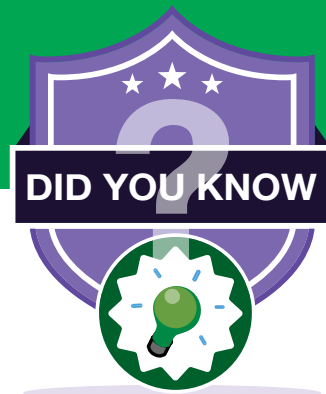


Unity Real Time™ Software

Analyze QC Performance with Peer Group Data

From the **Did You Know** series



Peer group statistics can provide supplemental insights about a lab's quality control (QC) performance during the review process and when troubleshooting QC errors.

Using a data management program to analyze peer group data can provide labs with the context and perspective of their QC performance against their peers, allowing for immediate action when potential problems arise.

With this guide, learn how to use the Unity Real Time Software to compare your statistics with peer group data. There are two main ways to perform this peer group analysis: creating a Data Analysis Grid or creating a Levey-Jennings Chart.

Keep reading to learn how to:

- [Analyze Peer Group Data with a Data Analysis Grid](#)
- [Analyze Peer Group Data with a Levey-Jennings Chart](#)

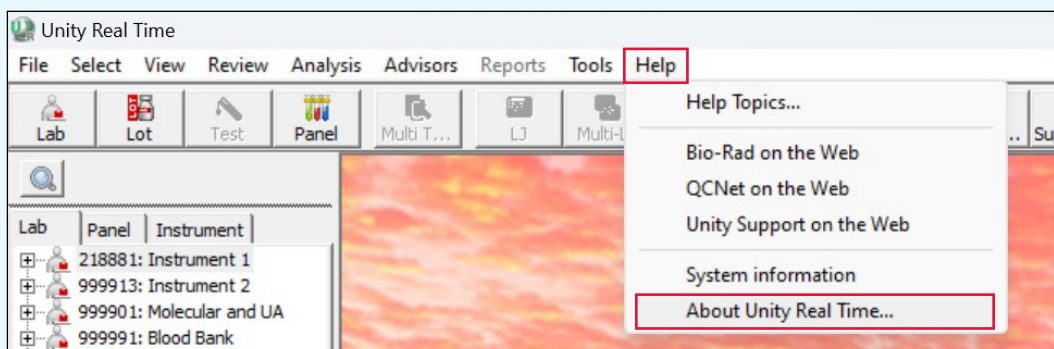
Analyze Peer Group Data with a Data Analysis Grid

Using the Data Analysis Grid, labs can compare their instrument data against the data of their peer groups. The Data Analysis Grid compares one Data Set A to multiple (up to 500) Data Set B's. This provides flexibility for data set comparisons, as you can set up multiple different views depending on your needs.

Confirm Code Lists Are Up to Date

The Unity Real Time Software downloads code lists with the latest peer group statistics. To access the most recent statistics, it's important for your lab to ensure your software is updated and your code lists are up to date.

1. Confirm that your Unity Real Time code lists are up to date. Select **Help > About Unity Real Time...**



2. Under **Code list dates**, check the dates for the **Mean/CV for Peer**, **Mean/CV for Method** and **Mean/CV for All Labs**.

Are the dates recent (within the last 30 days)? If the dates are older than 30 days, continue to Step 3 to update your software. If recent, then your code lists are up to date, and you can skip ahead to the section [Configure the Data Analysis Grid Template](#) on page 4.

About Unity Real Time

Unity Real Time
Application Version 2.11.0.000 (Service Pack 11)
Database Version 2.11.0.000 (Service Pack 11)
Copyright © 1993–2024 Bio-Rad Laboratories
U.S. Patents #5,541,854, #5,734,591, #5,937,364, #6,549,876, #6,760,683, and #7,467,054. Other patents pending.

Code list dates

Lot:	8/5/2024	Biological Variation:	7/24/2024
Analyte:	8/5/2024	Mean/CV for Peer:	8/5/2024
Method:	8/5/2024	Mean/CV for Method:	8/5/2024
Instrument:	8/5/2024	Mean/CV for All Labs:	8/5/2024
Reagent:	8/5/2024		
Unit:	8/5/2024	Instrument Setup:	8/5/2024
Temperature:	8/5/2024		
Unit Conversion:	8/5/2024	QualitativeResponse:	8/5/2024
Analyte-based Unit Conversion:	8/5/2024	Valid QualitativeResponse:	8/5/2024
Valid Analyte:	8/5/2024		
Valid Units:	8/5/2024	Total Allowable Error:	7/24/2024
Instrument Tiering:	8/5/2024		
Level Names:	8/5/2024	Rili-BÄK B1:	12/17/2021
		Rili-BÄK B2:	9/10/2020
GOST:	10/1/2016	Rili-BÄK B3:	2/10/2015

