Quicker turnaround times with the Dimension Vista 500 systems have increased the laboratory's responsiveness. "We've noticed a reduction in the number of calls from the ER by at least 50 to 60 percent," Mazzara says. "We used to get probably ten calls every one to two hours from the ER looking for their troponin results. Now, we might get five to ten calls per shift."



Broadening testing menu without increasing cost

"We thought we were going to take more tests off the Dimension Vista 500 system, but we actually transferred some tests and added a few tests to the platforms as they became available," says Mazzara. "We were able to transfer B12 and CEA assays to our Dimension Vista systems. We've also added prealbumin, hs-CRP, IgA, IgM, and haptoglobin."

"We are looking forward to bringing in some new testing on the Dimension Vista 500 systems," he says. "Right now, FSH* is still an idea that's being bounced around," says Jordt. "We're looking at the best benefit between what we do in-house and what we send out. If it gets to a point where we have sufficient volume, as we grow our outreach and pick up more OB/GYNs, we might be looking at adding more fertility tests. We have so many more tests now on the Dimension Vista 500s that are running at the same time, and we still don't challenge their capabilities."

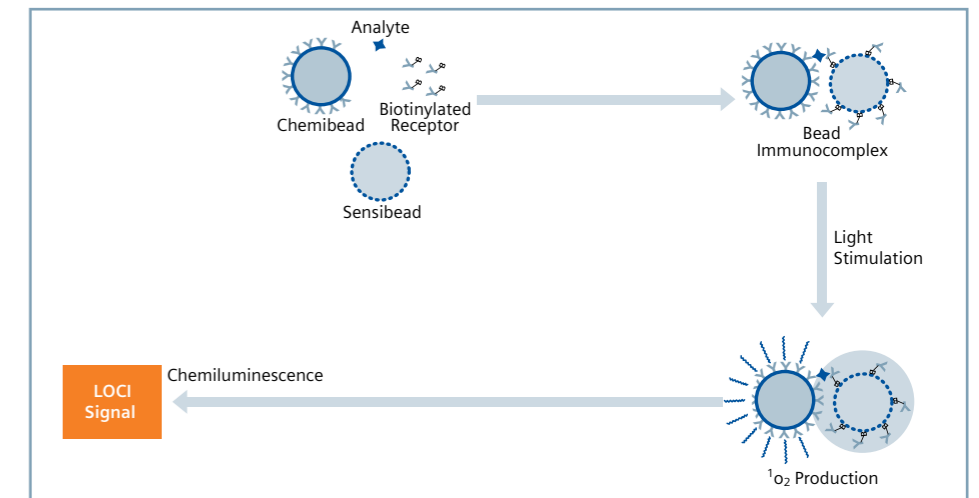
The lab increased its testing capacity with the new instrumentation without increasing its budget. "It's helped us maintain our costs as we've grown," Jordt says. "That's been a big thing for us in this economy. In order for us to stay viable, it was a big decision on the hospital's part to allow us to get new instrumentation, and we've been able to stay within our projected budget. We needed new instrumentation, and Siemens was able to help us meet that challenge."

The ultra-integration of four technologies

The Dimension Vista 500 System offers speed and quality without compromise.

- Processes up to 100 methods simultaneously
- 144 onboard reagent slots
- Disease state management from a single primary sample tube
- Automation onboard eliminates manual tasks freeing up technical time to address critical issues throughout the laboratory

Advancing immunoassay testing with LOCI technology



LOCI® advanced chemiluminescence technology represents an important breakthrough in immunoassay testing, enabling unique ultra-integration. LOCI is the first patented homogeneous chemiluminescent immunoassay technology that directly measures reactions for enhanced accuracy and reproducibility, yielding highly sensitive assays and unlimited menu potential for developing even the most complex immunoassays.

"With LOCI technology," Mazzara says, "we have improved our reproducibility, our CVs have dropped, and we've got a higher level of sensitivity and specificity, especially at the low end."

The Dimension Vista 500 systems also allowed the lab to add the third generation TSH test, which Jordt describes as "a very sensitive and specific assay."

