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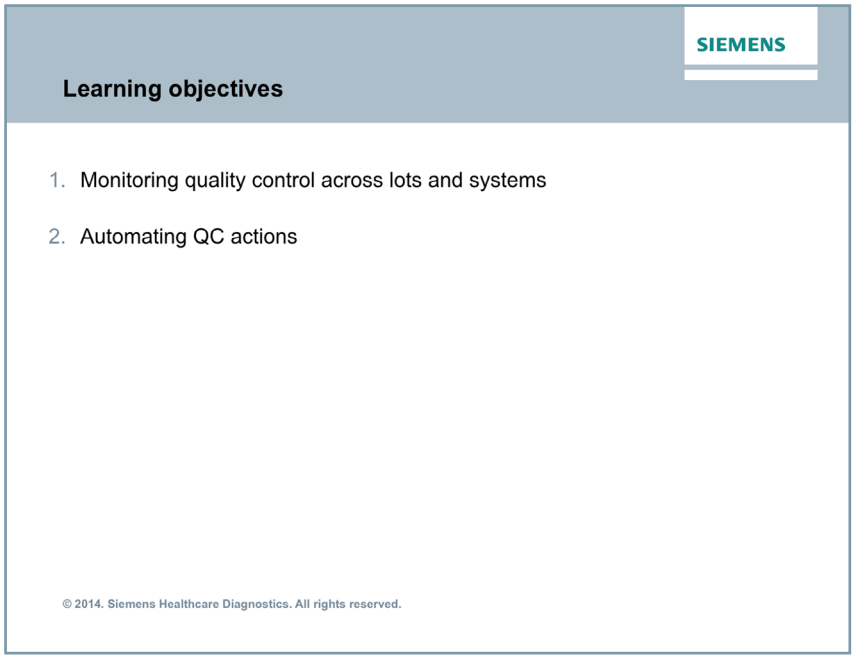
CentraBytes

Quality control: Monitoring and automating QC

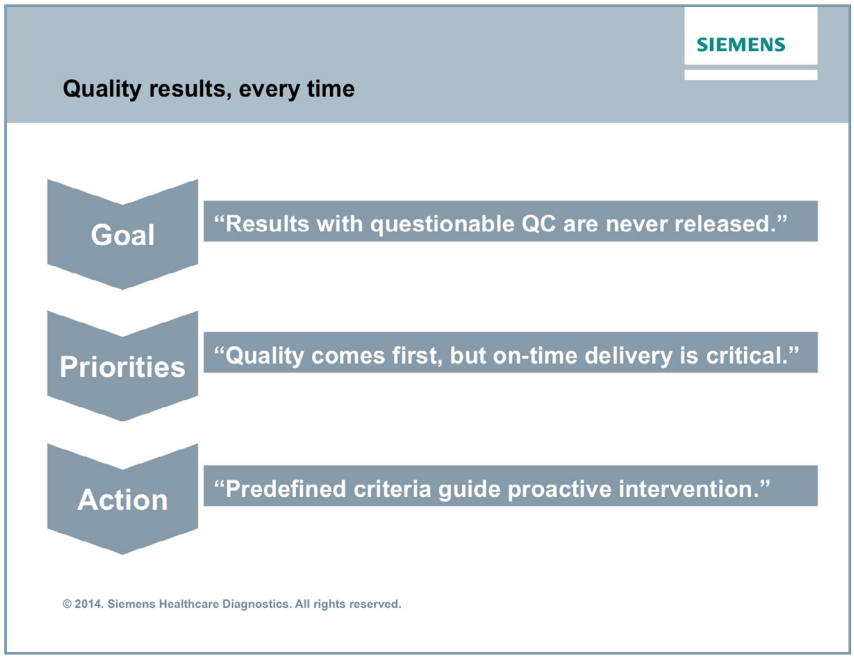
Welcome to CentraBytes, a monthly tutorial on how laboratories around the world are applying the power of Siemens' CentraLink™ Data Management System to improve workflow and quality. Our topic today is quality control.

