

Welcome!

CAREWare Quick Starts will walk you through the basics of setting up, managing and using basic CAREWare functions. They're not a replacement for the CAREWare User Manual, which is where you'll need to go to learn about more advanced functions. This material is for non-technical users who just need to get information in and out of CAREWare with no worries.

About This Guide #8: Creating More Advanced Custom Reports

Guides in this series:

1. *Downloading and installing CAREWare*
2. *Creating contracts and services*
3. *Entering Clients and their Service and Clinical Data*
4. *Customizing tabs and fields*
5. *Customizing clinical data*
6. *Working with CAREWare's prebuilt reports (including the Ryan White Annual Program Data Report)*
7. *Creating basic custom reports*
8. *Creating more advanced reports*
9. *User and System Administration*

First Things First

What do I need to get started?

You must have the appropriate user privileges to run reports.

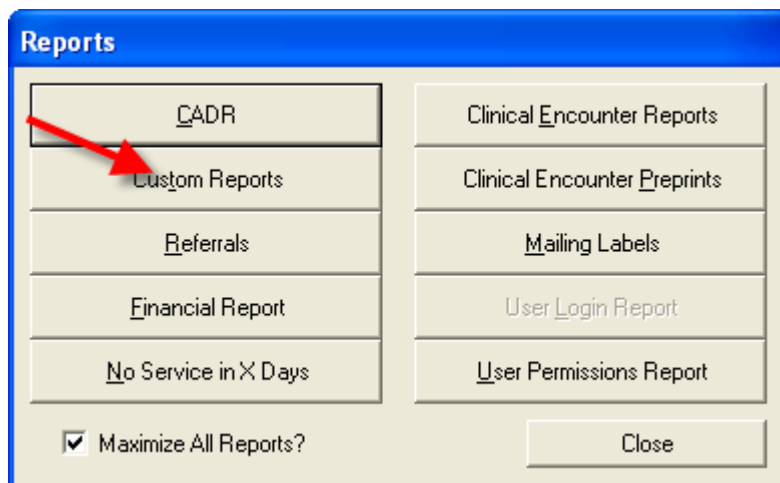
You should have a number of clients entered in the system so you can see how your reports will look.

Please see the previous guide in this series, “Creating Custom Reports,” before moving on to this one. This manual assumes basic knowledge of getting to and creating basic custom reports.

Creating an advanced custom report

As you get comfortable with custom reports, you can create more complex reports. Below we’ll run an example of a report that uses the “advanced” options. It will report all clients whose housing status is “Non-permanently housed,” who are female or under 25.

1. From the **Reports** menu, select **Custom Reports**.



2. The menu will appear.

Report Name:	Report Type:	Custom/Crosstab:
asdf	Service	Custom

3. Click **New Report** to add a new report.

4. Create a new demographic report and call it “Non-permanently Housed Title IV Clients.”
5. Create a new field selection. Name it “Housing Arrangement.” You can use this selection in other demographic reports later.
6. In order, add the fields “Name,” “Housing Arr,” “DOB,” and “Gender.”

Custom Reports - Field Selection

Custom Selection Format Name: Use Totals ? Close

Report Type: Delete Selection

Field Selection

Field: Report Column Header: Total: Sort: Sort Priority: Save Cancel

Col#	Field Name	Column Header	Totals	Sort	Sort Priority
0	Name	Name			
1	Housing Arr	Housing Arr			
2	DOB	DOB			
3	Gender	Gender (Group By)			

Add Field Edit Field Remove Field

7. Click **Close**.

Custom Report Add

Report Name:

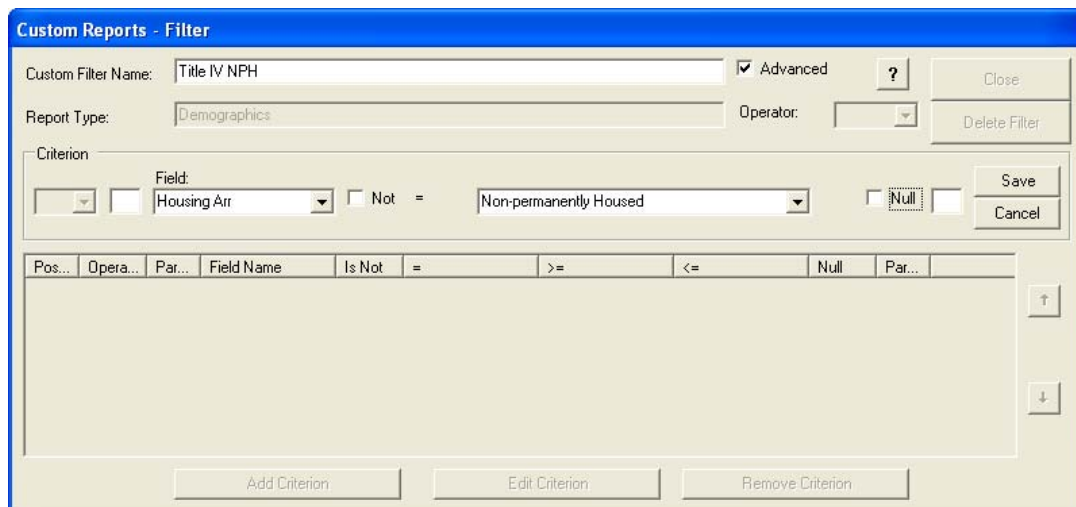
Report Type: Crosstab?