Data Transmission

Last Transmission Date:	10/5/2022
Last Transmitted File:	999991.0005
Last Transmitted By:	admin

Write Transmission File

Last Transmission File Date:	7/12/2024
Last Transmission File:	999991.0006
Last Created By:	admin

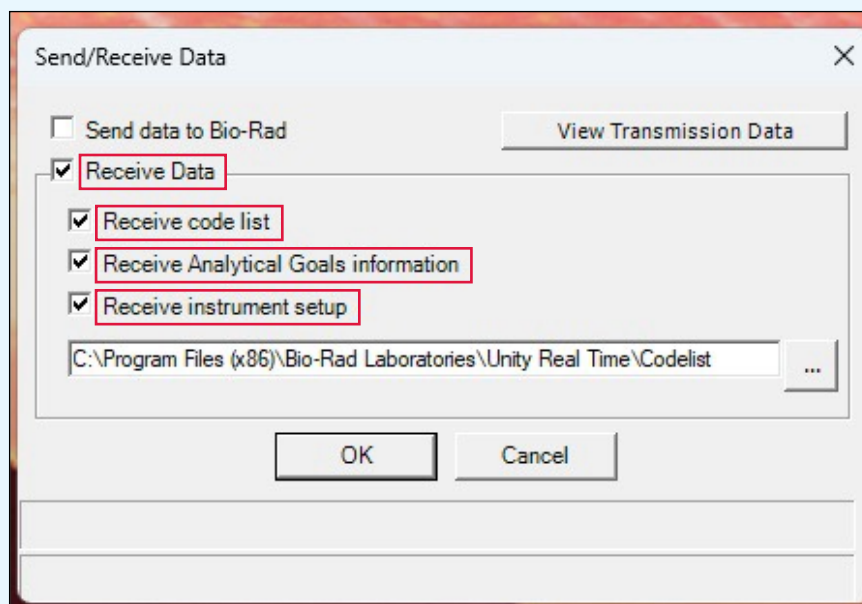
OK

3. Because the dates are older than 30 days, your software needs to be updated. Select **Tools > Unity Interlab > Send/Receive Data...**



4. Select **Receive Data** and checkmark all three options (**Receive code list**, **Receive Analytical Goals information**, and **Receive instrument setup**).

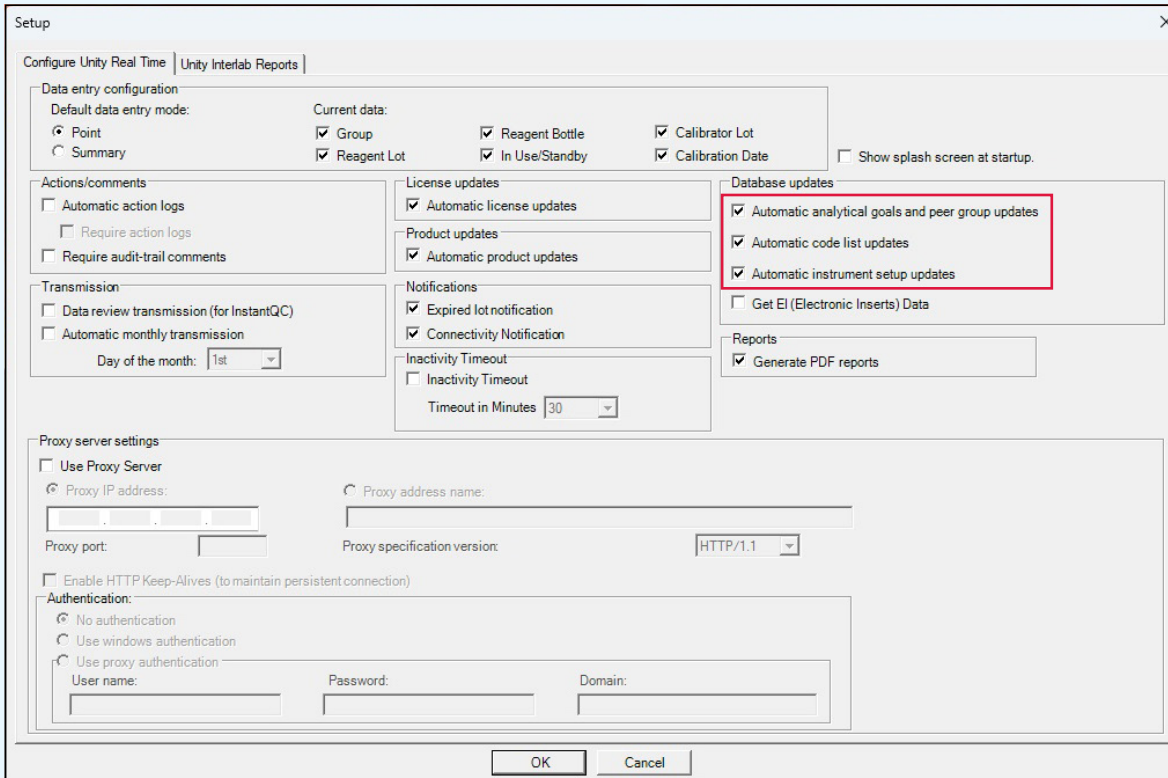
5. Click **OK**. Your download will start, and a database update will be performed. This can take a couple of minutes depending on your internet and network speed.



