

DataDirect 2.0 Overview

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Objectives

- Introduce DataDirect as a tool used for quality and research
- Provide overview of the new application – highlighting changes from current version
- Describe enhancements scheduled for upcoming year

What is DataDirect?

- Application used to query data stored in the MPOG Central database
- Allows users to apply filters to identify a cohort of patients for a study (research) or direct a quality improvement project
- Limited data set- no MRNs or patient names provided, only date of service and MPOG Case IDs
- Review patient or case counts to determine impact/relevance of the study/project quickly and can download case list to review individual cases as needed

How to Obtain Access

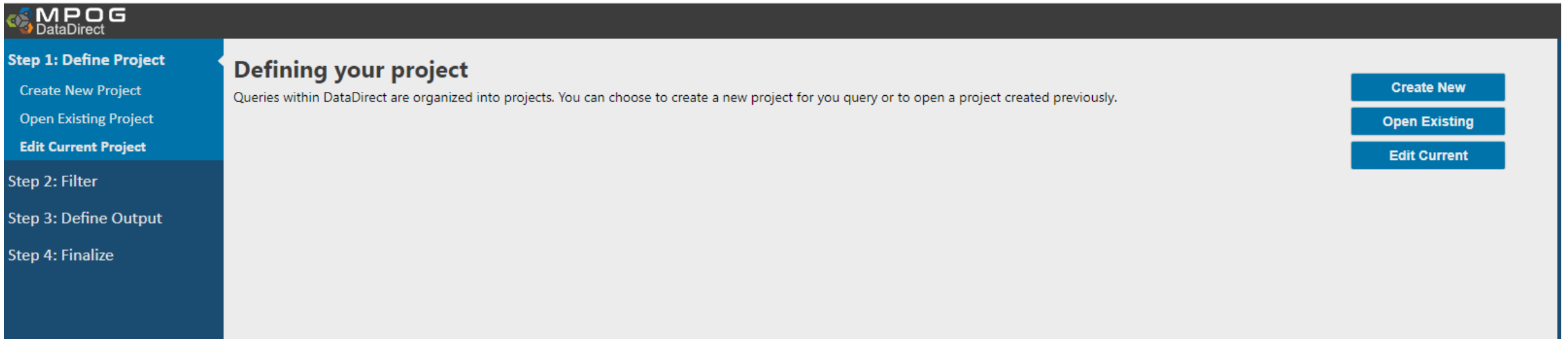
- Accessed via the web: [DataDirect](#)
- New [User Guide](#) Coming Soon!
- All users need to complete [DataDirect Security Checklist and Authorization Form](#)
- DataDirect roles are assigned by MPOG based on the user's role in MPOG
 - Quality Champions and ACQRs may want to query the data differently from researchers and therefore have different types of DataDirect access
- Access expires every 6 months- must renew to maintain access

DataDirect 2.0: Getting Started

- New version provides step-by-step instructions for how to setup your query
- Task bar on the left side allows for easy navigation through the tool

STEP 1: Define your project

- New
- Open Existing
- Edit Current



The screenshot displays the MPOG DataDirect web interface. On the left, a dark blue sidebar contains a 'Step 1: Define Project' section with three options: 'Create New Project', 'Open Existing Project', and 'Edit Current Project'. Below this are 'Step 2: Filter', 'Step 3: Define Output', and 'Step 4: Finalize'. The main content area has a light gray background and is titled 'Defining your project'. It includes a paragraph: 'Queries within DataDirect are organized into projects. You can choose to create a new project for you query or to open a project created previously.' To the right of this text are three blue buttons: 'Create New', 'Open Existing', and 'Edit Current'. The MPOG DataDirect logo is in the top left corner, and the MPOG logo is in the bottom right corner.

Creating a New Query

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Define Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Project Name

Description (optional)

Query Mode

- ☒ Cohort Only 
- ☐ PCRC Proposal 
- ☐ Quality Report 

Starting Population

All Patients
All MPOG patients and cases

7,271,709 patients
12,015,843 cases
55 institutions

Save & Next

Query Modes

- Cohort Only: Results only include count of patients meeting query criteria; no ability to download data; no query spec generated
- PCRC Proposal (will actually be called: Single Center and Multi-center Research): Results include cohort counts with query spec; can download sample from own site only
- Quality Report: Cohort counts; query spec and download of site case list only