Field Selections:

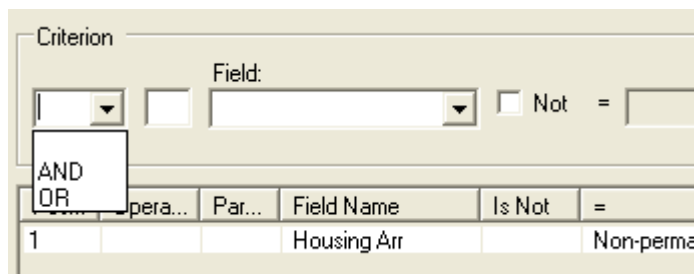
Filters:

Save Cancel

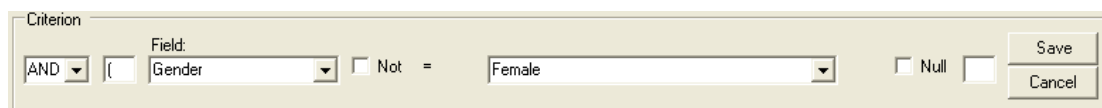
8. Create a new filter called "Title IV NPH."
9. Check the "Advanced" box next to the Custom filter name field at the top of the screen.
10. Add the criteria "Housing Arr = Institution" and click **Save**.



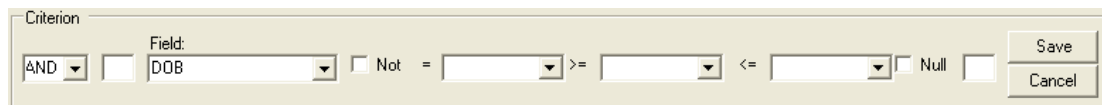
- When you add your next criterion, you'll see that the **operator** becomes active next to the field. The operator is the function (AND or OR) which you'll use to connect and filter your results.



- Select the AND operator, then put a left parenthesis in the next box. The parenthesis lets CAREWare know that the part of the **statement** you are building is to be joined with the 3rd criteria, which you'll create in a minute. Select "Gender = Female," then click **Save**.



- Add another criterion. Select the OR statement from the drop down, then select DOB as the field. The selection options will automatically change to =, >=, and <= to reflect the field type (Date).



- In the >= box, **enter today's date minus 25 years and a day**. This will capture all clients 24 and under (Title IV). Since the day of this writing is July 16, 2007, we've selected July 15, 1982.
- Enter a parenthesis in the last box on the row to **close** your statement.

Criterion

Field: Not = >= <= Null

- Click **Save**. Your results should appear as they do below.

Custom Reports - Filter

Custom Filter Name: Advanced

Report Type: Operator:

Criterion

Field: Not = >= <= Null

Pos...	Opera...	Par...	Field Name	Is Not	=	>=	<=	Null	Par...
1			Housing Arr						
2	AND	(Gender						
3	AND		DOB			7/15/1982)

- Close** this filter and **Save** at the next window.
- Highlight the report from the list and click **Run Report**. Remember to specify the date range to select clients served in that range.

Custom Reports

View/Edit

Data Scope

Show Shared Service Records

Show Shared Clinical Records

Filter by Report Type:

Date Span

From: Through:

Clinical Review

Year:

Show New Clients Only Show Specifications Sum Numeric Fields

Report Name:	Report Type:	Custom/Crosstab:
asdf	Demographics	Custom
Clients by Race and Gender	Demographics	Custom
Non-permanently Housed Title IV Clients	Demographics	Custom

- The report will return results similar to this:

<u>Non-permanently Housed Title IV Clients</u>		
Data Scope: Marianas Trench Care Center		
Name:	Housing Arr:	DOB: Gender (Group By):
Eel, Laura	Non-permanently Housed	11/10/1990 Female
Abalone, Julia	Non-permanently Housed	12/23/1989 Female

Number of Records 2

Using Totals

NOTE: This and following sections assume you are now comfortable creating field selections and filters. We will show you what your field selections and filters should look like, but we'll now skip walking through each step to create them.