Note: You can also set up the Unity Real Time Software to check these code list updates automatically at login.

1. Select **Tools > Setup**.

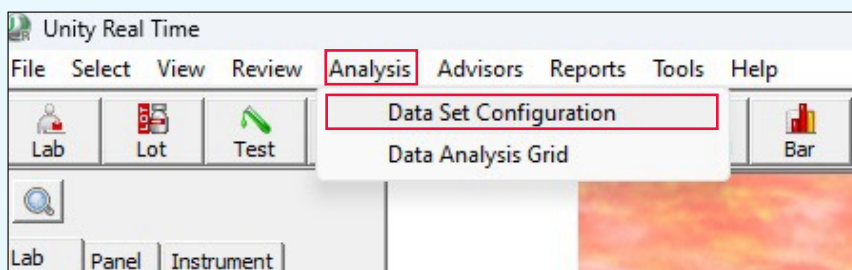
2. Under **Database updates**, checkmark the three options: **Automatic analytical goals and peer group updates**, **Automatic code list updates**, and **Automatic instrument setup updates**.



Configure the Data Analysis Grid Template

1. Once software code lists are up to date, you can use the latest peer group information to create a Data Analysis Grid. In the following example, you'll learn an easy way to compare your instrument to the peer group.

First, you'll need to configure your data set. In the toolbar, click **Analysis > Data Set Configuration**.



2. Enter a template name. The example below uses the template name “Peer group comparison.” This template will be saved and is an easy way to use the same Data Analysis Grid settings later, so there’s no need to set up your configuration every time.

3. On the tab **Data Set A**, select **Your laboratory**. Then select your instrument as **Current Instrument** and your date range as **Cumulative**.

Note: Optional date ranges can be selected in the **From** and **To** dropdowns.

4. After configuring **Data Set A**, click on the tab **Data Set B** to move to the next data set.

Select 'Add' to create a new template or 'Update' to change an existing template.

Add Update

Enter a template name:

Data Set A | Data Set B | General

Your laboratory Consensus group

Current Instrument Another Instrument

<input type="checkbox"/>	Instrument	Description	Lab
<input type="checkbox"/>	1drop	Water Quality.temps, cou...	999911
<input type="checkbox"/>	3M Diagnostics	Water Quality.temps, cou...	999911
<input type="checkbox"/>	3v-diagnostic	Water Quality.temps, cou...	999911
<input type="checkbox"/>	Abbott Alinity i	Instrument 1	218881
<input type="checkbox"/>	Abbott Alinity m	Molecular and UA	999901
<input type="checkbox"/>	Beckman Coulter AU680	Instrument 1	218881
<input type="checkbox"/>	Beckman Coulter AU680	Instrument 2	999913
<input type="checkbox"/>	Bio-Rad Banjo ID-Reader	Blood Bank	999991

Evaluation mean/SD

Cumulative Today

From:

To:

Peer
 Method
 All labs

1 month
 6 months
 Cumulative

5. For Data Set B, you can configure up to 500 data sets. In the example below, there are two Data Set B's, one for your peer and one for your method comparison.

Enter "2" for the number of Data Set B's.

6. Select **B1** for your peer comparison data set. On the right side, select **Consensus group, Peer** and then **6 months** for the date range selection.

Note: A 1-month peer group will reflect the most recent data in a peer group. This can be different from longer term data (6 months or cumulative) due to changes in reagent lots and/or calibration lot changes. Selecting a 6-month or cumulative peer date range will provide a longer term mean and SD.

Select 'Add' to create a new template or 'Update' to change an existing template.

