

A woman with long blonde hair, wearing a white lab coat, is seated at a desk in a laboratory. She is looking at a computer monitor that displays a software interface with various data tables and charts. Her hands are on a black keyboard. To the left of the monitor is a large white medical device, possibly a printer or a small laboratory instrument. The background shows laboratory cabinets and equipment.

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## CentraLink Data Management System

Delivering quality lab results faster for better patient care

Answers for life.

# CentraLink Data Management System

## Delivering quality lab results faster for better patient care



### The power of middleware in your lab

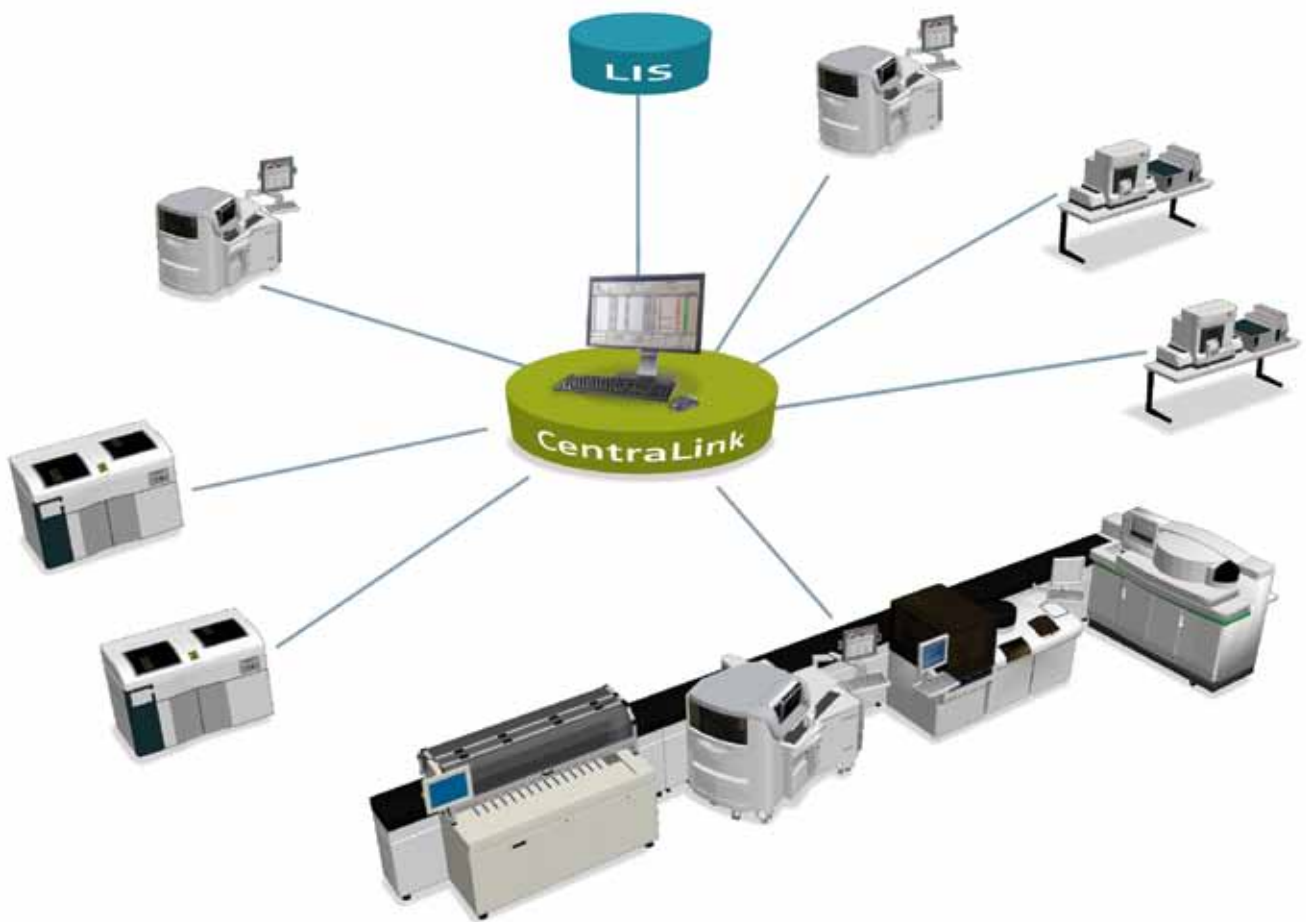
In many laboratories, multiple analyzers are spread around a room, each with its own connection to the laboratory information system (LIS). To gather data on patients, quality control (QC), and instruments, lab technologists walk from platform to platform or go through multiple LIS instrument sessions. Only then can they validate results.