If you need to sum certain values, or group the report in a specific way (e.g. over clients or service categories), you can check the **Use Totals** button box at the top of the Field Selection screen. Use totals also includes new functions to calculate the minimum or maximum or average of a group of observations, say CD4 counts or viral loads.

We'll do two examples of the *Use Totals* function, one for a **service** report where there are often multiple services per client, and one for a custom **lab** report, where there are often multiple lab tests per individual.

Service Report:

Here's the top portion of a basic service report (fields Name, Srv Category and Srv Short Name), sorted by client; *Use Totals* was *not* checked. You can see that some clients appear multiple times because they've received multiple services in the date range.

2007 Services

Data Scope: Marianas Trench Care Center

Name:	Srv Category:	Srv Short Name (Group By):
Abalone, Julia	Face-to-face Case Management	200 Face-to-face Case Management
Abalone, Julia	Face-to-face Case Management	200 Face-to-face Case Management
Abalone, Julia	Face-to-face Case Management	200 Face-to-face Case Management
Blowfish, Christina	Face-to-face Case Management	201 Intake
Blowfish, Christina	Ambulatory/Outpatient Medical Care	300 Doctor Visit
Blowfish, Christina	Ambulatory/Outpatient Medical Care	300 Doctor Visit
Blowfish, Christina	Ambulatory/Outpatient Medical Care	300 Doctor Visit
Clam, Thomas	Face-to-face Case Management	200 Face-to-face Case Management
Clam, Thomas	Face-to-face Case Management	200 Face-to-face Case Management
Clam, Thomas	Face-to-face Case Management	200 Face-to-face Case Management
Clam, Thomas	Ambulatory/Outpatient Medical Care	301 PA/NP Visit

Now we check the Use Totals option, grouping by client and service category and counting the number subservices:

Custom Reports - Field Selection

Custom Selection Format Name: Use Totals ? Close

Report Type: Delete Selection

Field Selection

Field: Report Column Header: Total: Sort: Sort Priority: Save Cancel

Col#	Field Name	Column Header	Totals	Sort	Sort Priority
0	Name	Name	Group By	Ascending	1
1	Srv Category	Srv Category	Group By		
2	Srv Short Name	Srv Short Name (Co...	Count		

Add Field Edit Field Remove Field

2007 Services

Data Scope: Marianas Trench Care Center

Name:	Srv Category:	Srv Short Name (Count):
Deepwater, Geraldo	Ambulatory/Outpatient Medical Care	2
Seaweed, Robert	Ambulatory/Outpatient Medical Care	1
Clam, Thomas	Face-to-face Case Management	3
Cuttlefish, William	Face-to-face Case Management	1
Mantaray, Peter	Face-to-face Case Management	1
Seahorse, Barbara	Ambulatory/Outpatient Medical Care	1
Maguro, Juan J	Ambulatory/Outpatient Medical Care	2
Squid, Jeremiah L	Face-to-face Case Management	1
Cuttlefish, Constantine	Ambulatory/Outpatient Medical Care	1

(Written as if the report ran correctly) For the client Julia Abalone, there's now only one line for Face-to-Face Case Management, with the number 3 in the right-hand column indicating how many of those services she received in the date span.

Lab Report:

In the next example we will use the 'Use Totals' option to show the minimum or lowest CD4 count for a client over a specified date range.

1. First, without using totals, we create a report as seen below:

Field selection:

Custom Reports - Field Selection

Custom Selection Format Name: Use Totals ? Close

Report Type: Delete Selection

Field Selection

Field: Report Column Header: Total: Sort: Sort Priority: Save Cancel

Col#	Field Name	Column Header	Totals	Sort	Sort Priority
0	Last Name	Last Name		Ascending	1
1	Lab Result	Lab Result			

↑ ↓

Add Field Edit Field Remove Field

Filter:

Custom Reports - Filter

Custom Filter Name: Advanced ? Close

Report Type: Operator: Delete Filter

Criterion

Field: Not = >= <= Null Save Cancel

Pos...	Opera...	Par...	Field Name	Is Not	=	>=	<=	Null	Par...
1			Lab Test		CD4 Count				

↑ ↓

Add Criterion Edit Criterion Remove Criterion

Remember to set the date span:

Date Span ?