Add Update

Enter a template name:

Peer group comparison

Data Set A **Data Set B** General

Select the number of data sets to compare to Data Set A: 2 (Between 1 and 500)

Select the Data Set B to configure below: B1

Data Set B1

Your laboratory

- Current Instrument
- Another Instrument

<input type="checkbox"/>	Instrument	Description	Lab
<input type="checkbox"/>	1drop	Water Quality,temps, cou...	999911
<input type="checkbox"/>	3M Diagnostics	Water Quality,temps, cou...	999911
<input type="checkbox"/>	3v-diagnostic	Water Quality,temps, cou...	999911
<input type="checkbox"/>	Abbott Alinity i	Instrument 1	218881
<input type="checkbox"/>	Abbott Alinity m	Molecular and UA	999901
<input type="checkbox"/>	Beckman Coulter AU680	Instrument 1	218881
<input type="checkbox"/>	Beckman Coulter AU680	Instrument 2	999913
<input type="checkbox"/>	Bio-Rad Banjo ID-Reader	Blood Bank	999991

Evaluation mean/SD

Consensus group

- Peer
- Method
- All labs

1 month

6 months

Cumulative

Cumulative

Today

From: 8/ 7/2024 11:24 AM

To: 8/ 7/2024 11:24 AM

7. Select **B2** for your method comparison data set. On the right side, select **Consensus group**, **Method**, and **6 months**.

8. Click the **General** tab.

Select 'Add' to create a new template or 'Update' to change an existing template.

Add Update

Enter a template name:

Peer group comparison

Data Set A Data Set B **General**

Select the number of data sets to compare to Data Set A: (Between 1 and 500)

Select the Data Set B to configure below: **B2**

Data Set B2

Your laboratory

- Current Instrument
- Another Instrument

<input type="checkbox"/> Instrument	Description	Lab
<input type="checkbox"/> 1drop	Water Quality.temps, cou...	999911
<input type="checkbox"/> 3M Diagnostics	Water Quality.temps, cou...	999911
<input type="checkbox"/> 3v-diagnostic	Water Quality.temps, cou...	999911
<input type="checkbox"/> Abbott Alinity i	Instrument 1	218881
<input type="checkbox"/> Abbott Alinity m	Molecular and UA	999901
<input type="checkbox"/> Beckman Coulter AU680	Instrument 1	218881
<input type="checkbox"/> Beckman Coulter AU680	Instrument 2	999913
<input type="checkbox"/> Bio-Rad Banjo ID-Reader	Blood Bank	999991

Evaluation mean/SD

Cumulative

Today

From:

To:

Consensus group

- Peer
- Method
- All labs

1 month

6 months

Cumulative

9. The **General** tab allows for further customization of the report. Checkmark the following items: **Lab description, Method, Instrument, Unit, SDI, CVR, Bias %**, and any other items you'd like to see.

10. Click **Save** to save the template.

The screenshot shows the 'Data Set Configuration' dialog box with the 'General' tab selected. The 'Add' radio button is selected, and the template name is 'Peer group comparison'. The 'Save' button is highlighted with a red box. In the 'Select the items to be displayed on report headers' section, the following items are checked and highlighted with red boxes: Lab description, Method, Instrument, Unit, SDI, CVR, and Bias %.

Data Set Configuration

Select 'Add' to create a new template or 'Update' to change an existing template.

Add Update

Enter a template name:

Peer group comparison **Save** Close

Data Set A | Data Set B **General**

Select the items to be displayed on report headers

<input type="checkbox"/> Lab	<input checked="" type="checkbox"/> SDI	<input type="checkbox"/> CV Threshold
<input checked="" type="checkbox"/> Lab description	<input checked="" type="checkbox"/> CVR	<input type="checkbox"/> Bias % Threshold
<input checked="" type="checkbox"/> Method	<input checked="" type="checkbox"/> Bias %	<input type="checkbox"/> TEB% Threshold
<input checked="" type="checkbox"/> Instrument	<input type="checkbox"/> TE p<0.05	<input type="checkbox"/> Acceptance Rate%
<input type="checkbox"/> Reagent	<input type="checkbox"/> TEB%	<input type="checkbox"/> Standard Expanded Uncertainty
<input checked="" type="checkbox"/> Unit	<input type="checkbox"/> Sigma	
<input type="checkbox"/> Temperature	<input type="checkbox"/> TEa	
<input type="checkbox"/> QC Rules (Westgard, AG)	<input type="checkbox"/> RCV	

Set font

Font size: 8

Data reference set

Data Set A Data Set B

Instrument scope

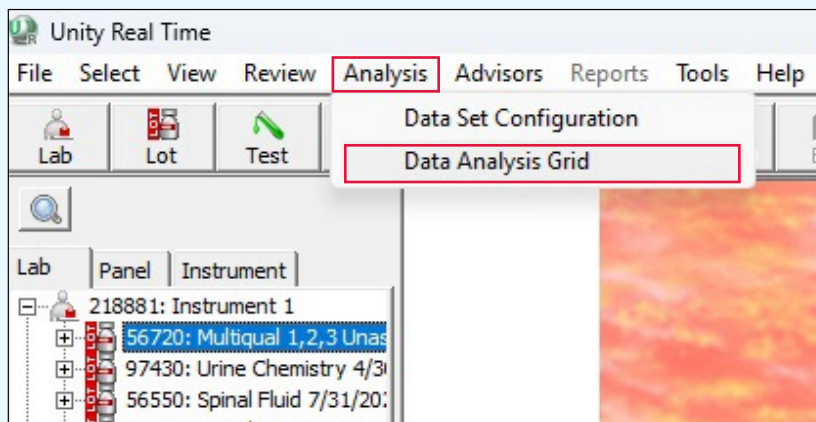
Compare data across instrument models (disables consensus group option)

