

MPOG DataDirect: User Access & Demonstration

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DataDirect Access

The screenshot shows the MPOG website (mpog.org) with a navigation menu. The 'Tools' menu is open, and a red box highlights the 'DataDirect' option. A red arrow points to 'DataDirect' from the 'Tools' menu. The main banner features a vintage microphone and the text: 'MPOG Research Tips and Tricks Webpage Live! Check our new resources using high-powered research tools!'. A 'VISIT WEBPAGE' button is visible next to the microphone. The MPOG logo is in the top left and bottom right.

mpog.org

Bookmarks Outlook:\mathism...

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DataDirect
Concept Browser
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Quality Dashboards
Quality Case Reports
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DataDirect Access

- Pre-requisites:
 - Security Checklist & Authorization Form
 - Obtain Login

DataDirect Access

- Pre-requisites:

- Authorization

MPOG DataDirect Security Checklist and Authorization Form

The screenshot shows the MPOG website's Downloads page. The browser address bar displays `mpog.org/downloads/`. The MPOG logo (Multicenter Perioperative Outcomes Group) is at the top center. The top navigation bar includes links for About, Join, Research, Quality, Apps, Downloads (highlighted with a red box), and Events / News. A 'Dashboard Login' button is in the top right. The main heading is 'Downloads'. Below it, there are two sections: 'Research' and 'Regulatory and Legal'. Under 'Research', there are four links: 'MPOG DataDirect Security Checklist and Authorization Form' (highlighted with a red arrow), 'DataDirect User Guide', 'PCRC Proposal Template', and 'PCRC Proposal Checklist'. Under 'Regulatory and Legal', there are seven links: 'BAA Template for University of Michigan', 'IRB Approval Letter Coordinating Site (Expires 01-21-2020)', 'IRB Approval Letter Participating Site (Expires 12-16-2019)', 'IRB University of Michigan Performance Site Application Example', 'MPOG Bylaws', 'MPOG Master DUA Agreement (Europe Only)', and 'MPOG Master DUA Agreement (United States Only)'. At the bottom left, there is a link for 'IT Job'.

MPOG DataDirect Security Checklist and Authorization Form

Thank you for your interest in using MPOGs DataDirect application for Quality Improvement and/or Research Projects at your institution. DataDirect contains 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.

Standard data security processes must be followed when using the application. These are detailed below.

The site's Anesthesiology Quality Champion and/or Practice Leader is responsible for all of the data that is downloaded for their institution from DataDirect. All individuals gaining access to MPOG DataDirect will need to complete and sign the affidavit below. This affidavit affirms that he/she understands the necessary processes and policies to ensure data security. Detailed descriptions of all items on the checklist can be found on the MPOG Security

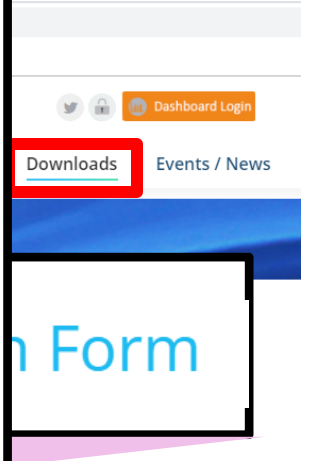
Use of this data for Research

Anyone downloading data using Data Direct for the purpose of research should follow their institution review board policies.

Please do not hesitate to contact the MPOG with any questions/concerns.

Secure Computer

- Encrypt all mobile workstations (laptops): encrypt computer hard drive using approved tools (described on MPOG website)
- Ensure physical security or encryption of any desktop workstations
- Ensure physical security of servers: Institutional server room with near zero risk of physical theft



DataDirect Key Features

- User Guide



DataDirect

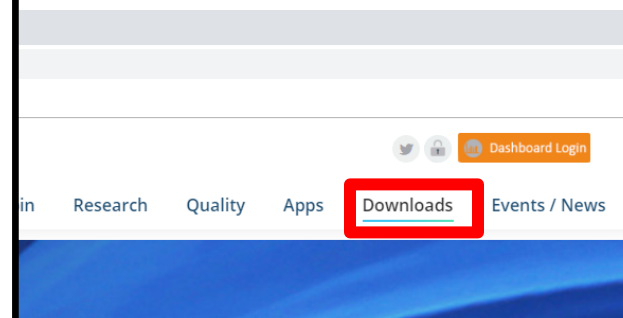
- User Guide



DataDirect User Guide

For questions or comments, please contact:

Multicenter Perioperative Outcomes Group
support@mpog.zendesk.com





DataDirect Key Features

- Query Modes

- **Cohort Only**

- Goals:

- Determine if a research/QI question is **answerable**

- Sample size → roughly estimate **statistical power**

- Ensure a **satisfying experience** doing MPOG research or QI

- No prior approval

- (except login)

- **Multicenter** data (counts only)



DataDirect Key Features

- Query Modes

- Quality Report

- Goal:

- Review cases, processes of care, and outcomes for local research and QI

- Approval from your site leadership

- Implied with DataDirect login, but user re-attests at time of access

- **Single center** data

DataDirect Key Features

- Query Modes

- Research

- Goal:

- Execute high-impact multicenter research for manuscripts / grants

- Approval from PCRC Committee

- Formal submission/review process

- **Single-center data** *before* PCRC review/approval

- **Multi-center** data *after* PCRC review/approval

DataDirect Key Features

- Query Modes

	Access Requirements	Scope	Goal
Cohort Only	Login	Multicenter (counts)	Determine if question is answerable
Quality Report			
Research			

DataDirect Key Features

- Query Modes

	Access Requirements	Scope	Goal
Cohort Only	Login	Multicenter (counts)	Determine if question is answerable
Quality Report	Login + Re-attest with download	Single Center	Local QI
Research			

DataDirect Key Features

- Query Modes

	Access Requirements	Scope	Goal
Cohort Only	Login	Multicenter (counts)	Determine if question is answerable
Quality Report	Login + Re-attest with download	Single Center	Local QI
Research	PCRC Approval	Single Center → Multicenter	High-impact publications / grants

... some thoughts on data wrangling in MPOG



MPOG Data Wrangling

- Commonly **structured**, or with **cleanable artifact**:
 - Demographics – height, weight, gender, age, etc.
 - Simple case details – ASA class, Anesthesia CPT, duration
 - Simple anesthetic details – GA, ETT/LMA attempted
 - *Elixhauser* comorbidities, ICD-9/10 diagnosis codes
 - *Intraoperative* medications
 - *Standard* physiologic monitors
 - Laboratory values

MPOG Data Wrangling

- Sometimes unstructured, or with complex artifact:
 - Surgical diagnosis and/or procedure text
 - Nuanced intraoperative interventions
 - e.g. positioning, awake/deep extubation, jet ventilation, partial CPB
 - *Anesthesia H&P* comorbidities
 - *Non-intraoperative* medications (e.g. home, preop, postop)
 - *Advanced* physiologic monitors (e.g. CVP, cerebral oximetry)

MPOG Data Wrangling

**Usually Structured,
Cleanable**

**Sometimes Unstructured,
Cleaning is Challenging or Intractable**

Demographics, Labs

MPOG Data Wrangling

**Usually Structured,
Cleanable**

**Sometimes Unstructured,
Cleaning is Challenging or Intractable**

Demographics, Labs

Simple Case Details (e.g. Anes CPT)

Diagnosis/Procedure Text

MPOG Data Wrangling

**Usually Structured,
Cleanable**

**Sometimes Unstructured,
Cleaning is Challenging or Intractable**

Demographics, Labs

Simple Case Details (e.g. Anes CPT)

Simple Anesthetic Details (e.g. ETT)

Diagnosis/Procedure Text

Nuanced Interventions (e.g. jet vent)

MPOG Data Wrangling

**Usually Structured,
Cleanable**

**Sometimes Unstructured,
Cleaning is Challenging or Intractable**

Demographics, Labs

Simple Case Details (e.g. Anes CPT)

Simple Anesthetic Details (e.g. ETT)

Comorbidities – *Elixhauser*

Diagnosis/Procedure Text

Nuanced Interventions (e.g. jet vent)

Comorbidities – *Anesthesia H&P*

MPOG Data Wrangling

**Usually Structured,
Cleanable**

**Sometimes Unstructured,
Cleaning is Challenging or Intractable**

Demographics, Labs

Simple Case Details (e.g. Anes CPT)

Simple Anesthetic Details (e.g. ETT)

Comorbidities – *Elixhauser*

Medications – *Intraoperative*

Diagnosis/Procedure Text

Nuanced Interventions (e.g. jet vent)

Comorbidities – *Anesthesia H&P*

Medications – *Home, Preop, Postop*

MPOG Data Wrangling

Usually Structured, Cleanable

Sometimes Unstructured, Cleaning is Challenging or Intractable

Demographics, Labs

Simple Case Details (e.g. Anes CPT)

Simple Anesthetic Details (e.g. ETT)