From: Through:

2. Run the report this way and you'll get all CD4 results in that time frame:

CD4 Counts

Data Scope: Marianas Trench Care Center

Last Name:	Lab Result:
Abalone	1150
Albacore	300
Albacore	229
Albacore	405
Albacore	121
Albacore	575
Albacore	590
Albacore	650
Albacore	780
Blowfish	750
Blowfish	820
Blowfish	127
Blowfish	997
Clam	375
Clam	175

- Now we'll rerun the same report, but this time we'll check the Use Totals in the field selection screen and choose the following settings: **Group By** Last name and **Min** for Lab Result:

Custom Reports - Field Selection

Custom Selection Format Name: CD4 Count Use Totals

Report Type: Lab

Field Selection

Col#	Field Name	Column Header	Totals	Sort	Sort Priority
0	Last Name	Last Name		Ascending	1
1	Lab Result	Lab Result (Min)	Group By Min		

Buttons: Add Field, Edit Field, Remove Field

- Each client's lowest CD4 value in that time frame is shown:

CD4 Counts	
Data Scope: Marianas Trench Care Center	
Last Name:	Lab Result (Min):
Abalone	1150
Albacore	121
Blowfish	127
Clam	175
Coral	199
Crab	199
Cuttlefish	199
Deepwater	250
Doe	412
Fish	200
Jellyfish	2
Krill	1200
Maguro	275
Mantaray	200
Mollusk	200

Generating a Crosstab Wizard Report

While custom reports generate lists of clients meeting specific selection criteria, the Crosstab Wizard calculates the NUMBER of individuals who meet those criteria. In the example below, you can calculate the number of clients in a certain age group by race/ethnicity and gender.

1. Check the Crosstab? box when you create a report.

Custom Report Add

Report Name:
Crosstab by Race (Race/Ethnicity by Gender)

Report Type:
Demographics Crosstab?

Field Selections:
[Empty dropdown] ...

Filters:
[Empty dropdown] ...

Save Cancel

2. Create a field selection as seen below – note that the field options on this screen are different when you select Crosstab.

Crosstab Reports - Field Selection

Custom Selection Format Name:

Report Type:

Field Selection

Field: Report Column Header:

Field	Column Header	Field Status
Race/Ethnicity	Race/Ethnicity	Row
Gender	Gender	Column
AgeGroup	A. Ind.	Strata

3. Create a filter for the age group on which you wish to report.

Custom Reports - Filter

Custom Filter Name: Advanced

Report Type: Operator:

Criterion

Field: Not = >= <= Null

Pos...	Opera...	Par...	Field Name	Is Not	=	>=	<=	Null	Par...
1			AgeGroup		13 - 24				

4. The report will sort these clients by race and gender, with percentages.

Crosstab by Race (Race/Ethnicity by Gender) (Race/Ethnicity by Gender by A. Ind.)

Data Scope: Marianas Trench Care Center

Race/Ethnicity:	Total:	Col. %:	Female:	Male:
Black or African-American	2	25.0	1 (50.0%)	1 (50.0%)
Hispanic	2	25.0	1 (50.0%)	1 (50.0%)
White (non-Hispanic)	4	50.0	1 (25.0%)	3 (75.0%)
Total:	8	100.0	3 (37.5%)	5 (62.5%)

Using Calculated Objects in Custom Reports

The ability to analyze changes in lab results and other indicators has been expanded considerably in CAREWare with the addition of calculated objects in Custom Demographic Reports. A full description of these objects is available on the Careware web site at <http://hab.hrsa.gov/careware> in the document called ‘Field Descriptions for Custom Reports and Crosstab Wizard.’ The fields are listed alphabetically and described in the demographic section.

There is an extensive list of calculated fields. Some examples of particular interest allow you to determine:

- The highest and lowest quantitative lab value within a specified date range
- The change in lab values from one period to the next (e.g., how much did a client’s CD4 count or viral load rise or fall?)
- If a client had a change in ARV drug class


Calculated objects are available in demographic custom reports, but require some additional steps not found in a typical custom report setup. As an example, we’ll create a report that lists clients and the absolute change in their CD4 lymphocyte counts from one period to the next.

Setting up date ranges for comparison:

Say you want to look at how much a client’s CD4 count changed in 2007 compared to 2006. The calculated object will select the latest CD4 test result in 2007, and compare that to the latest CD4 count in 2006. You can run this test over any pair of time frames; i.e., if you select the first 6 months of 2007 in your date range below, CAREWare will automatically compare to the 6 months previous.