Test Selection

Current Lot Current Test

Open the Data Analysis Grid

1. Now it's time to view the Data Analysis Grid. Click **Analysis > Data Analysis Grid**.



2. Select the template “Peer group comparison” in the dropdown menu.

Template: Lab: 218881 Lot: 56720 Multiquel 1,2,3 Unassayed Matrix: Serum

Peer group comparison [Data Set Configuration] [Configure TEa] [Configure Alert] [Export] [Print] [Close]

Level 1 | Level 3 | All Levels

Data Set	Analyte	Lab description	Method	Instrument	Unit	Mean	SD	CV	Pts	Labs	SDI	CVR	Bias%
A	Calcium	Instrument 1	Arsenazo III	Beckman Coulte...	mg/dL	5.80	0.15	2.61	604	1			
B1						5.83	0.14	2.40	48154	200	-0.16	1.08	-0.37
B2						5.90	0.16	2.67	115358	448	-0.62	0.97	-1.66
A	CO2 (Carbon Di...	Instrument 1	Enzymatic	Beckman Coulte...	mEq/L	15.63	1.09	6.98	622	1			
B1						15.18	1.05	6.89	53541	203	0.43	1.01	2.95
B2						14.84	1.53	10.29	250002	1001	0.51	0.68	5.30
A	Cholesterol, HDL	Instrument 1	Direct measure, ...	Beckman Coulte...	mg/dL	28.85	1.90	6.58	625	1			
B1						31.96	1.35	4.24	16794	70	-2.29	1.55	-9.72
B2						29.39	3.81	12.98	96650	447	-0.14	0.51	-1.82

3. For every test in the product/lot, you will see the data appear in the Data Analysis Grid. The **SDI**, **CVR**, and **Bias %** fields show the calculated results.

To set alerts, click **Configure Alert**. This will allow you to highlight results if they exceed a specific range.

For **SDI** and **CVR**, you'll type one value that you'll use for all tests. The example below uses the value "2." For **Bias %**, you can select individual targets by test (or copy the same target for all tests).

The screenshot shows the 'Configure Alerts Thresholds Of Data Analysis' dialog box. The 'Alerts Thresholds' section contains the following settings:

- SDI: \pm 2
- CVR: 2
- Sigma: 3
- Acceptance Rate%: 90
- CV: User Defined
- Bias%: User Defined
- TEB%: User Defined

There is a 'Set Color...' button at the bottom of the dialog.


4. By default, the Data Analysis Grid will open up the Level 1 data. You can select the different levels by clicking their respective tabs. The tab **All Levels** provides information from all the levels in one table.

Template		Lab: 218881 Lot: 56720 Multiquanal 1.2,3 Unassayed		Matrix: Serum									
Peer group comparison		Data Set Configuration	Configure TEa	Configure Alert	Export	Print	Close						
Level 1 Level 3 All Levels													
Data Set	Analyte	Lab description	Method	Instrument	Unit	Mean	SD	CV	Pts	Labs	SDI	CVR	Bias%
A	Calcium	Instrument 1	Arsenazo III	Beckman Coulte...	mg/dL	5.80	0.15	2.61	604	1			
B1						5.83	0.14	2.40	48154	200	-0.16	1.08	-0.37
B2						5.90	0.16	2.67	115358	448	-0.62	0.97	-1.66
A	CO2 (Carbon Di...	Instrument 1	Enzymatic	Beckman Coulte...	mEq/L	15.63	1.09	6.98	622	1			
B1						15.18	1.05	6.89	53541	203	0.43	1.01	2.95
B2						14.84	1.53	10.29	250002	1001	0.51	0.68	5.30
A	Cholesterol, HDL	Instrument 1	Direct measure, ...	Beckman Coulte...	mg/dL	28.85	1.90	6.58	625	1			
B1						31.96	1.35	4.24	16794	70	-2.29	1.55	-9.72
B2						29.39	3.81	12.98	96650	447	-0.14	0.51	-1.82

5. These tables can be saved and printed as PDFs or exported as .xlsx files, as needed.

Template **Lab: 218881** **Lot: 56720 Multiqual 1,2,3 Unassayed** **Matrix: Serum**

