# Third Annual ACQR Retreat
# Ann Arbor, Michigan

September 20, 2019

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

# General Housekeeping

- *Breakfast*: Panera Bread
- Bathrooms are located down the hall:
  - Please take a break when needed
- *Lunch*: Zingerman's!
- Gifts – Thank you for all you do!

# Morning Agenda

- Introductions/Announcements
- 2020 P4P Cards
- Case Viewer 2.0 Preview
- MPOG Coordinating Center Workflow
- October Upgrade
- Using MPOG for Data and Research

# Introductions

- Welcome to our Newest ACQR!
  - Quinten Davis, BSN (Mercy Muskegon)
- Best wishes on your Retirement!
  - Joan Crawford (Mercy Muskegon): August 2019
  - Kathy Louzon (Beaumont RO/Troy): March 2020
- New MPOG Coordinating Center Staff
  - Brooke Szymanski, MSN (QI Coordinator)
  - Rob Coleman (Programmer)
  - Michelle Romanowski (Programmer)
  - Chris Heiden (Technical Support)
    - ***For access issues contact*** support@mpog.zendesk.com

# Announcements

- MPOG Retreat in October
  - *Environmental Impact of Anesthesia*; Dr. Jodi Sherman (Yale)
  - *Post-operative Delirium*; Dr. Deb Culley (Brigham & Women's Hospital)
  - Best of MPOG Research and QI Abstracts
  - MPOG QI Update, Dr. Shah from ASPIRE
- IM Onboarding 2020
  - HFHS: Macomb/Wyandotte and Allegiance
  - St. Mary's Grand Rapids
  - Borgess?
- IM Conversion 2020
  - Trinity (Epic)
  - Bronson
  - Sparrow

MPOG

# MPOG Retreat Registration

| First Name | Last Name | Institution | Confirmed |
|---|---|---|---|
| Mary | McKinney | Beaumont Dearborn/Taylor | 9/13/2019 - 378495838 |
| Ellen | Webb | Beaumont Dearborn/Wayne | 8/31/2019 - 378480176 |
| Joshua | Berris | Beaumont Farmington Hills | 9/18/2019 - 378504274 |
| Pamela | Tyler | Beaumont Farmington Hills | 9/10/2019 - 378492784 |
| Nichole | Pardo | Beaumont Grosse Pointe | 8/13/2019 - 378155012 |
| Zach | Price | Beaumont Grosse Pointe | 8/21/2019 - 378356206 |
| Ashvin | Patel | Beaumont Hospital - Trenton | 9/9/2019 - 378492302 |
| Tiffany | Malenfant | Beaumont Trenton/Wayne | 8/7/2019 - 377854128 |
| Lindsay | Studt | Beaumont Troy | 9/13/2019 - 378495520 |
| Dietmar | Schlecht | Beaumont Troy | 8/5/2019 - 377852454 |
| | | Beaumont Royal Oak | |
| | | Bronson | |
| Masakatsu | Nanamori | Henry Ford Hospital | 9/10/2019 - 378492894 |
| Bruce | Adelman | Henry Ford West Bloomfield Hospital | 8/12/2019 - 378152390 |
| Chris | Wedeven | Holland Hospital | 9/16/2019 - 378502754 |
| John | Lagorio | Mercy Muskegon | 7/15/2019 - 374351910 |
| Glenn | Gall | Saint Mary Mercy Hospital | N |
| | | Sparrow Hospital | |
| Traci | Coffman | St. Joseph Mercy Hospital | 9/11/2019 - 378494386 |
| Jerrilyn | Heiter | St. Joseph Mercy Hospital | 7/23/2019 - 374652148 |
| Kathleen | Collins | St. Mary Mercy Hospital | 8/27/2019 - 378456904 |

MPOG

# MPOG Published!

- *Considerations for integration of perioperative electronic health records across institutions for research and quality improvement: the approach taken by the Multicenter Perioperative Outcomes Group (MPOG)*
- Published in Anesthesia & Analgesia September 2019
- Methods paper describing how MPOG functions
- Congratulations Dr. Colquhoun!!

**Douglas Colquhoun, MB ChB, MSc, MPH**
Research Fellow

MPOG

# MPOG Toolkits Featured in MSA's Newsletter

Michigan Society of Anesthesiologists
THE ventilator
Newsletter of the Michigan Society of Anesthesiologists
Summer/Fall 2019

PRESIDENT'S MESSAGE

Roy G. Soto, M.D., FASA
*President, Michigan Society of Anesthesiologists*

## MPOG Toolkits:
## Value Added for your Practice

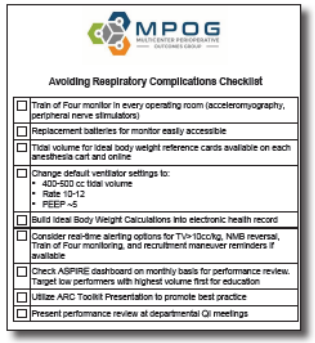
As you almost certainly know by now, ASPIRE and MPOG provide powerful means of improving the quality of anesthesia care in Michigan and beyond. I'd like to take this opportunity to discuss an expanded offering of MPOG, which is available to all comers, and not limited to ASPIRE participants. As of this writing, three Toolkits have been published and are available for free download at:

https://mpog.org/quality/toolkits/

The Toolkits cover best practices in avoiding respiratory complications, improving blood transfusion safety, and reducing surgical site infections. Each uses evidence-based best practices and ASPIRE outcomes measures to provide practical clinical guidance for practicing anesthesiologists.

### Avoiding Respiratory Complications Toolkit

This Toolkit provides a Powerpoint presentation designed for use by anesthesia QI champions, a checklist of potential practice and documentation system changes intended to assist anesthesia providers in avoiding respiratory complications, and a body weight/tidal volume chart that can be printed and posted on or near the anesthesia machine to assist with appropriate ventilation.


MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

Avoiding Respiratory Complications Checklist

- ☐ Train of Four monitor in every operating room (acceleromyography, peripheral nerve stimulators)
- ☐ Replacement batteries for monitor easily accessible
- ☐ Tidal volume for ideal body weight reference cards available on each anesthesia cart and online
- ☐ Change default ventilator settings to:
  - 400-500 cc tidal volume
  - Rate 10-12
  - PEEP ~5
- ☐ Build ideal Body Weight Calculations into electronic health record
- ☐ Consider real-time alerting options for TV>10cc/kg, NMB reversal, Train of Four monitoring, and recruitment maneuver reminders if available
- ☐ Check ASPIRE dashboard on monthly basis for performance review. Target low performers with highest volume first for education
- ☐ Utilize ARC Toolkit Presentation to promote best practice
- ☐ Present performance review at departmental QI meetings

*Sample of the ARC checklist*



### Perioperative Transfusion Stewardship Toolkit

This Toolkit again provides a presentation for use by anesthesia champions, as well as a pocket transfusion guide which delineates appropriate transfusion criteria for surgical patients.


MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

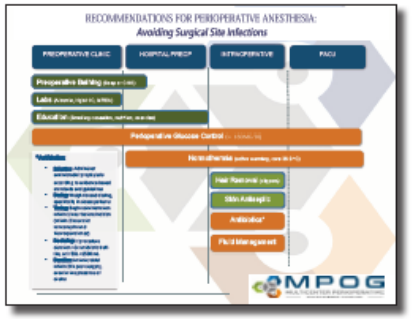
Transfusion Considerations:

- Decision to transfuse should be based on objective assessment of anemia including Hgb/Hct in addition to signs and symptoms
- For most transfusions, should be able to check hemoglobin or hematocrit before administration
- For pediatric cases (<12 years), check before first transfusion and again after 15cc/kg of PRBCs have been administered
- In the absence of acute, massive hemorrhage, administer one unit at a time
- Recheck hemoglobin or hematocrit after each transfusion to determine if additional units are indicated
- For obstetric hemorrhage or massive transfusion scenarios, follow site protocols
- Most patients do not need to be transfused to a Hct > 30%

*Considerations for transfusions*

### Surgical Site Infection Toolkit

This latest Toolkit uses four ASPIRE measures to focus perioperative care to reduce surgical site infections. Again, there is an excellent Powerpoint presentation, as well as printable quick reference guide outlining infection reduction strategies.




*Surgical Site Infection one-pager*

Each Toolkit also offers a list of summarized and hyperlinked references for further education, each of which potentially could be used for departmental journal club or QI presentations.

Lifelong learning and continuous quality improvement are hallmarks of physicianship. The expanding offerings of MPOG and ASPIRE are ideal ways to improve the care we provide for our Michigan patients. ASPIRE members receive regular updates on their own progress and best-practice compliance, and non-members can benchmark against published data (always available online, and, quarterly, here). I encourage you to visit the MPOG website and determine if your practice is doing everything it can to ensure safe perioperative care.



MPOG

# Planned Measure Release

- **2019 (Q4)**
  - **PONV 03**: Percentage of patients, regardless of age, who undergo a procedure and have a documented nausea/emesis occurrence postoperatively OR receive a rescue antiemetic in the PACU.
  - **BP 03:** Percentage of cases where intraoperative hypotension (MAP < 65 mmHg) was sustained for less than 15 minutes
  - **GLU 03:** Percentage of cases where glucose was checked in preop (diabetic and/or high risk cases)
- **2020**
  - **GLU 01/02b**: Glycemic management expanded into preop/PACU
  - **PUL 04**: Respiratory Complications postop
  - **PUL 05**: Respiratory Bundle

# 2020 P4P Scorecard: Cohort 1- 4

- **What's New?**
  - Reduced case validations to 10/month
  - No MQUARK audits!!
  - Performance Measure: **BP 03**
  - Cross Cohort Measure: **PUL 02**
    - Threshold increased to > 90% to obtain full points
- **Required Attendance**
  - Quality Committee Webex (5)
    - ACQR or QI Champion must attend
  - Collaborative Meetings (3)
    - ACQR and QI Champion must attend
- **Document Submission**
  - Site Based Report x 3

**2020 Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE)**
**Collaborative Quality Initiative Performance Index Scorecard**
Cohort 1 - 4 : 15 Sites (excludes Trinity sites)
Measurement Period: 01/01/2020 - 12/31/2020

| Measure # | Weight | Measure Description | Points |
|---|---|---|---|
| 1 | 10% | Collaborative Meeting Participation: ASPIRE Quality Champion and Anesthesiology Clinical Quality Reviewer (ACQR) combined attendance at collaborative meetings- Three total meetings with six opportunities for attendance | |
| | | 5-6/6 Meetings | 10 |
| | | 4/6 Meetings | 5 |
| | | 3 or less Meetings | 0 |
| 2 | 5% | Attend Webex ASPIRE Quality Committee Meetings: ASPIRE Quality Champion or ACQR attendance across five meetings | |
| | | 5 Meetings | 5 |
| | | 4 or less Meetings | 0 |
| 3 | 5% | ACQR/ASPIRE Quality Champion perform data validation, case validation and submit data by the third Wednesday of each month for January through November and by the second Wednesday of the month for December | |
| | | 10 - 11/12 Months | 5 |
| | | 9 or Less Months | 0 |
| 4 | 10% | Site Based Quality Meetings: Sites to hold an onsite meeting following the three ASPIRE Collaborative meetings to discuss the data and plans for quality improvement at their site | |
| | | 3 Meetings | 10 |
| | | 2 Meetings | 5 |
| | | 1 or less Meeting | 0 |
| 5 | 20% | Performance Measure: Cross Cohort Measure Pulmonary 02 (PUL 02) - percentage of patients with median tidal volumes less than or equal to 8 ml/kg (cumulative score January 1, 2020 through December 31, 2020) | |
| | | 90% of sites ≥ 90% | 20 |
| | | 90% of sites ≥ 80% | 10 |
| | | 90% of sites < 80% | 0 |
| 6 | 30% | Performance Measure: Blood Pressure (BP 03) - Percentage of cases where intraoperative hypotension (MAP < 65 mmHg) was sustained for less than 15 minutes (cumulative score January 1, 2020 through December 31, 2020) | |
| | | Performance is > 90% | 30 |
| | | Performance is ≥ 85% | 20 |
| | | Performance is ≥ 80% | 10 |
| | | Performance is < 80% | 0 |
| 7 | 20% | Site Directed Measure: Sites choose a measure they are performing below national ASPIRE threshold by December 13, 2019 (cumulative score January 1, 2020 through December 31, 2020) | |
| | | Performance is > 90% | 20 |
| | | Performance is ≥ 80% | 10 |

MPOG

# 2020 P4P Scorecard: Trinity Sites

- **Timely data submission and emails**
  - Data submitted by September 1, 2020
  - First round of emails sent October 2020
- **Attend ACQR Retreat**
- **Required Attendance**
  - Quality Committee Webex (5)
    - ACQR or QI Champion must attend
  - Collaborative Meetings (3)
    - ACQR and QI Champion must attend
- **Document Submission**
  - Site Based Report x 3