We will also illustrate the power of the CentraLink system's rules engine, called MISPL, and how it is used to automate quality-control (QC) management.

Answers for life.



We will show you some of the features of the CentraLink system, including how to perform QC monitoring across lots and systems, and how to automate QC actions.



Every laboratory wants to achieve the highest possible quality *and* meet its commitment to deliver timely results. To minimize, if not eliminate, the risk of reporting a result that does not pass QC, we need readily accessible information that not only tells us where we stand but also what we need to know to take action.

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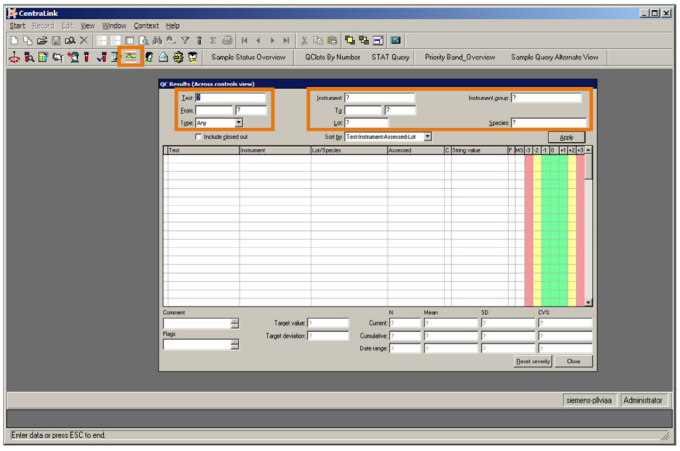
Proactive monitoring



To get started, click the QC icon in the CentraLink system workspace to open the QC Results window. This allows you to proactively monitor QC rather than wait until something goes wrong.

Notice the many different fields at the top of the window. These are filters you can set up to look at QC results in different ways—for example, across a specific lot number for a specific test across all systems.

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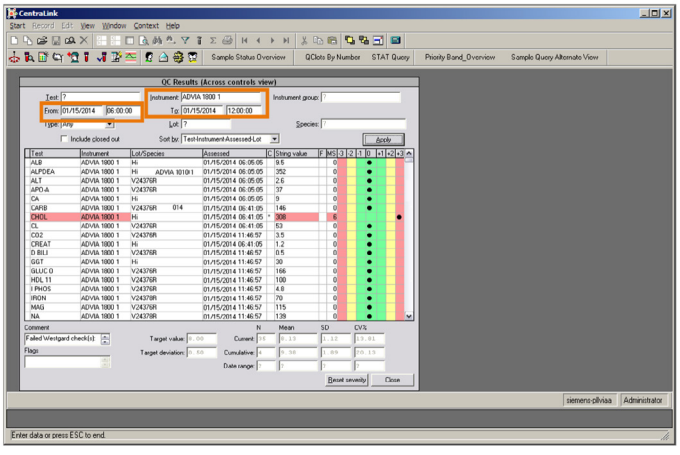
Ready access to QC information



Here's an example of how to use the filter to quickly access the information you need. In this example, we are interested in QC results from the instrument ADVIA® 1800 Clinical Chemistry System 1 over a specific time period (6 a.m. to 12 noon). Data for all reagent lots used on the system can now be reviewed.

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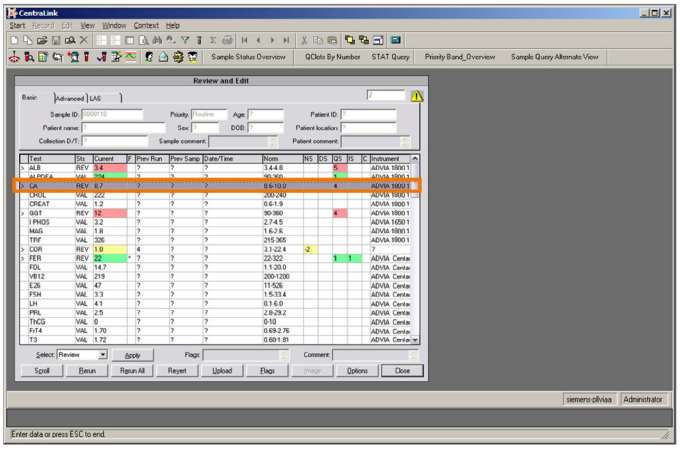
Going deeper with Review and Edit



The Review and Edit window is very helpful in highlighting a QC violation and allowing one-click access to the underlying details. In this example, a Westgard rule violation is holding a patient result for manual review. The number 4 in the Quality/Severity, or QS, column indicates that there is an issue with QC.