Peer group comparison Data Set Configuration Configure TEa Configure Alert Export Print Close



Printed 8/7/2024
Unity Real Time

Data Analysis Report

Template: Peer group comparison
 Lab: 218881
 Lot: 56720 Multiqual 1,2,3 Unassayed, Matrix: Serum, Manufacturer: Bio-Rad, Expiration date: 9/30/2025
 Data reference set: Data Set B
 Test Selection: Current Lot
 Data Set A: Your laboratory, Current Instrument: Instrument [218881], Cumulative
 Data Set B1: Consensus group: Peer, 6 months
 Data Set B2: Consensus group: Method, 6 months
 Alert threshold: SDI: ≤ 2.00, CVR: 2.00, Sigmas: 2.40
 Level 1

Data Set	Analyte	Lab description	Method	Instrument	Unit	Mean	SD	CV	Pts	# Labs	SDI	CVR	Bias%
A	Calcium	Instrument 1	Arsenazo III	Beckman Coulter AU680 [218881]	mg/dL	5.80	0.15	2.61	604	1			
B1						5.83	0.14	2.40	48154	200	-0.16	1.08	-0.37
B2						5.90	0.16	2.67	115358	448	-0.62	0.97	-1.66
A	CO2 (Carbon Dioxide)	Instrument 1	Enzymatic	Beckman Coulter AU680 [218881]	mEq/L	15.63	1.09	6.98	622	1			
B1						15.18	1.05	6.89	53541	203	0.43	1.01	2.95
B2						14.84	1.53	10.29	250002	1001	0.51	0.68	5.30
A	Cholesterol, HDL	Instrument 1	Direct measure, polymer-polyanion	Beckman Coulter AU680 [218881]	mg/dL	28.85	1.90	6.58	625	1			
B1						31.96	1.35	4.24	16794	70	-2.29	1.55	-9.72
B2						29.39	3.81	12.98	96650	447	-0.14	0.51	-1.82

Analyze Peer Group Data with a Levey-Jennings Chart

The Levey-Jennings Chart is an alternative to the Data Analysis Grid. Next, you'll learn how to use Levey-Jennings Charts in the Unity Real Time Software to graph against your peers and monitor QC performance.

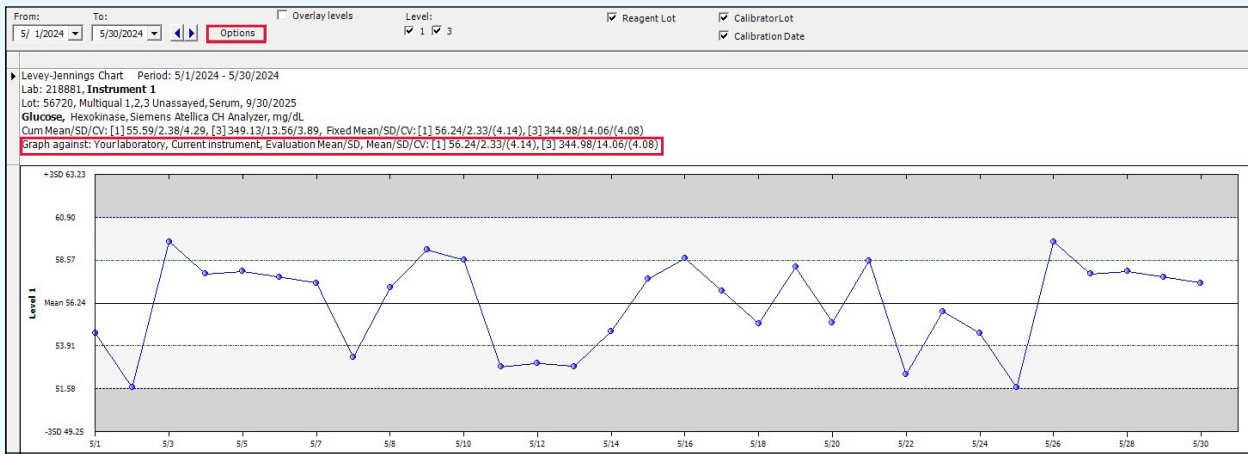
Confirm Code Lists are Up to Date

The Unity Real Time Software uses code lists to download the most recent peer group statistics. To access the most updated statistics, it's important for the lab to ensure code lists are up to date. See page 1 for a guide on how to confirm your code lists are up to date.

Create a Levey-Jennings Chart

1. If software code lists are up to date, you can compare your QC data against the latest peer group data in a Levey-Jennings Chart.

Your Levey-Jennings Chart normally defaults to graph your QC data against your evaluation mean and standard deviation (SD). To configure the graph settings, click **Options**.