**2020 Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE)**
**Collaborative Quality Initiative Performance Index Scorecard**
Trinity Sites: Mercy Muskegon, St. Joseph (Ann Arbor, Chelsea, Livingston, Oakland) and St. Mary Livonia
Measurement Period: 01/01/2020 - 12/31/2020

| Measure # | Weight | Measure Description | Points |
|---|---|---|---|
| 1 | 20% | **Collaborative Meeting Participation: ASPIRE Quality Champion and Anesthesiology Clinical Quality Reviewer (ACQR) combined attendance at collaborative meetings- Three total meetings with six opportunities for attendance** | |
| | | 5-6/6 Meetings | 20 |
| | | 4/6 Meetings | 10 |
| | | 3 or less Meetings | 0 |
| 2 | 10% | **Attend Webex ASPIRE Quality Committee Meetings: ASPIRE Quality Champion or ACQR attendance across five meetings** | |
| | | 5 Meetings | 10 |
| | | 4 Meetings | 5 |
| | | 3 or Less Meetings | 0 |
| 3 | 5% | **Attend ACQR Retreat** | |
| | | Yes | 5 |
| | | No | 0 |
| 4 | 10% | **Timeliness of data submission (with Case by Case Validation and Data Diagnostic Attestations Completed)** | |
| | | Data Submitted by September 1, 2020 | 10 |
| | | Data Submitted by December 1, 2020 | 5 |
| | | Data Submitted after December 2, 2020 | 0 |
| 5 | 20% | **Timeliness of monthly provider e-mails** | |
| | | E-mails Sent October 28, 2020 | 20 |
| | | E-mails Sent November 26, 2020 | 10 |
| | | E-mails Sent December 16, 2020 | 0 |
| 6 | 20% | **Performance Metric: Accuracy of data of "High" and "Required" priority data diagnostics marked as "Data Accurately Represented" in Data Diagnostics Tool** | |
| | | ≥ 90% diagnostics marked as "Data Accurately Represented" | 20 |
| | | ≥ 75 - 90% marked as "Data Accurately Represented" | 10 |
| | | < 75% marked as "Data Accurately Represented" | 0 |
| 7 | 15% | **Timeliness of Responses to Coordinating Center Inquiry Requests** | |
| | | Within 2 business days | 15 |
| | | 3 - 5 business days | 10 |
| | | 6 - 10 business days | 5 |
| | | Greater than 10 business days | 0 |

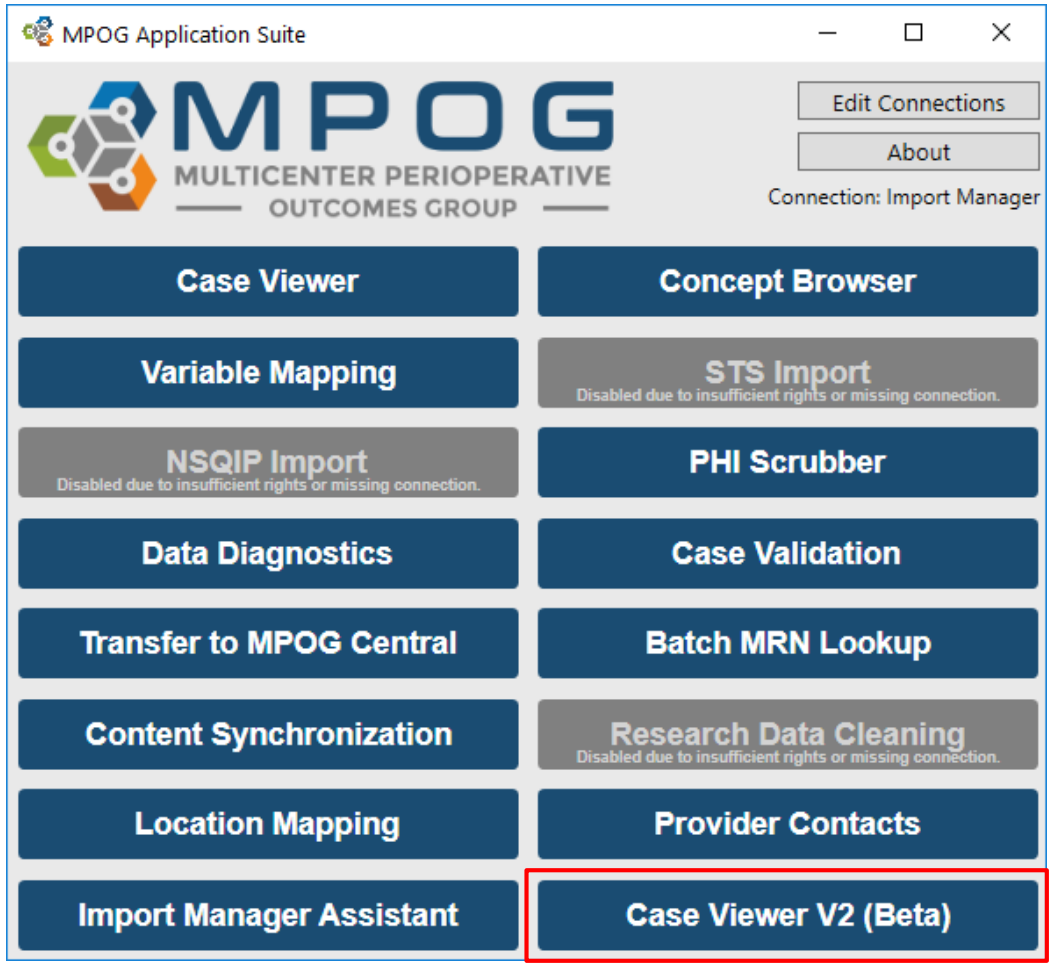
MPOG

# 2020 P4P Scorecard: Cohort 5

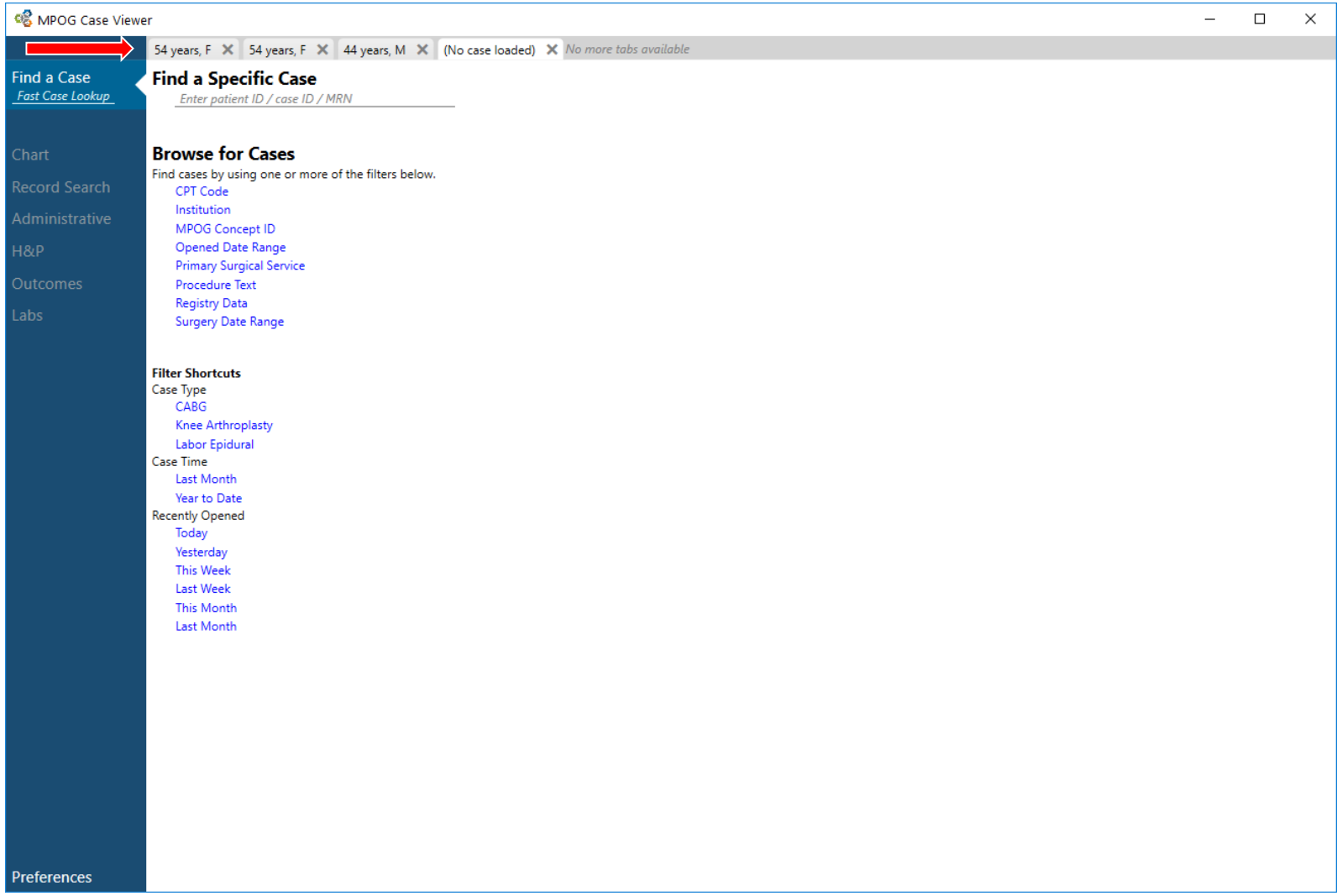
- New sites only…5 new sites scheduled
- There will be more ACQRs at this table next year ☺

| 2020 Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE)<br>Collaborative Quality Initiative Performance Index Scorecard<br>Cohort 5 - Year 1 (start 2020) | | | |
|---|---|---|---|
| Measure # | Weight | Measure Description | Points |
| 1 | 20% | **Collaborative Meeting Participation: ASPIRE Quality Champion and Anesthesiology Clinical Quality Reviewer (ACQR) - three total meetings with six opportunities for attendance for champion and ACQR combined** | |
| | | 5-6/6 Meetings | 20 |
| | | 4/6 Meetings | 10 |
| | | 3 or less Meetings | 0 |
| 3 | 10% | **ASPIRE Champion or ACQR attend Monthly Webex ASPIRE Quality Committee Meetings** | |
| | | 5 Meetings | 10 |
| | | 4 Meetings | 5 |
| | | 3 or Less Meetings | 0 |
| 4 | 10% | **Timeliness of Regulatory/Legal documentation: Business Associate Agreement (BAA), Data Use Agreement (DUA), Multicenter Perioperative Outcomes Group (MPOG) Bylaws & IRB** | |
| | | Submitted by April 1, 2020 | 10 |
| | | Submitted by July 1, 2020 | 5 |
| | | Submitted after July 2, 2020 | 0 |
| | | | |
| 5 | 10% | **Hiring an ACQR** | |
| | | ACQR Start Date on or before February 1, 2018 | 10 |
| | | ACQR Start Date on or before April 1, 2018 | 5 |
| | | ACQR Start Date on or after April 2, 2018 | 0 |
| 6 | 20% | **Timeliness of data submission (with Case by Case Validation and Data Diagnostic Attestations Completed)** | |
| | | Data Submitted by September 1, 2020 | 20 |
| | | Data Submitted by December 1, 2020 | 10 |
| | | Data Submitted after December 2, 2020 | 0 |
| 7 | 20% | **Performance Metric: Accuracy of data of "High" and "Required" priority data diagnostics marked as "Data Accurately Represented" in Data Diagnostics Tool** | |
| | | ≥ 90% diagnostics marked as "Data Accurately Represented" | 20 |
| | | ≥ 75 - 90% marked as "Data Accurately Represented" | 10 |
| | | < 75% marked as "Data Accurately Represented" | 0 |
| 8 | 10% | **Timeliness of Responses to Coordinating Center Inquiry Requests** | |
| | | Within 2 business days | 10 |
| | | Within 5 business days | 5 |
| | | Greater than 5 business days | 0 |

