



# DataDirect User Guide

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# DataDirect User Guide

DataDirect is an application that allows users to create queries using data that has been submitted to MPOG for quality improvement and research purposes. It contains multiple filters that can help easily identify a cohort of patients. For example: Before a researcher begins work on a proposal, they can use DataDirect to identify patient, case, and institution counts for the cohort they are interested in studying. For QI purposes, providers can generate a count of how many patients received reversal for neuromuscular blockade during a specific timeframe and compare that to institution reintubation rates to identify if any correlation exists.

### Gaining DataDirect Access

DataDirect contains a limited dataset: Protected Health Information is excluded except for date of service. However, because DataDirect may contain information regarding hospital level quality indicators (i.e. hospital mortality), we ask that approval from the appropriate hospital department (i.e. Quality or Health Information Management) is obtained. In order to obtain access to DataDirect, an authorization form must be completed and sent to the MPOG coordinating center. This form can be found on our website <https://mpog.org/> under the “Join” tab in the top right corner.



Next click “Downloads” from the menu on the left side:



To download the form click “MPOG DataDirect Security Checklist and Authorization Form” located under Research at the top



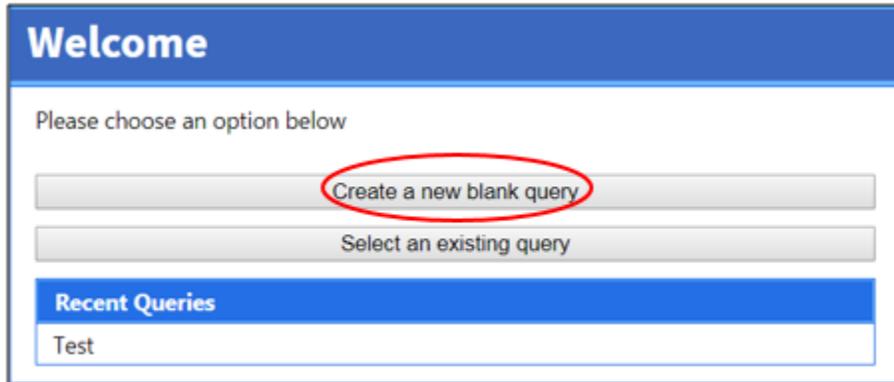
Please scan and email the completed form to Chris Ladd ([laddchri@med.umich.edu](mailto:laddchri@med.umich.edu)) or Meredith Bailey ([meridith@med.umich.edu](mailto:meridith@med.umich.edu)). You will be contacted once login permissions have been updated.

## Generating a Query

When creating a query, there are two modes you can choose from. **Cohort Mode** allows you to view case counts across all MPOG sites while **Data Download mode** allows you to only download cases from your site. Although DataDirect will display final case counts, institution's will remain unidentified. The following guide walks through the filters available and steps needed to create a query.

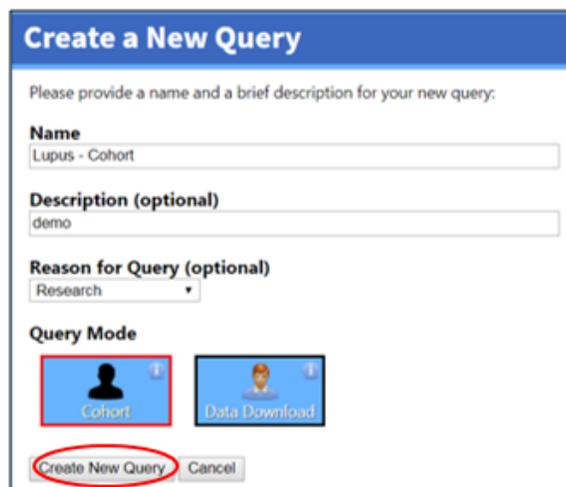
### Cohort Query Mode

Upon logging in, select **Create a new blank query** to proceed. To use a previously created query, click **Select an existing query**. In cohort mode, you are able to view case counts across all MPOG sites.



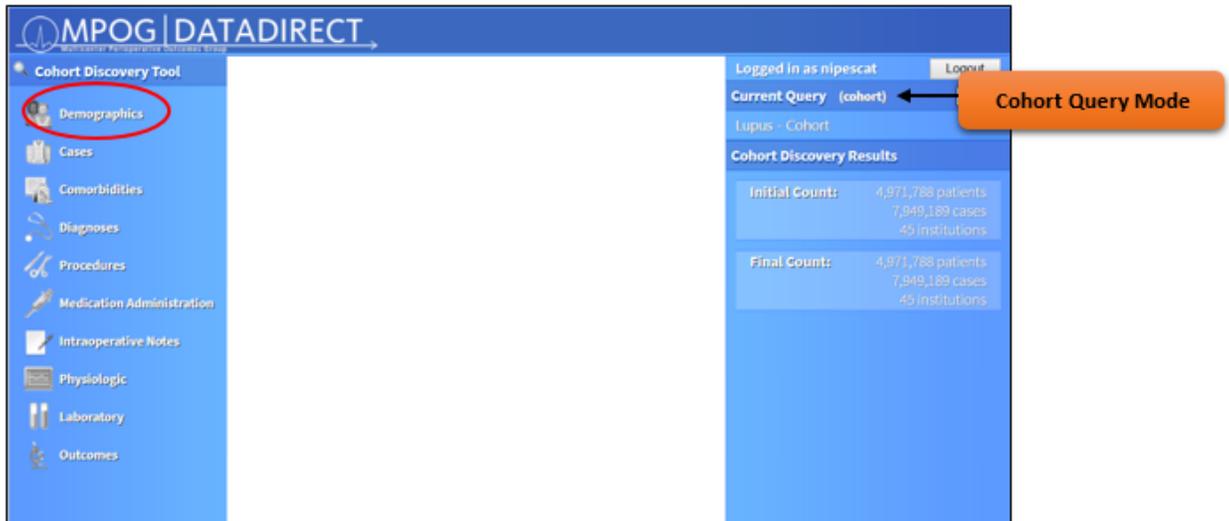
The screenshot shows a 'Welcome' page with a blue header. Below the header, it says 'Please choose an option below'. There are two buttons: 'Create a new blank query' (circled in red) and 'Select an existing query'. Below these buttons is a section titled 'Recent Queries' with a table containing one entry: 'Test'.

Enter a name, description, and reason for your query. Select **Cohort** under Query Mode and then click **Create New Query**.



The screenshot shows the 'Create a New Query' form. It has a blue header. Below the header, it says 'Please provide a name and a brief description for your new query:'. There are three input fields: 'Name' (with 'Lupus - Cohort'), 'Description (optional)' (with 'demo'), and 'Reason for Query (optional)' (with 'Research' selected in a dropdown). Below these fields is the 'Query Mode' section with two buttons: 'Cohort' (circled in red) and 'Data Download'. At the bottom, there are two buttons: 'Create New Query' (circled in red) and 'Cancel'.

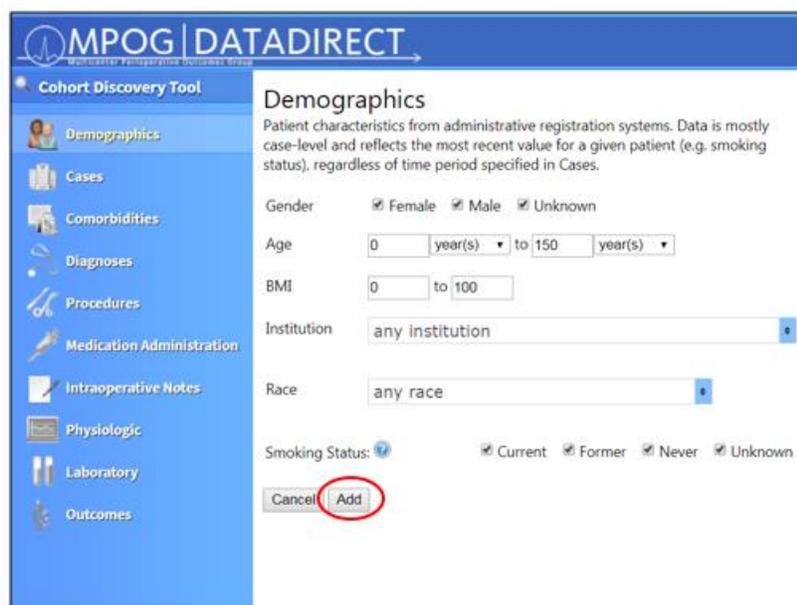
Next begin defining criteria for your query. Choose from the filters listed in the left panel, for example, select **Demographics**.