STEP 2: Filtering Cases

The screenshot displays the MPOG DataDirect web application interface. The top navigation bar includes the MPOG DataDirect logo on the left and the user name 'Kathryn Buehler' with a 'Logout' link on the right. A vertical sidebar on the left contains a list of steps: 'Step 1: Define Project' (with sub-items 'Create New Project', 'Open Existing Project', 'Edit Current Project'), 'Step 2: Filter' (highlighted), 'Step 3: Define Output', and 'Step 4: Finalize'. The 'Step 2: Filter' section is expanded, showing a list of filter categories: 'Demographics', 'Cases', 'Comorbidities', 'Diagnoses', 'Procedures', 'Medication Administration', 'Intraoperative Notes', 'Physiologic', 'Laboratory', and 'Outcomes'. The main content area is titled 'Filtering Cases' and contains the text: 'Here you will apply filters to define your cohort and return only cases that you're interested in. The available filters are listed on the left sidebar while the size of your cohort will be dynamically updated on the right.' A blue 'Next' button is located in the top right corner of the main content area. On the right side of the interface, there is a dark blue sidebar with project information: 'Project' (ACQR Test, Project ID: 2128, Query Mode: cohort, Last updated on 9/18/2019) and 'Cohort Size' (Start: 12,015,843 cases, All Patients: 55 institutions).

*Options: Can click the 'Next' button in the top right corner to continue moving through the steps or can go directly to the filter category by clicking on that header using the navigation bar on the left side of the screen

STEP 2: Filtering Cases- Demographics

MPOG

DataDirect

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Demographics

Cases

Comorbidities

Diagnoses

Procedures

Medication Administration

Intraoperative Notes

Physiologic

Laboratory

Outcomes

Step 3: Define Output

Step 4: Finalize

Demographics

Patient characteristics from administrative registration systems. Data is mostly case-level and reflects the most recent value for a given patient (e.g. smoking status), regardless of time period specified in Cases.

Sex

☒ Female ☐ Male ☒ Unknown

Age

20 year(s) to 60 year(s)

BMI

0 to 100

Institution

1 institution selected

University of Michigan Health System

Race

any race

Smoking Status

☒ Current ☒ Former ☒ Never ☒ Unknown

Add & Next

Skip & Next

Project

ACQR Test

Project ID: 2128

Query Mode: cohort

Last updated on 9/18/2019


Cohort Size

Start

All Patients

12,015,843 cases

55 institutions

 MPOG

STEP 2: Filtering Cases- Cohort refreshes as you add filters

MPOG
DataDirect

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Demographics

Cases

Comorbidities

Diagnoses

Procedures

Medication Administration

Intraoperative Notes

Physiologic

Laboratory

Outcomes

Step 3: Define Output

Step 4: Finalize

Cases

Perioperative case characteristics from the clinical documentation and professional fee billing systems. Some patient characteristics (ASA status) may change from one case to another and reflect the information known at the time of that case.

Procedure Date01/01/2000to09/18/2019

CPT Base Units3to30

Weekend CaseYesNo

Holiday CaseYesNo

ASA StatusASA 1ASA 2ASA 3ASA 4ASA 5ASA 6

Emergency StatusYesNoUnspecified

Admission TypeInpatientOutpatientOtherUnknown

Case DurationAnesthesia time1minute(s)to1440minute(s)

Cardiac CaseYesNo

Anesthesia Technique GeneralYesNo

Anesthesia Technique LMAYesNo

Endotracheal Tube UsedYesNo

Anesthesia Technique NeuraxialYesNo

Anesthesia Technique BlockYesNo

Add & Next

Skip & Next

Kathryn BuehlerLogout

Project

ACQR Test

Project ID: 2128

Query Mode: cohort

Last updated on 9/18/2019

Cohort Size

Start12,015,843 cases

All Patients55 institutions

Demographics

Gender: Female or Unknown


Age: 20 years - 60 years

BMI: 0.0 - 100.0

Institution: University of Michigan Health System

285,028 cases

1 institutions



STEP 2: Filtering Cases- Modifying selected filters

Cases

Perioperative case characteristics from the clinical documentation and professional fee billing systems. Some patient characteristics (ASA status) may change from one case to another and reflect the information known at the time of that case.

Procedure Date ⓘ
01/01/2018 to 01/01/2019

CPT Base Units ⓘ
☐ 3 to 30

Weekend Case ⓘ
☒ Yes ☒ No

Holiday Case ⓘ
☒ Yes ☒ No

ASA Status ⓘ
☒ ASA 1 ☒ ASA 2 ☒ ASA 3 ☒ ASA 4 ☐ ASA 5 ☐ ASA 6

Emergency Status ⓘ
☒ Yes ☒ No ☒ Unspecified

Admission Type ⓘ
☒ Inpatient
☐ Outpatient
☐ Other
☐ Unknown

Case Duration ⓘ ⓘ ⓘ
Anesthesia time ▾ 1 minute(s) to 1440 minute(s)

Cardiac Case ⓘ
☒ Yes ☒ No

Anesthesia Technique General ⓘ
☒ Yes ☒ No

Anesthesia Technique LMA
☒ Yes ☒ No

Endotracheal Tube Used
☒ Yes ☒ No

Anesthesia Technique Neuraxial ⓘ
☒ Yes ☒ No

Anesthesia Technique Block ⓘ
☒ Yes ☒ No

Update & Next

Skip & Next

Disable this filter

Delete this filter

After making the selection changes, click 'Update & Next' to apply the filter.