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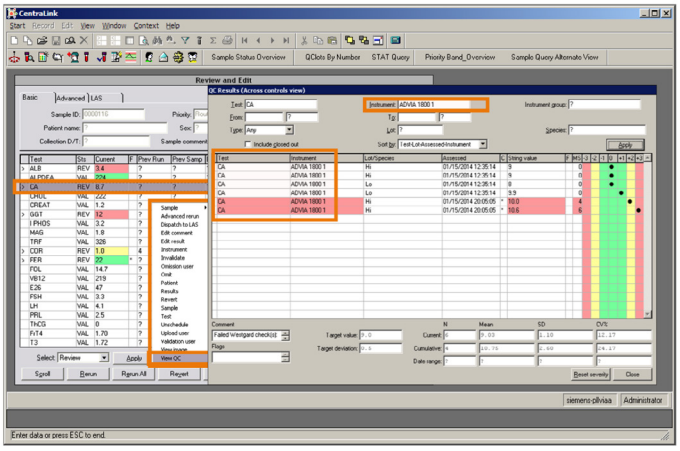
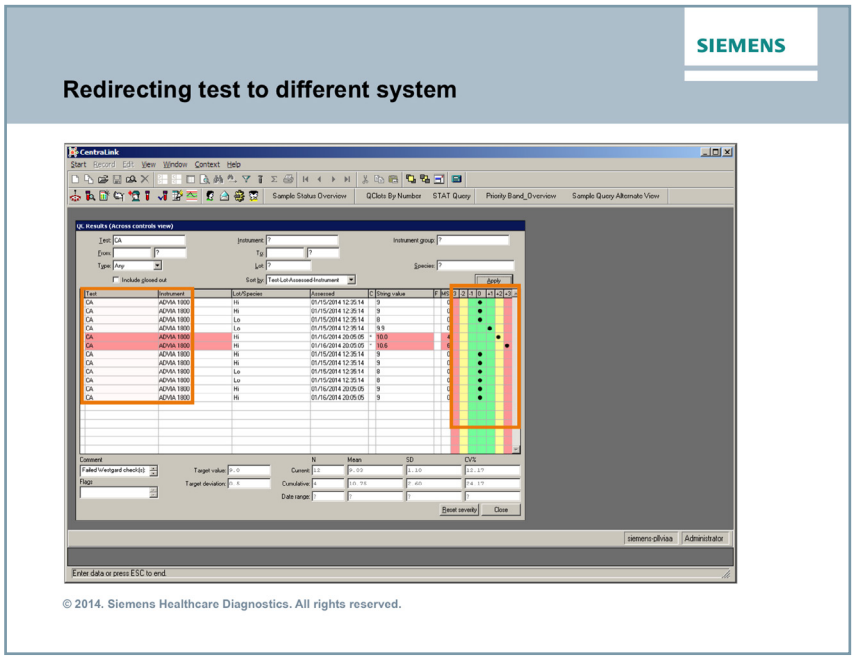
Close-up on source of QC alert

