ARGOS Overview and Tutorial

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# Table of Contents

ARGOS Introduction ........................................................................................................................................................................ 3
  Scope of Document ......................................................................................................................................................... 3
  Pre-requisites and Support Information ......................................................................................................................... 4
Logging In ........................................................................................................................................................................... 5
Creating a Filter .................................................................................................................................................................... 10
  Choosing Top Level Categories ................................................................................................................................. 10
  Choosing Lower Level Categories ............................................................................................................................... 13
  Saving the Filter ............................................................................................................................................................. 17
Creating a Data Grid ............................................................................................................................................................ 19
  Adding a Column Filter to a Grid .................................................................................................................................. 21
Requesting a Data Export ..................................................................................................................................................... 23
My Links Display Settings ..................................................................................................................................................... 25
Using Survival Curves .......................................................................................................................................................... 26
Including Specimen Data ................................................................................................................................................. 35
Appendix ............................................................................................................................................................................... 40
Revision History ................................................................................................................................................................. 40
ARGOS Introduction

ARGOS is a self-service application built on the HIDRA Core platform, allowing Cancer Consortium members to find, filter, and view patient, specimen and study data from a variety of data sources. New features and broader, deeper access to data are planned, which will allow access to over 350,000 patient records.

Highlights include:

- Multiple Data Portals
- Timelines
- Patient Accrual
- Survival Curves

Scope of Document

The Argos Overview and Tutorial is intended for a general audience and covers the following:

- Basic pre-requisites, support, and caveats
- Logging in
- Browsing patients
- Filtering patients
- Filtering specimens
- Saving and viewing Filters and Data Grids
- Requesting Data Exports
- Viewing Survival Curves
- Viewing Patient Accrual
- Viewing Patient Timelines
- Viewing Specimen Data Grids as filtered by patients

Note: This document covers explicit instructional material in the manner of an end-user guide. For general procedural instructions, refer to any procedure documents as may exist.
Pre-requisites and Support Information

- No OS restrictions (browser based app)
- JavaScript and cookies required
- Supported browsers:
  - Safari 6 and later
  - IE 11 and later
  - Chrome 35 and later
  - Firefox 30 and later
- VPN to Fred Hutch or on-campus connection required
- Hutch ID/account required*
- Contact support at (206) 667-2557 or CIT_Informatics@fredhutch.org
Logging In

This sequence of steps assumes prerequisite access to the ARGOS application.

1. Navigate to the ARGOS website, [https://hidra.fredhutch.org/](https://hidra.fredhutch.org/).

![Login page](image)

**Figure 1.** Login page.

2. Log in using the name portion of your Fred Hutch email and your Fred Hutch network password (i.e. User ID = Jsmith Password=XXXXXXX).

3. The Argos Home/Portal Selection Page will display as follows:
4. The user should see the Argos portals (Note: only portals a user is configured to have, will display).

5. Select the **Brain** portal for this tutorial.
Figure 3. Choose Activity.

6. Under ROLE, select the appropriate option and fill in IRB number if applicable.

7. Select your PHI Level (Note: a user’s available PHI levels are controlled via the user’s permission level).

8. Select the Next button.
9. The Terms of Use dialog box will appear. Actually read and familiarize yourself with these important rules before you accept them.

10. Select the **OK** button. ARGOS will load the portal you selected.

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**Figure 4.** Terms of Use dialog.
Figure 5. Brain portal dashboard.

The selected portal will load, defaulting to the Dashboard view. If your selected disease group has pre-configured sub-disease categories, they will appear at the top.

Portal specific summary patient statistics and data counts for patients, specimens and studies appear. Additionally, My Links is an area that displays the user's saved filters, grids, and reports.
Creating a Filter

Choosing Top Level Categories

1. Select the **PATIENTS** link on the right-hand side.

The Filter Summary page displays as seen in Figure 6.

![Filter Summary page](image)

**Figure 6.** Filter Summary page.

It lists the following items:

- On the left, see the main categories for filtering patient information.

- On the right, see the sub categories for each main category. Each sub-category has a number next to it indicating the number of choices available (Note: sub-categories such as age and year will display as a range). For example, Demographics > Ethnicities has 5 choices when selected.

2. Click on a sub-category, like **Ages**, to see how the UI works.
Figure 7. Explorer bars.

- Upon selecting a sub-category, the user should see a screen similar to the one below where the sub-categories’ choices appear, the individual explorer bars (Note: the main category as well as the other sub-categories will display at the top with a drop down menu for all main categories).