Click the filter header that you wish to modify on the 'Project' results bar.

Project

ACQR Test
Project ID: 2128
Query Mode: cohort
Last updated on 9/18/2019

Cohort Size

Start All Patients 12,015,843 cases
55 institutions

Demographics


Gender: Female or Unknown
Age: 20 years - 60 years
BMI: 0.0 - 100.0
Institution: University of Michigan Health System
285,028 cases
1 institutions

Cases

Procedure Date: 01/01/2018 - 01/01/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4
Emergency Status: Yes
Admission Type: Inpatient
Anesthesia time: 1 minute - 1440 minutes
1,306 cases
1 institutions

Procedures

include: 01967
< 10 cases
1 institutions



STEP 2: Filtering Cases- Modifying selected filters

MPOG
DataDirect

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Demographics

Cases

Comorbidities

Diagnoses

Procedures

Medication Administration

Intraoperative Notes

Physiologic

Laboratory

Outcomes

Step 3: Define Output

Step 4: Finalize

Cases

Perioperative case characteristics from the clinical documentation and professional fee billing systems. Some patient characteristics (ASA status) may change from one case to another and reflect the information known at the time of that case.

Procedure Date

01/01/2018 to 01/01/2019

CPT Base Units

☐ 3 to 30

Weekend Case

☒ Yes ☒ No

Holiday Case

☒ Yes ☒ No

ASA Status

☒ ASA 1 ☒ ASA 2 ☒ ASA 3 ☒ ASA 4 ☐ ASA 5 ☐ ASA 6

Emergency Status

☒ Yes ☒ No ☒ Unspecified

Admission Type

☒ Inpatient
☒ Outpatient
☒ Other
☒ Unknown

Case Duration

Anesthesia time 1 minute(s) to 1440 minute(s)

Cardiac Case

☒ Yes ☒ No

Anesthesia Technique General

☒ Yes ☒ No

Anesthesia Technique LMA

☒ Yes ☒ No

Endotracheal Tube Used

☒ Yes ☒ No

Anesthesia Technique Neuraxial

☒ Yes ☒ No

Anesthesia Technique Block

☒ Yes ☒ No

Update & Next

Skip & Next

Disable this filter

Delete this filter

Kathryn Buehler Logout

Project

ACQR Test

Project ID: 2128

Query Mode: cohort

Last updated on 9/18/2019

Cohort Size

Start 12,015,843 cases

All Patients 55 institutions

Demographics

Gender: Female or Unknown

Age: 20 years - 60 years

BMI: 0.0 - 100.0

Institution: University of Michigan Health System

285,028 cases

1 institutions

Cases

Procedure Date: 01/01/2018 - 01/01/2019

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4

Anesthesia time: 1 minute - 1440 minutes

25,142 cases

1 institutions


Procedures

include: 01967

2,204 cases

1 institutions

Better!

 MPOG

STEP 2: Filtering Cases Summary

- Continue to add (or skip) filters as prompted by the step-by-step buttons in the top right corner OR use the navigation pane on the left
- As filters are added, counts for the cohort size will continue to refresh in the Summary Bar on the right side of the screen
- Click directly on the filter headers to modify previously selected filters
- Move on to Step 3 once filters are selected and cohort size seems plausible

STEP 3: Define Outputs

The screenshot shows the MPOG DataDirect web application interface. The left sidebar contains navigation steps: Step 1: Define Project, Step 2: Filter, Step 3: Choose Output (highlighted), and Step 4: Finalize. The main content area is titled 'Choose Output Items' and includes a search bar, a list of available output items, and a list of selected output items. The right sidebar displays project details for 'Mark's Super Amazing Query' and cohort statistics.

Available Output Items

Item Name	Description	?	+
Anesthesia Duration	The difference between anesthesia start and end in minutes	?	+
Anesthesia End	The time of the last anesthesia end documented on the procedure	?	+
Anesthesia Start	The time of the first anesthesia start documented on the procedure	?	+
Antiemetics Given	Whether the patient was given antiemetics or not (yes/no)	?	+
Baseline Blood Pressure	The baseline blood pressure documented in preop	?	+
Core Temperature Location Documented	Whether a core temp location was documented (yes/no)	?	+

Selected Output Items

Item Name	Description	Options	?	X
Age	The patient's age in years at the time of the procedure		?	X
ASA Class (Merged)	A merged, single value for the patient's ASA class	Options	?	X
Admission Type	E.g. outpatient, inpatient, observation		?	X