The system's revolutionary advancement in immunoassay analysis also offers unrivaled simplicity. It reduces imprecision and provides a wide, dynamic range through the unique oxygen channeling technology, eliminating the extra analytical steps of separating, washing, and adding trigger reagents necessary with standard heterogeneous immunoassays.

*Under development. Not available for sale.

LOCI Technology:

- Delivers the analytical sensitivity needed for disease-state diagnosis such as cardiac, thyroid, fertility hormones, cancer markers, and infectious disease methods.
- Has an unlimited menu capability; new assays are continually being made available.
- Is patient-friendly; low sample volumes (only 2 to 20 µL for all analytes) enable fewer draws.
- Delivers unprecedented turnaround time:
 - 10-minute cardiac panel
 - 16-minute 3rd-generation TSH

“The LOCI technology is a significant advance in immunoassay capabilities,” says Jordt. “For example, the sensitivity of troponin using the LOCI technology is much more sensitive than the old method.” Mazzara adds, “When a doctor is trying to determine if a patient is in the midst or on the doorstep of having an MI, that’s when you really need to have a high level of sensitivity.”

“The LOCI technology opens up the future quite a bit for the instrument,” DuMouchelle says. Mazzara agrees. “I don’t see anything limiting it right now. Any assay is improved with LOCI technology.”

Comprehensive focus on intelligent workflow

The Dimension Vista 500 system is the preferred intelligent lab system for those in mid-volume labs who want to streamline workflow and consolidate instruments while enhancing productivity and efficiency. Many manual tasks that cause laboratory bottlenecks are eliminated through the system’s unique automated capabilities:

Intelligent Inventory Management

- Eliminates daily task requirements for managing inventory.
 - Continual monitoring for low calibrators and QC materials and schedules required calibrations and QC runs to maximize usage of calibrator and QC lots

The onboard Intelligent Reagent Management System:

- Continually tracks the number of tests performed on each analytical system and provides a customized pick list for the next 24 hours of processing
 - Monitors onboard inventory and prompts the user if an unexpected need arises, giving the operator time to add reagents without impacting workflow
 - Enables multiple Flex® cartridges per lot and up to three lots per method onboard
 - > Monitors diluents, probe wash solutions, and V-LYTE® standard samples as well

Maintenance

“Maintenance of the analyzer is also so much easier,” DuMouchelle says. “There is far less hands-on required. The systems do a lot by themselves.”

Automated calibration and QC

The automation of calibration and QC reduces daily preparation tasks to under 10 minutes.

- Autocalibration with more than 95 percent liquid, ready-to-use calibrators
- Calibrator vials are stored onboard for ease of use and efficiency, with vials and vial carriers barcoded for tracking and logging
- Autocalibration can be scheduled at any time to minimize disruption to sample testing
- Integrated QC materials are stored onboard

Sample management

“Because we can run so many tests on the Dimension Vista 500 analyzer, we have less sample splitting, a 30 percent reduction in samples that need to be split.” says Mazzara.

Uninterrupted operation

The Dimension Vista 500 platform makes system operation easy. “With the Dimension Vista 500 systems, there isn’t a whole heck of a lot of difference between running a STAT and a routine. It’s just seamless,” DuMouchelle says. “You put a STAT on and it just draws it in through the STAT lane. You’re oblivious to it as far as slowing down anything else, because it takes it in and those results are generated. It’s a big difference.”

Space reduction

There are other benefits of the Dimension Vista 500 system. “Despite increasing our testing,” DuMouchelle says, “we have decreased the amount of refrigerator space we have needed to store reagents because of the new packaging. There is a higher test volume in each Flex Cartridge, and the boxes are smaller. We can get all our reagents, calibrators, and controls in a triple-door refrigerator, where before, we had probably another two and a half doors that we required.”

Labor redeployment

The Dimension Vista 500 System offers the capability to do more with less. “Even though our test volume has grown dramatically, we actually have been able to manage the additional changes without adding more staff,” says Jordt. The Dimension Vista 500 systems also enable the technologist to be more productive. “We have that time,” Mazzara says. “0.1, 0.2 FTEs are now available to help out in other areas such as chemistry, hematology, and coagulation. We even dabble in a lot of serology and immunology tests.”