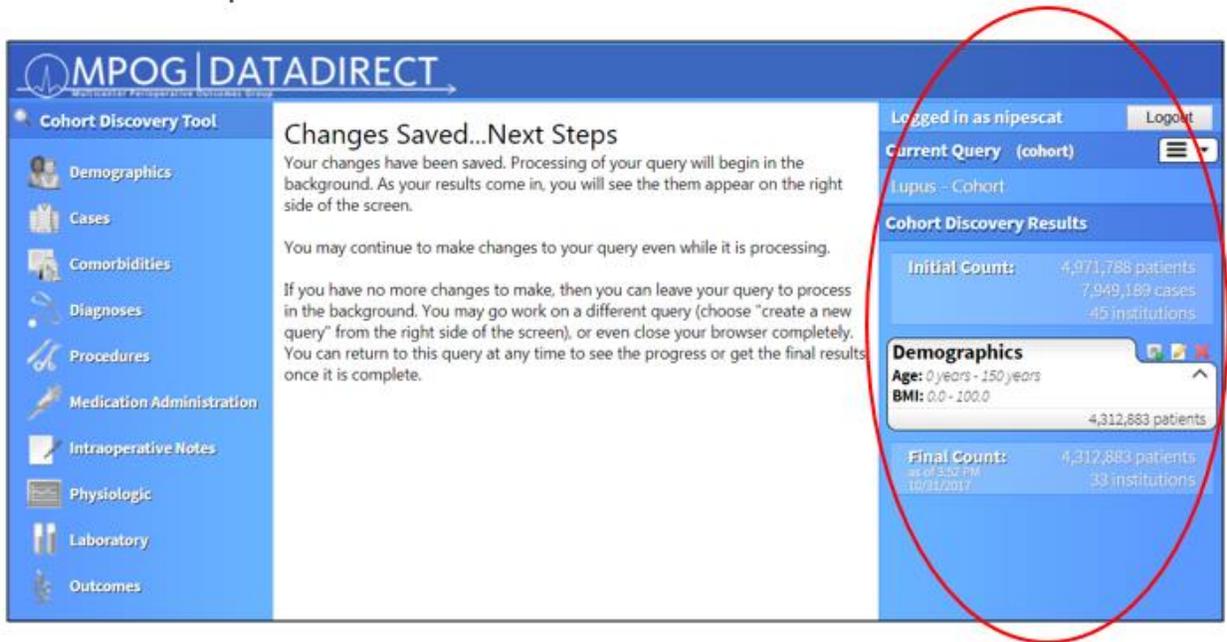
Demographics are *patient-level* characteristics available from the administrative registration systems (**not** case-level data, in other words, they do not change from one case to another).

**Select** the checkboxes beside the characteristics to *include* them in your query. De-select items you do **not** wish to include. For example, to find only Female patients, de-select Male and Unknown under Gender. \*You can include any institution in cohort mode.

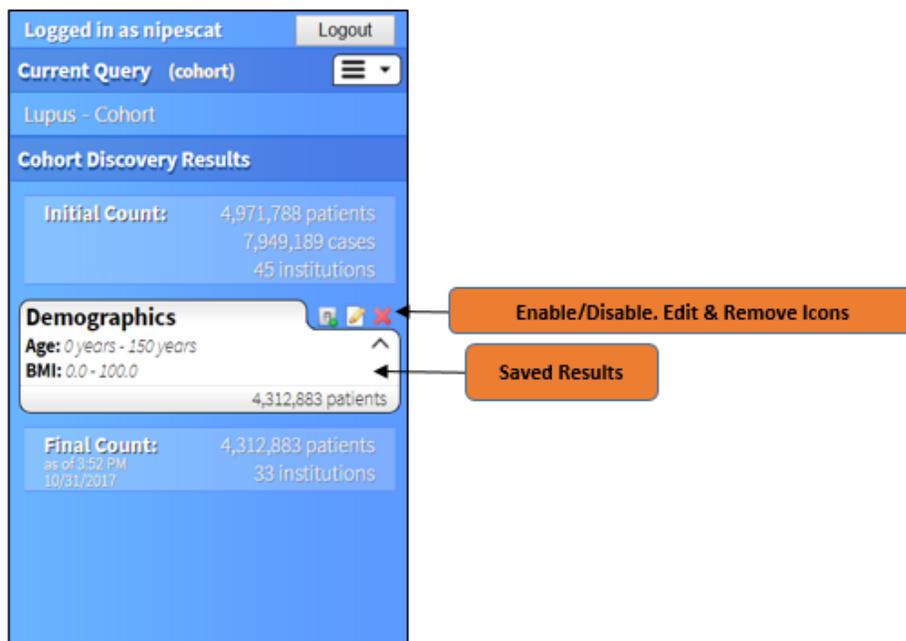
Click **Add** to *add* these criteria to your query.



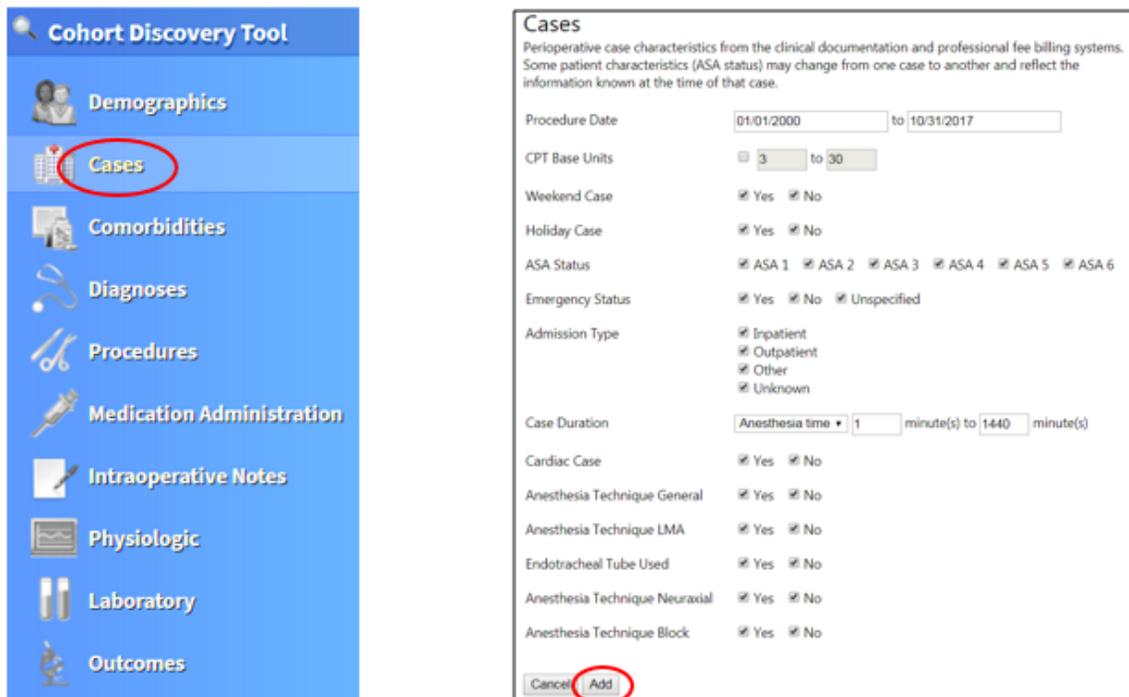
**Cohort Results:** As DataDirect retrieves data to match the selected criteria, the right panel of the screen will display final counts. Note: Your query is also saved to your individual profile in DataDirect.



Cohort Discovery Results include 1) *initial patient, case, and institution counts*, 2) *saved query criteria*, and 3) *final count of patient data matching your query*. As you build your query, check the right panel to verify that your criteria have been added. At any time, you may enable/disable, edit or remove an individual filter from your query.