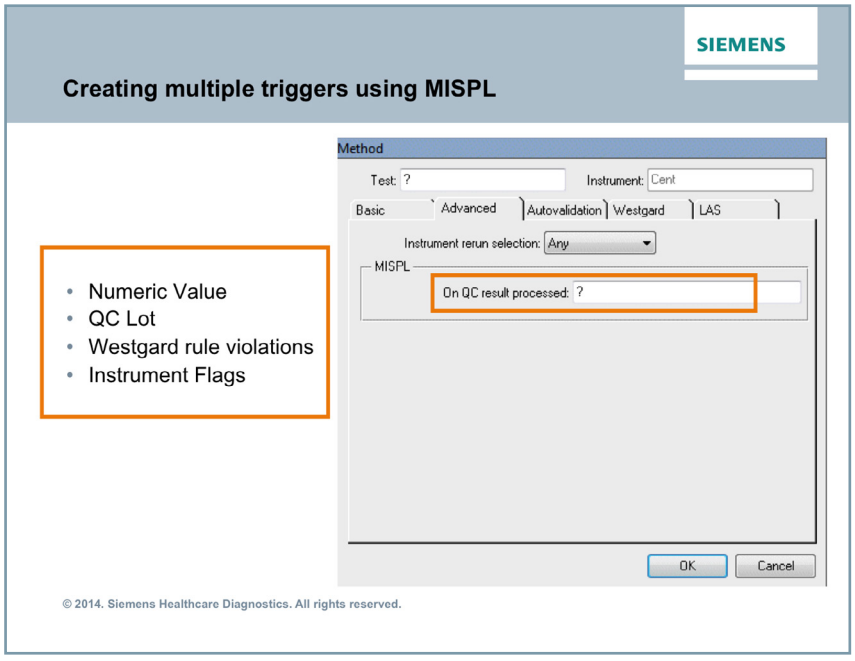


To find out what's happening with this calcium result, right-click on the result in question and select View QC to open the QC Results window. Notice that the QC Results window is automatically filtered for the test and instrument of the patient result being held. You can see that a Westgard rule has been violated. You can also see an unfavorable trending for calcium—which means you might want to run calcium on a different system until the problem is resolved.



To look at QC results for calcium on other ADVIA 1800 systems, simply remove the system—in this case ADVIA 1800 1—from the instrument filter field. Once that is done, you can see that the ADVIA 1800 2 is performing very well for calcium, so that's where you'll want to send calcium samples.

In this way, your lab saves money by not wasting reagent on samples that are run and then held. And time is saved by not having to go back later to search for samples with tests that may have been run after the QC failed.



Sometimes you will want to use several criteria during troubleshooting. You can do this by creating multiple triggers on a QC result. You can include a numeric value, a specific lot number, Westgard rule violations, or instrument flags. Any one of these will turn off the particular assay for that system.

Let's walk through how this works. On the Advanced tab of the Method window, there is a field called "On QC result processed." This is where we would attach a very simple rule to disable the method on this particular system based on a QC trigger. The local CentraLink system specialist would implement any rule in the "On QC result processed" field.

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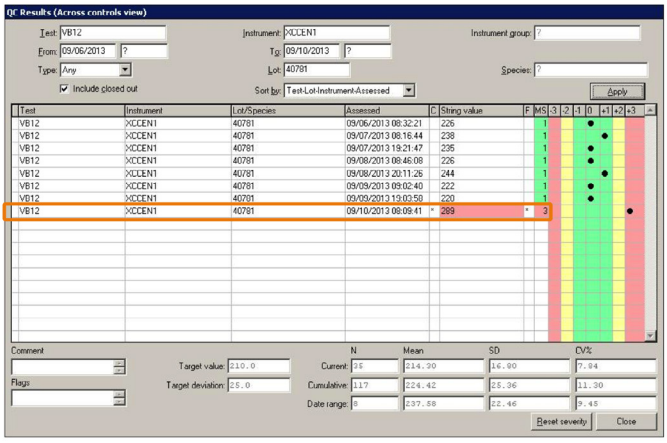
Managing QC to optimize workflow



Here is an example of how you can automate the process to redirect patient samples to a system that has a viable QC when a Vitamin B12 on an ADVIA Centaur® Immunoassay System has violated a Westgard rule. This is a powerful automated workflow implemented for automation customers. The local CentraLink system specialist would implement this configuration.

