

DI-Cubed Videos

For the best context, watch the following videos in the order presented in this list. These videos are also available in a [YouTube playlist](#).

1. [DiCubedAge40_50Part1_with_narration](#)

- Click the arrow to view *DiCubedAge40_50_Part1_with_narration* narration >>

The initial query with the DiCubed i2b2 prototype will be to find the number of patients between the ages of 40 and 50 years.

To perform a query in i2b2, one must select query terms from the "Navigate Terms" tab in the upper left of the screen. Opening the Demographics folder, we see a term for Age, along with folders for Race and Sex. As we hover over of the Age term we see a tooltip with a definition of the term along with its NCI code.

Next, we drag the Age term from the Navigate Terms view and drop it in the Query Tool. We see a window that lets us enter parameters for the age term. We select the *between* operator, and then set 40 and 50 and our lower and upper bound. After clicking **OK**, we see that 40 - 50 Years range reflected in the Query Tool.

To execute the query, press the **Run Query** button. We see a variety of query options that are available in the system. Select **Number of Patients** and click **OK** to execute the query. The query returns with a patient count of 124 patients between the ages of 40 and 50 years.

2. [DiCubedAge40_50Part2_with_narration](#)

- Click the arrow to view *DiCubedAge40_50_Part2_with_narration* narration >>

Next, we stratify the query by gender, vital status, race, data set, anatomic site, organ, and clinical course of disease.

We press the **Run Query** but now we select the breakdown queries. Running the query again returns 124 patients, but let us examine the Query Report more closely. We maximize the report area and chose **Query Report**. The query definition is shown.

We see a table for total patients and then tables and bar charts each breakdown option selected. First, we see gender, then vital status, race, dataset (note that the TCGA-BRCA data did not include age), anatomic set, and course of disease.

3. [DiCubedAge40_50_with_lobular_breast_carcinoma_with_narration](#)

- Click the arrow to view *DiCubedAge40_50_with_lobular_breast_carcinoma_with_narration* narration >>

We now modify the query to find patients with invasive lobular breast carcinoma between the ages of 40 and 50.

In the Navigate Terms window, open the Primary Diagnosis folder.

We see the subset of primary diagnoses applicable to the collection data in the prototype.

Drag Invasive Lobular Breast Carcinoma to the Query Tool pane group 2.

The prototype will search for patients with Age between 40 and 50 AND with Invasive Lobular Breast Carcinoma.

Run the query with the breakdown options as before. We now see only 3 patients fit these criteria.

4. [DiCubedTripleNegativePatientCount_with_narration](#)

- Click the arrow to view *DiCubedTripleNegativePatientCount_with_narration* narration >>

We will now do a new query. This query will be to find the number of triple negative (negative estrogen, progesterone, and HER2/Neu) patients in our system.

We open up the receptor status folder. Then open the Estrogen Receptor Status folder and drag the Estrogen Receptor Negative term to the Query Tool. Then open the HER2/Neu status folder and drag the HER2/Neu Negative to Query Tool Group 2. Likewise, open the Progesterone Receptor Status folder and drag the Progesterone Receptor Negative to Group 3 in the Query Tool.

We now run the query. We note that we have 78 triple negative patients in the system. Examining the report, we see that the report includes all of the terms and make up the query definition.

5. [DiCubedTripleNegativeLongestDiameter_with_narration](#)

- Click the arrow to view *DiCubedTripleNegativeLongestDiameter_with_narration* narration >>

We will now add a fourth query term to our previous query. First, select **New Group** to add a fourth group to the query tool. Now, go to **Navigate Terms** and open the **Property or Attribute** folder. Then open the **Diameter** folder. Drag the Longest Diameter item to group 4. This opens the dialog box that allows us to specify the longest diameter of greater than 30 millimeters. Running the query, we see that we have 59 patients that are triple negative with the longest diameter of greater than 30 millimeters. Select **Run Query** again. We will now select the patient set option for the query. This will allow us to use the results of this query and i2b2 plugins developed for DI-cubed.

6. [DiCubedTripleNegativeTCIAHyperlink_with_narration](#)

- Click the arrow to view *DiCubedTripleNegativeTCIAHyperlink_with_narration* narration >>

We now show to hyperlink to images contained in TCIA for the triple negative patients.

Open the **Analysis Tools** menu. A collection of plugins is listed. Select the **TCIALink plugin**.

In the Previous Queries section, open the **Triple Negative query**. Find the patient set generated as part of that query and drop it in the patient set box on the TCIA Link plugin.

Click the **View Results** tab. A table appears, showing the collection, TCIA Subject ID, and other information about the patient.

Clicking a hyperlink for a patient opens up the TCIA page for that Subject.

7. [DiCubedTripleNegativeSDTMExport_with_narration](#)

- Click the arrow to view *DiCubedTripleNegativeSDTMExport_with_narration* narration >>

We will now take the results of the triple negative query and export the data for those patients in a CDISC SDTM compatible format.

We pull down the Analysis Tools menu and select the SDTM export option. We drag the patient set generated from our triple negative query and drop it in the specified location in the plugin.

Click the review results tab. We can see the SDTM domains from which we have data. We can export this data to SAS Export (.xpt) files by pressing the Export to SDTM button. The system generates these files per SDTM specifications.

Note that this capability was developed expressly for the DICubed project.