**Cases:** To continue building your query, select an additional filter category, for example, **Cases**. Check boxes you wish to select per each field. Click “Add” to finalize.



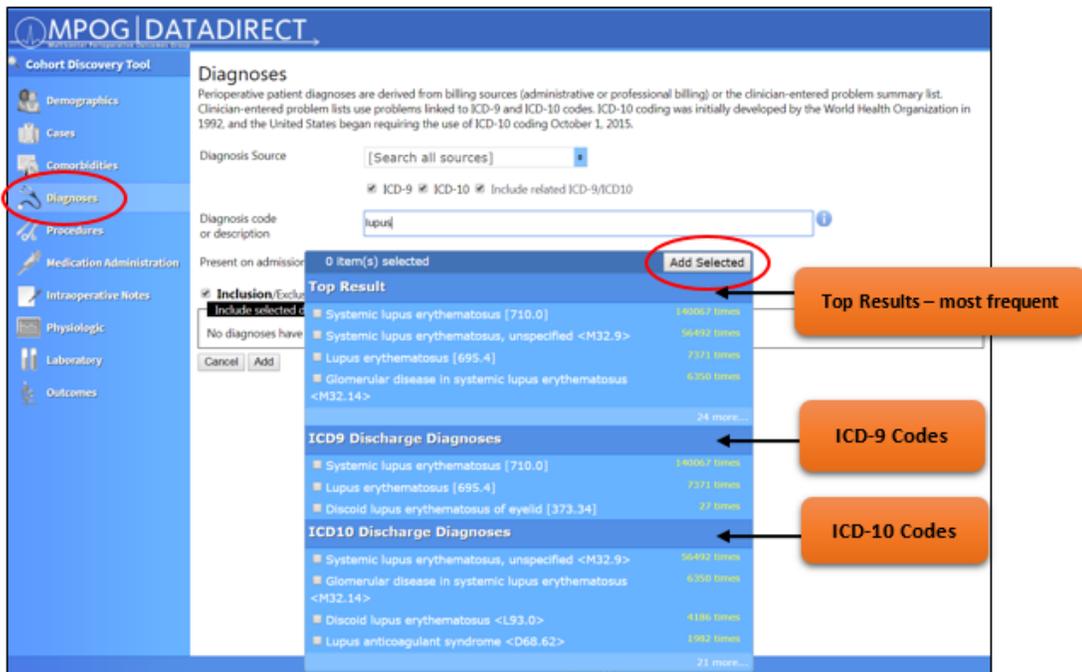
Review the updated result panel on the right side of the screen each time you click “Add” to note the additional criteria have been *saved* to your query. In this example, both Demographics and Cases criteria have been added to the query, and a final count has been generated:



**Comorbidities:** Next, Select **Comorbidities**, and continue to check the boxes of from the dropdown menu of comorbidities you want to include in your query.



**Diagnoses:** Begin typing the desired diagnosis name (or associated ICD-9 and ICD-10 codes) into the Diagnosis Code field. IDC-10 codes were required as of October 1, 2015, therefore historical data may not include ICD-10 codes. If you are interested in capturing diagnosis data for a case before that occurred before this date, please choose both ICD-9 and ICE-10 codes. Select the codes you desire, then click **“Add Selected”**.



As you select a diagnosis code, the ‘parent’ ICD-9 and ICD-10 codes and its associated ‘child’ ICD-9 and ICD-10 codes will be displayed and automatically **included**. De-select (click the red X) any individual code you wish to remove from the suggested list. “Inclusion” is the default selection. Click “Add” when finished.

**Systemic lupus erythematosus**

**ICD-9**

- [710.0] Systemic lupus erythematosus
- [710.1] Systemic sclerosis
- [710.2] Sicca syndrome
- [710.3] Dermatomyositis
- [710.4] Polymyositis
- [710.5] Eosinophilia myalgia syndrome
- [710.8] Other specified diffuse diseases of connective tissue
- [710.9] Unspecified diffuse connective tissue disease

**ICD-10**

- <M32.10> Systemic lupus erythematosus, organ or system involvement unspecified
- <M32.9> Systemic lupus erythematosus, unspecified
- <M34.0> Progressive systemic sclerosis
- <M34.1> CR(E)ST syndrome
- <M34.9> Systemic sclerosis, unspecified
- <M34.89> Other systemic sclerosis
- <M35.00> Sicca syndrome, unspecified
- <M35.01> Sicca syndrome with keratoconjunctivitis
- <M33.09> Juvenile dermatomyositis with other organ involvement
- <M33.10> Other dermatomyositis, organ involvement unspecified
- <M33.90> Dermatomyositis, unspecified, organ involvement unspecified
- <M33.00> Juvenile dermatomyositis, organ involvement unspecified
- <M36.0> Dermato(poly)myositis in neoplastic disease
- <M33.19> Other dermatomyositis with other organ involvement
- <M33.99> Dermatomyositis, unspecified with other organ involvement
- <M21.80> Other specified acquired deformities of unspecified limb
- <M33.20> Polymyositis, organ involvement unspecified
- <M33.29> Polymyositis with other organ involvement
- <M35.8> Other specified systemic involvement of connective tissue
- <M35.5> Multifocal fibrosclerosis
- <L87.1> Reactive perforating collagenosis
- <M35.1> Other overlap syndromes
- <M35.9> Systemic involvement of connective tissue, unspecified
- <M36.8> Systemic disorders of connective tissue in other diseases classified elsewhere

Cancel Add

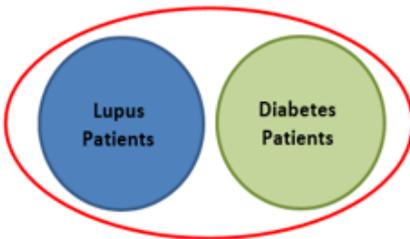
**NOTE:** To **Exclude** a characteristic in your query (e.g., run a query to retrieve patients who do NOT have Lupus), you must “UNCHECK” the Inclusion / Exclusion checkbox. When the box is **unchecked**, the indicator “Exclusion” appears in bold print.

Inclusion/**Exclusion**

Exclude selected diagnoses

**Systemic lupus erythematosus** X

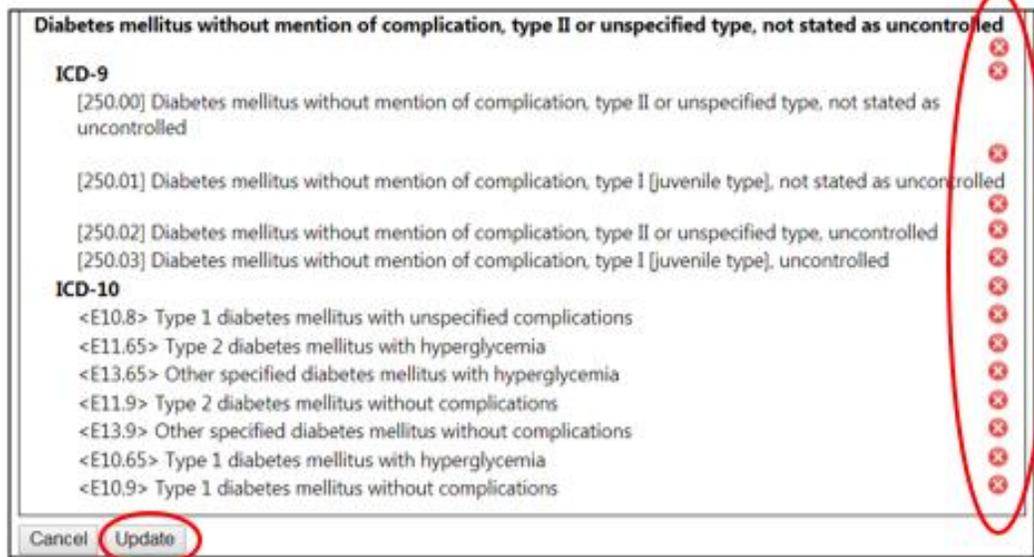
**Adding “OR” Logic:** You may be interested in patients who have *either* one condition *or* a second condition. For example, if you were interested in patients with Lupus **OR** patients with Diabetes, use “OR” logic. To achieve this, include the Diabetes criteria in the “same criteria box” as the Lupus diagnoses. Open the existing Diagnoses query Lupus. Click the **Edit** icon  to edit the Diagnoses filter.