Here, in custom demographic reports, we select one of the calculated objects as one of our report fields.

There is an important difference from regular custom report field selection setup. When any of the calculated objects are selected as a field, ***an ellipsis appears to the right of the field*** (the box with three dots...), meaning that CAREWare requires you to provide additional details.

1. Create the field selection (Last Name, Quantitative Lab Amount Change).
When you enter the second field, click on the ellipse  button next to it.
2. The filter for this field is automatically created without parameters.

Custom Reports - Calculated Field

Calculated Field Name: Save Field

Report Column Header:

Criterion

Field: Not >= <= Null Save
Cancel

Pos...	Opera...	Par...	Field Name	Is Not	=	>=	<=	Null	Par...
1		(Quant Test						
2	AND		Quant Lab Date)

Edit Criterion

3. Select **Quant Test** and edit criterion to select the test, CD4 Count, and select **Quant Lab Date** to select the time frame (this being written at the end of July 2007, we can compare the 8 months of 2007 so far with the last 8 months (May-December) of 2006).

Custom Reports - Calculated Field

Calculated Field Name: Save Field

Report Column Header: Cancel

Criterion

Field: Not >= <= Null Save
Cancel

Pos...	Opera...	Par...	Field Name	Is Not	=	>=	<=	Null	Par...
1		(Quant Test		CD4 Count				
2	AND		Quant Lab Date			1/1/2007	7/28/2007)

Edit Criterion

4. Click **Save Field** and then save again on the Field Selection.
5. Run the report; results will appear as seen below.

Quantitative CD4 change

Data Scope: Marianas Trench Care Center

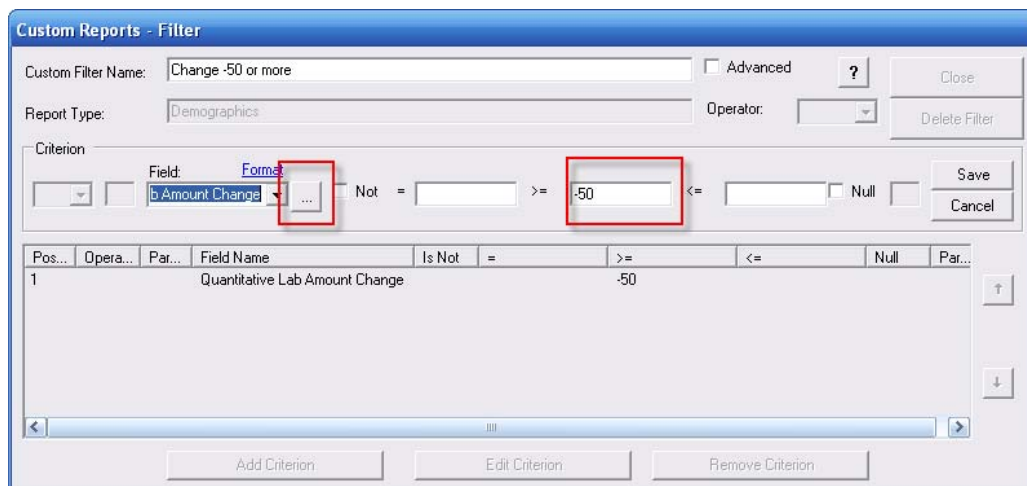
Last Name:	Quantitative Lab Amount Change:
Abalone	-300
Albacore	-245
Blowfish	247
Bluefin	400
Clam	
Coral	
Crab	

For a result to appear on this report, a client must have two CD4 counts in the time frame, as well as at least one service.

Applying filters to calculated objects

As with any other report, you can apply an additional filter – for instance, restricting this report to only those clients whose absolute drop in CD4 count was greater than 50.

1. Open the report you just created, and add a filter.
2. Add the same field you used when you added the field-based filter (Quantitative Lab Amount Change).
3. Indicate the amount of change you want to report. As we are looking for a drop, remember to use a negative number.
4. You will have click on the ellipse again and re-enter the same information you entered during field selection (test and date range).



Quantitative CD4 change

Data Scope: Marianas Trench Care Center

Last Name:	Quantitative Lab Amount Change:
Blowfish	247
Bluefin	400
Jellyfish	-18

Quantitative CD4 change

Data Scope: Marianas Trench Care Center

Last Name:	Quantitative Lab Amount Change:
Abalone	-300
Albacore	-245
Cuttlefish	-601
Swordfish	-425