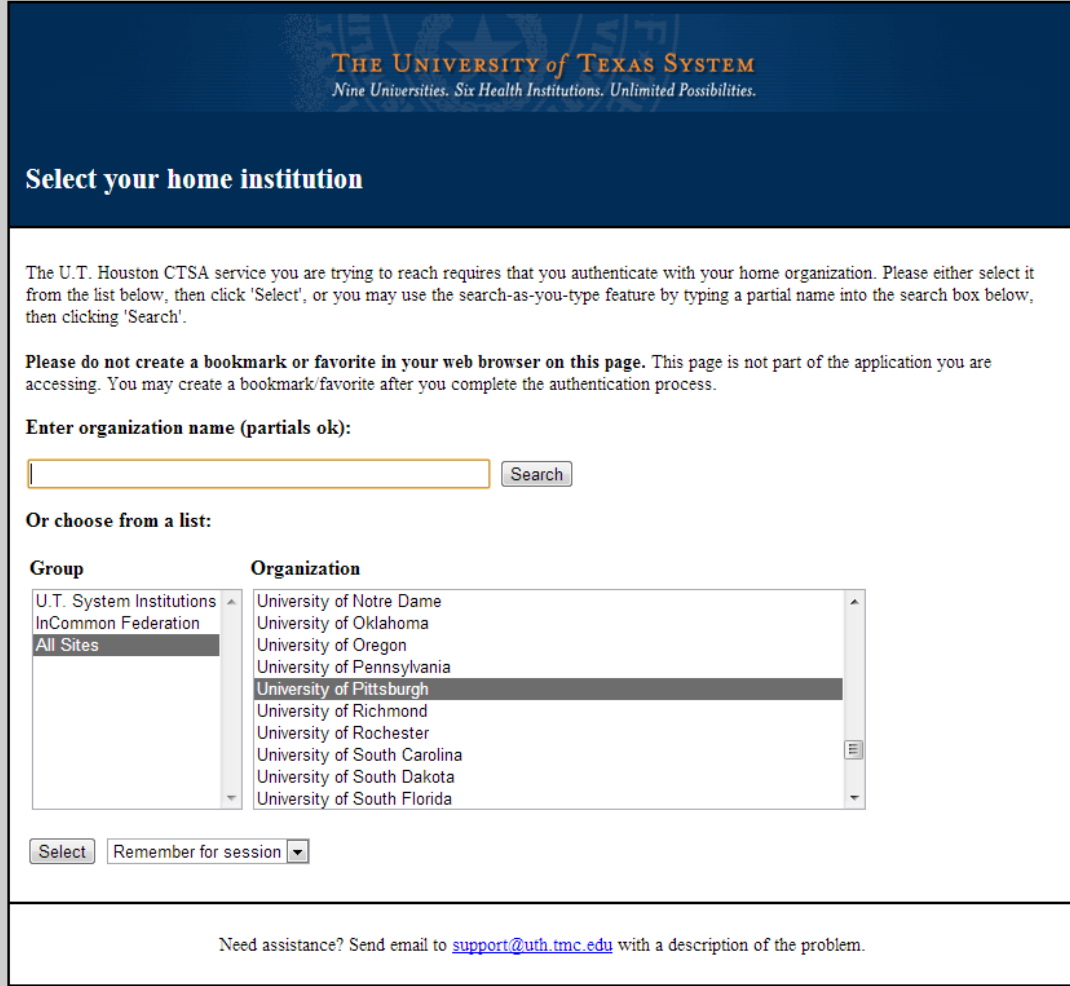


Using BigMouth – Registered user

Logging in to BigMouth

Open the URL <https://bigmouth.uth.edu/secure/> in a web browser

For InCommons Federation Members - Select 'All Sites' under 'Group' section and select your respective organization under the under 'Organization' section. Click Select button. You will now be redirected to the Shibboleth authentication page. Please use your organization's username and password to login.



THE UNIVERSITY of TEXAS SYSTEM
Nine Universities. Six Health Institutions. Unlimited Possibilities.

Select your home institution

The U.T. Houston CTSA service you are trying to reach requires that you authenticate with your home organization. Please either select it from the list below, then click 'Select', or you may use the search-as-you-type feature by typing a partial name into the search box below, then clicking 'Search'.