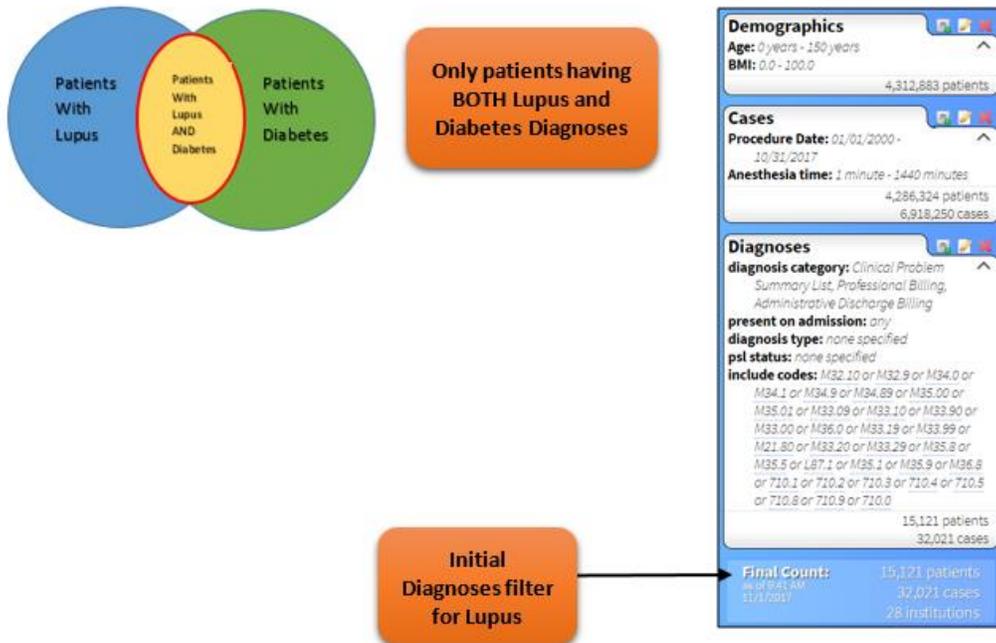
The TWO groups will be retrieved with “OR” logic.

Enter the second criteria, e.g., Diabetes. Select the desired code(s) by clicking **Add Selected**

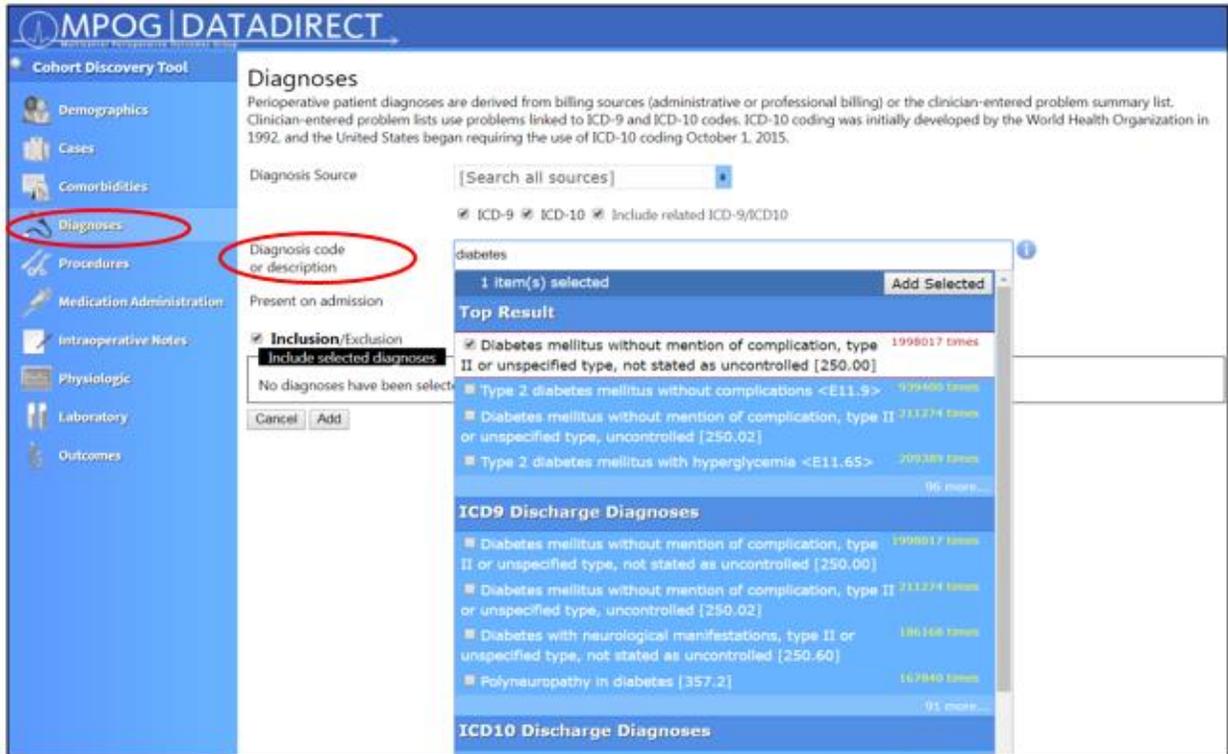
Remove any “child” ICD-9 and ICD-10 codes that you do not wish to keep (by clicking the red X for each). Click **Update** (both conditions will be listed).



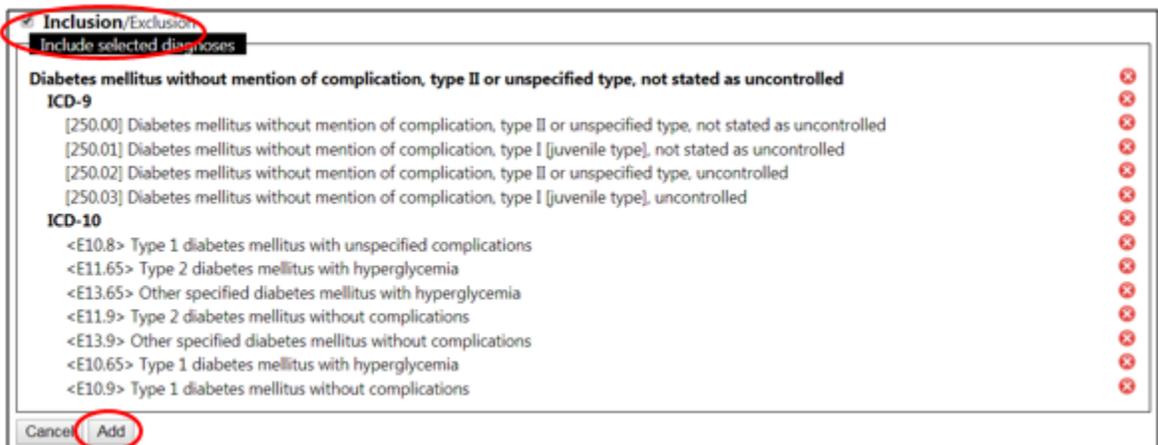
**Adding “AND” Logic:** In contrast, if you are interested in patients who have BOTH Lupus AND Diabetes diagnoses, use “AND” logic. To find these patients, build two separate filters (i.e. one for Lupus, and a separate one for Diabetes). Start with an initial Diagnosis filter including Lupus.



Build an additional Data Source (Diagnosis) by *returning* to the main filter list. Click **Diagnoses**, enter Diabetes into the Diagnosis code field, and click **Add Selected** to create new, separate criteria.



After specifying the details (refining your ICD-9 and ICD-10 codes if desired), click **Add**. Each time you click **Add**, you are adding a new criteria panel (i.e. an 'AND' statement to the query).



The additional required criteria appear as a separate criteria box in the right hand panel, and the narrowed query results show a far more limited population of patients – only those patients who possess BOTH of the listed diagnosis codes.