Comorbidities – *Elixhauser*

Medications – *Intraoperative*

Standard Monitors (e.g. BP)

Diagnosis/Procedure Text

Nuanced Interventions (e.g. jet vent)

Comorbidities – *Anesthesia H&P*

Medications – *Home, Preop, Postop*

Advanced Monitors (e.g. CVP)

DataDirect v2.0 Updates

DataDirect v2.0

- Major updates
 - **Intuitive** workflow
 - Step-wise process
 - Differentiation between inclusion criteria vs. covariates/outcomes
 - **Broader range** of data types
 - MPOG concepts, phenotypes, QI measures all accessible
 - (Coming soon): Automated, downloadable **data summaries**
 - QI: Quality Report
 - Research: Data Query Spec

DataDirect v2.0 Demo

(note: DataDirect continues to be updated...current version not identical to this presentation)

Step 1: Define Project

[Create New Project](#)[Open Existing Project](#)[Edit Current Project](#)

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Defining your project

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.

[Create New](#)[Open Existing](#)[Edit Current](#)

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Save & Next





Project Name

MPOG DataDirect Demo Query

Description (optional)

Demonstration for MPOG Retreat

Query Mode

- ☐ Cohort Only 
- ☐ Quality Report 
- ☐ Single Center Research 
- ☒ Multi-Center Research 

Choose Starting Population

Intraoperative Research Standard

- Has valid Anesthesia Start and End
- Patient in room time should be valid if exists
- Has a valid institution id
- Case Duration must be at least 15 minutes if Anesthesia Technique General is true
- Case Duration must be at least 5 minutes if Anesthesia Technique General is false
- Actual or predicted anesthesia CPT code must be present
- Age must be present
- Sex must not be unknown
- ASA Class must not be Missing, Invalid, or Conflicting
- Baseline Blood Pressure Mean must be present
- At least one Intraoperative medication was administered

2,081,081 patients

3,170,027 cases

29 institutions

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Project Name

MPOG DataDirect Demo Query

Description (optional)

Demonstration for MPOG Retreat

Query Mode

- ☐ Cohort Only
- ☐ Quality Report
- ☐ Single Center Research
- ☒ Multi-Center Research

Choose Starting Population

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- Actual or predicted anesthesia CPT code must be present
- Age must be present
- Sex must not be unknown
- ASA Class must not be Missing, Invalid, or Conflicting
- Baseline Blood Pressure Mean must be present
- At least one intraoperative medication was administered

2,081,081 patients
3,170,027 cases
29 institutions

Save & Next

All cases

Valid case times, age, sex, CPT, ASA class

ICD-9/10 codes present, labs present

Mortality, discharge diagnoses

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Project Name

MPOG DataDirect Demo Query

Description (optional)

Demonstration for MPOG Retreat

Query Mode

- ☐ Cohort Only
- ☐ Quality Report
- ☐ Single Center Research
- ☒ Multi-Center Research

Choose Starting Population

Intraoperative Research Standard

- Has valid Anesthesia Start and End
- Patient in room time should be valid if exists
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- Case Duration must be at least 15 minutes if Anesthesia Technique General is true
- Case Duration must be at least 5 minutes if Anesthesia Technique General is false
- Actual or predicted anesthesia CPT code must be present
- Age must be present
- Sex must not be unknown
- ASA Class must not be Missing, Invalid, or Conflicting
- Baseline Blood Pressure Mean must be present
- At least one intraoperative medication was administered

2,081,081 patients
3,170,027 cases
29 institutions

Save & Next

	All cases	Intraop Standard		
Valid case times, age, sex, CPT, ASA class		X		
ICD-9/10 codes present, labs present				
Mortality, discharge diagnoses				

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Project Name

MPOG DataDirect Demo Query

Description (optional)

Demonstration for MPOG Retreat

Query Mode

- ☐ Cohort Only
- ☐ Quality Report
- ☐ Single Center Research
- ☒ Multi-Center Research

Choose Starting Population

Intraoperative Research Standard

- Has valid Anesthesia Start and End
- Patient in room time should be valid if exists
- Has a valid institution id
- Case Duration must be at least 15 minutes if Anesthesia Technique General is true
- Case Duration must be at least 5 minutes if Anesthesia Technique General is false
- Actual or predicted anesthesia CPT code must be present
- Age must be present
- Sex must not be unknown
- ASA Class must not be Missing, Invalid, or Conflicting
- Baseline Blood Pressure Mean must be present
- At least one intraoperative medication was administered

2,081,081 patients

3,170,027 cases

29 institutions

Save & Next

	All cases	Intraop Standard	Periop Standard	
Valid case times, age, sex, CPT, ASA class		X	X	
ICD-9/10 codes present, labs present			X	
Mortality, discharge diagnoses				

Step 1: Define Project

Create New Project

Open Existing Project

Edit Current Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Create a New Query

Name your project and set a few attributes.