Please do not create a bookmark or favorite in your web browser on this page. This page is not part of the application you are accessing. You may create a bookmark/favorite after you complete the authentication process.

Enter organization name (partials ok):

Or choose from a list:

Group	Organization
U.T. System Institutions	University of Notre Dame
InCommon Federation	University of Oklahoma
All Sites	University of Oregon
	University of Pennsylvania
	University of Pittsburgh
	University of Richmond
	University of Rochester
	University of South Carolina
	University of South Dakota
	University of South Florida

Need assistance? Send email to support@uth.tmc.edu with a description of the problem.



Web Authentication

COMPUTING SERVICES & SYSTEMS DEVELOPMENT

Authentication Required

You are connecting to a Web resource that requires authentication. Please enter your University Computing Account username and password below and click the Login button to continue.

Username:	<input type="text"/>	<p>Remember to close all your Web browsers when you have finished using an online resource and have logged out.</p> <p><i>Need help?</i></p> <p>Contact the Technology Help Desk online or by phone at 412-624-HELP [4357].</p>
Password:	<input type="password"/>	
<input type="button" value="Login"/>		

BigMouth layout

i2b2 Query & Analysis Tool Project: COHRI UTH User: Krishna Kumar Kookal Find Patients | Analysis Tools | Help | Logout

Navigate Terms Find Terms

- [-] Axiom
 - [-] UTH
 - [-] Demographics - 245976
 - [-] Diagnosis - 13192
 - [-] Forms - 23809
 - [-] Odontogram - 241905
 - [-] Perio - 20573
 - [-] Procedures - 113671
 - [-] Providers
 - [-] COHRI
 - [-] Demographics - 1178716
 - [-] Dental Procedures - 517288
 - [-] Diagnosis - 125862
 - [-] Forms - 124866
 - [-] Odontograph - 193163
 - [-] [Perio - 0]
 - [-] [Providers - 0]

Navigate Terms Tab: Users can manually lookup for terms by browsing through the hierarchy.

Find Terms Tab: Search concepts using a word.

Query Tool

Query Name: Forms@09:45:41

Temporal Constraint: Treat all groups independently

Group 1			Group 2			Group 3		
Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude
Treat Independently			Treat Independently			Treat Independently		
[-] Forms - 23809								

one or more of these AND drop a term on here

Run Query Clear Print Query 1 Group New Group

Query Tool: Area where user build their question (query) by dragging and dropping concepts/terms from Navigate Terms/Find Terms tab.

Previous Queries

- [-] Forms@09:45:41 [6-26-2012] [kkookal@uth.tmc.edu]
- [-] Perio@09:37:38 [6-26-2012] [kkookal@uth.tmc.edu]
- [-] ABNORMALITIES O@11:37:28 [6-21-2012] [kkookal@uth.tmc.edu]
- [-] Bleedin-Age@12:54:33 [6-2-2012] [kkookal@uth.tmc.edu]

Previous Queries: Queries previously run by the logged in user.