2. The Options window will open. Click the **Graph Against** tab.

Options

General | Levey-Jennings | Header | Lines | **Graph Against**

Your laboratory

Current instrument

Another instrument:

Instrument	Description	Lab
<input type="checkbox"/> 1drop	Water Quality, temps, counters	999911
<input type="checkbox"/> 3M Diagnostics	Water Quality, temps, counters	999911
<input type="checkbox"/> 3v-diagnostic	Water Quality, temps, counters	999911
<input type="checkbox"/> Abbott Alinity i	Instrument 1	218881
<input type="checkbox"/> Abbott Alinity m	Molecular and IJA	999901
<input type="checkbox"/> Beckman Coulter AU680	Instrument 1	218881

Evaluation Mean/SD

Cumulative

Date range

From: 6/13/2024 To: 6/13/2024

Z-Score

Default

Consensus group

Peer

Method

All labs

1 Month

6 Months

Cumulative

Apply to current user

Apply to all users

OK Cancel Apply

3. You'll want to graph against the consensus group. On the right side, select **Consensus group** and then select **Peer**.

Then adjust the date range selection (**1 month**, **6 months**, or **Cumulative**). The example below has the selection of **6 months**. The Levey-Jennings Chart will now display the values of your peer group data.

Note: A 1-month peer group will reflect the most recent data in a peer group. This can be different from longer term data (6 months or cumulative) due to changes in reagent lots and/or calibration lot changes. Selecting a 6-month or cumulative peer date range will provide a longer term mean and SD.

Options

General | Levey-Jennings | Header | Lines | Graph Against

Your laboratory

Consensus group

Current instrument

Peer

Method

All labs

Another instrument:

Instrument	Description	Lab
<input type="checkbox"/> 1drop	Water Quality, temps, counters	999911
<input type="checkbox"/> 3M Diagnostics	Water Quality, temps, counters	999911
<input type="checkbox"/> 3v-diagnostic	Water Quality, temps, counters	999911
<input type="checkbox"/> Abbott Alinity i	Instrument 1	218881
<input type="checkbox"/> Abbott Alinity m	Molecular and UA	999901
<input type="checkbox"/> Beckman Coulter AU680	Instrument 1	218881