- The explorer bars are selectable and allow the user to build their filter. The number at the end of each bar represents the number of patients filtered out of the total population in the selected portal, according to the indicated attribute. In this case, 2,637 patients total exist in the Brain portal. Twenty five of them are 90 to 99 years of age, for example).

3. At the top left, select the **Ages** sub-category drop-down menu, then select **Ages at First Surgery**.

4. The user will be taken to the **Ages at First Surgery** sub-category but will still remain within the Demographics category.
Figure 8. Age at First Surgery sub-category displayed.

5. Select the “+” icon to expand the 40-49 bar.
Figure 9. Age at First Surgery sub-category displayed, with 40-49 bar expanded.

**Choosing Lower Level Categories**

This example looks at the survival rates of women who’ve had surgery in their late forties.

1. Select the 48 and 49 bars under the expanded 40-49 bar. Alternately, at the bottom of the page, type 48 and 49 in the min/max fields respectively in the Or enter a range UI element and click **Apply**.
Figure 10. First surgeries at 48 or 49.

The values to the right show the patients selected. In this case, it’s 26 of 26 and 14 of 14. Also, the population to the right displays the subset of patients to which you are filtering.

Notice that the filter defaulted to 48 OR 49, which makes sense given that a first surgery can only happen once.

2. Select AND in the dropdown menu on the right-hand side. Notice the numbers turn to zero.

3. Select OR to proceed.

4. To add another filter, select another demographic. For this example, select Genders.
**Figure 11.** Filtering by gender.

The values appear, with the darker-toned part of the bar indicating the subset (first surgery at ages 48 or 49) for each group and the lighter part indicating those outside the subset.

In this case, we have 14 females who first had surgery at 48 or 49, but still 44 patients total listed on the right-hand side because we haven’t turned this selection into a filter yet.

5. **Select the Female explorer bar.**
Figure 12. Female demographic added to filter.

Adding the Female filter introduced an additional layer of filtering. Now we have 14 patients out of 2,367 that meet these two filter conditions (female and 48 or 49). We can also go back and look at it in terms of ages broken down for women.

6. Select **Ages of First Surgery** again from the upper-left drop down menu.
Figure 13. Ages of first surgery filtered to females aged 48 or 49.

By going back to the Ages at First Surgery filter, we can see that 9 of 26 female patients were 48 when they first had surgery, and so on. Note that the 48 and 49 bars now have the subset indicated by tone.

Saving the Filter

1. Now that our filter is complete, to save your filter, select SAVE FILTER AS in the lower right.
2. In the dialog box, type in a name and select the appropriate radio button.

3. Select **SAVE** in the dialog.

The filter is now saved, as indicated in the right-hand side.

There are now 14 patients total. The saved filter has now created an entirely separate set of patients. Selecting any of the explorer bars will now cause them to display in one tone instead of splitting into dark and pale.
Creating a Data Grid

A data grid is the assemblage of data viewed through a filter, with additional information.

1. To get more detailed information, like coded ID information, surgery, pathology, etc., select the View tab at the top left.

The Column Chooser will appear, looking similar to the image in Figure 15.

The Column Chooser gives the user the ability to create a data grid from a variety of different categories to accompany the user’s filter or to be used by itself.
Figure 15. Column chooser.

Under the Source column, scroll down and select Operating Room Details. The Columns section on the right will then populate with choices.

This example assumes interest in everything but admission and discharge years.

2. Check Select All and then uncheck Op Admit Date and Op Discharge Date.

3. Select OK.
Figure 16. Data Grid with demographic variables applicable

The data grid breaks down the user’s filtered data even further and illustrates what we can find in terms of Demographics variables, specifically Age, Current Grade, Ethnicity, Gender, etc.

Adding a Column Filter to a Grid

In addition to being able to sort the columns, the user can add a column filter in the data grid. It can be used to further filter values within a selected column.

1. Filter within the grid by hovering the mouse over a column heading and selecting the filter icon.

2. In this example, select the Gender column. The user will see a dialog similar to the one in Figure 17.
Figure 17. Filtering the Grid.

To remove that filter, use the dialog again. Click **Clear Filters** and click **OK**.

Click **CLEAR ALL**, to clear the individual data grid filters on all columns and return your original data grid.