Project Name

MPOG DataDirect Demo Query

Description (optional)

Demonstration for MPOG Retreat

Query Mode

- ☐ Cohort Only
- ☐ Quality Report
- ☐ Single Center Research
- ☒ Multi-Center Research

Choose Starting Population

Intraoperative Research Standard

- Has valid Anesthesia Start and End
- Patient in room time should be valid if exists
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- Case Duration must be at least 15 minutes if Anesthesia Technique General is true
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- ASA Class must not be Missing, Invalid, or Conflicting
- Baseline Blood Pressure Mean must be present
- At least one intraoperative medication was administered

2,081,081 patients
3,170,027 cases
29 institutions

Save & Next

	All cases	Intraop Standard	Periop Standard	Outcome Standard
Valid case times, age, sex, CPT, ASA class		X	X	X
ICD-9/10 codes present, labs present			X	X
Mortality, discharge diagnoses				X

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic
- Labs
- Outcomes

Step 3: Choose Output

Step 4: Finalize

Filtering Cases

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.

Next

Project
MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

Start	3,170,027 cases
Intraoperative	29 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases**
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic
- Labs
- Outcomes

Step 3: Choose 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	<input type="text" value="01/01/2000"/> to <input type="text" value="10/14/2019"/>
CPT Base Units	<input type="checkbox"/> 3 to <input type="text" value="30"/>
Weekend Case	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Holiday Case	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ASA Status	<input checked="" type="checkbox"/> ASA 1 <input checked="" type="checkbox"/> ASA 2 <input checked="" type="checkbox"/> ASA 3 <input checked="" type="checkbox"/> ASA 4 <input checked="" type="checkbox"/> ASA 5 <input checked="" type="checkbox"/> ASA 6
Emergency Status	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Unspecified
Admission Type	<input checked="" type="checkbox"/> Inpatient <input checked="" type="checkbox"/> Outpatient <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/> Unknown
Case Duration	Anesthesia time <input type="text" value="1"/> minute(s) to <input type="text" value="1440"/> minute(s)
Cardiac Case	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Anesthesia Technique General	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Anesthesia Technique LMA	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Endotracheal Tube Used	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Anesthesia Technique Neuraxial	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Anesthesia Technique Block	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Add

Next

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Cohort

Last updated on 10/14/2019

Cohort Size

Start 3,170,027 cases
Intraoperative 29 institutions

Demographics

Age: 18 years - 150 years

BMI: 0.0 - 100.0

Race: American Indian or Alaska Native or Asian or Pacific Islander or Black, not of Hispanic Origin or Hispanic, Black or Hispanic, Color Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed

2,465,118 cases
28 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic
- Labs
- Outcomes

Step 3: Choose Output

Step 4: Finalize

Comorbidities

Elixhauser comorbidity measures are pre-defined collections of ICD-9 and ICD-10 codes which assess for 31 patient comorbidities, commonly used for correlation to a higher risk of in-hospital mortality. The comorbidities are only available for centers contributing Problem Summary List ICD9/10 or Discharge ICD9/10 data. ICD-10 coding was initially developed by the World Health Organization in 1992, and the United States began requiring the use of ICD-10 coding October 1, 2015.

Elixhauser comorbidities

1 comorbidity selected

Mode

- ☒ Keep only cases with these comorbidities
- ☐ Remove cases with these comorbidities

Selection

Valvular Disease

Add

Next

Michael Mathis Logout

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Cohort

Last updated on 10/14/2019

Cohort Size

Start

Intraoperative

3,170,027 cases

29 institutions

Demographics

Age: 18 years - 150 years

BMI: 0.0 - 100.0

Race: American Indian or Alaska Native or Asian or Pacific Islander or Black, not of Hispanic Origin or Hispanic, Black or Hispanic, Color Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed

2,465,118 cases

28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5

Emergency Status: Yes or No

Anesthesia time: 60 minutes - 1440 minutes

Cardiac Case: Yes

AnesTech General: Yes

Endotracheal Tube: Yes

28,367 cases

25 institutions

Step 1: Define Project

Step 2: Filter

Demographics

Cases

Comorbidities

Diagnoses

Procedures

Notes

Medications

Physiologic

Labs

Outcomes

Step 3: Choose Output

Step 4: Finalize

Procedures

Perioperative procedures activity identified using Current Procedure Terminology (CPT) codes, professional fee charges, or using free text procedure descriptions.