**Diagnoses**  
 diagnosis category: Clinical Problem  
 Summary List, Professional Billing,  
 Administrative Discharge Billing  
 present on admission: any  
 diagnosis type: none specified  
 psl status: none specified  
 include codes: M32.10 or M32.9 or M34.0 or  
 M34.1 or M34.9 or M34.89 or M35.00 or  
 M35.01 or M33.09 or M33.10 or M33.90 or  
 M33.00 or M36.0 or M33.19 or M33.99 or  
 M21.80 or M33.20 or M33.29 or M35.8 or  
 M35.5 or L87.1 or M35.1 or M35.9 or M36.8  
 or 710.1 or 710.2 or 710.3 or 710.4 or 710.5  
 or 710.8 or 710.9 or 710.0  
 15,121 patients  
 32,021 cases

**Diagnoses**  
 diagnosis category: Clinical Problem  
 Summary List, Professional Billing,  
 Administrative Discharge Billing  
 present on admission: any  
 diagnosis type: none specified  
 psl status: none specified  
 include codes: E10.8 or E11.65 or E13.65 or  
 E11.9 or E13.9 or E10.65 or E10.9 or 250.00  
 or 250.01 or 250.02 or 250.03  
 1,952 patients  
 4,612 cases

**Final Count:** 1,952 patients  
 as of 9:57 AM 4,612 cases  
 11/1/2017 20 institutions

Separate Diagnoses  
 Criteria filters represent  
 “AND” logic – patients  
 who have Lupus AND  
 Diabetes

Each of the displayed criteria boxes in the right-hand panel represents an “AND” statement – in other words, all retrieved patients must possess ALL of these criteria:

**Demographics**  
 Age: 0 years - 150 years  
 BMI: 0.0 - 100.0  
 4,312,883 patients

**Cases**  
 Procedure Date: 01/01/2000 - 10/31/2017  
 Anesthesia time: 1 minute - 1440 minutes  
 4,286,324 patients  
 6,918,250 cases

**Diagnoses**  
 Click the arrow for more details  
 15,121 patients  
 32,021 cases

**Diagnoses**  
 Click the arrow for more details  
 1,952 patients  
 4,612 cases

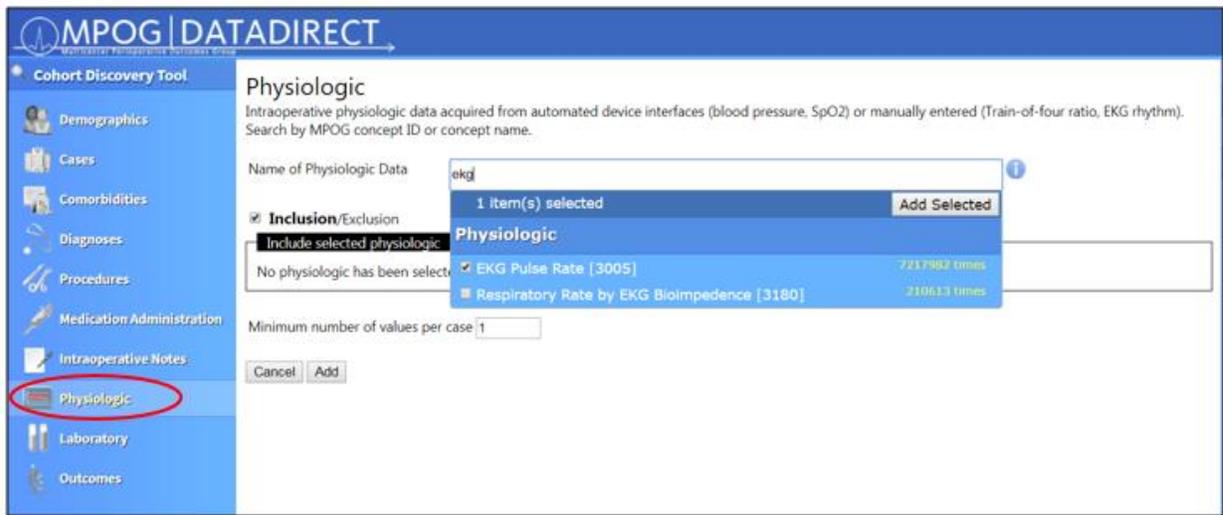
Retrieve all patients who  
 are 0-150 years old with  
 BMI 0-100.

AND have cases with  
 dates of service between  
 1/1/2000 – 10/31/2107

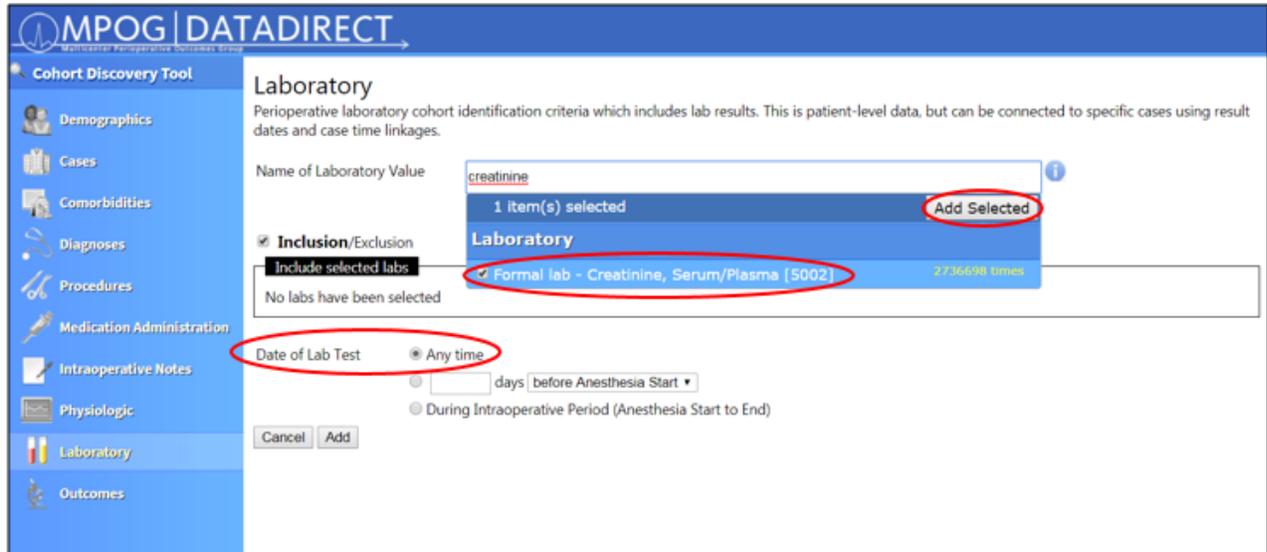
AND have Lupus

AND have Diabetes

In addition to the Procedures, Medication Administration, Intraoperative Notes, and Laboratory filters, you may select **Physiologic** data.



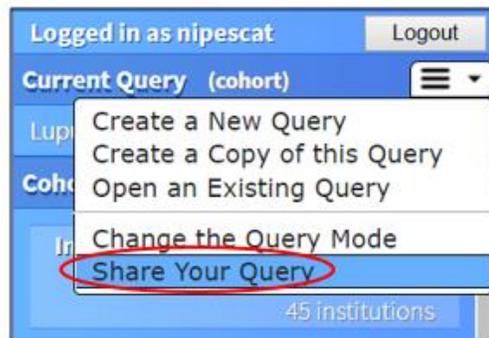
Continue to build and refine your query using Data Sources on the left-hand panel. Refer to the instructions inside each filter panel to determine the source and details for the information available.



## Share Your Query

Users have the ability to share queries that create. For example, researchers may explore ideas in DataDirect to identify a viable research topic and then share their query to the Coordinating Center programmer assigned to their PCRC project to have them run the query on the database before submitting to the PCRC committee. For Quality Improvement, a QI champion may generate a query that they share with their administration. An ACQR may want to share a query to track a certain subset of patients before or after QI project implementation

To share your query, select the dropdown menu icon  and select **Share Your Query**.