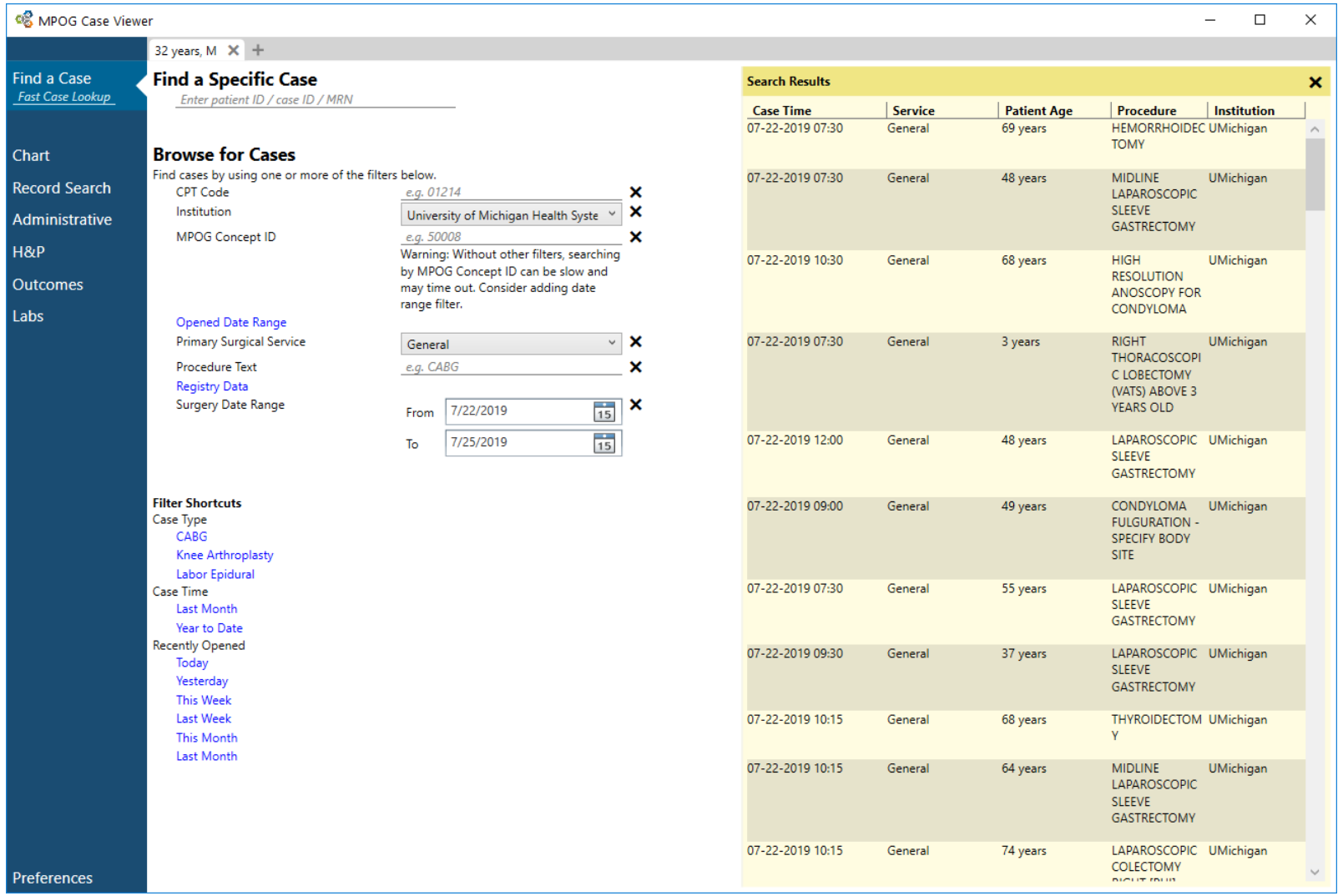
# MPOG Case Viewer 2.0



# Home Page

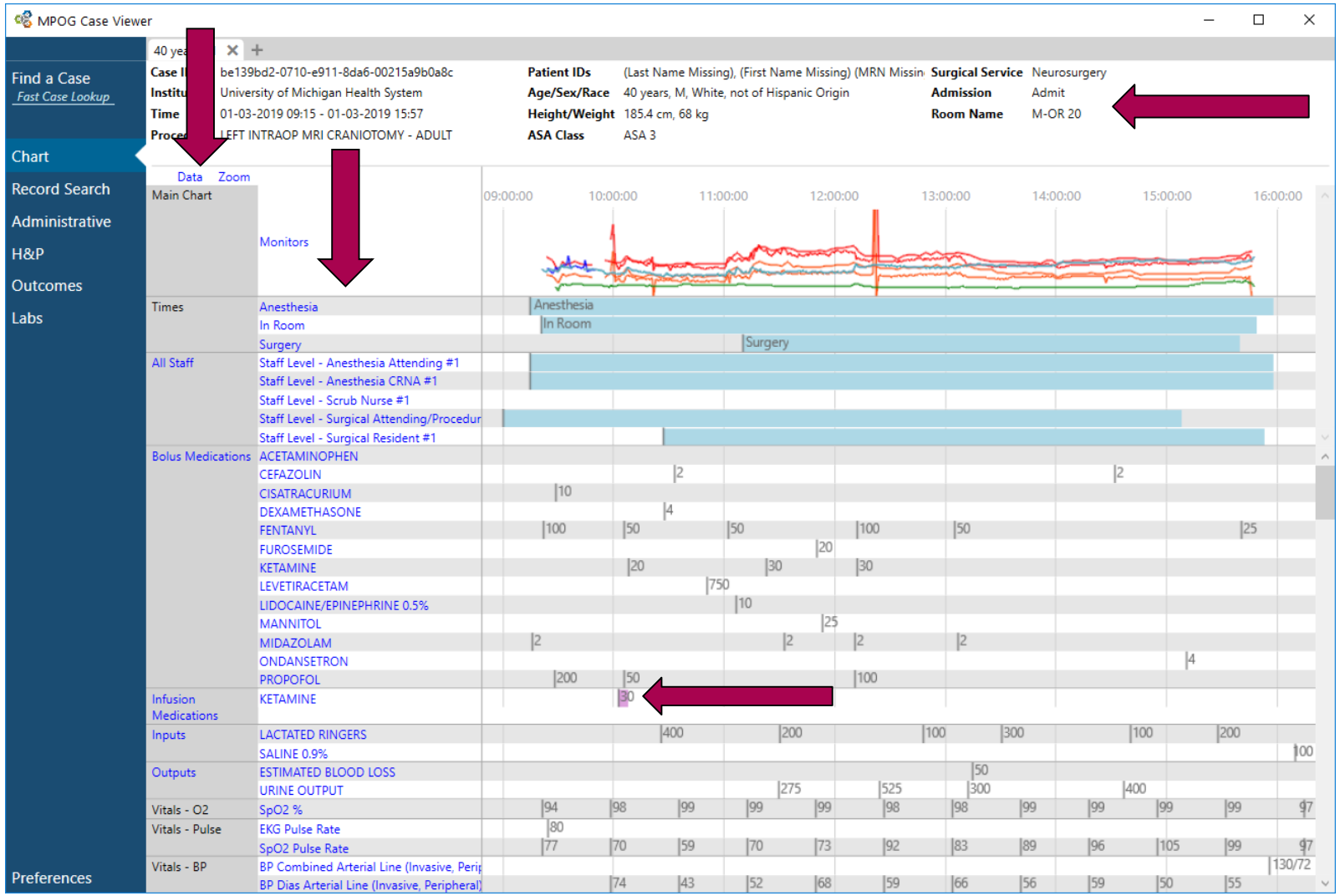

MPOG Case Viewer
54 years, F
54 years, F
44 years, M
(No case loaded)
No more tabs available
Find a Case
Fast Case Lookup
Chart
Record Search
Administrative
H&P
Outcomes
Labs
Preferences
Find a Specific Case
Enter patient ID / case ID / MRN
Browse for Cases
Find cases by using one or more of the filters below.
CPT Code
Institution
MPOG Concept ID
Opened Date Range
Primary Surgical Service
Procedure Text
Registry Data
Surgery Date Range
Filter Shortcuts
Case Type
CABG
Knee Arthroplasty
Labor Epidural
Case Time
Last Month
Year to Date
Recently Opened
Today
Yesterday
This Week
Last Week
This Month
Last Month

# Search Filters



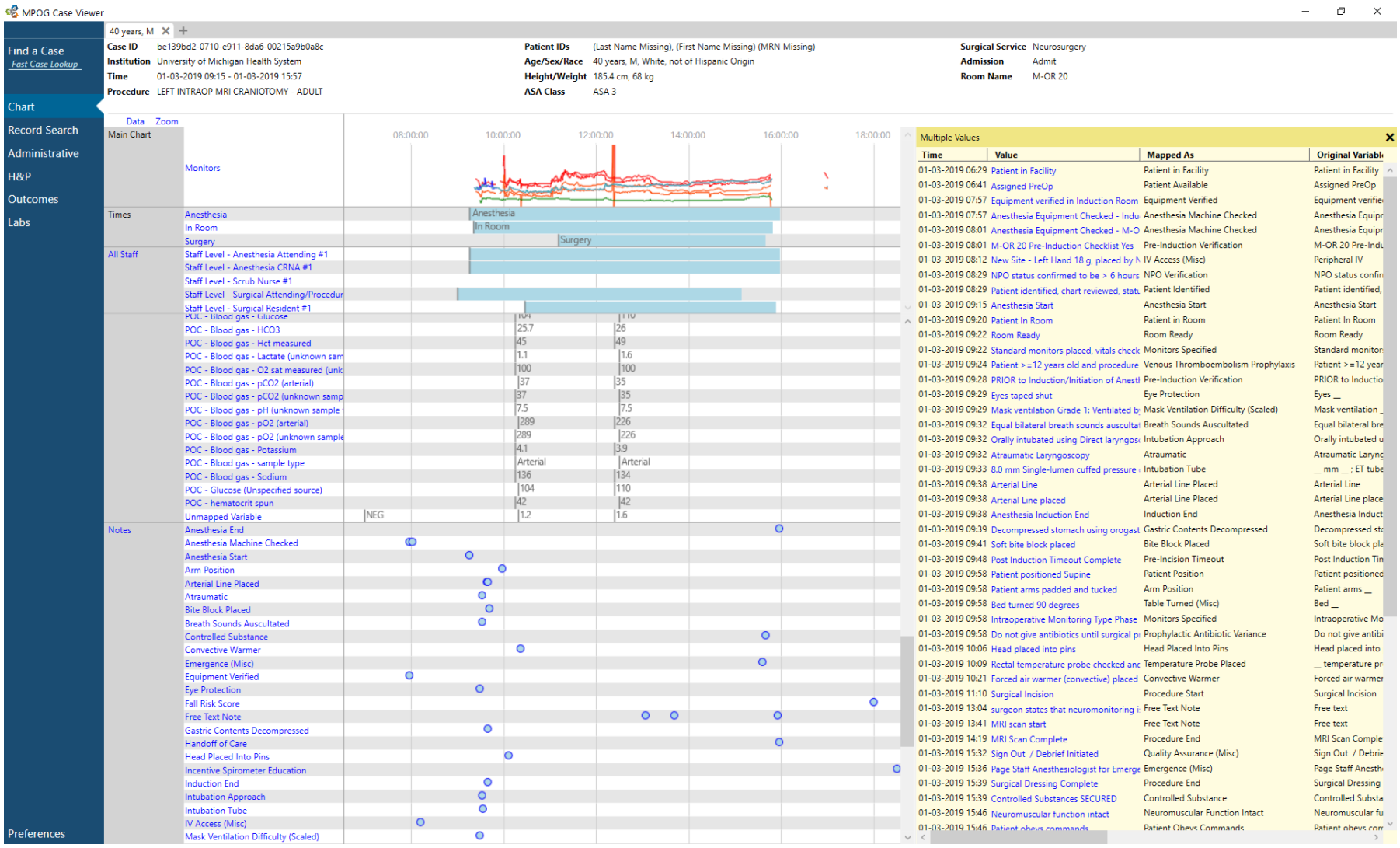

- **Filter By**:
  - Case ID, MRN, Patient ID
  - CPT Code
  - Institution
  - MPOG Concept
  - Date Range: Case Opened
  - Date Range: Surgery Date
  - Surgical Service
  - Procedure Text
- **Shortcuts:**
  - Case Type
  - Case Time
  - Recently Opened Cases