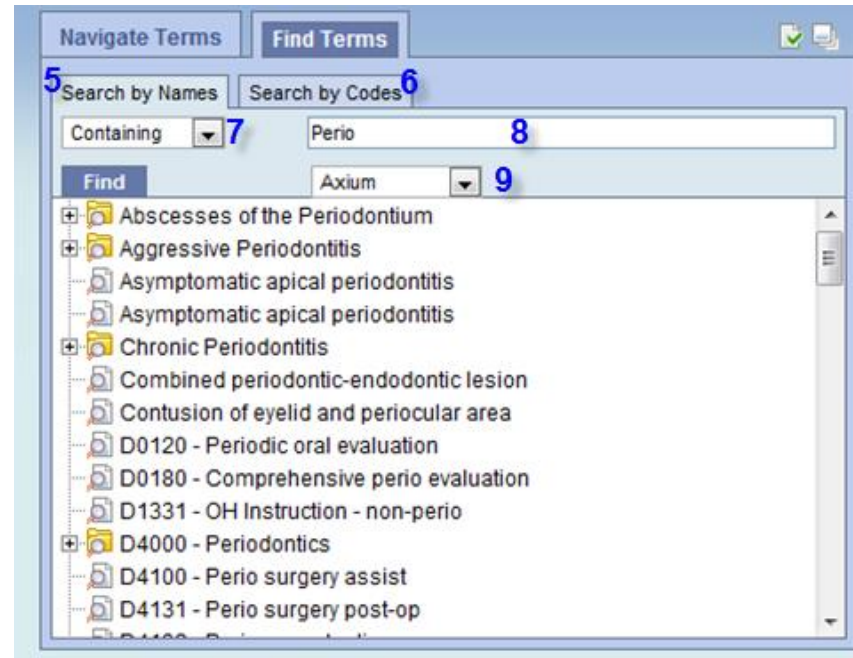
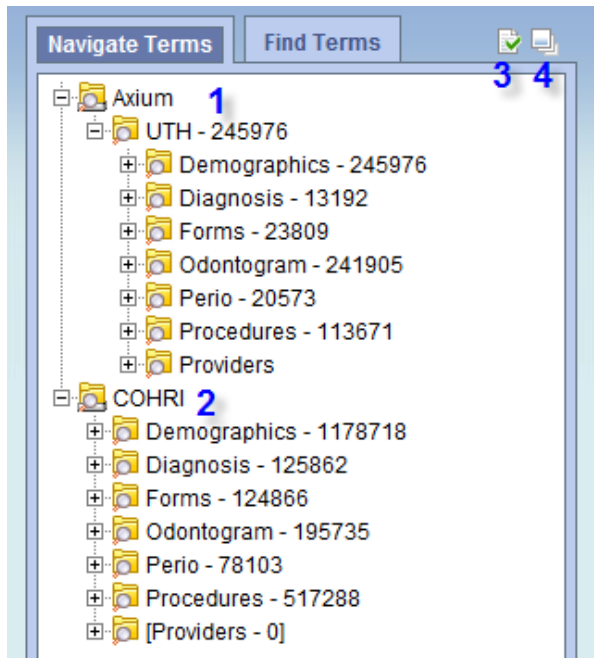
Query Status


Finished Query: "Forms@09:45:41" [17.0 secs]
 Compute Time: 14.7 secs

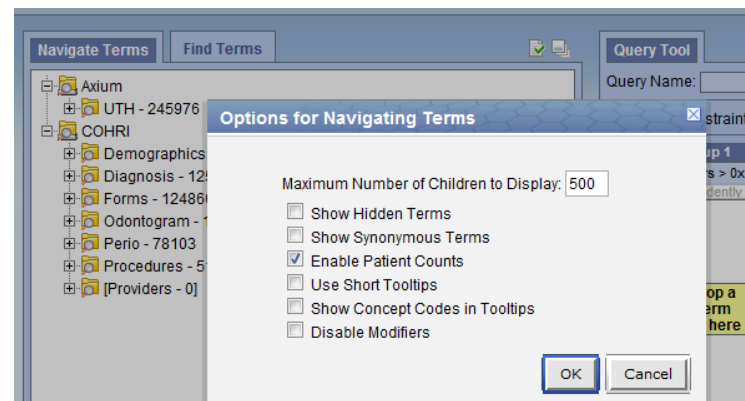
Number of patients for "Forms@09:45:41"
 patient_count: 23809


Query Status: User can view the status of the current query. Once the query completes its execution, the patient count and other details are displayed here.