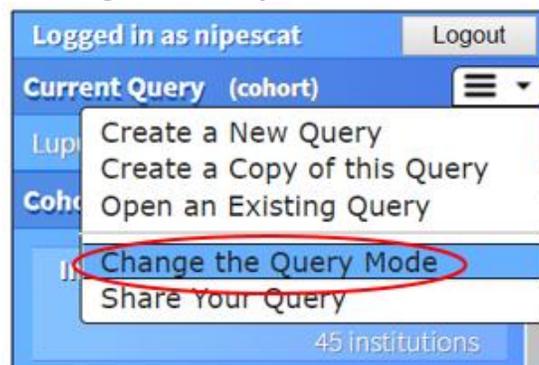


Enter the name or UserId of the DataDirect user you wish to share your query with, and click **Share**.

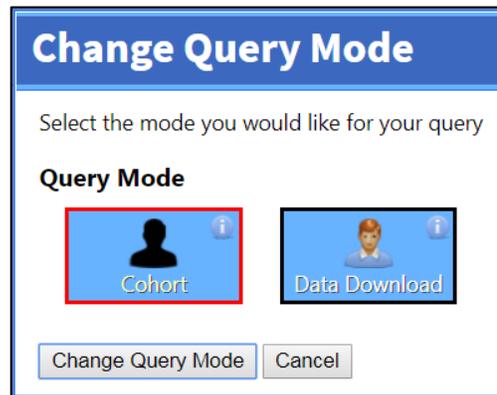
A screenshot of the "Share Your Cohort" dialog box. The title bar says "Share Your Cohort". Below the title bar, there is a message: "You can share your cohort search criteria with another DataDirect user." followed by a help icon. Below that, it says "Please enter the name or userid of the person below." There is a text input field labeled "Search by name or userid:". Below the input field, it says "Share with:". At the bottom of the dialog, there are two buttons: "Share" and "Cancel".

## Toggling Between Query Modes

To switch from Cohort Mode to Data Download Mode (or vice versa), click on the dropdown menu icon  and select **Change the Query Mode**.



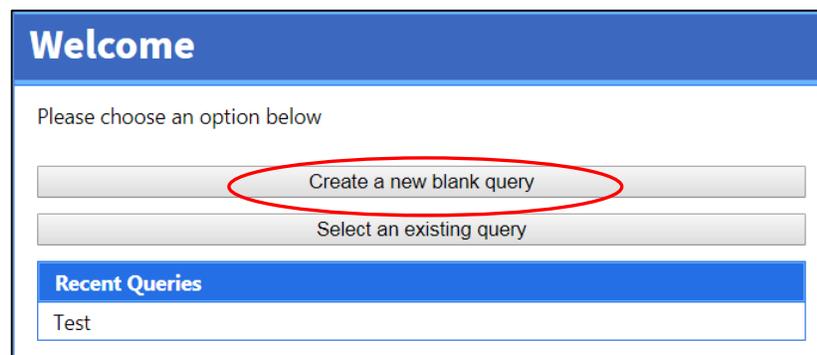
Select the desired mode for your query, then click **Change the Query Mode**.



The dialog box has a blue header with the text "Change Query Mode". Below the header, it says "Select the mode you would like for your query". Underneath, there is a section titled "Query Mode" with two options: "Cohort" (represented by a silhouette icon) and "Data Download" (represented by a person icon). The "Cohort" option is highlighted with a red border. At the bottom, there are two buttons: "Change Query Mode" and "Cancel".

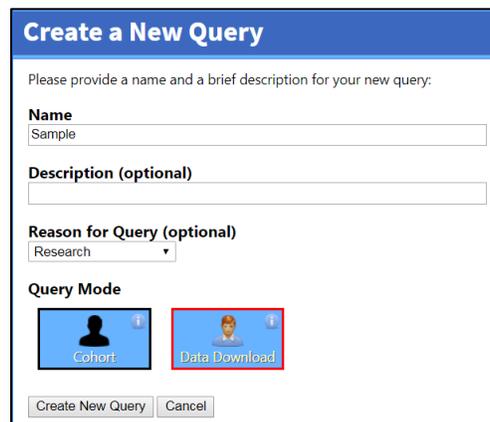
### Data Download Mode

Creating a New Query: After logging in, select **Create a new blank query** to proceed (or **Select an existing query** to use a previously created query). Note: In data download mode, you are ONLY able to download cases from your site.



The "Welcome" screen has a blue header with the text "Welcome". Below the header, it says "Please choose an option below". There are two buttons: "Create a new blank query" and "Select an existing query". The "Create a new blank query" button is circled in red. Below the buttons, there is a section titled "Recent Queries" with a table containing one entry: "Test".

Enter a name, description, and reason for your query and select Data Download, then click **Create New Query**. You may also download an existing Cohort query by editing your query and toggling the Query Mode to Data Download.



The form has a blue header with the text "Create a New Query". Below the header, it says "Please provide a name and a brief description for your new query:". There are three input fields: "Name" (with the text "Sample"), "Description (optional)", and "Reason for Query (optional)" (with a dropdown menu showing "Research"). Below the input fields, there is a section titled "Query Mode" with two options: "Cohort" (represented by a silhouette icon) and "Data Download" (represented by a person icon). The "Data Download" option is highlighted with a red border. At the bottom, there are two buttons: "Create New Query" and "Cancel".

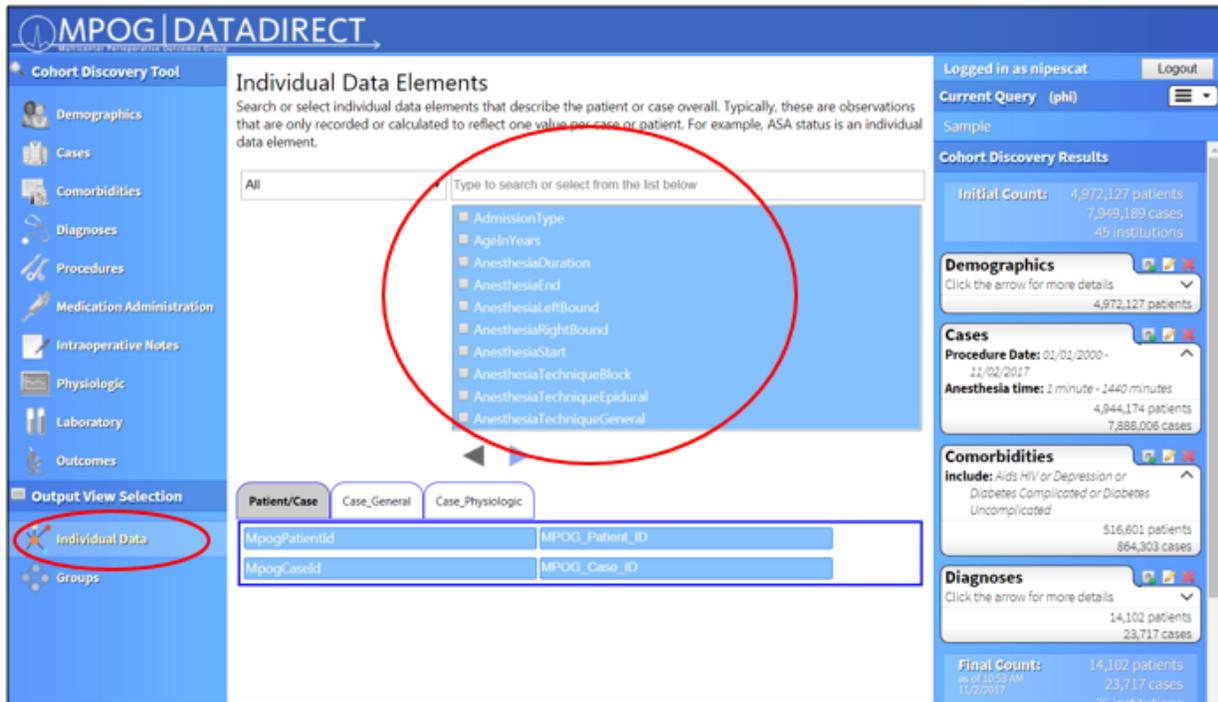
Continue to add criteria from the left panel to your query as you would in Cohort mode.