# Chart



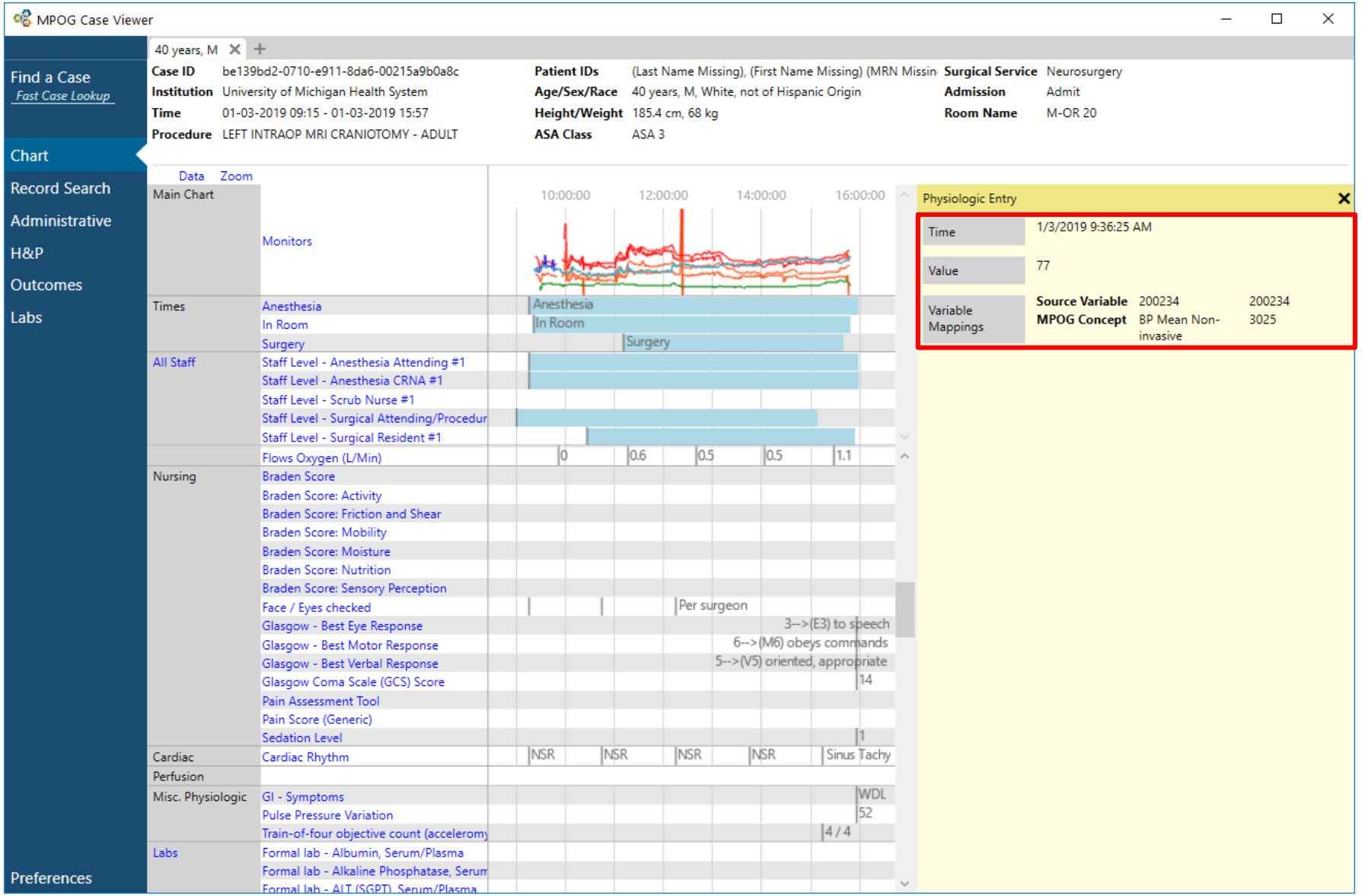

## New Grouper Order:

- Graph
- Times
- Staff Sign In/Out
- Bolus Meds
- Infusion Meds
- Fluids (In)
- Fluids (Out)
- Vitals: O2, Pulse, BP, RR, Temp
- Ventilator
- Agents
- Flows
- Nursing
- Cardiac
- Perfusion
- Misc. Physiologic
- Labs
- Notes

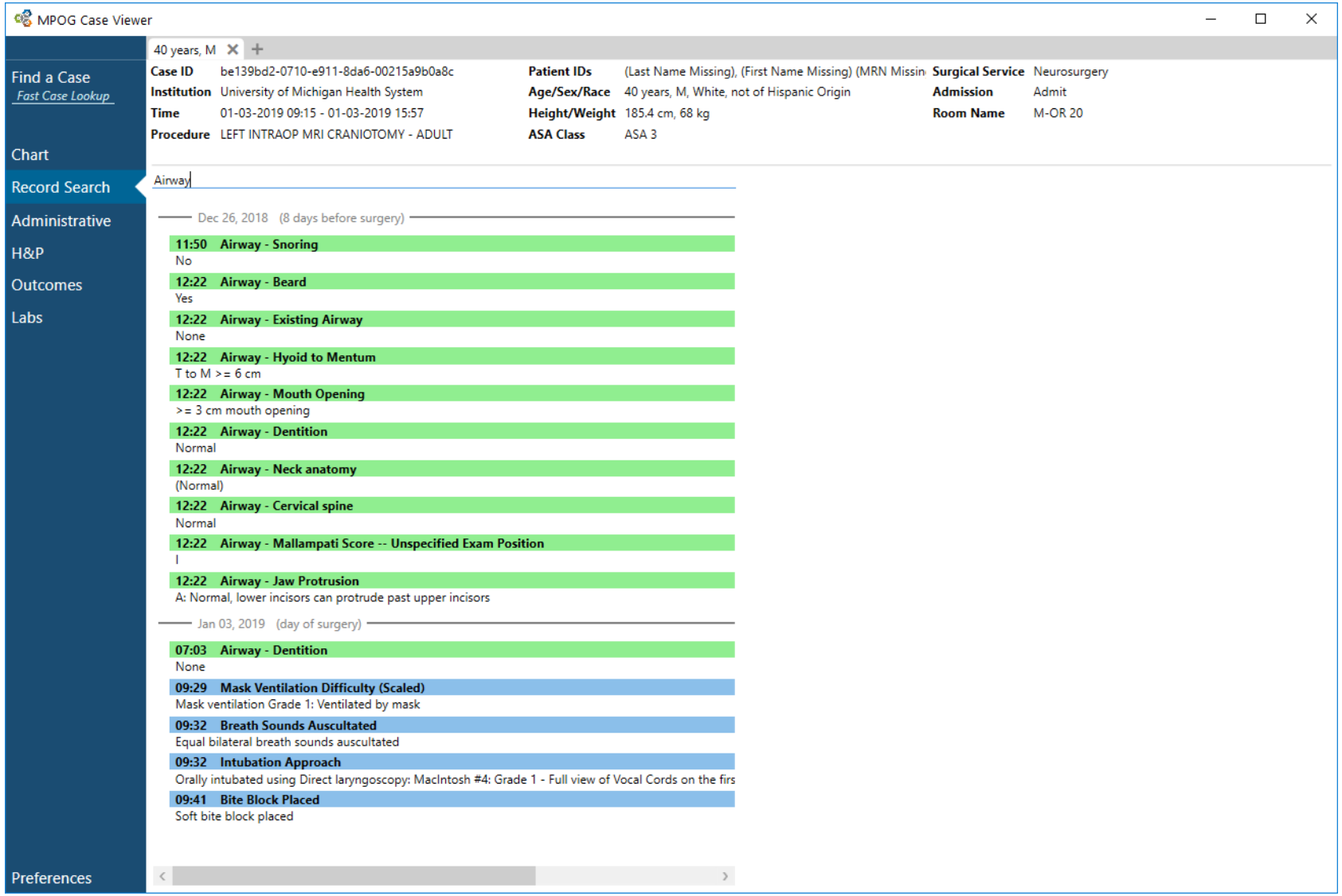



# Anything with blue text is clickable:

- Click Variable: See all values in chronological order
- Click Value: See details of source variable and current mapping

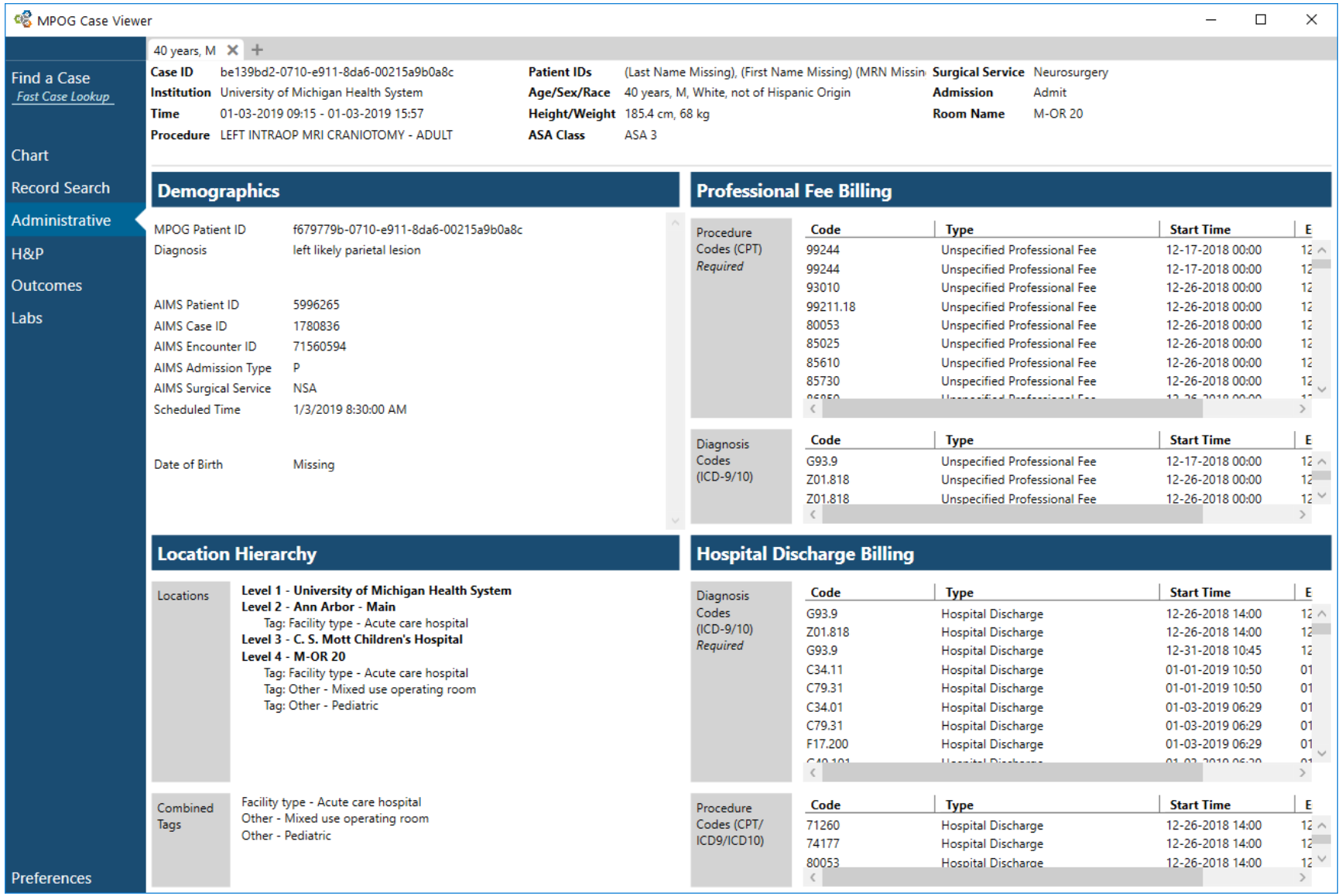

MPOG Case Viewer
40 years, M
Find a Case
Fast Case Lookup
Chart
Record Search
Administrative
H&P
Outcomes
Labs
Preferences
Case ID be139bd2-0710-e911-8da6-00215a9b0a8c
Institution University of Michigan Health System
Time 01-03-2019 09:15 - 01-03-2019 15:57
Procedure LEFT INTRAOP MRI CRANIOTOMY - ADULT
Patient IDs (Last Name Missing), (First Name Missing) (MRN Missin
Age/Sex/Race 40 years, M, White, not of Hispanic Origin
Height/Weight 185.4 cm, 68 kg
ASA Class ASA 3
Surgical Service Neurosurgery
Admission Admit
Room Name M-OR 20
Data Zoom
Main Chart
Monitors
10:00:00
12:00:00
14:00:00
16:00:00
Times
Anesthesia
In Room
Surgery
All Staff
Staff Level - Anesthesia Attending #1
Staff Level - Anesthesia CRNA #1
Staff Level - Scrub Nurse #1
Staff Level - Surgical Attending/Procedur
Staff Level - Surgical Resident #1
Flows Oxygen (L/Min)
0
0.6
0.5
0.5
1.1
Nursing
Braden Score
Braden Score: Activity
Braden Score: Friction and Shear
Braden Score: Mobility
Braden Score: Moisture
Braden Score: Nutrition
Braden Score: Sensory Perception
Face / Eyes checked
Per surgeon
Glasgow - Best Eye Response
3-->(E3) to speech
Glasgow - Best Motor Response
6-->(M6) obeys commands
Glasgow - Best Verbal Response
5-->(V5) oriented, appropriate
Glasgow Coma Scale (GCS) Score
14
Pain Assessment Tool
Pain Score (Generic)
Sedation Level
1
Cardiac
Cardiac Rhythm
NSR
NSR
NSR
NSR
Sinus Tachy
Perfusion
Misc. Physiologic
GI - Symptoms
WDL
Pulse Pressure Variation
52
Train-of-four objective count (acceleromy
4 / 4
Labs
Formal lab - Albumin, Serum/Plasma
Formal lab - Alkaline Phosphatase, Serum
Formal lab - ALT (SGPT), Serum/Plasma
Physiologic Entry
Time
1/3/2019 9:36:25 AM
Value
77
Variable Mappings
Source Variable 200234 200234
MPOG Concept BP Mean Non-invasive 3025