1. Navigate Terms/Find Terms Section



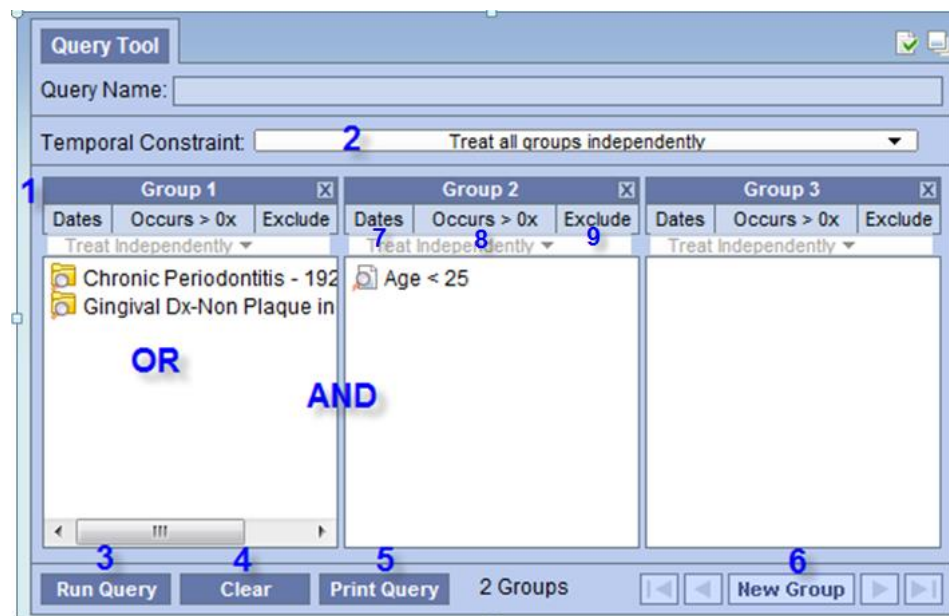
1. Site specific terminology: The axiUm node contains the site specific terminologies. Users can query for data available in axiUm at their own site. The number displayed adjacent to each folder/leaf node represents the number of patients.
2. COHRI terminology: This folder provides an integrated terminology system that allows users to query for data from more four schools
3. Options: Clicking on the  icon opens a small popup window (shown below) where users can customize the way the terms are displayed.



4. Expand: Clicking on the  icon expands the “Navigate Terms” section.
5. Search by Names: Users can use this tab to search terms by its name.
6. Search by Code: Users can search terms using their BigMouth code and description. These codes are different from the axiUm codes. These codes can be found by hovering over the terms.
7. Operators: User can use various operators while searching the term by name and code.
8. User can specify the search text in the space provided.
9. Users can specify whether they want to search in the site specific terminology or COHRI terminology.

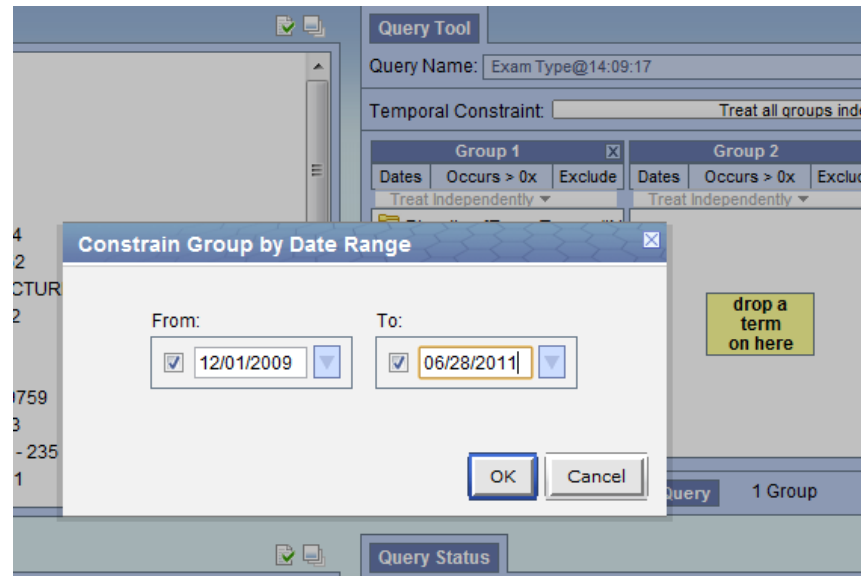
2. Query Tool Section

The query tool comprises of many groups where a user can specify the inclusion and exclusion criteria of patients.