The screenshot shows the MPOG DATADIRECT Cohort Discovery Tool interface. The left sidebar contains a list of categories: Demographics, Cases, Comorbidities, Diagnoses, Procedures, Medication Administration, Intraoperative Notes, Physiologic, Laboratory, and Outcomes. Below this is the 'Output View Selection' section with options for Individual Data and Groups. The main content area displays a message: 'Changes Saved...Next Steps' with instructions on how to proceed. On the right, the 'Cohort Discovery Results' section shows 'Initial Counts' (4,972,127 patients, 7,949,189 cases, 45 institutions) and 'Final Counts' (14,102 patients, 23,717 cases, 36 institutions) as of 10:55 AM on 11/17/2017. Below the counts are expandable sections for Demographics, Cases, Comorbidities, and Diagnoses. The bottom of the page includes an 'Email Support/Feedback' link.

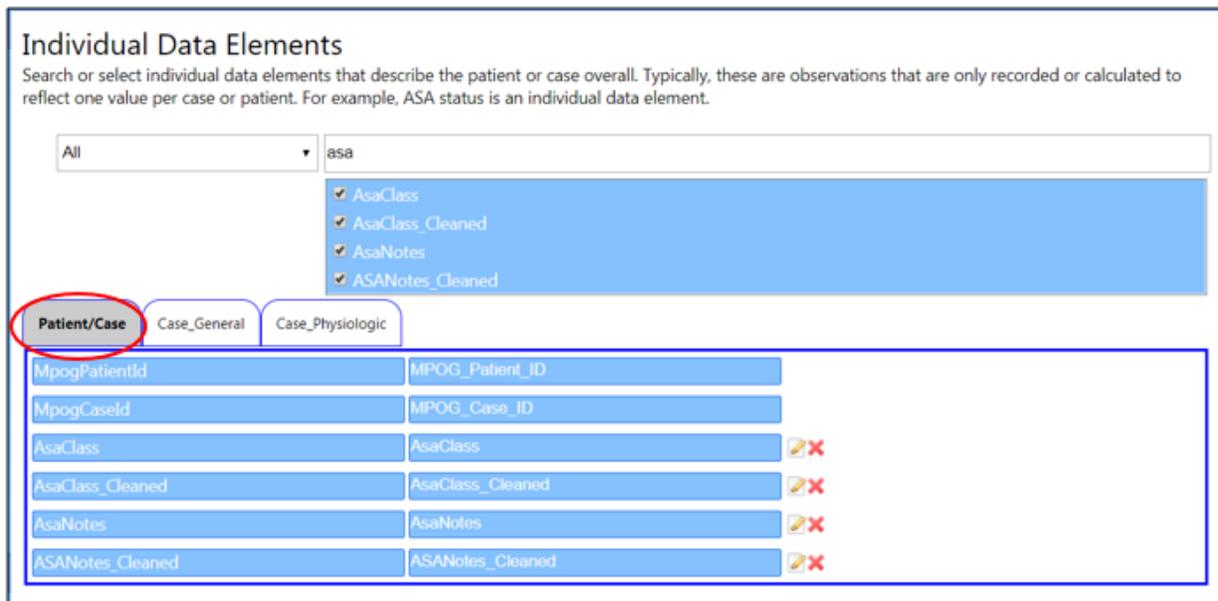
**NOTE:** Since you may only download cases from your own site, you will receive an error message if you attempt to run a query with a filter that includes multiple sites. Verify that you have selected your institution in the **Demographics** section.

The screenshot shows the 'Demographics' filter configuration screen in the MPOG DATADIRECT Cohort Discovery Tool. The left sidebar is the same as in the previous screenshot. The main content area is titled 'Demographics' and contains the following filter options: Gender (checkboxes for Female, Male, Unknown), Age (0 to 150 year(s)), BMI (0 to 100), Institution (a dropdown menu with 'any institution' selected and circled in red), Race (any race), and Smoking Status (checkboxes for Current, Former, Never, Unknown). There are 'Cancel' and 'Add' buttons at the bottom.

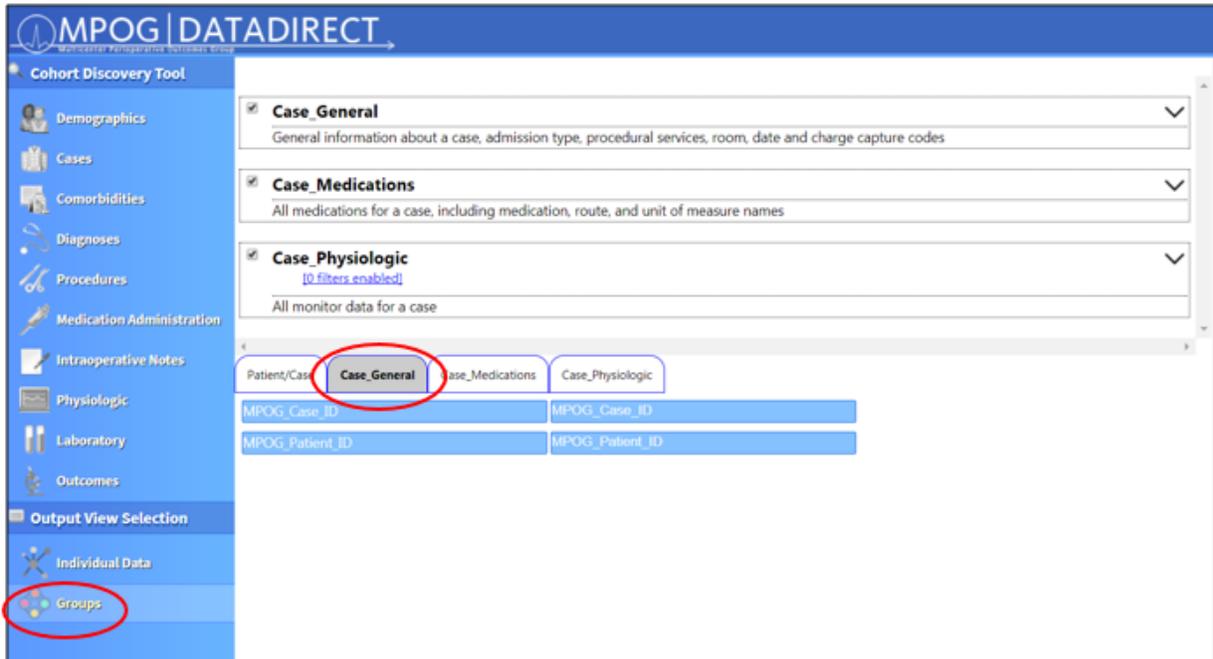
To select the data elements, you want included in your dataset, click on **Individual Data** under the Output View Selection.



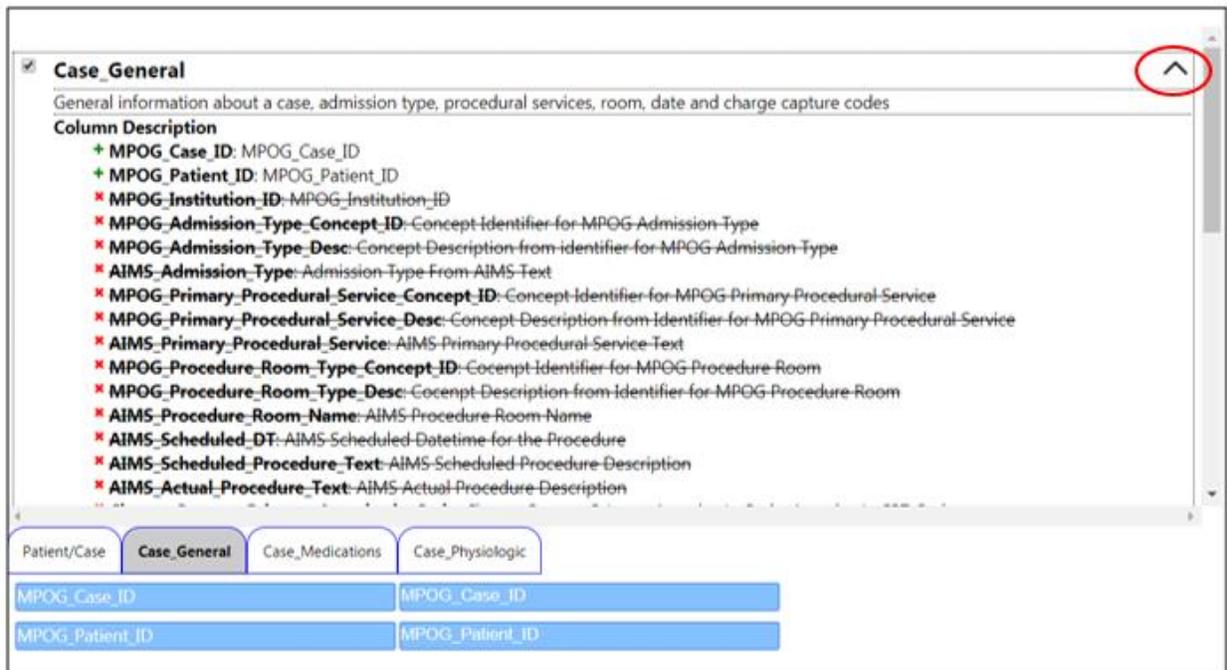
In this section, you may select individual data elements that describe the *patient* or *case overall*. Begin typing the name of the item, and check the appropriate boxes to save these data elements.