# Record Search



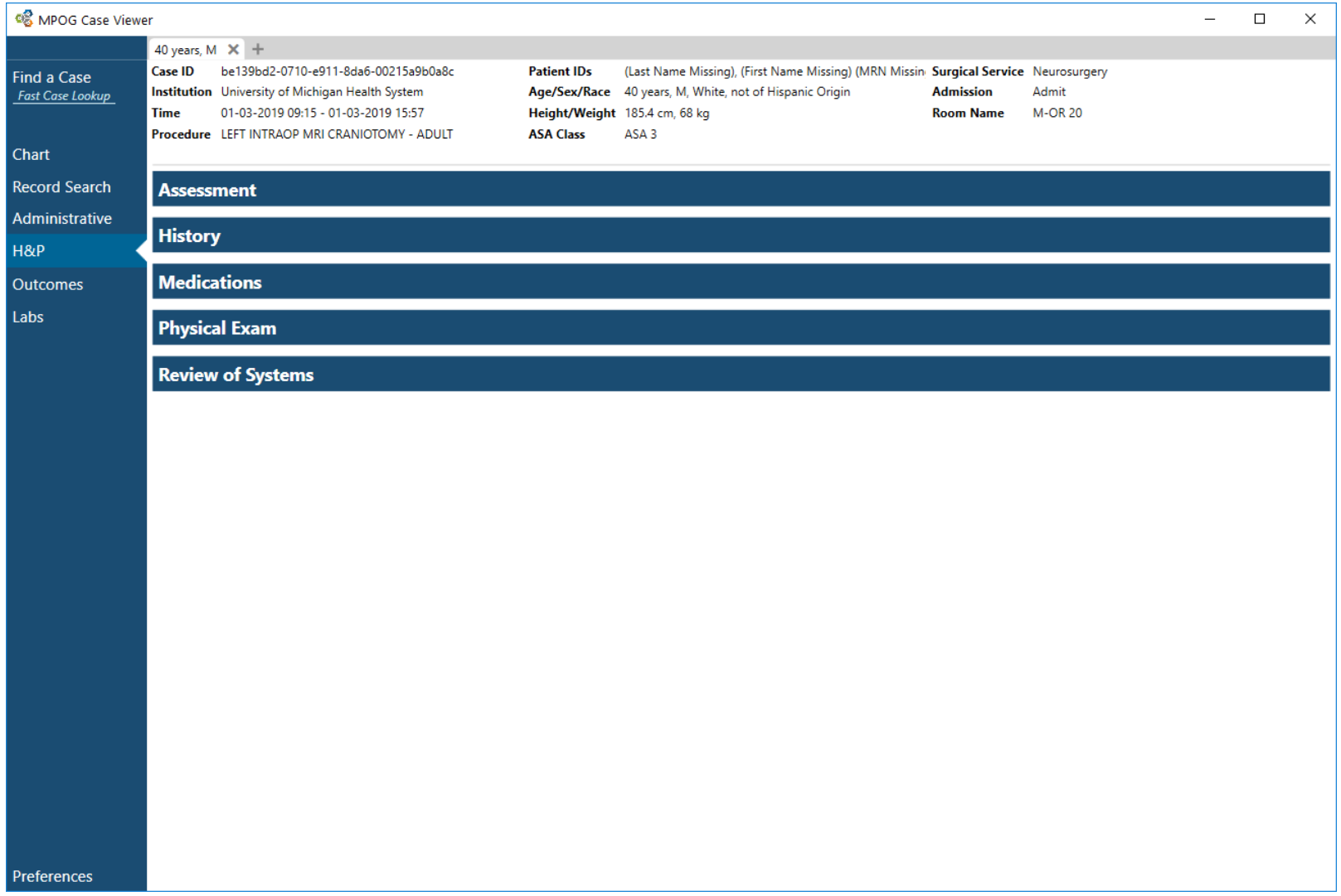

- Free text search for all variables containing certain words or numeric values
- Considers ALL data
- Colors determine type of MPOG concept
  - *Preop: Green*
  - *Intraop Notes: Blue*
  - *Physiologic: Orange*
  - *Medication: Red*
  - *Lab: Pink*
  - *Outcome: Yellow*

# Administrative

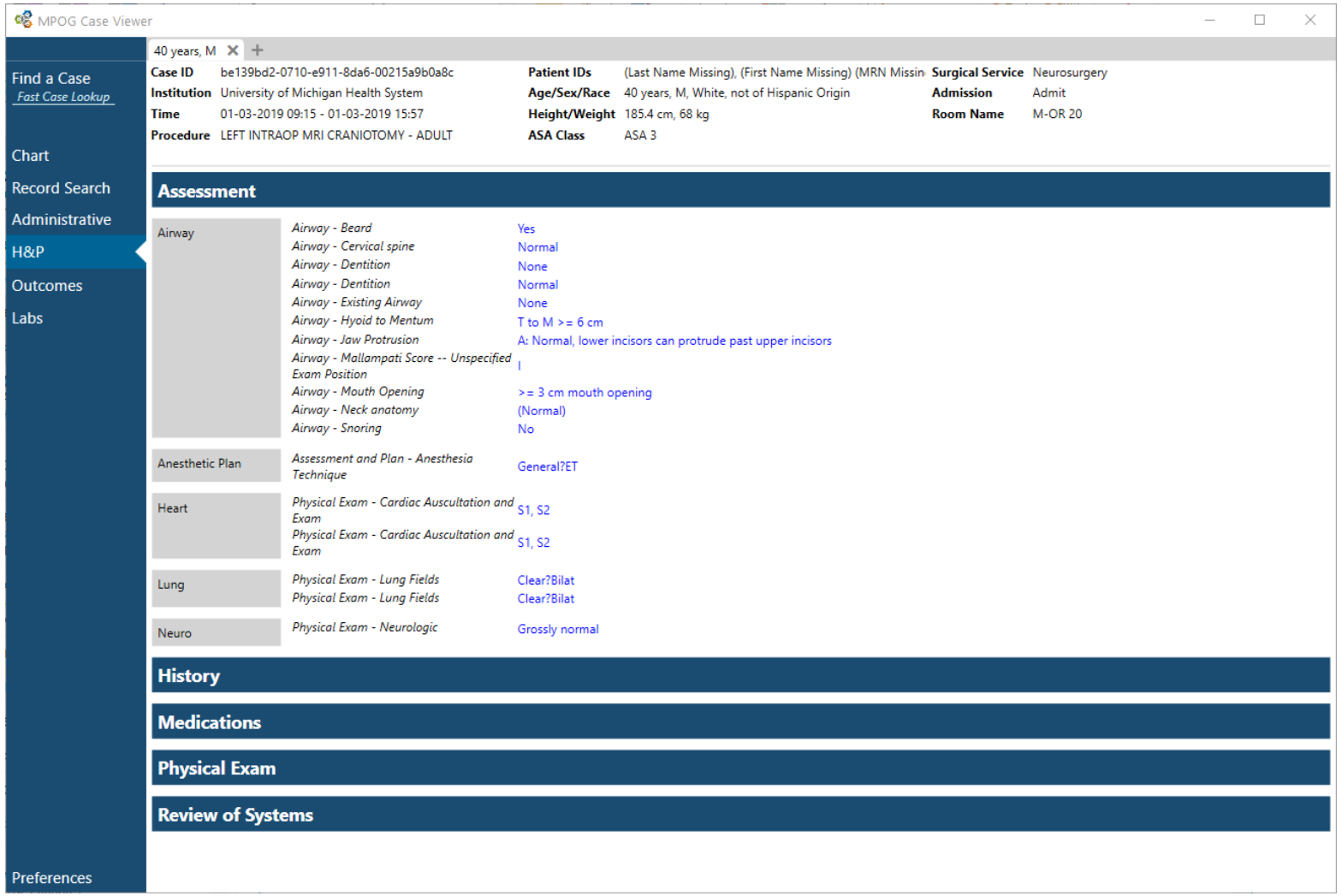



- **Demographics**
  - Removed Address and Phone #
- **Billing: 2 sections**
  - Professional Fee
  - Hospital Discharge
- **Location Hierarchy**
  - Hierarchy level now displayed with room tags