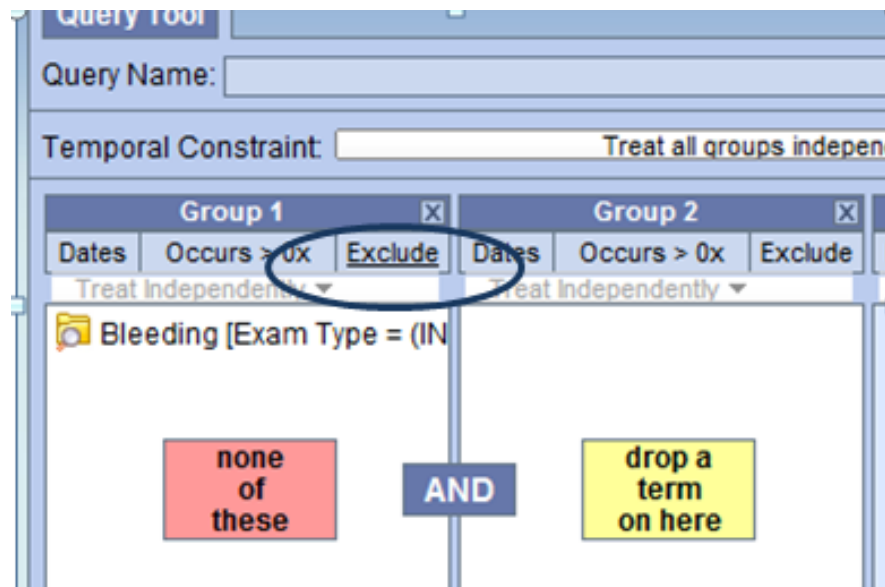
1. **Groups:** User can create as many groups as they like. A group can contain more than one term. A patient satisfying any one of the terms (conditions) in a group will be counted towards the final result. If more than one group is used, only patients satisfying conditions in all groups will be considered towards the final result. Users can add as many groups as required.
2. **Temporal Constraint:** This lets users specify if they would like to find patients from the same encounter. This feature is currently (as of June 2012) not supported in COHRI i2b2.
3. **Run Query:** Users can execute queries by clicking on the “Run Query” button.
4. **Clear:** Users can reset the content in the query tool by clicking on the “clear” button.
5. **Print Query:** Users can print the query for future reference by clicking on “Print Query” button.
6. **New Group:** Users can create new groups by clicking on “New Group” button.

7. **Dates:** Users can specify the date range of the encounters as shown below



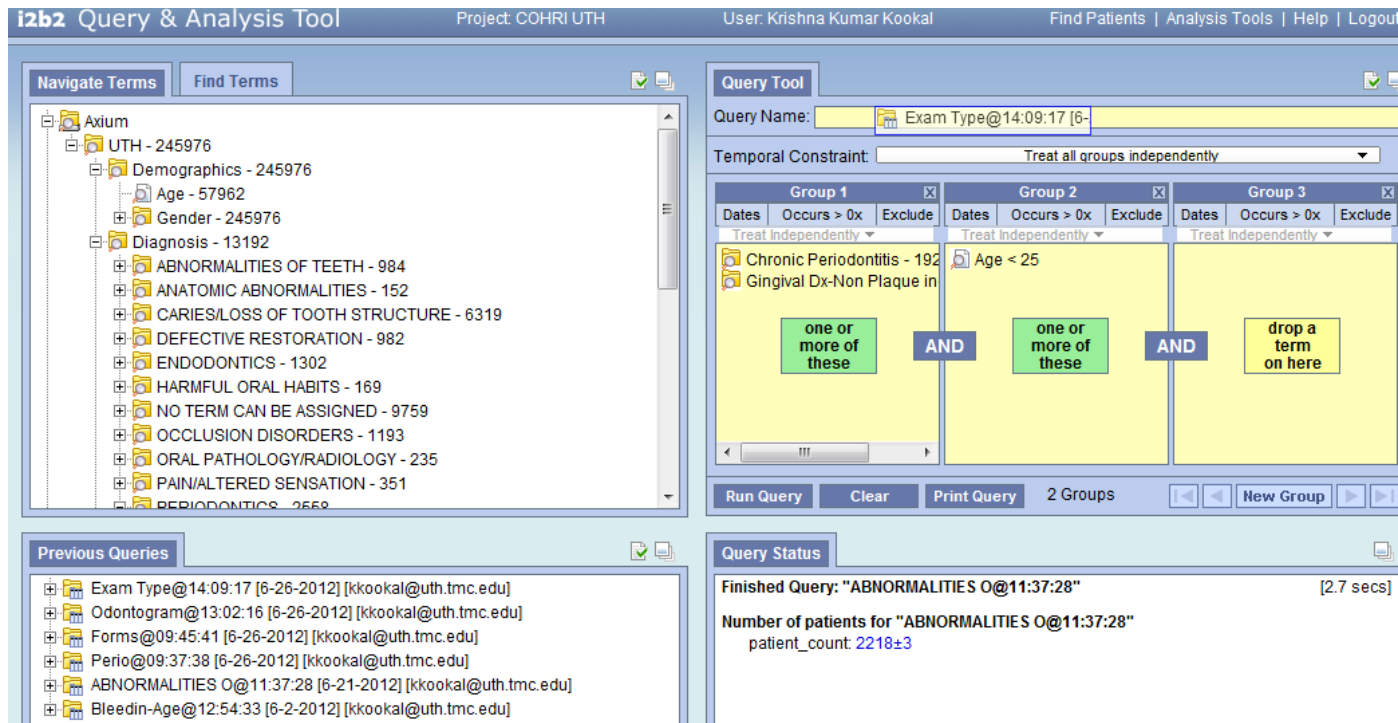
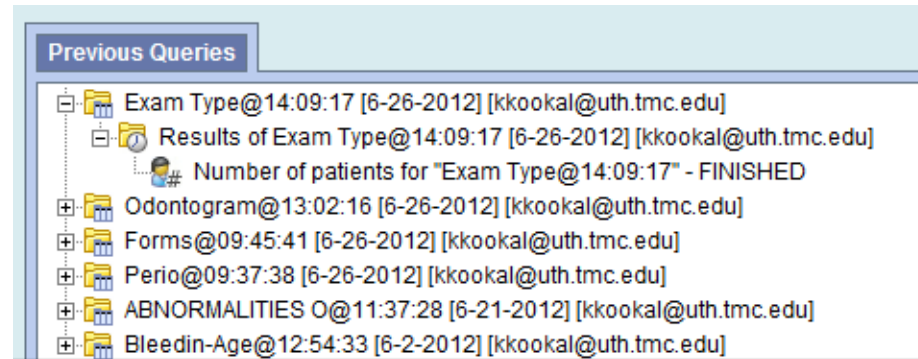
8. **This function is disabled**