This all-too-common scenario comes with hidden costs in the form of lost productivity, inefficient workflows, and heavy reliance on error-prone manual processes. Meanwhile, labs are under pressure to improve quality, reduce operational costs, and deliver services more efficiently.

These challenges drive the need for the CentraLink™ Data Management System from Siemens Healthcare Diagnostics. This field-proven product centralizes data management and automates manual processes for improved consistency, quality, and efficiency. Additionally, the system provides a single communication link between your LIS, lab instruments, automation systems, and multiple users within your central laboratory or across multiple laboratories.

*"The advantage of having CentraLink Data Management System is that it doesn't matter who is running the instrument. All of the samples are treated the same, so you **standardize your process and that improves quality.**"*

Omar Muñoz, Lead Technologist, ARUP Laboratories at the University of Utah Hospital



The CentraLink Data Management System consolidates connections to the LIS, centralizes data management, and automates manual processes, providing everything technologists need to review and validate results from a central point of control.

## Reduce errors, increase quality

### Centralize management of test results

With CentraLink, you can enhance quality across your lab, increase consistency, and improve efficiency. You can define your laboratory's result verification criteria and automatically and systematically apply it, regardless of changes in personnel, shift schedules, peak times, or increases in your work volume. As a result, your lab

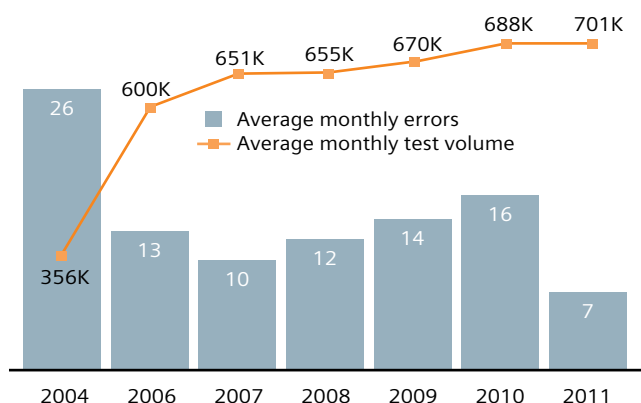
technologists can focus on those test results that truly need follow-up, from one workstation that consolidates test results from all your connected instruments.

## Reducing error rates while increasing volumes

In the U.S., the University of Michigan Hospital (UMH) is realizing the benefits of CentraLink. Standardization of the results review process, automation of error-prone manual tasks, and the reduction of the number of results requiring staff review have contributed to a reduction of the number of reported errors. The monthly error rate at UMH has dropped from 26 per month, with a monthly volume of 356,557 in 2004, to 7 per month, with a monthly volume of 701,000 in 2011.\*

\* Individual laboratory's system productivity, throughput, and associated TATs may vary.