# History & Physical



# H & P: Assessment



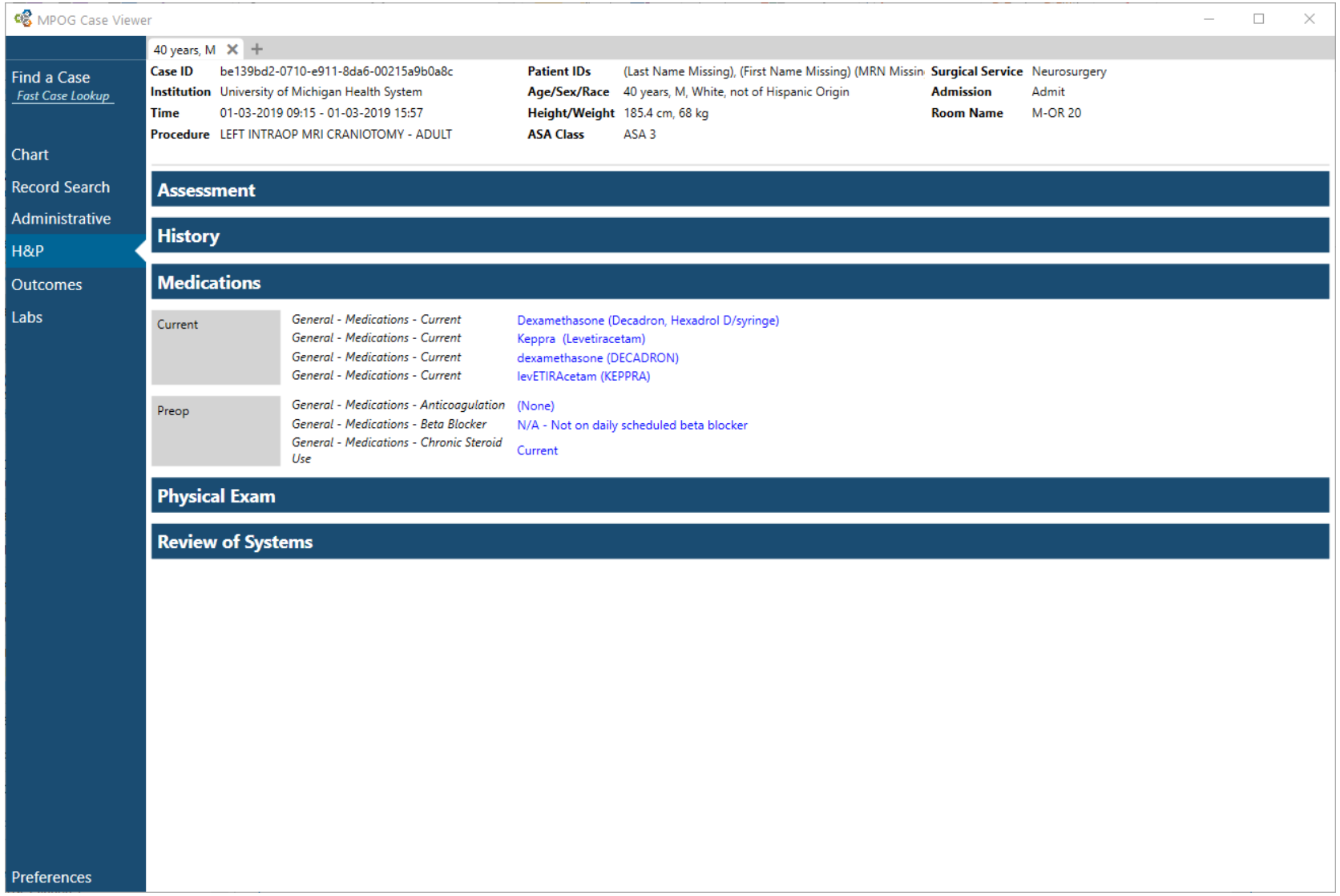

- Airway
- Anesthetic Plan
- Heart
- Lung
- Neuro

MPOG

# H & P: History

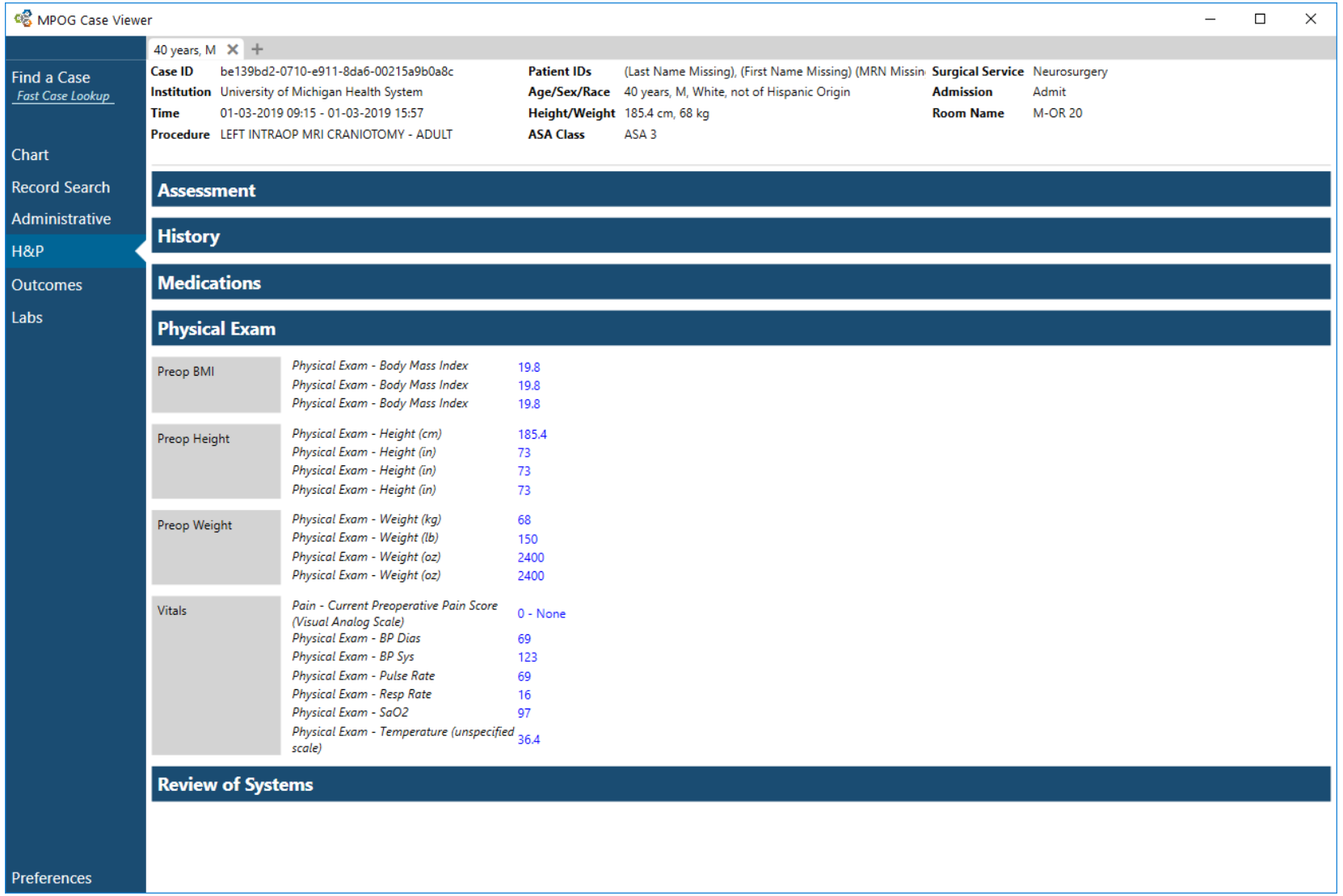

- Family History
- History of Present Illness
- Past Surgical History
- Social History

# H & P: Medications



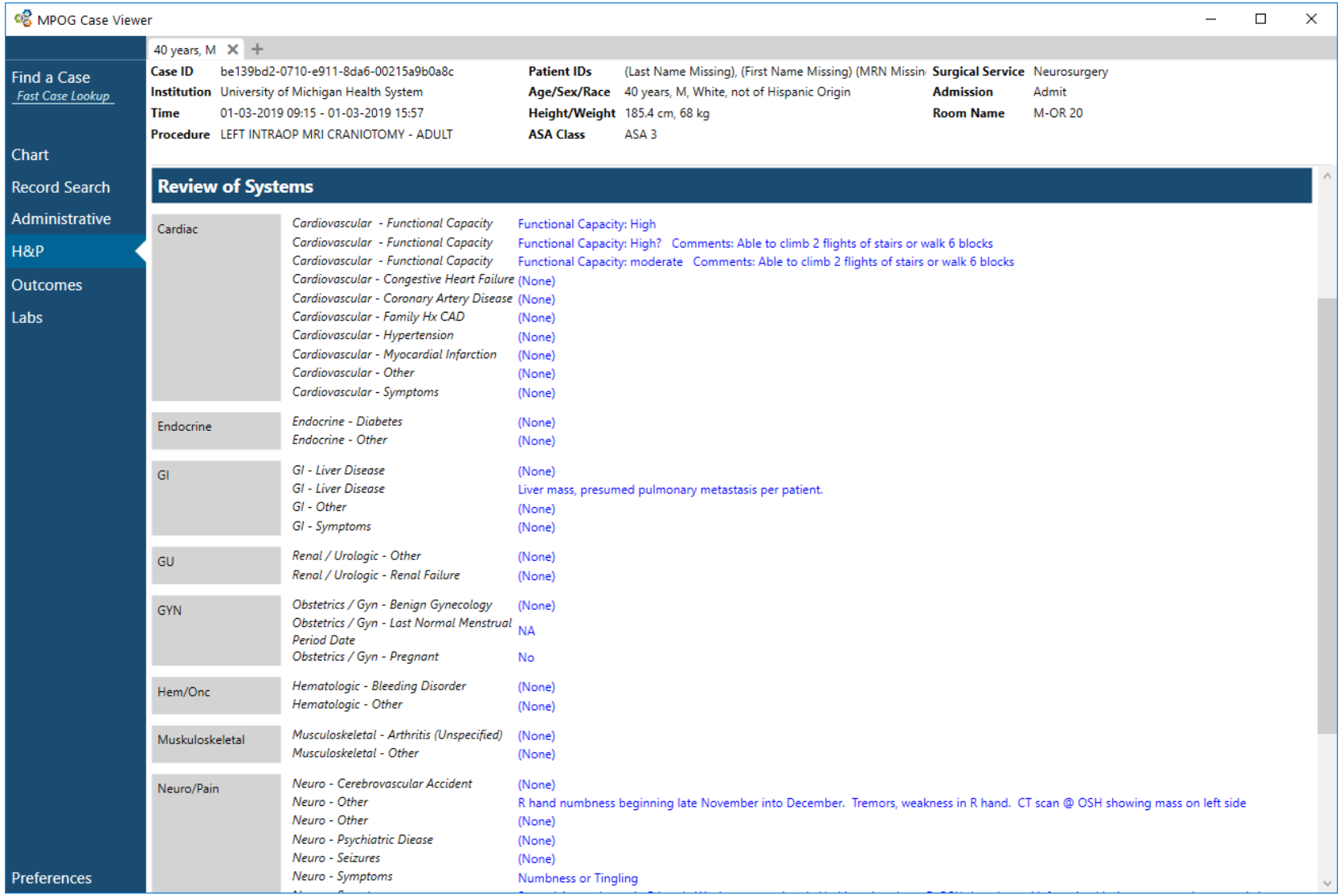

- Home Meds
- Current Meds
- Preop Meds

# H & P: Physical Exam




- Preop Height
- Preop Weight
- Preop BMI
- Vitals
  - HR
  - BP
  - RR
  - SpO2
  - Pain
  - Temp

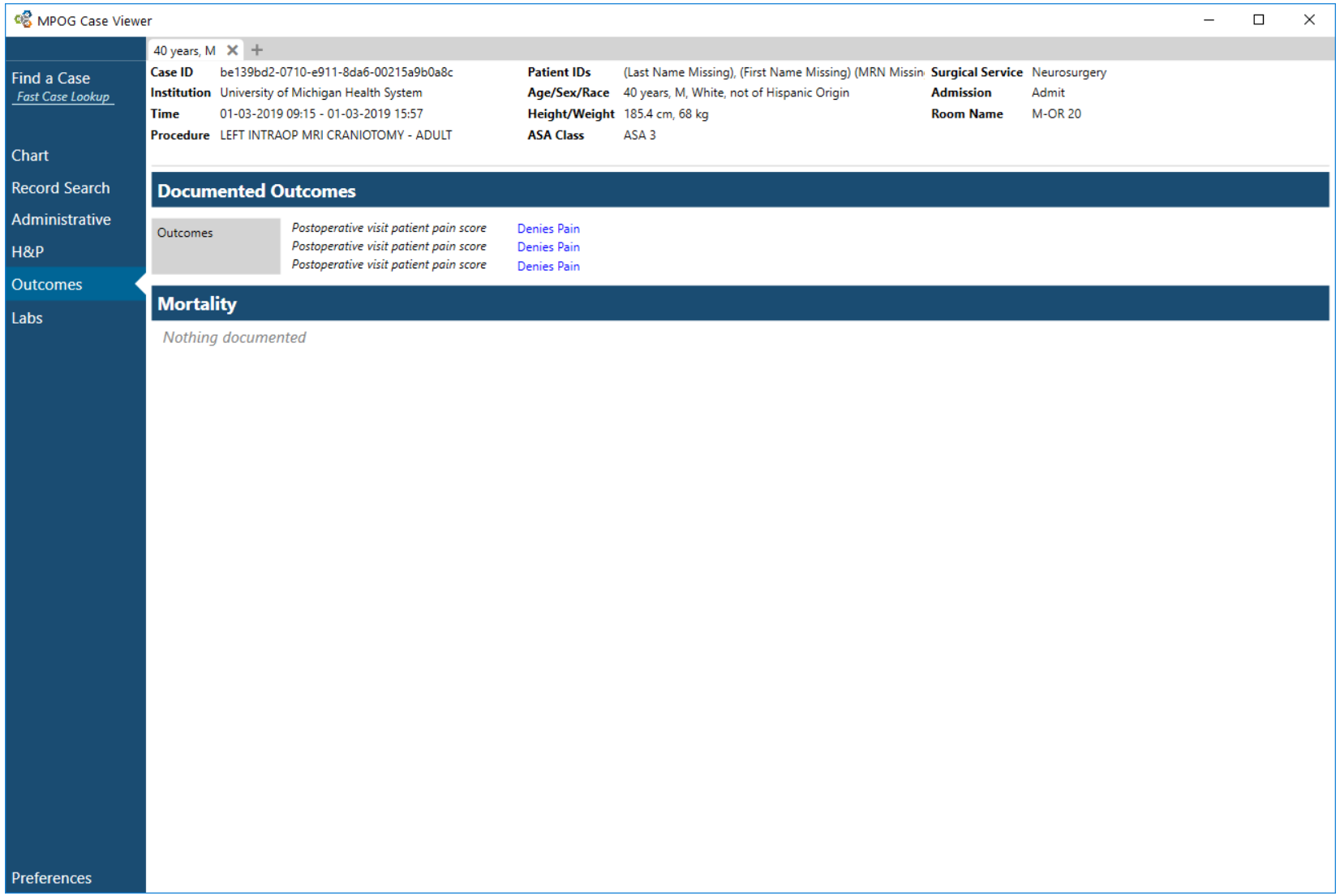
# H & P: Review of Systems



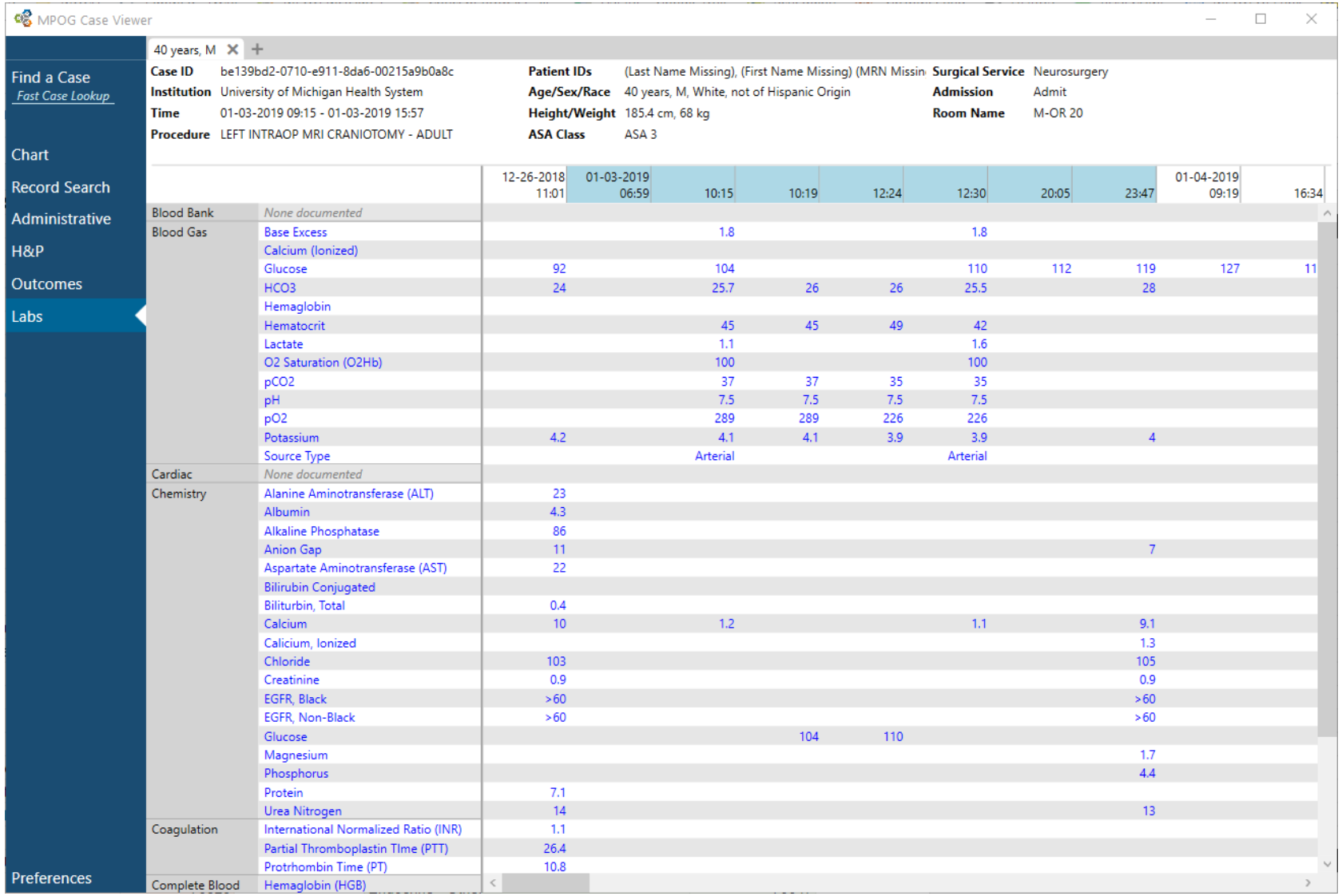

- Cardiac
- Endocrine
- GI
- GU
- Gyn
- Hem/Onc
- Muskuloskeletal
- Neuro/Pain
- Pulmonary