Evaluation Mean/SD

Cumulative

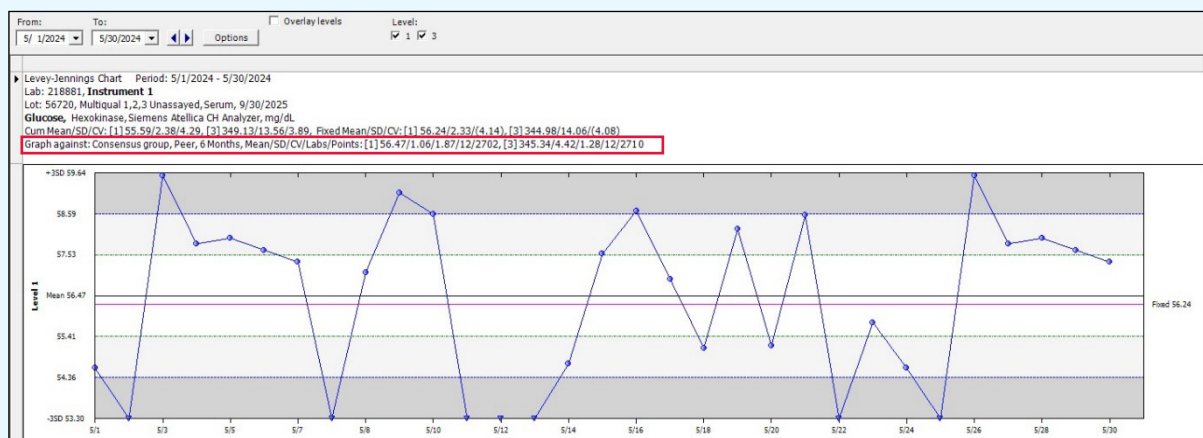
Date range

From: 6/13/2024 To: 6/13/2024

Z-Score

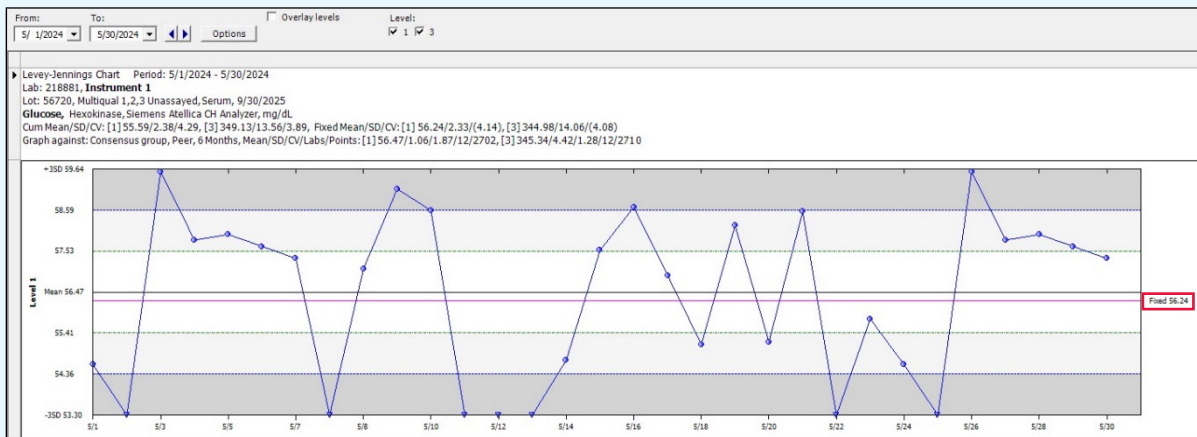
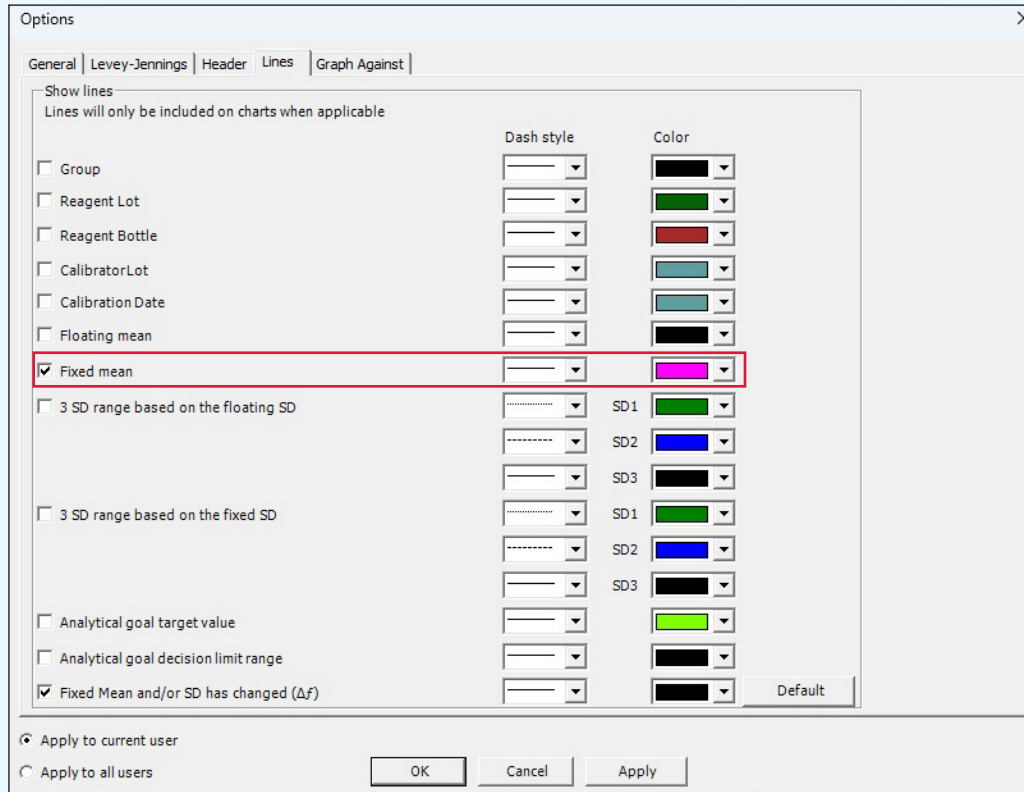
Default

4. The header of the graph will now display the updated date range, peer group, and the mean/SD/CV/Labs/Points information for the selected consensus group.



Important Note: It is always important to confirm in the header that you are graphing against the peer group. If a peer group is not available, the Levey-Jennings Chart will default back to the evaluation mean and SD.

5. One helpful tool to visualize your lab's mean or evaluation mean (and SD) is a line. To add a fixed mean line, check **Fixed mean** in the **Options** menu and set the dash style and color of your line.



Important Note: After graphing against the consensus group, make sure to return your Levey-Jennings Chart to graph against the evaluation mean and SD. This will allow you to see your own internal QC Levey-Jennings Chart again.

Helpful Hint: To navigate to the next test in your lot, use the **F5** key on your keyboard. There is no need to close the Levey-Jennings Chart and reopen a new chart. Using F5 will move your Levey-Jennings Chart to the next test.

Other useful keys:

- **Shift + F5** will return your test to the previous test
- **F6** will move your Levey-Jennings Chart to the next control product/lot
- **F7** will move your Levey-Jennings Chart to the next lab number



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