To save a grid, click **SAVE GRID** in the upper left-hand corner.

Type in a name for the data grid and click **SAVE**.
Figure 18. Saving a data grid.

**Requesting a Data Export**

1. To request an export of the data grid, click **REQUEST EXPORT** in the upper left-hand corner. A dialog like the one in Figure 19 will display.

2. Type in a reason for your request (this will be validate by an admin).

3. Select either Excel (.xlsx) or Tab Separated (.tsv) as your format.
Figure 19. Requesting the export of data.

4. Click Make Request.

5. To see and use your saved grids and filters, select Dashboard and then select one from under My Links.
Figure 20. Saved filters, grids, and reports under My Links.

My Links Display Settings

1. The user has the ability to turn on/off what is displayed under My Links. Also, the user can delete their saved grids or filters if they desire.

2. To see manage your saved grids and filters, select the REPORTS view on the right-hand side.

3. Then select the DATA GRIDS tab or the Saved Filters tab in the upper left-hand corner.

4. To turn on/off a grid or filter, select toggle switch next to the grid or filter.

5. To delete a grid or filter, check the grid(s) or filter(s) you wish to delete, then select the Delete button.
Using Survival Curves

1. To view the survival curve for the patients in the active filter, go to the Patients page and select Survival. Something like Figure 22 will display.
**Figure 22.** Survival curve for filtered patient set.

This plots a rough Survival Curve of all Brain patients, represented with a blue line, with the filtered patients represented with an orange line on the graph.

2. To view patient accrual with the same filtered patient set, select **Accrual** in the upper left-hand corner of the portal.
Figure 23. Accrual.

3. Lastly, we can view a timeline of patient data by selecting **TIMELINE** in the upper left (in order for the timeline to display, your filter must have 5,000 patients or less).

The user shall see a graph similar to the one below with the different colored points representing **DOB**, **Diagnosis**, **Radiation**, **Chemo**, **Progression**, and **Status**.
Figure 24. Timeline.

4. Within the Timeline, the user can hide a value and narrow their view. Select on **DOB** below left-hand side of the diagram. All of the blue points have now disappeared.
Figure 25. Timeline with DOB removed.

5. To change the alignment of your data select the **Align By**: dropdown menu. Select **Diagnosis**.

Now we can see the timeline of events for our subset of patients starting from the day of their diagnosis.
Figure 26. Timeline aligned by Diagnosis.

6. To change how your data is ordered, select the **Order By:** dropdown menu and select **Survival**.

The patients are now arranged so that those that lived the shortest time since diagnosis are at the top, and the longest lived are at the bottom.
Figure 27.  Aligned by Diagnosis and ordered by Survival, with shortest survival after diagnosis at top.

7. Furthermore, the user can add a feature from the left side plot to complement the Timeline. To add the Status feature, choose **Status** in the dropdown menu. You will now be able to see each patient’s current status.
Figure 28. Patient Status (Alive vs. Dead) in Timeline.

8. To add a new feature, click **Add+** in the side plot dropdown menu. The Calculate Event dialog box will appear.

9. If we are interested in seeing the time from diagnosis to chemo, for Event 1 choose **Diagnosis**, for Event 2 choose **Chemo**, and for Time Scale choose **Days**. Name it **TimeToChemoStart** and click **Create**.
Figure 29. Calculating `TimetoChemoStart` event.

In the left side plot, you will now see the time from diagnosis to chemotherapy for every patient.
Figure 30. Diagnosis to Chemo on Timeline.

As before, you can now select EXPORT or SAVE FILTER AS for this data set.

Including Specimen Data

Finally, you may also want to view and include specimen data in your filter or search.

1. Select SPECIMENS on the right-hand menu. You will see that there are 53 total specimens within our previously set patient filter.
Figure 31. Specimens available.

2. Click **VIEW** on the upper left-hand side. The COLUMN CHOOSER will appear much like it does for patient data.
3. In this example, choose Demographics on the left-hand side and check the Select All box on the right-hand side.
Figure 33. Demographics with all columns selected.

4. Select OK.
Figure 34. Specimens displayed.

You can now sort by the columns, save the view as a grid, and request a data export as you did with patients in the earlier.
# Appendix

## Revision History

These entries describe the general revision history of the document.

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<th>Authors</th>
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<tr>
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<td>Chris Briggs, Martin Tran, Ryan Blue</td>
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