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Performance Without Compromise: Beaver Dam Reference Lab

Dimension EXL Integrated Chemistry System

Siemens Healthcare Diagnostics, a global leader in clinical diagnostics, provides healthcare professionals in hospital, reference, and physician office laboratories and point-of-care settings with the vital information required to accurately diagnose, treat, and monitor patients. Our innovative portfolio of performance-driven solutions and personalized customer care combine to streamline workflow, enhance operational efficiency, and support improved patient outcomes.

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“We were looking for the complete package: one tube, one sample, broad menu, walkaway time, assay quality, backup capability, ease of use, technical service, and fiscal economy. By consolidating, we were putting all of our eggs in one basket. The system had to reliably perform at a high level.”

Jay Bosch
Medical Laboratory Technician



To say that Beaver Dam Reference Laboratory (BDRL) is a busy lab might be an understatement. The fact that it services seven onsite clinics and six nursing homes up to 35 miles away is one reason. The other: the lab supports the entire Beaver Dam Community Hospital, a facility licensed for 99 beds and staffed for 60, whose outpatient area sees between 75 to 100 patients per day. Since the hospital is one of the few remaining independent hospitals in America, it constantly feels the pressure of remaining fiscally competitive while maintaining a broad variety of services for the local community and the region at large. Therefore, BDRL must continually seek ways of increasing operational efficiency, expanding service offerings, and improving the quality of its services.

A Comprehensive Solution for Wide-Ranging Laboratory Needs

Extensive Selection Criteria

As part of its selection process, BDRL was looking for a comprehensive laboratory solution—one that could deliver platform consolidation and full-menu utilization while also satisfying an extensive list of considerations, all of which were deemed equally important:

- Integrated testing: one tube, one sample
- Full menu
- Walkaway time
- Assay quality
- Backup capability
- Ease of use
- Fiscal economy
- Outstanding reliability
- Capacity for growth
- Staff training
- High level of partnership and service

Upgradability and a supportive vendor partnership were particularly critical, since the lab anticipated continued high-volume growth and did not want to evaluate higher-capacity systems in the near future.

Dimension EXL Integrated Chemistry Systems Met BDRL's Need for Performance Improvements

BDRL turned to the Dimension® EXL™ with LM and Dimension® EXL™ 200 Integrated Chemistry Systems to meet its checklist of needs. The Dimension EXL systems provided the “total package,” one that delivers a broad menu with complete system backup, while helping BDRL improve performance:

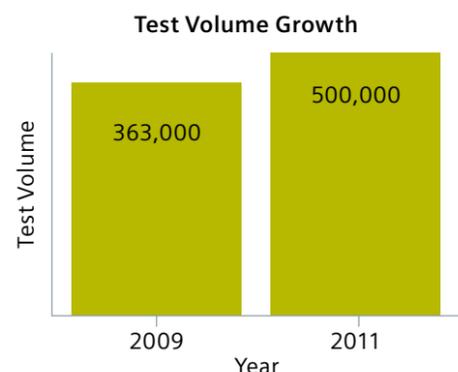
- Runs 98% of BDRL's routine and STAT chemistry/ immunoassay tests
- Provides several complete disease-state panels
- Increased BDRL's onboard methods from 44 to 70
- Allowed growth of test volume by 37% since 2009, with another 20% increase expected over the next few years
- Managed volume increase while freeing up one FTE

Full-Menu Integration

- > Coronary Risk
- > Cardiac (including NT-proBNP)
- > Diabetes
- > Thyroid
- > Hepatic Function
- > Kidney Function
- > Metabolic Panels (basic and comprehensive)

“The system has really helped with the quality of results. Techs are able to evaluate patient trends a lot faster because they have more time to do so.”

Jay Bosch
Medical Laboratory Technician



Immediate Workflow Benefits

Upon system go-live of the Dimension EXL analyzer, pre-analytical process improvements became immediately apparent.