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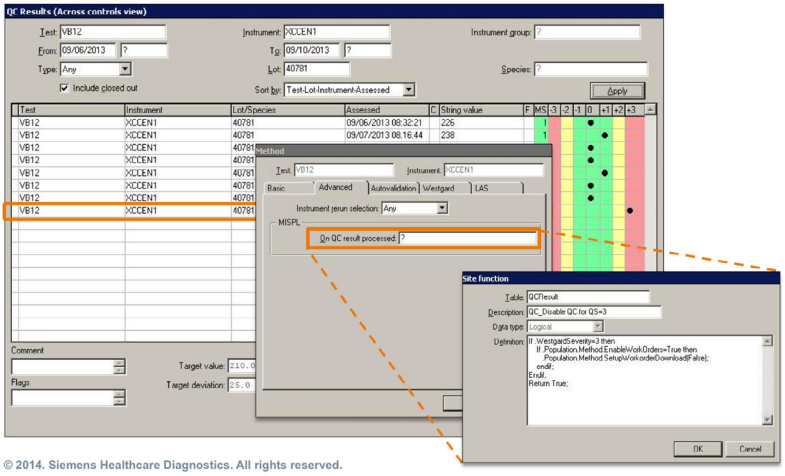
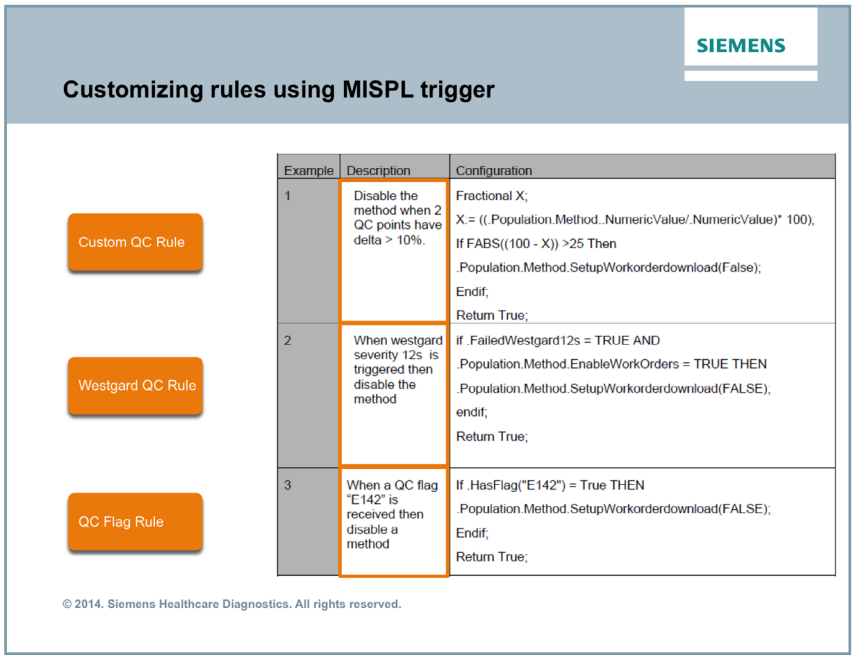
Disabling test when QC fails



We do this by creating a MISPL for the test. MISPL is the programming language used within the CentraLink system to write rules. In this case, the MISPL directs that, if a Westgard rule violation triggers a severity that is 3 or more, then disable the work order immediately. Your CentraLink system technical resource will work with you to create MISPL rules that meet your lab's protocol.



There are different QC scenarios that can be evaluated and actions triggered by copying and pasting rules from the MISPL rules library.

For example, you can write a custom QC rule to disable a method when you have two QC points that have a delta of more than 10% between them.

Test disabling can be triggered on a Westgard rule that's already predefined, or you can have it on a QC Flag rule. So if you have a flag that is associated with a QC, this MISPL trigger will fire and disable the test immediately.

These are some of the functions of the CentraLink system that can automate QC and give you more confidence in your QC process, while also making it more efficient. And you can tailor your process to your lab's exact needs.

Please feel free to download a copy of this presentation to share with your colleagues. Most importantly, practice is key. Start by testing some of the ideas we shared with you today.

Thank you.

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