CPT search ⓘ

Actual or Scheduled
Procedure Text

Add ⓘ

Mode

- ☒ Keep only cases with these procedures
☐ Remove cases with these procedures

Selection

Add

Next

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Cohort

Last updated on 10/14/2019

Cohort Size

Start **3,170,027 cases**
Intraoperative 29 institutions

Demographics

Age: 18 years - 150 years

BMI: 0.0 - 100.0

Race: American Indian or Alaska Native or Asian or Pacific Islander or Black, not of Hispanic Origin or Hispanic, Black or Hispanic, Color Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed

2,465,118 cases
28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5

Emergency Status: Yes or No

Anesthesia time: 60 minutes - 1440 minutes

Cardiac Case: Yes

AnesTech General: Yes

Endotracheal Tube: Yes

28,367 cases
25 institutions

Comorbidities

13,737 cases
keep: Valvular Disease 22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative Discharge Billing

present on admission: any

diagnosis type: none specified

psl status: none specified

keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases
18 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes**
- Medications
- Physiologic
- Labs
- Outcomes

Step 3: Choose Output

Step 4: Finalize

Intraoperative Notes

Enforce inclusion or exclusion of patients with documentation of specific MPOG concepts in the intraoperative notes, such as cardiopulmonary bypass, thoracic surgery, specific blocks, etc.

Search Note Concept

MPOG Intraoperative Note Concept Name, ID, or Group Name

Mode

- ☒ Keep only cases with these intraoperative notes
- ☐ Remove cases with these intraoperative notes

Selection

[50122] Intubation Endotracheal Tube Size
[50115] Intubation Laryngoscopy Blade Type and Size
[50118] Intubation Number of Attempts
[50119] Intubation Direct Laryngoscopy View
[50123] Intubation Endotracheal Tube Type
[50334] Intubation - cricoid pressure applied
[50120] Intubation Bougie Introducer Used
[50117] Intubation - ETT Placed
[50197] Intubation - atraumatic
[50695] Categorized note - Intubation
[50205] Intubation Tube Note
[50207] Intubation device and adjunct note
[50688] Intubation - comment
[50101] Intubation - Observed to be difficult

Add

Next

Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

Start 3,170,027 cases
Intraoperative 29 institutions

Demographics

Age: 18 years - 150 years
BMI: 0.0 - 100.0
Race: American Indian or Alaska Native or Asian or Pacific Islander or Black, not of Hispanic Origin or Hispanic, Black or Hispanic, Color Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed

2,465,118 cases
28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes

28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease 22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases
18 institutions

Procedures

keep: mitral or mv 14 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications**
- Physiologic
- Labs
- Outcomes

Medication Administration

Perioperative medications that were administered. Medication data is at the case-level. Medications are searchable by drug name (generic only, MPOG concept name) or drug ID (MPOG concept ID). Bolus or infusion administrations can be identified distinctly.

Name of Medication

Mode ☒ Keep only cases with these medications that were administered
☐ Remove cases with these medications that were administered

Selection

Add

Next

Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

Demographics

Age: 18 years - 150 years
BMI: 0.0 - 100.0
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2,465,118 cases
28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes
28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease
13,737 cases
22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2
4,988 cases
18 institutions

Procedures

keep: mitral or mv
1,035 cases
14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101
1,035 cases
14 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic**
- Labs
- Outcomes

Step 3: Choose Output

Step 4: Finalize

Physiologic

Intraoperative physiologic data acquired from automated device interfaces (blood pressure, SpO2) or manually entered (Train-of-four ratio, EKG rhythm). Search by MPOG concept ID or concept name.

Name of Physiologic Data

Mode ☒ Keep only cases with these physiologic data
☐ Remove cases with these physiologic data

Selection

Minimum number of values per case

Add

Next

Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

BIW: 0.0 - 100.0
Race: American Indian or Alaska Native or Asian or Pacific Islander or Black, not of Hispanic Origin or Hispanic, Black or Hispanic, Color Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed

2,465,118 cases
28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes

28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease

13,737 cases
22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases
18 institutions

Procedures

keep: mitral or mv
keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101

1,035 cases
14 institutions

Medication Administration

keep: 10301

940 cases
14 institutions

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic
- Labs**
- Outcomes

Step 3: Choose Output

Step 4: Finalize

Laboratory

Perioperative laboratory cohort identification criteria which includes lab results. This is patient-level data, but can be connected to specific cases using result dates and case time linkages.