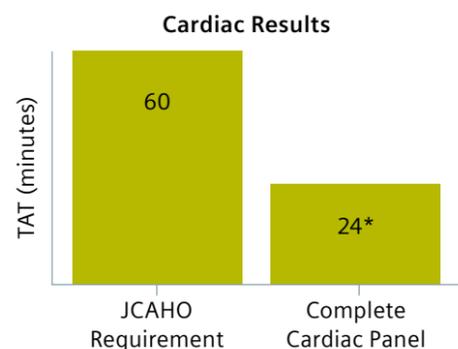
- Techs were no longer double-handling and splitting samples to place them on the correct analyzers
- The system's clot check feature eliminated the need for visual inspection of every sample
- The QCC PowerPak® eliminated the need to manually program QC—a particular benefit for lightly-staffed night shifts
- Calibration, STAT, and reagent alerts helped to anticipate system intervention and to plan accordingly

Mirror-image Backup

The Dimension EXL 200 system also gives BDRL a complete mirror-image backup of their Dimension EXL with LM system for uninterrupted testing. The lab no longer deals with the administrative hassle of contacting backup labs when an analyzer is down, especially on nights or weekends, and the Dimension EXL 200 system provides a STAT alternative when the Dimension EXL with LM system is at full capacity.

Improved ED Patient Management

The facility easily meets the JCAHO requirement for one-hour troponin results for ED patients presenting with chest pain. With a troponin assay that can be run in 10 to 13 minutes, BDRL is able to deliver results for their cardiac panel in 24 minutes or less from the time of receipt in the lab until result verification.



*From time of receipt in lab until result verification.

Expanding Lab Capacity Now and in the Future

The Dimension EXL system's LOCI® advanced chemiluminescence technology also makes higher-sensitivity troponin testing possible. Now, the ED can confidently rule out AMI, even in patients who exhibit normal EKGs but who have actually had a myocardial event.

Finally, all thyroid testing has been moved to the Dimension EXL system. Now that thyroid tests can be performed as a single panel from a single tube, BDRL is able to offer the panel as a STAT for the ED.

LOCI Technology Reduces TAT

Assay	Previous Methodology	LOCI Technology
TNI	18-22 minutes	10-13 minutes
TSH	47-50 minutes	15-18 minutes

Improved Drug Testing

The Dimension EXL system helped BDRL deliver a new employee drug screening service, while also offering it to the larger community. The system's drug testing menu made this possible, helping the lab offer a wider variety of services that increased its community engagement—and its potential revenue.

Increased Physician Satisfaction

Across the board, physicians have been extremely satisfied with results they receive from the laboratory. Physician calls have dwindled to almost zero since installation. ED physicians have taken advantage of the Dimension system's new STAT thyroid capability, as evidenced by increased thyroid-testing volumes. And Internal Medicine doctors have voiced their satisfaction with higher-sensitivity troponin results that help them rule out AMIs.

“By better servicing our physicians, we're better able to service our patient community.”

Lori Schuerman
Laboratory Director

Future Expandability

With test volumes growing, BDRL needed a solution that could handle imminent expansion. The Dimension EXL integrated chemistry system was an ideal fit, since it offers an upgrade path with VersaCell® and IT solutions that help ensure continued performance:

VersaCell Solution

The VersaCell solution provides a simple, complementary upgrade path that takes pre-analytical sample management to higher levels of efficiency. With the VersaCell solution, techs don't need to spend extra time evaluating where samples should go, and it maintains TAT by automatically routing samples to the most available analyzer.

CentraLink Data Management System

The CentraLink™ IT system increases a lab's potential for significant workflow and system performance improvements. Autoverification further improves TAT by immediately releasing normal sample results to the LIS without human intervention.

Beyond the Dimension EXL System

In addition to installing the Dimension EXL with LM system, BDRL also replaced a 10-year-old analyzer with the ADVIA Centaur® CP Immunoassay System. The ADVIA Centaur system was chosen primarily for its menu-expansion capabilities, allowing BDRL to bring four immunoassay tests in house (IPTH, progesterone, estradiol, and BNP).

The Right Choice

Three years since the installation of the Dimension EXL systems, BDRL feels strongly that they made the right choice. The comprehensive criteria satisfied by the Dimension® systems has positioned BDRL for future growth and has made it a stronger, more efficient, and more productive reference lab. This newly empowered lab has helped the hospital remain true to its mission to continue serving the needs of its community and the region as a whole.

“We've been highly satisfied working with Siemens. Our staff appreciates having one vendor.”

Lori Schuerman
Laboratory Director

The outcomes achieved by the Siemens customer described herein were achieved in the customer's unique setting. Since there is no “typical” hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption) there can be no guarantee that others will achieve the same results.