9. **Exclude/Include:** Users can exclude or include the terms in a group.



3. Previous Queries Section

Users can view a summary of previously run queries in the “Previous Queries” section. In order to view the complete details of the query, user can drag and drop the query to the “Query Name” area within the “Query Tool” section.



How to run a query?

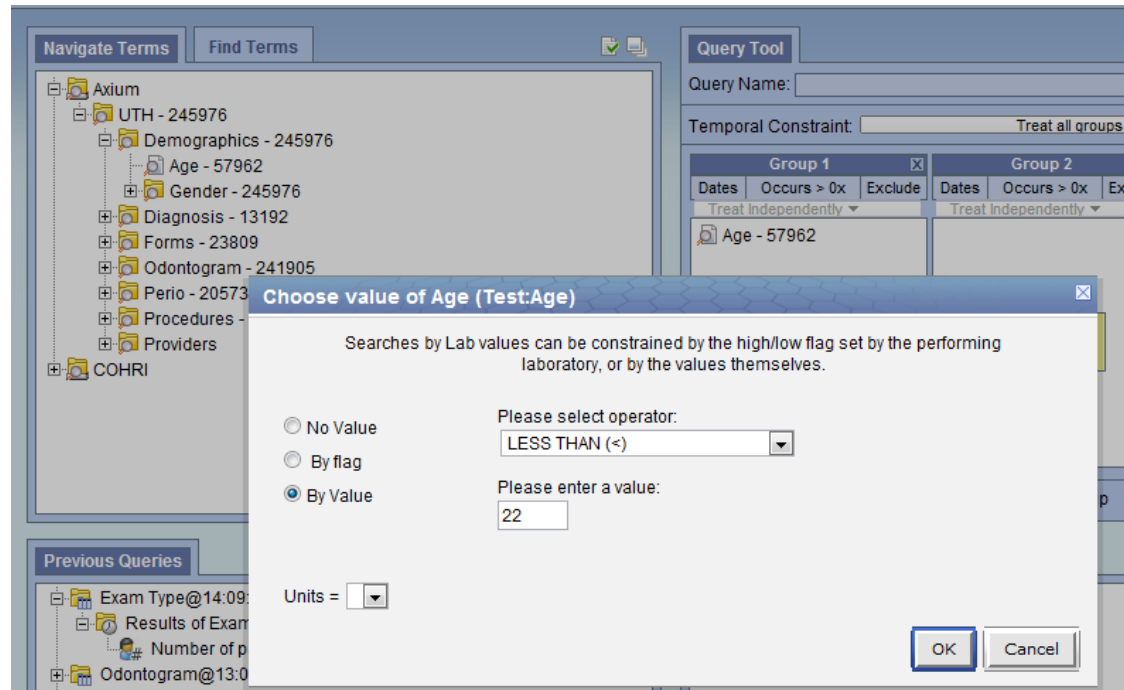
STEP 1: Identify the concept(s)/term(s) from the “Navigate Terms” section