Name of Laboratory Value

Mode
☒ Keep only cases with these laboratory values
☐ Remove cases with these laboratory values

Selection

Date of Lab Test
☒ Any time
☐ days before Anesthesia Start
☐ During Intraoperative Period (Anesthesia Start to End)

Add

Next

Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

Unknown or Hispanic, White or Middle Eastern or White, not of Hispanic Origin or Bi or Multi Racial or Other Race Not Listed
2,465,118 cases
28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes
28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease **13,737 cases**
22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative
Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2
4,988 cases
18 institutions

Procedures

keep: mitral or mv **1,035 cases**
14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101
1,035 cases
14 institutions

Medication Administration

keep: 10301 **940 cases**
14 institutions

Physiologic

keep: 3080 **885 cases**
13 institutions
Min.# of values per case: 1

Step 1: Define Project

Step 2: Filter

- Demographics
- Cases
- Comorbidities
- Diagnoses
- Procedures
- Notes
- Medications
- Physiologic
- Labs
- Outcomes**

Step 3: Choose Output

Step 4: Finalize

Outcomes

Clinical outcomes derived from Electronic Health Record and Administrative Data.

- Acute Kidney Injury
- ☐ No AKI
 - ☐ Stage 1 AKI
 - ☐ Stage 2 AKI
 - ☐ Stage 3 AKI
 - ☐ No preoperative creatinine
 - ☐ Preoperative renal failure
 - ☐ No postoperative creatinine
 - ☐ Missing or invalid
- 30-day Hospital Mortality
- ☒ Yes
 - ☒ No
 - ☐ ASA6
 - ☐ Missing
 - ☐ Conflicting

Add

Next

Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

28 institutions

Cases

Procedure Date: 01/01/2014 - 10/14/2019
ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes

28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease
22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary
List, Professional Billing, Administrative
Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or
I25.118 or I25.10 or I25.89 or I25.810 or I25.799
or I25.811 or I25.812 or 414.01 or 414.00 or
414.02 or 414.03 or 414.04 or 414.05 or 414.06
or 414.07 or 429.2

4,988 cases
18 institutions

Procedures

keep: mitral or mv
14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or
50123 or 50334 or 50120 or 50117 or 50197 or
50695 or 50205 or 50207 or 50688 or 50101

1,035 cases
14 institutions

Medication Administration

keep: 10301
14 institutions

Physiologic

keep: 3080
Min.# of values per case: 1
13 institutions

Laboratory

keep: 5002
Range: any time
12 institutions

MPOG
DataDirect

Step 1: Define Project

Step 2: Filter

Demographics

Cases

Comorbidities

Diagnoses

Procedures

Notes

Medications

Physiologic

Labs

Outcomes

Step 3: Choose Output

Outcomes

Clinical outcomes derived from Electronic Health Record and Administrative Data.

Acute Kidney Injury

☐ No AKI

☐ Stage 1 AKI

☐ Stage 2 AKI

☐ Stage 3 AKI

☐ No preoperative creatinine

☐ Preoperative renal failure

☐ No postoperative creatinine

☐ Missing or invalid

30-day Hospital Mortality

☒ Yes

☒ No

☐ ASA6

☐ Missing

☐ Conflicting

Update

Next

Disable this filter

Delete this filter

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Cohort

Last updated on 10/14/2019

Cohort Size

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5

Emergency Status: Yes or No

Anesthesia time: 60 minutes - 1440 minutes

Cardiac Case: Yes

AnesTech General: Yes

Endotracheal Tube: Yes

28,367 cases

25 institutions

Comorbidities

keep: Valvular Disease

13,737 cases

22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary

List, Professional Billing, Administrative

Discharge Billing

present on admission: any

diagnosis type: none specified

psl status: none specified

keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases

18 institutions

Procedures

keep: mitral or mv

1,035 cases

14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101

1,035 cases

14 institutions

Medication Administration

keep: 10301

940 cases

14 institutions

Physiologic

keep: 3080

885 cases

13 institutions

Min.# of values per case: 1

Laboratory

keep: 5002

882 cases

12 institutions

Range: any time

Outcomes

Acute Kidney Injury: any

30-day Mortality: Yes or No

879 cases

12 institutions

Email Support/Feedback

Step 1: Define Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Choose Output Items

Now that you've chosen which cases will be included, you will need to define which data elements will be returned in the result set.