### University of Michigan: Reduction in Error Rates



## Focus on critical patients

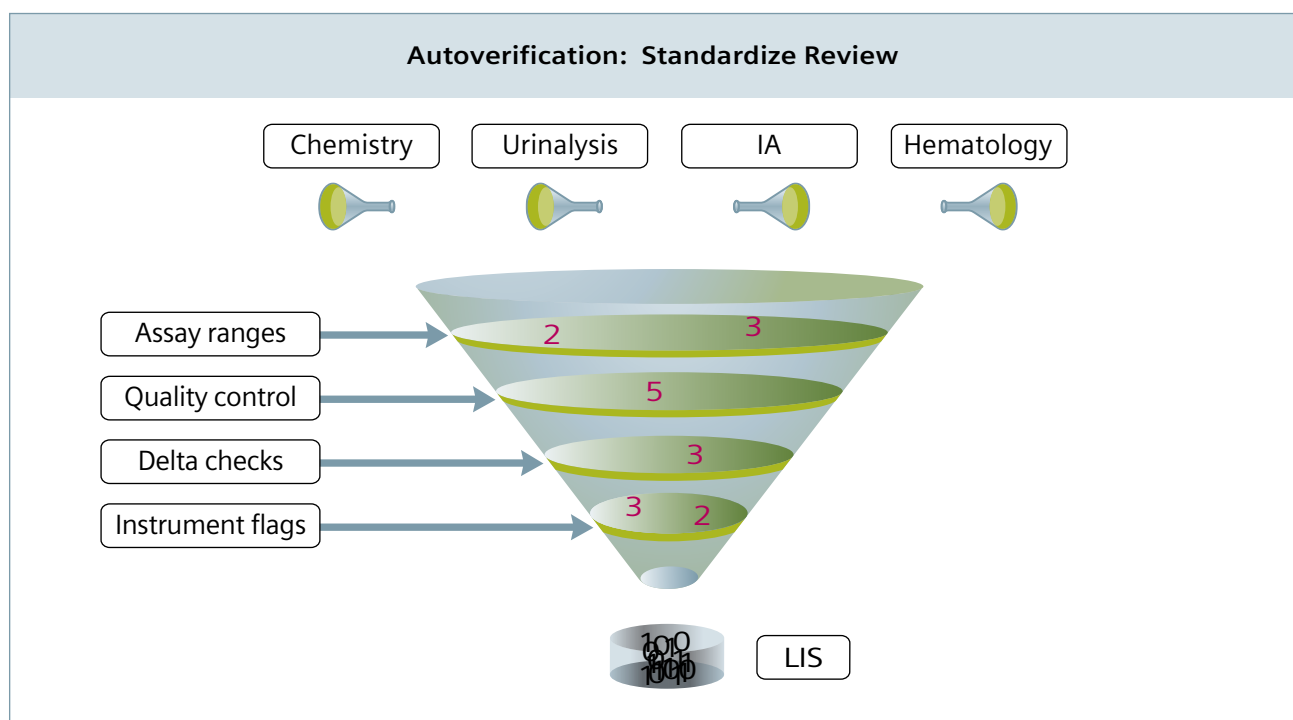
What if you could autoverify up to 75 percent of test results? You can with CentraLink. In fact, visual color cues and customized workspaces enable your staff to easily see which results are STAT, which are pending review by the operator, why they need review, and how far off from the norm each is. This helps your staff quickly determine which results to focus on first.

As a result, your lab staff has the time to focus on the critical 25 percent of results that require attention. And as it screens results, the system automatically applies consistent processes to verify normal ranges, QC, delta checks, and instrument flags to help ensure that the right results are released and the wrong ones are stopped.

## Lower costs while increasing quality

CentraLink functions like a funnel with a series of filters. These filters screen results based on normal ranges, QC Westgard checks, delta checks, and instrument flags. If certain normal ranges are met, the test passes and can be automatically reported to physicians. Abnormal results are held inside the software for staff review.

What's more, powerful, flexible autoverification rules help you ensure consistency in the management of test results across your lab staff. You can be assured that every result is automatically examined from multiple angles in a consistent manner.



**Review and Edit**

Basic | Advanced | LAS

Sample ID: 1013456782 Priority: Routine Age: 21 Patient ID: MM

Patient name: Mandela, Margret Sex: Female DOB: 07/22/1988 Patient location: ER

Collection D/T: 02/08/2012 12:45 Sample comment: Patient comment:

**Sample status overview**

☐ Time interval to refresh at: 1

	Total	STAT
Pending	78	2
Reun	2	0
Scheduled	31	7
Review	7	1
Validated	3	2
Uploaded	17832	844
Deleted	321	48
Unknown	1	0
<b>Total</b>	<b>18275</b>	<b>904</b>

My counters

Oncology	1
Tripodan	4
?	0
?	0
?	0
?	0
?	0
?	0

Refresh Page Close

The Review and Edit screen contains everything you need to validate a sample, including information on the test, its status, and current and previous runs. Real-time sample counters provide a current view of all the tests that are ready for review. A single click then takes you to the Sample Status Overview screen, which provides a list of all remaining samples.

**Samples**

Sample ID	Priority	Patient ID	Collection Date/Time	Physician ID	Status
0000001	Stat	?	?	?	PND
0000004	Stat	?	?	?	VAL
0000005	Stat	?	?	?	PND
0000009	Stat	?	?	?	VAL
0520x1	Routine	0520x1	?	?	RRN
120	Routine	?	?	?	REV
0000007	Routine	?	?	?	OMT
0000014	Routine	?	?	?	PND
120520	Routine	?	?	?	RRN
120014999	Routine	?	?	?	REV

Options... Close

A color scheme helps operators focus on critical samples. Samples highlighted in red are STAT and require immediate action. At a glance, you can determine if the sample is held for operator review or if it is still pending results.