STEP 2: Drag and drop the selected term to a group in the “Query tool” section. Specify date range, exclusion criterion as needed.

The screenshot displays a software interface for building queries. It is divided into several sections:

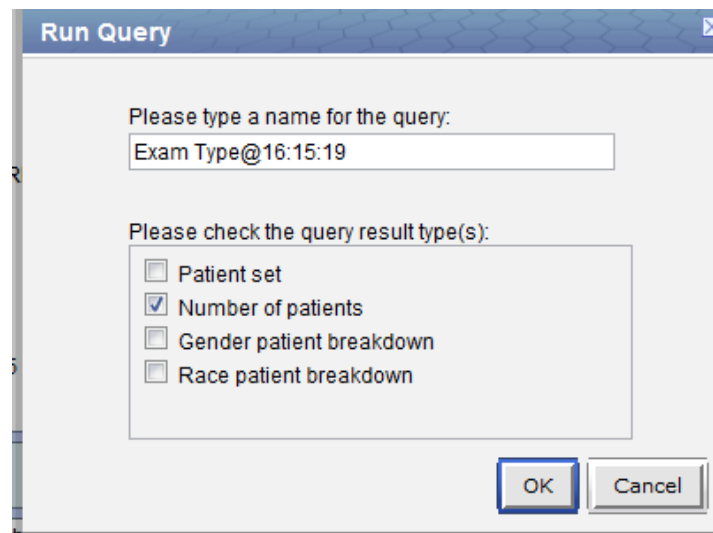
- Navigate Terms:** A hierarchical tree structure showing categories like 'Axiom', 'UTH - 245976', 'Demographics - 245976', 'Age - 57962', 'Gender - 245976', 'Diagnosis - 13192', and 'ABNORMALITIES OF TEETH - 984'. Under 'ABNORMALITIES OF TEETH', there are sub-terms such as 'Cementum Defect - 23', 'Dentin Defect - 40', 'Enamel and Dentin Defect - 163', 'Enamel Defect - 158', 'Eruption Abnormalities - 541', 'Number Alteration - 77', 'Pulp Abnormalities - 4', 'Shape Alteration - 26', 'Size Alteration - 9', and 'ANATOMIC ABNORMALITIES - 152'.
- Query Tool:** A central workspace for building queries. It includes a 'Query Name' field, a 'Temporal Constraint' dropdown set to 'Treat all groups independently', and three groups (Group 1, Group 2, Group 3). Each group has a 'Dates' field, an 'Occurs > 0x' field, and an 'Exclude' checkbox. Group 1 contains 'Age < 22'. Group 2 contains 'ABNORMALITIES OF TEETH' and 'Dentin Defect - 40'. Group 3 is empty. The groups are connected by 'AND' operators. A yellow box with the text 'drop a term on here' is positioned over Group 3. A green box with 'one or more of these' is placed over each group. A 'Run Query' button is at the bottom.
- Previous Queries:** A list of recent queries, including 'Exam Type@14:09:17 [6-26-2012] [kkookal@uth.tmc.edu]', 'Results of Exam Type@14:09:17 [6-26-2012] [kkookal@uth.tmc.edu]', 'Odontogram@13:02:16 [6-26-2012] [kkookal@uth.tmc.edu]', 'Forms@09:45:41 [6-26-2012] [kkookal@uth.tmc.edu]', 'Perio@09:37:38 [6-26-2012] [kkookal@uth.tmc.edu]', 'ABNORMALITIES O@11:37:28 [6-21-2012] [kkookal@uth.tmc.edu]', and 'Bleedin-Age@12:54:33 [6-2-2012] [kkookal@uth.tmc.edu]'.
- Query Status:** A section for displaying the results of the query.