MPOG

# Outcomes


MPOG Case Viewer
40 years, M
Find a Case
Fast Case Lookup
Chart
Record Search
Administrative
H&P
Outcomes
Labs
Preferences
Case ID be139bd2-0710-e911-8da6-00215a9b0a8c
Institution University of Michigan Health System
Time 01-03-2019 09:15 - 01-03-2019 15:57
Procedure LEFT INTRAOP MRI CRANIOTOMY - ADULT
Patient IDs (Last Name Missing), (First Name Missing) (MRN Missin
Age/Sex/Race 40 years, M, White, not of Hispanic Origin
Height/Weight 185.4 cm, 68 kg
ASA Class ASA 3
Surgical Service Neurosurgery
Admission Admit
Room Name M-OR 20
Documented Outcomes
Outcomes
Postoperative visit patient pain score Denies Pain
Postoperative visit patient pain score Denies Pain
Postoperative visit patient pain score Denies Pain
Mortality
Nothing documented

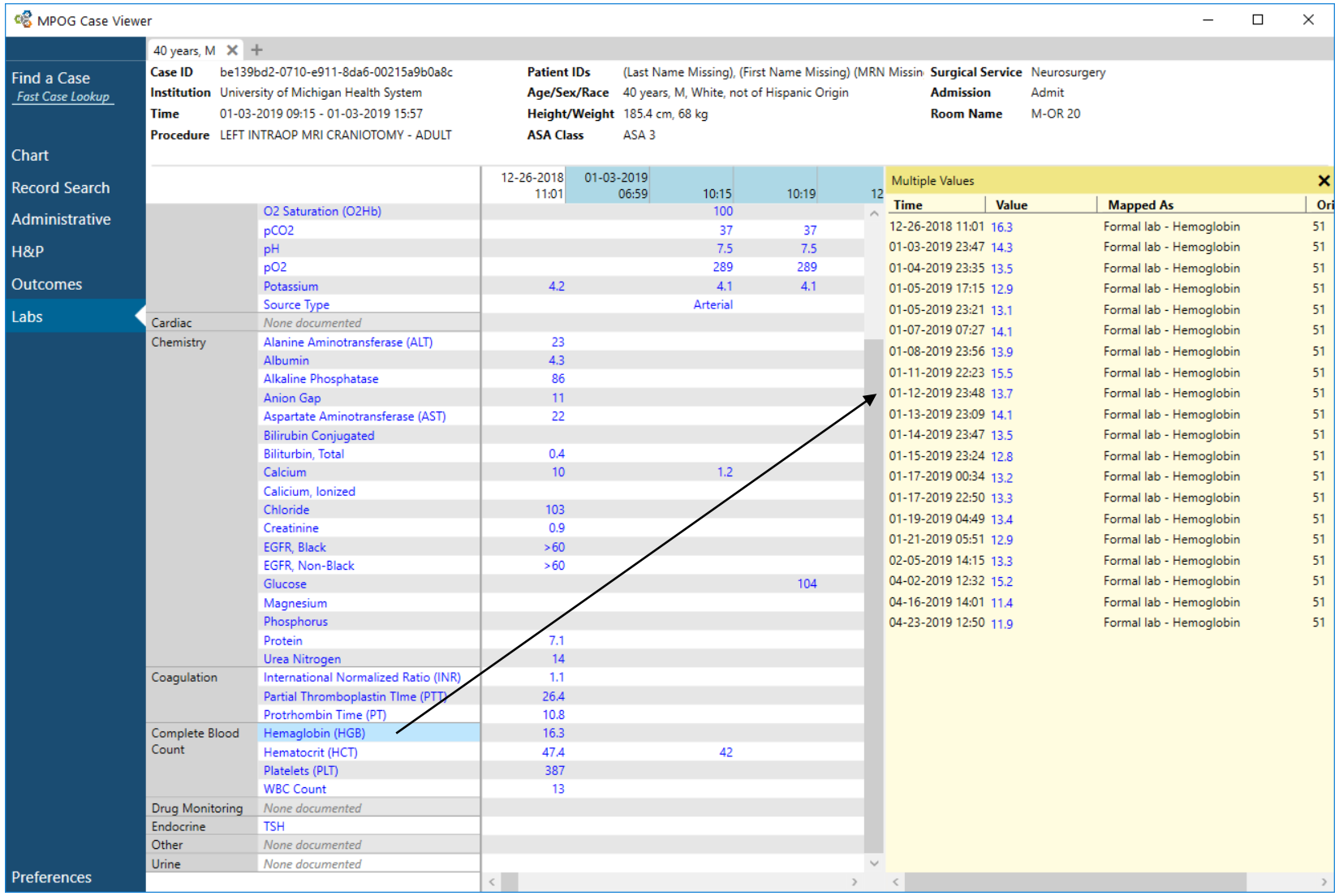
# Labs




| | | 12-26-2018 11:01 | 01-03-2019 06:59 | 10:15 | 10:19 | 12:24 | 12:30 | 20:05 | 23:47 | 01-04-2019 09:19 | 16:34 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Blood Bank | *None documented* | | | | | | | | | | |
| Blood Gas | Base Excess | | | 1.8 | | | 1.8 | | | | |
| | Calcium (Ionized) | | | | | | | | | | |
| | Glucose | 92 | | 104 | | | 110 | 112 | 119 | 127 | 11 |
| | HCO3 | 24 | | 25.7 | 26 | 26 | 25.5 | | 28 | | |
| | Hemaglobin | | | | | | | | | | |
| | Hematocrit | | | 45 | 45 | 49 | 42 | | | | |
| | Lactate | | | 1.1 | | | 1.6 | | | | |
| | O2 Saturation (O2Hb) | | | 100 | | | 100 | | | | |
| | pCO2 | | | 37 | 37 | 35 | 35 | | | | |
| | pH | | | 7.5 | 7.5 | 7.5 | 7.5 | | | | |
| | pO2 | | | 289 | 289 | 226 | 226 | | | | |
| | Potassium | 4.2 | | 4.1 | 4.1 | 3.9 | 3.9 | | 4 | | |
| | Source Type | | | Arterial | | | Arterial | | | | |
| Cardiac | *None documented* | | | | | | | | | | |
| Chemistry | Alanine Aminotransferase (ALT) | 23 | | | | | | | | | |
| | Albumin | 4.3 | | | | | | | | | |
| | Alkaline Phosphatase | 86 | | | | | | | | | |
| | Anion Gap | 11 | | | | | | | 7 | | |
| | Aspartate Aminotransferase (AST) | 22 | | | | | | | | | |
| | Bilirubin Conjugated | | | | | | | | | | |
| | Biliturbin, Total | 0.4 | | | | | | | | | |
| | Calcium | 10 | | 1.2 | | | 1.1 | | 9.1 | | |
| | Calicium, Ionized | | | | | | | | 1.3 | | |
| | Chloride | 103 | | | | | | | 105 | | |
| | Creatinine | 0.9 | | | | | | | 0.9 | | |
| | EGFR, Black | >60 | | | | | | | >60 | | |
| | EGFR, Non-Black | >60 | | | | | | | >60 | | |
| | Glucose | | | | 104 | 110 | | | | | |
| | Magnesium | | | | | | | | 1.7 | | |
| | Phosphorus | | | | | | | | 4.4 | | |
| | Protein | 7.1 | | | | | | | | | |
| | Urea Nitrogen | 14 | | | | | | | 13 | | |
| Coagulation | International Normalized Ratio (INR) | 1.1 | | | | | | | | | |
| | Partial Thromboplastin TIme (PTT) | 26.4 | | | | | | | | | |
| | Protrhombin Time (PT) | 10.8 | | | | | | | | | |
| Complete Blood | Hemaglobin (HGB) | | | | | | | | | | |

- Times that are highlighted occurred between Anesthesia start and end.
- Grouped in Sections
  - Blood Bank
  - Blood Gas
  - Cardiac
  - Chemistry
  - Coagulation
  - CBC
  - Drug Monitoring
  - Endocrine
  - Other
  - Urine

# Labs




- Clicking on any lab variable will display all labs in the database for that patient.
- Ability to sort by any column headers: time, value, mapping…