*"If you look at our turnaround time and error rate statistics, you can see how we've worked with the automation line, leaned out our processes, and improved things with CentraLink. We save so much time in resulting and manual processes. We've reduced the number of reporting errors, and we've been able to consolidate our blood draws."*

Sue Stern  
Administrative Healthcare Manager, Chemical Pathology Lab, University of Michigan Hospital

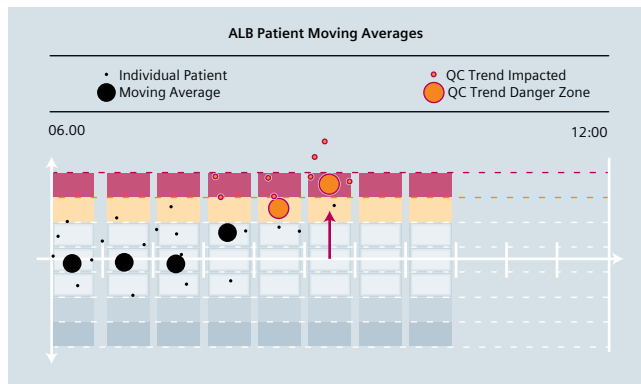
## Deliver high quality results faster

### Leverage the power of integrated QC and test management

With its integrated QC and test management capabilities, CentraLink helps you deliver high quality results in less time. With a single click, you can select a test result and directly access the QC information. Easily view QC per instrument, across multiple instruments, or per test across multiple QC levels and instruments. QC can be viewed in tabular or graphical formats, which uses the same intuitive color scheme applied to the patient results (red, yellow, blue).

Patient Moving Averages can also be configured for any test. The QC screen gives you a graphical view of patient moving averages so you can easily see when QC averages are drifting into a danger zone. This allows you to work proactively to address instrument problems, such as calibration issues.

In addition, for easy comparison of QC results against peer labs, CentraLink allows you to establish a dedicated communication channel to Bio-Rad's Unity software. You can then upload your QC results to compare them in real time with those of other labs.



### Identify QC trends before results are impacted

In this example, the average of the last set of data is above the maximum value defined by the lab, as indicated by the red zone. As a result, the software will notify the operator that the average of the patient results has passed the highest acceptable point. Patient results can be held for review until QC is verified.

### CentraLink provides you with additional time-saving and workflow enhancement benefits

- Easy configuration of QC lots with auto-creation
- Minimized workflow disruptions:
  - Alert operator of anticipated expiration of QC.
  - Automatic disabling of tests that fail QC on an instrument and rerouting of tests to another available instrument (when connected to the automation track).
- Real-time QC support by automatic upload of QC results to Bio-Rad's Unity online QC system.

## Increase productivity

### Power high-performance automation with CentraLink

Using dynamic communication with Aptio™ Automation or ADVIA® Automation, CentraLink keeps track of the status of samples on the track, as well as the status of instruments that samples may route to. With continuous communication with CentraLink, samples can be efficiently load-balanced by intelligently distributing tubes and routing tests to the most available instrument.

With this dynamic management of sample processing, tests are enabled or disabled without any intervention from your operators. This real-time process control helps you streamline workflows, simplify test processes, and increase staff productivity.

Further, CentraLink supports simultaneous connections to two lab information systems including those in different hospitals. This capability can help you maintain consistent workflows across labs, support orders from different entities, and test systems before they go live.

## Go with a technology leader—and a proven solution

CentraLink is a proven technology, successfully used in demanding lab environments around the world. In the 2011 Information Dynamics middleware survey, 85 percent of the customers surveyed were Satisfied/Extremely Satisfied with CentraLink.

These findings reflect the views of the many Siemens customers who attest to the efficiency gains realized with CentraLink. As one lab manager—Susan Dawson from Swedish Covenant Hospital, Chicago—explained: “The ADVIA WorkCell automation line streamlines everything, but the true benefit is in the back end where the result review takes place. This is where CentraLink makes the most impact, by making more efficient use of your technologist staff and improving the overall productivity of the lab.”

*“Labs need to look for a vendor and product that has a good track record. Reliability of the software and customization of key features that allow smooth implementation of autoverification are paramount. The CentraLink solution combines filters for review ranges, quality control tracking, delta changes, and instrumentation flags into a single user interface that is simple for the end user. That is success! Siemens promised and Siemens delivered.”*

Susan Dawson  
Clinical Laboratory Manager  
Swedish Covenant Hospital, Chicago, IL

## To learn more

For a closer look at the CentraLink Data Management System,

**visit [www.siemens.com/centralink](http://www.siemens.com/centralink)**

and/or talk to your Siemens representative about the new features in version 14 of the 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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