“When someone comes into our lab and looks at the Dimension Vista 500 systems,” Mazzara says, “they are very impressed. We’ll explain to them that the instruments are set up where all the daily maintenance is pretty much automated. You can dictate when you want the controls to run automatically, and so on and so forth. That’s when their eyes get a little wider and they say, ‘Wow, that’s pretty cool!’”



“The instrument calibrates automatically,” says DuMouchelle.

“All you have to do is put on a calibrator, and the analyzer will calibrate itself and auto-accept that calibration.”

Ensuring a smooth transition into the future

The responsive Siemens representatives helped the laboratory staff adapt quickly to the new instruments. “When we went live, Siemens service and support personnel were here 24 hours a day for more than a week,” says Mazzara.

“Even before we went live, they were here running classes, teaching the techs on the instruments themselves while we still had the Dimension RxL Max systems running our tests. Support-wise, they helped us tremendously.”

“I have nothing but praise for the Siemens staff. They are the best out there,” notes Mazzara. “Together, we keep the systems up and running so we can focus on patient care,” Jordt says.

Siemens Healthcare Diagnostics offers laboratory personnel a comprehensive range of educational activities from clinical excellence to patient services that are conducted by a seasoned staff at select facilities worldwide, as well as on-site training provided by the sales and service support team members.

“Every time I’ve gone to Siemens for any type of training, it’s been excellent,” DuMouchelle says.

Any trained technologist can run any test at any time, thanks to the system’s customer-driven design. “Siemens took the time to come in about 6 months into our first year with the Dimension Vista 500 systems and interviewed us to take back suggestions and identify problems that we have had,” says Jordt. “We’ve even attended Dimension Vista Customer Forums where we provided input on additional assays and instrument upgrades. They definitely listened to us.”

Remote monitoring reduces downtime

Siemens offers a customized service approach to suit the needs of the customer through **Intelligent Device Management** with remote monitoring:

- Remote real-time monitoring services from Siemens enable proactive maintenance to minimize downtime and disruption to the lab

“The Siemens service department and hotline are fantastic,” DuMouchelle says.

“And now, with the Dimension Vista 500 systems, they have remote monitoring and repair capabilities, which have been very impressive. They come in through the Internet, hook up to the instruments, and probably fix 70 to 80 percent of the problems, so their techs don’t have to come out here.”

Intelligent Results Management has a positive impact on the lab:

- Offers result autoverification for intelligent automatic acceptance of results
 - Results are automatically verified according to user-programmable rules eliminating a common cause of delayed TAT
- Facilitates the processing of “normal abnormal,” enabling the focus on true abnormal samples and results
- Reduces error rates

Growing with the lab into the future

The laboratory will soon “twin” the two Dimension Vista 500 systems together and keep them running in tandem with the Dimension Vista 1000T Intelligent Lab System. “As we grow our outreach service,” says Jordt, “we want to be able to maintain the ability to do all the extra work without adding staff, while maintaining an efficient operation. Twinning will enable us to do that.”

“I am looking forward to twinning them,” notes DuMouchelle. “Right now, we have them set up side-by-side. However, the way our workflow is from our processing area to the Dimension Vista 500 systems, the techs get to that first Dimension Vista 500 analyzer and that’s where the specimens go, especially on the off shifts. So, the way they’re set up, the Dimension Vista 500 analyzer that is closest to the processing area is already showing a significant increase in testing compared with the other one.”



DuMouchelle continues, “When we had our Dimension RxL Max systems, they were set up in the same way. You walked into a room and there was the first analyzer, and the second system was maybe six to ten feet past it. Over the lifetime of the six years we had the systems, we probably did four million tests on one and one million tests on the other. Twinning the two systems into one will provide a better workflow balance with built-in backup.”

Siemens also offers other automation solutions that are designed to evolve with your lab. The StreamLAB® Automation Solution offers the ability to connect the Dimension Vista 500 platforms with other analyzers. It then allows the lab to reconfigure its systems as needs change and new technology becomes available.

In summary, Jordt says,

“The Dimension Vista 500 systems are a good value for the money. When you aggregate it all, we actually came out with a lower budget because we didn’t have to maintain a separate service or a separate analyzer.”

Mazzara agrees:

“The Dimension Vista 500 system is a very good fit for our laboratory.”