Save

Search Output Items

All

Available Output Items

Anesthesia Technique Used: Neuraxial Neuraxial block attempted perioperatively	+
Arrived Intubated Patient already intubated prior to entering the OR	+
Arterial Line Placed Arterial line placed or recorded perioperatively	+
ASA Status ASA Physical Status Classification System Status	+
Body Region of Primary Procedure Classification of body region for the procedure	+
Days Since Last Case Duration in days since the patient's last case	+
Emergency Status ASA "E" physical status classification	+
Endotracheal Tube Used Endotracheal tube attempted during the case	+
Hospital Length of Stay Patient hospital length of stay in days	+
Institution Institution where the case was documented	+
Intentional Hypothermia Intentional hypothermia documented in the case	+
Intubated Awake Documented intubation (awake, asleep, unknown)	+
Intubated Fiberoptic Attempted fiberoptic intubation (not glidescope)	+
Patient Last Known Alive Date Time/date of last documented clinical observation	+
Postop Destination Destination for the patient following the case	+
Procedure Location Classifications	+

Selected Output Items



Project

MPOG DataDirect Demo Query
Project ID: 2169
Query Mode: Cohort
Last updated on 10/14/2019

Cohort Size

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5
Emergency Status: Yes or No
Anesthesia time: 60 minutes - 1440 minutes
Cardiac Case: Yes
AnesTech General: Yes
Endotracheal Tube: Yes

28,367 cases
25 institutions

Comorbidities

keep: Valvular Disease

13,737 cases
22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative Discharge Billing
present on admission: any
diagnosis type: none specified
psl status: none specified
keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases
18 institutions

Procedures

keep: mitral or mv

1,035 cases
14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101

1,035 cases
14 institutions

Medication Administration

keep: 10301

940 cases
14 institutions

Physiologic

keep: 3080
Min.# of values per case: 1

885 cases
13 institutions

Laboratory

keep: 5002
Range: any time

882 cases
12 institutions

Outcomes

Acute Kidney Injury: any
30-day Mortality: Yes or No

879 cases
12 institutions

Step 1: Define Project

Step 2: Filter

Step 3: Choose Output

Step 4: Finalize

Choose Output Items

Now that you've chosen which cases will be included, you will need to define which data elements will be returned in the result set.

Save

Next

Search Output Items

All

Available Output Items

Anesthesia Technique Used: Block Peripheral block attempted perioperatively	+
Anesthesia Technique Used: General General anesthetic attempted operatively	+
Anesthesia Technique Used: Neuraxial Neuraxial block attempted perioperatively	+
Arrived Intubated Patient already intubated prior to entering the OR	+
Arterial Line Placed Arterial line placed or recorded perioperatively	+
Body Region of Primary Procedure Classification of body region for the procedure	+
Days Since Last Case Duration in days since the patient's last case	+
Emergency Status ASA "E" physical status classification	+
Endotracheal Tube Used Endotracheal tube attempted during the case	+
Hospital Length of Stay Patient hospital length of stay in days	+
Institution Institution where the case was documented	+
Intentional Hypothermia Intentional hypothermia documented in the case	+
Intubated Awake Documented intubation (awake, asleep, unknown)	+
Intubated Fiberoptic Attempted fiberoptic intubation (not glidescope)	+
Patient Last Known Alive Date Time/date of last documented clinical observation	+
Postop Destination Destination for the patient following the case	+

Selected Output Items

ASA Status ASA Physical Status Classification System Status	Options	×
Age Patient age in years		×
Height Patient height in centimeters		×
Sex Categorical patient sex		×
Weight Patient weight in kilograms		×
Estimated Blood Loss Estimated blood loss recorded for the case		×
Fresh Frozen Plasma Total intraop fresh frozen plasma administered	Options	×
Packed Red Blood Cells Total intraoperative PRBCs administered	Options	×
Platelets Total intraoperative platelets administered	Options	×
MIDAZOLAM Unprocessed raw data for medication midazolam		×
Postop Creatinine First lab value documented after Case End		×
Cardiopulmonary Bypass Duration Difference of (Bypass End - Bypass Start)		×
Baseline Blood Pressure First recorded non-artifact mean blood pressure		×
Train of Four Measurements Perioperative train of four readings		×