Modifiers can be added to certain terms. A popup window is displayed when such terms are added to the “Query Tool” section. For example, when querying for age, users can specify the operator and the value (example shown below).



STEP 3: Click on the Run Query button

STEP 4: Specify the format of the result in the small popup window that appears after clicking on “Run Query” button. Please note that the “Patient Set” option is not available to all users.



Step 5: View results in the "Query Status" section

Finished Query: "Perio@16:18:11"

Compute Time: 7.5 secs

Patient Set for "Perio@16:18:11"

Race patient breakdown for "Perio@16:18:11"

American Indian or Alaska Native: 61

Asian: 1231

Black or African American: 2675

Some Other Race: 4185

White: 6525

Gender patient breakdown for "Perio@16:18:11"

Female: 11940

Male: 8062

Others: 2

Unknown: 569

Number of patients for "Perio@16:18:11"

patient_count: 20573

Example Query

How many patients ages 45 and older have been diagnosed with chronic periodontitis and a cardiovascular condition?

The screenshot displays the i2b2 Query & Analysis Tool interface. The top navigation bar includes the tool name, project (COHRI UTH), user (Krishna Kumar Kookal), and various utility links. The main workspace is divided into several panels:

- Navigate Terms:** A hierarchical tree view of medical terms. The 'Diagnosis' folder is expanded, showing 'CHRONIC PERIODONTITIS - 192' highlighted. A callout box points to this term with the text: "Number of patient having information regarding this condition".
- Query Tool:** The central area for building the query. It shows a query name "Age-Chron-073 -@12:42:11" and a temporal constraint "Treat all groups independently". The query is structured into three groups:
 - Group 1:** "Age > 45"
 - Group 2:** "Chronic Periodontitis - 192" with sub-terms like "Generalized Moderate", "Generalized Severe", etc.
 - Group 3:** A list of cardiovascular conditions such as "073 - YES-Infective endoc...", "074 - YES-Coronary artery...", "075 - YES-Heart attack - 5...", etc.The groups are connected by "AND" operators, and "OR" operators are used within Group 2 and Group 3. Summary boxes at the bottom of each group indicate "one or more of these".
- Workplace:** A large empty area for displaying query results.
- Previous Queries:** A list of recent queries, including "Age-Chron-073 -@12:42:11 [6-28-2012] [kkookal]".
- Query Status:** A panel at the bottom right showing the query execution details: "Finished Query: 'Age-Chron-073 -@12:42:11' [43.6 secs]", "Compute Time: 41.6 secs", and "Number of patients for 'Age-Chron-073 -@12:42:11' patient_count: 586".

Note: a common question regarding patient count: why the patient counts don't add up?

The reason is because one patient may have more than one specific condition. For example, total number of patients of the category "Abnormalities of teeth" in the picture below is 984. The number of patients of the subcategories of the category "Abnormalities of teeth" adds up to 1041. This is because one patient may be in both subcategories such as "Cementum Defect" and "Dentin Defect".

The screenshot displays a clinical data query tool interface. On the left, a "Navigate Terms" pane shows a hierarchical tree structure under "Axiom" > "UTH - 245976" > "Diagnosis - 13192". The "ABNORMALITIES OF TEETH - 984" category is expanded, showing subcategories: "Cementum Defect - 23", "Dentin Defect - 40", "Enamel and Dentin Defect - 163", "Enamel Defect - 158", "Eruption Abnormalities - 541", "Number Alteration - 77", "Pulp Abnormalities - 4", "Shape Alteration - 26", "Size Alteration - 9", and "ANATOMIC ABNORMALITIES - 152".

The "Query Tool" pane on the right shows a query named "Age < 22 AND ABNORMALITIES OF TEETH AND Dentin Defect - 40". The query is structured into three groups:

Group 1			Group 2			Group 3		
Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude
Age < 22			ABNORMALITIES OF TEETH					
one or more of these			one or more of these			drop a term on here		

The query builder includes a "Temporal Constraint" dropdown set to "Treat all groups independently" and a "Run Query" button. The "Previous Queries" pane at the bottom left lists several recent queries, including "Exam Type@14:09:17 [6-26-2012] [kkookal@uth.tmc.edu]" and "ABNORMALITIES O@11:37:28 [6-21-2012] [kkookal@uth.tmc.edu]".