Project Details

Project: Mark's Super Amazing Query
Query ID 12345
Created on 7/17/2019

Cohort Size

Category	Cases	Institutions
Start	11,594,452 cases	45 institutions
Demographics	2,864,021 cases	7 institutions
Comorbidities	290,351 cases	5 institutions

Output

Category	Count
Total Items	3
Custom Elements	1

- Outputs = Column headers for your Excel file available for download
- All 'options' are available on the left side of the screen- click the (+) button to add to the right side of the screen
- Final selection of outputs are listed on the right, some are defaults that can be removed, if desired

STEP 4: Review and Finalize

MPOG | DATADIRECT
https://datadirect.mpogethersearch.org/Main
John Doe Logout

Step 1: Define Project
Step 2: Filter
Step 3: Define Output
Step 4: Finalize

Review and Finalize

Here you can review your choices in detail and save documents relevant to your proposal.

Download Docs
Download Data

**Downloading data is disabled in PRCR mode.*

Cohort Details

Filter	Cases	Patients	Institutions
Start All Patients	11,594,452	9,845,234	45
Demographics Age > 18 Female 7 Selected Institutions	2,864,021	2,143,429	7
Comorbidities Diabetes	290,351	190,465	5

Data Quality Disclaimers

For any given output item, there will be variation in data quality as different institutions have different documentation practices. Below you can find basic data quality information for each of your selected output items. Note these numbers are for the entirety of MPOG and are **not representative of your filter selection**. Once you've run your query, the result set will include a data quality report for your specific cohort.

Output Item	Case Fill Rate	Reporting Institutions
Age	99%	45
Patient Race	62%	40
Weight	88%	44
Diabetes	35%	15

Query Output Specification

Table 1 - Main Case List
This table contains a single row for each case in the research cohort. Any data element that

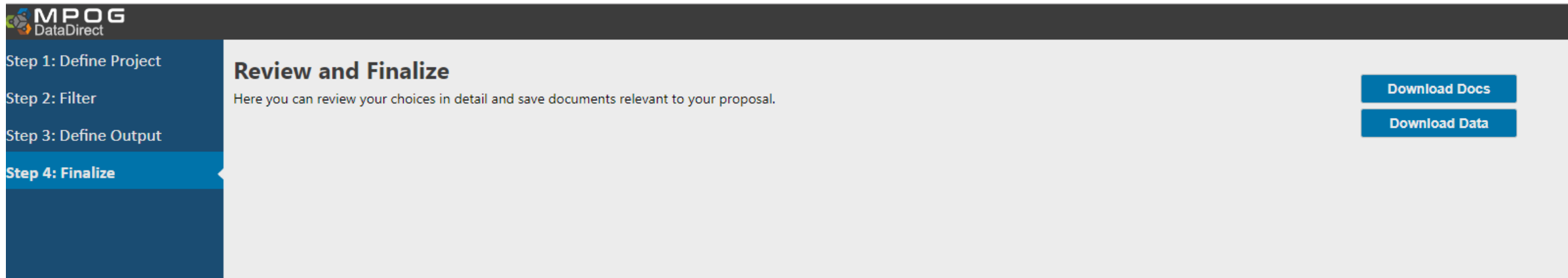
Display Name	Source	Data Direct Category
MPOG Case ID	Phenotype: MPOG Case ID	Basic Elements
Institution	Institution Randomizer	
Case Time	Phenotype: Case Start	
Age	Phenotype: Age in Years	
ASA Class	Phenotype: ASA Status Classification	Preop
Weight	Phenotype: Weight	
Height	Phenotype: Height	
Propofol Total	Med Totaling: Propofol	Medications
Betablockers	Phenotype: Preop Betablockers	
Re-positioning Count	(CUSTOM)	

Table 2 - Medications
This table contains one row per medication administration/rate change. As such, given case

Project
Mark's Super Amazing Query
Query ID 12345
Created on 7/17/2019
Cohort Size
Start
All Patients
11,594,452 cases
45 institutions
Demographics
Age > 18
Female
7 Selected Institutions
2,864,021 cases
7 institutions
Comorbidities
Diabetes
290,351 cases
5 institutions
Output
Total Items
Custom Elements
3
1



STEP 4: Review and Finalize



- Depending on the query mode selected, will have different options available:
- Download Docs (Research & Quality Report Modes):
 - PCRC proposal template with simplified query specification embedded (Word document)
 - Full query specification (Excel spreadsheet)
- Download Data: Output of your institution's data for the query (Quality Report Mode Only)
- Both: Quality Report Mode
- Neither: Cohort Only Report Mode

Future Plans

- Full Disclosure: Steps 3 & 4 are just mock-ups at this point, may change slightly when actually built into the application
- Add quality measures and MPOG outcomes as additional filters
- Add Data Quality as one of the reports generated
 - Sample data
 - Fill rates
 - Data distribution
 - Reporting institutions
- Add option to set up repeat reporting (auto-sent via email)