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Cohort

Last updated on 10/14/2019

Cohort Size

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5

Emergency Status: Yes or No

Anesthesia time: 60 minutes - 1440 minutes

Cardiac Case: Yes

AnesTech General: Yes

Endotracheal Tube: Yes

28,367 cases

25 institutions

Comorbidities

13,737 cases

keep: Valvular Disease

22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative

Discharge Billing

present on admission: any

diagnosis type: none specified

psl status: none specified

keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases

18 institutions

Procedures

1,035 cases

keep: mitral or mv

14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101

1,035 cases

14 institutions

Medication Administration

940 cases

keep: 10301

14 institutions

Physiologic

885 cases

keep: 3080

13 institutions

Min.# of values per case: 1

Laboratory

882 cases

keep: 5002

12 institutions

Range: any time

Outcomes

879 cases

Acute Kidney Injury: any

12 institutions

30-day Mortality: Yes or No

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

Review and Finalize

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

Cohort Details

Project ID: 2169 Query Mode: multiCenterResearch Last updated on 10/14/2019

Filter	Cases	Patients	Institutions
Start	3,170,027	2,081,081	29
Demographics	2,465,118	1,589,653	28
Cases	28,367	26,888	25
Comorbidities	13,737	13,174	22
Diagnoses	4,988	4,768	18
Procedures	1,035	1,021	14
Intraoperative Notes	1,035	1,021	14
Medication Administration	940	929	14
Physiologic	885	874	13
Laboratory	882	871	12
Outcomes	879	868	12

Download Docs

Download Data

(Unavailable in Cohort Mode)

Query Output Specification

Table 1 - Main Case List

This table contains a single row for each case in the research cohort.

Display Name	Source	Data Direct Category
MPOG_Case_ID	Collation Group: MPOG Case ID	Basic Elements
Institution	Institution Randomizer	Basic Elements
ASA Status	Collation Group: ASA Status Classification	Case Characteristics
Age	Collation Group: Age in Years	Demographics
Height	Collation Group: Height	Demographics
Sex	Collation Group: Sex	Demographics
Weight	Collation Group: Weight	Demographics

Project

MPOG DataDirect Demo Query

Project ID: 2169

Query Mode: Multi-Center Research

Last updated on 10/14/2019

Cohort Size

ASA Status: ASA 1 or ASA 2 or ASA 3 or ASA 4 or ASA 5

Emergency Status: Yes or No

Anesthesia time: 60 minutes - 1440 minutes

Cardiac Case: Yes

AnesTech General: Yes

Endotracheal Tube: Yes

28,367 cases

25 institutions

Comorbidities

13,737 cases

keep: Valvular Disease

22 institutions

Diagnoses

diagnosis category: Clinical Problem Summary List, Professional Billing, Administrative

Discharge Billing

present on admission: any

diagnosis type: none specified

psl status: none specified

keep codes: I25.119 or I25.110 or I25.111 or I25.118 or I25.10 or I25.89 or I25.810 or I25.799 or I25.811 or I25.812 or 414.01 or 414.00 or 414.02 or 414.03 or 414.04 or 414.05 or 414.06 or 414.07 or 429.2

4,988 cases

18 institutions

Procedures

1,035 cases

keep: mitral or mv

14 institutions

Intraoperative Notes

keep: 50122 or 50115 or 50118 or 50119 or 50123 or 50334 or 50120 or 50117 or 50197 or 50695 or 50205 or 50207 or 50688 or 50101

1,035 cases

14 institutions

Medication Administration

940 cases

keep: 10301

14 institutions

Physiologic

885 cases

keep: 3080

13 institutions

Min.# of values per case: 1

Laboratory

882 cases

keep: 5002

12 institutions

Range: any time

Outcomes

879 cases

Acute Kidney Injury: any

12 institutions

30-day Mortality: Yes or No



DataDirect v2.0

- Outputs
 - Single vs. Repeated Measures

Example		Values Returned
Single Measures (One value per case)		
Repeated Measures (Many values per case)		



DataDirect v2.0

- Outputs
 - Single vs. Repeated Measures

	Example	Values Returned
Single Measures (One value per case)	Age	MPOG Case ID, MPOG Patient ID, Date of Procedure, Value
Repeated Measures (Many values per case)		



DataDirect v2.0

- Outputs
 - Single vs. Repeated Measures

Example		Values Returned
Single Measures (One value per case)	Age	MPOG Case ID, MPOG Patient ID, Date of Procedure, Value
Repeated Measures (Many values per case)	Blood pressure	MPOG Case ID, MPOG Patient ID, BP Source, Dates/Times of Measurements, Values

Take-Home Points

- DataDirect can catalyze research/QI, without needing:
 - ... to be a computer programmer
 - ... to be a 1st-degree relative of your hospital's CMIO
- DataDirect **query modes** can be tailored to use-case:
 - Cohort ID mode → Research/QI “speed dating”
 - Quality Report → Improve care at your hospital
 - Research → High-impact science

Thank You