Select the **Case\_General** tab or click on **Groups** under the Output View Selection section to choose case specific data elements such as admission type and procedural services. Check the box next to **Case\_General** to begin selecting the items you desire.



Click on the arrow to view the items associated with general case information. The green plus sign signifies that the item will be included. The red X items display in “strike-through” to indicate that they will NOT be included.



Click on the red X to change the symbol to a green plus sign

The screenshot shows the 'Case General' tab in the MPOG DATADIRECT Cohort Discovery Tool. The left sidebar lists various data categories, and the main area displays a list of columns with their inclusion status. Three callout boxes on the left provide context for the symbols used in the column list:

- These elements are included.**: Points to columns with a green plus sign (+).
- These elements are NOT included.**: Points to columns with a red X.
- List of elements included.**: Points to the blue plus sign (+) in the 'Output View Selection' section.

Column Description	Inclusion Status
MPOG_Case_ID: MPOG_Case_ID	Included (+)
MPOG_Patient_ID: MPOG_Patient_ID	Included (+)
MPOG_Institution_ID: MPOG_Institution_ID	Included (+)
MPOG_Admission_Type_Concept_ID: Concept Identifier for MPOG Admission Type	Included (+)
MPOG_Admission_Type_Desc: Concept Description from Identifier for MPOG Admission Type	Included (+)
AIMS_Admission_Type: Admission Type from AIMS Test	Included (+)
MPOG_Primary_Procedural_Service_Concept_ID: Concept Identifier for MPOG Primary Procedural Service	Included (+)
MPOG_Primary_Procedural_Service_Desc: Concept Description from Identifier for MPOG Primary Procedural Service	Included (+)
AIMS_Primary_Procedural_Service: AIMS Primary Procedural Service Text	Included (+)
MPOG_Procedure_Room_Type_Concept_ID: Concept Identifier for MPOG Procedure Room	Included (+)
MPOG_Procedure_Room_Type_Desc: Concept Description from Identifier for MPOG Procedure Room	Included (+)
AIMS_Procedure_Room_Name: AIMS Procedure Room Name	Included (+)
AIMS_Scheduled_DT: AIMS Scheduled Datetime for the Procedure	Included (+)
AIMS_Scheduled_Procedure_Text: AIMS Scheduled Procedure Description	Included (+)
AIMS_Actual_Procedure_Text: AIMS Actual Procedure Description	Included (+)

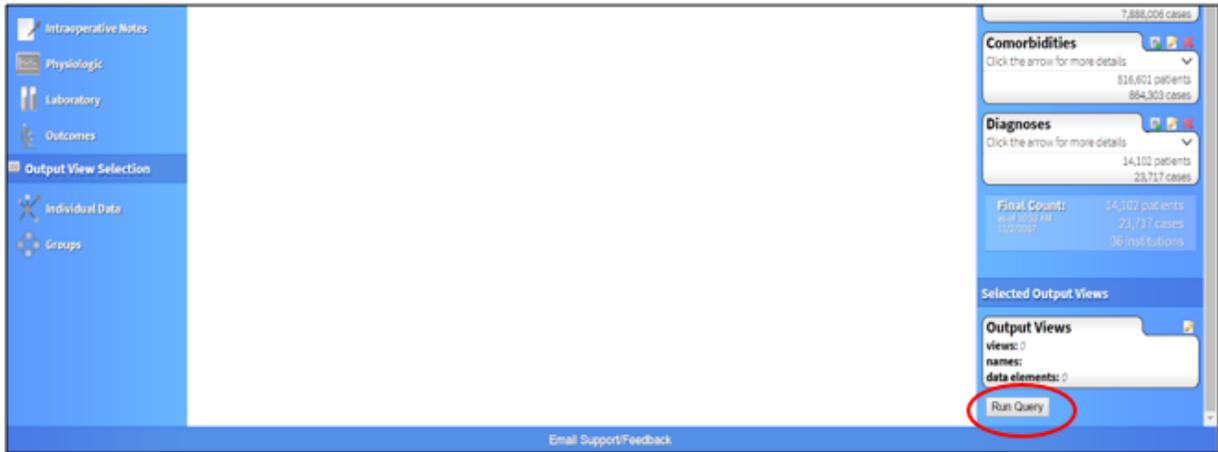
Output View Selection	Inclusion Status
MPOG_Case_ID	Included (+)
MPOG_Patient_ID	Included (+)
MPOG_Institution_ID	Not Included (X)
MPOG_Admission_Type_Concept_ID	Not Included (X)
MPOG_Admission_Type_Desc	Not Included (X)
AIMS_Admission_Type	Not Included (X)
MPOG_Primary_Procedural_Service_Concept_ID	Not Included (X)
MPOG_Primary_Procedural_Service_Desc	Not Included (X)
AIMS_Primary_Procedural_Service	Not Included (X)

If desired, proceed to check the boxes next to **Case\_Medications** and **Case\_Physiologic**, and select the items you wish to be included in your dataset as previously described.

The screenshot shows the 'Case General', 'Case Medications', and 'Case Physiologic' tabs selected in the MPOG DATADIRECT Cohort Discovery Tool. The 'Output View Selection' section is highlighted, and the 'Groups' option is selected.

Output View Selection	Inclusion Status
MPOG_Case_ID	Included (+)
MPOG_Patient_ID	Included (+)

**Running your Query:** When you are ready to build your query, click the **Run Query** button.



Enter a password that will be used to protect the Excel file containing your data and select **Run Query**.

### Run Query

Before your query can be run, please provide the following:

**Password**  
you must provide a password that will be used to protect the generated Excel file

Password Strength

retype password

**Email**  
 Send an email to [jayjeong@umich.edu](mailto:jayjeong@umich.edu) when the Excel file is ready to be downloaded.

Click **Return to current query (read only)** to view the status of your request. To create a copy of your query, select **Create a new query based on the current one**. Otherwise, choose from any of the other options presented. NOTE: You cannot modify your query once you have submitted it. You must create a new query based on the current one.

### Query Submitted

Your query has been submitted. What would you like to do next:

A progress bar will appear at the top to indicate the status of your query. Once you have submitted your query you can no longer edit it. You can either cancel your submission or create a copy of your query.

70% complete

Logged in as test\_jay Logout

Current Query (phi)

Sample

This query has already been submitted and cannot be modified

Create a new query with the same settings

Cohort Discovery Results

Institution: Yale New Haven Hospital  
170,430 patients

Cases  
Procedure Date: 01/01/2000 - 11/03/2017  
Anesthesia time: 1 minute - 1440 minutes  
169,292 patients  
250,990 cases

Comorbidities  
include: Depression or Diabetes : Complicated or Diabetes Uncomplicated  
32,194 patients  
57,068 cases

Diagnoses  
Click the arrow for more details  
1,527 patients  
2,527 cases

Laboratory  
include: 5002  
Range: any time  
1,428 patients  
2,415 cases

Final Count:  
as of 11:39 AM  
11/3/2017  
1,428 patients  
2,415 cases  
1 institutions

Click on the "Stop" button to cancel your data download request.

Select "Create a new query with the same settings" to create an editable copy of your