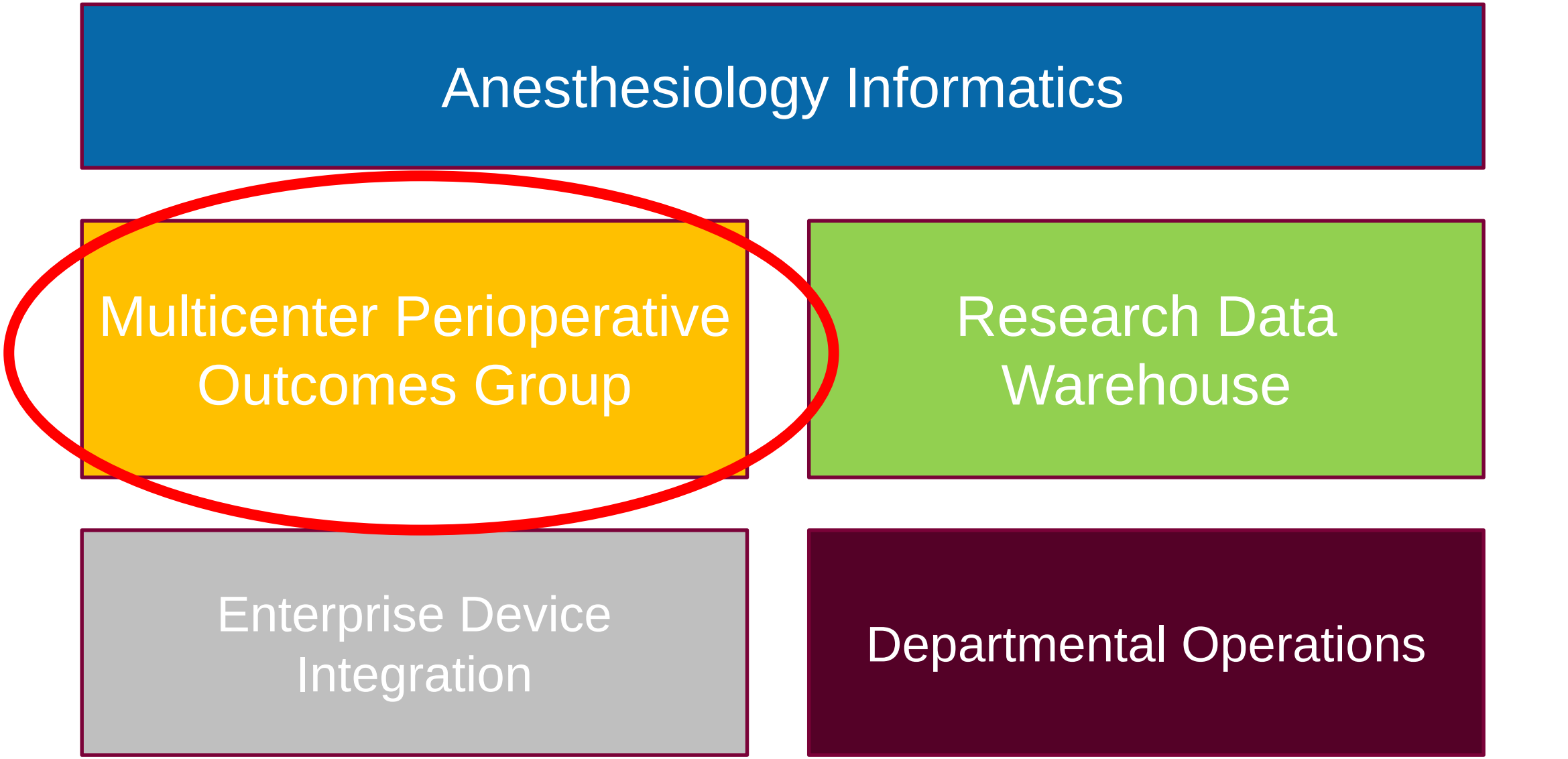
# MPOG Coordinating Center Workflow

*Nirav Shah, MD*

*Quality Improvement Director*

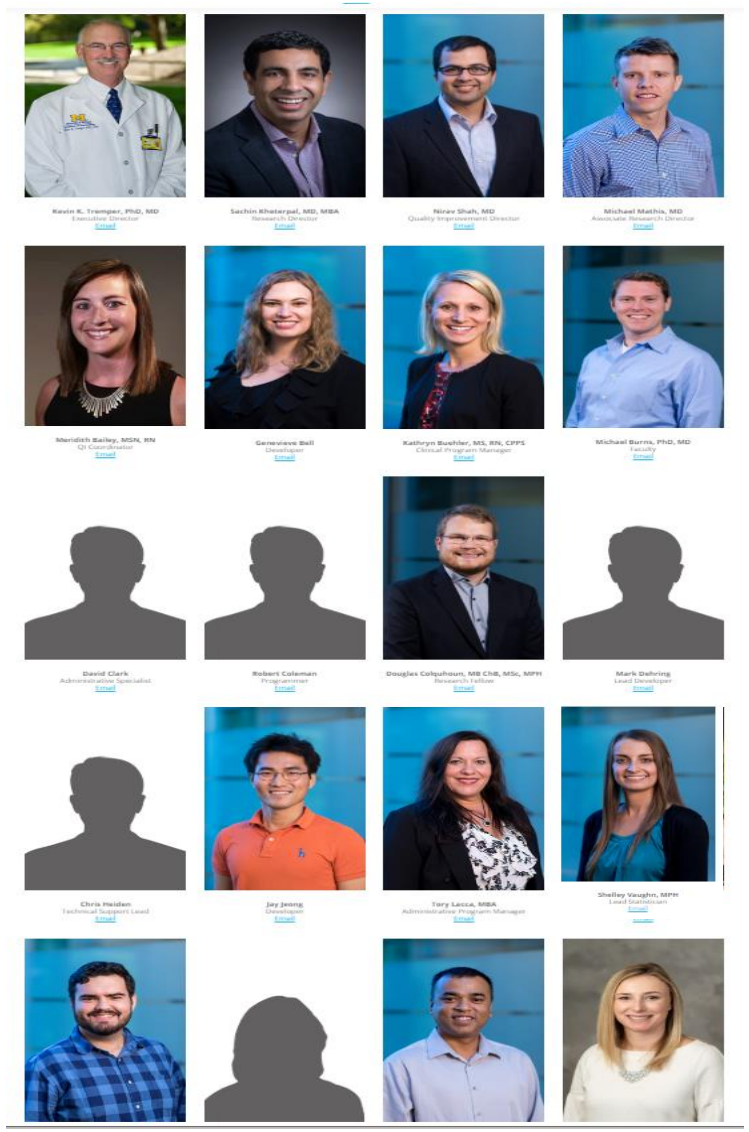
*Multicenter Perioperative Outcomes Group*

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

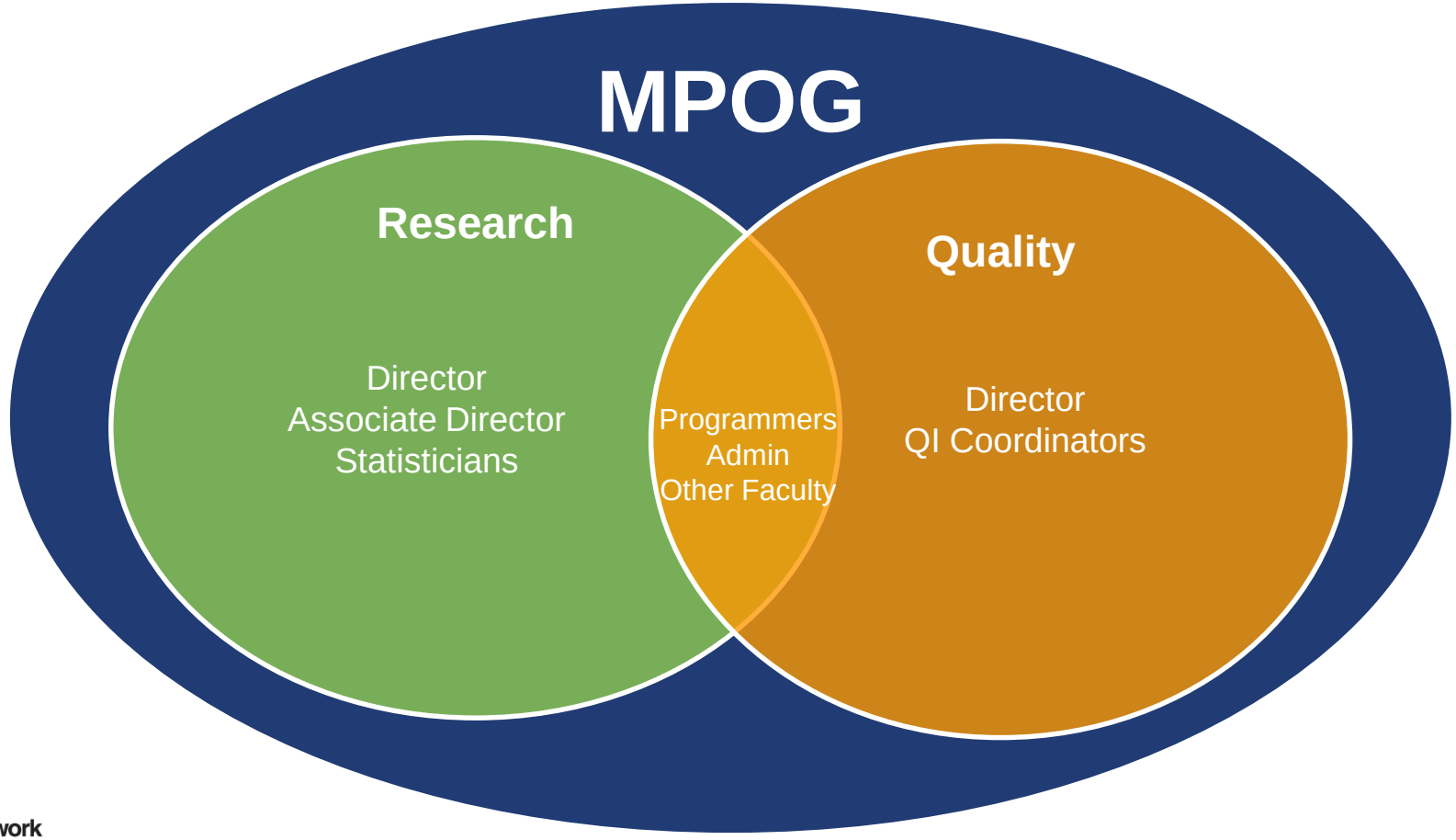

Anesthesiology Informatics
Multicenter Perioperative Outcomes Group
Research Data Warehouse
Enterprise Device Integration
Departmental Operations

# MPOG Staff

- Programmers (8 + 1 tech support)
- Physicians (6)
- Nurses (3)
- Administrative (2)
- Statisticians (1) +4



# Dual Mission of Research and Quality



- Descriptive / exploratory studies
- Operations analyses / practice patterns
- Outcomes research
- MPOG + surgical registry research
- Enhanced Observational Studies
- Pragmatic Clinical Trials

# Perioperative Clinical Research Committee (PCRC)

- The purpose of the committee is to ensure the appropriateness of the clinical research conducted within MPOG
- Ensure rational use of MPOG resources.
- It is primarily the responsibility of the institution's MPOG Site Principal Investigator / Research Champion to review all proposals before submission to the PCRC.

**ASPIRE Dashboard**

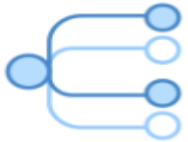
Measure performance visualization

**Basecamp**

ASPIRE QI forum

**Case Reports**

Measure case reports



**Concept Browser**

MPOG concept dictionary

**DataDirect**

MPOG registry data access

**Data Explorer**

Data quality visualization

**MQUARK**

QI and research surveys

**Phenotype Browser**

Curated data library

**Provider Contacts**

Provider information

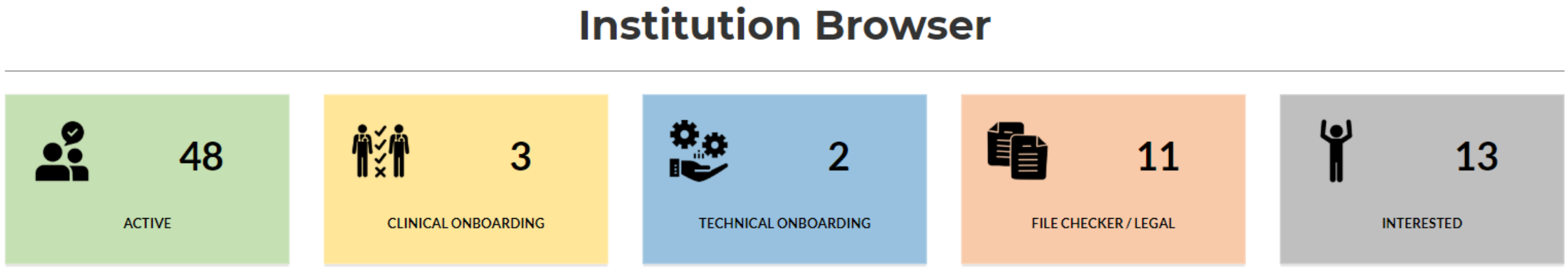
**QCDR Audit**

QCDR measure audit

MPOG

# MPOG Portal

Used to track live status and contacts for all institutions




Upload

**MPOG Status:** Active

**Hospital System Affiliation:** None

Funded Non-Funded

P4P Cohort: 1 (2015)

**Active Status:** Complete - E-mails

**Extraction Method:** Import Manager

**MPOG Clinical Lead:** Meridith

**MPOG Technical Lead:** Anik S.

**AIMS:** Centricity

**Site Level Designation:** Primary

**Private Practice Group:** None

Summary | Contacts | Legal/Reg

## Contacts

**Principal Investigator:**
Sachin Kheterpal

**Quality/ACQR Champion:**
Tim Dubovoy

**IT Champion:**

## Legal

| | |
|---|---|
| Application | ✔ |
| Institution BAA | – |
| Practice BAA | – |
| DUA | ✔ |
| IRB | ✔ |
| Bylaws | ✔ |
| Security Document | – |

## Data Submissions

## Quality Initiatives

## Research Projects

## Billing

MPOG

# Nursing/ QI Team

- Onboarding Sites and Site Maintenance
  - Distribute sites across team
  - Legal -> File Checker -> **Clinical Onboarding** -> Active Site
- Measure development  and maintenance
- Application requirements, specifications, and feedback
- Educational Tools
  - Toolkits – extensive lit review and collaboration on design
  - Supplemental documents
- MOCA Management
  - Work with Jay to improve user experience and to manage change in measures etc.

# How do we build measures?

- Idea
- Discussion with Quality Committee
- Create Specification
- Approval
- Build
- Test and Refine
- Publish
- Use (hopefully)!

# Technical Support

- Zendesk managed by Chris Heiden
- Assigns tickets to staff responsible for follow up

# Future

- More sites in MI – but probably slow growth
- More measures, but probably a better way to visualize
- More self service, likely via DataDirect

… while keeping the same collaboration and supportive environment

# October Upgrade – Coming Soon!

- **Infrastructure Improvements**
  - Pre-Mapping Framework
  - Case Viewer 2.0
  - Data Direct 2.0
- **Data Diagnostics**
  - Case Date in 3rd column of drill-down table
  - New Diagnostics
- **Case Validation**
  - Additional Questions: Preop/PACU, Labs
- **Location Mapping**
  - Multi-select rooms for tagging
  - Remove the auto-tag feature
- **Upload**
  - BRI Upload
- **Import Manager Assistant: Genevieve**

# Infrastructure Improvements

- **Case Viewer 2.0**
  - Current Case Viewer will still be available until next upgrade (April 2020)
  - New Case Viewer released as a new ‘button’ on the App Suite
  - Overview discussed earlier in detail
- **Data Direct 2.0**
  - Will replace current DataDirect
  - Process to obtain access & download still exists. Email completed security document to **support@mpog.zendesk.com**:
  - Dr. Mathis will be covering in more detail this afternoon
- **Pre-mapping (auto-mapping) will be available to new sites**
  - Auto-maps common Epic variables to MPOG concepts using variable IDs & Variable descriptions
  - Only available to Epic sites for this upgrade

# Data Diagnostics

- Additional column for case drill down to assist with targeting data issues

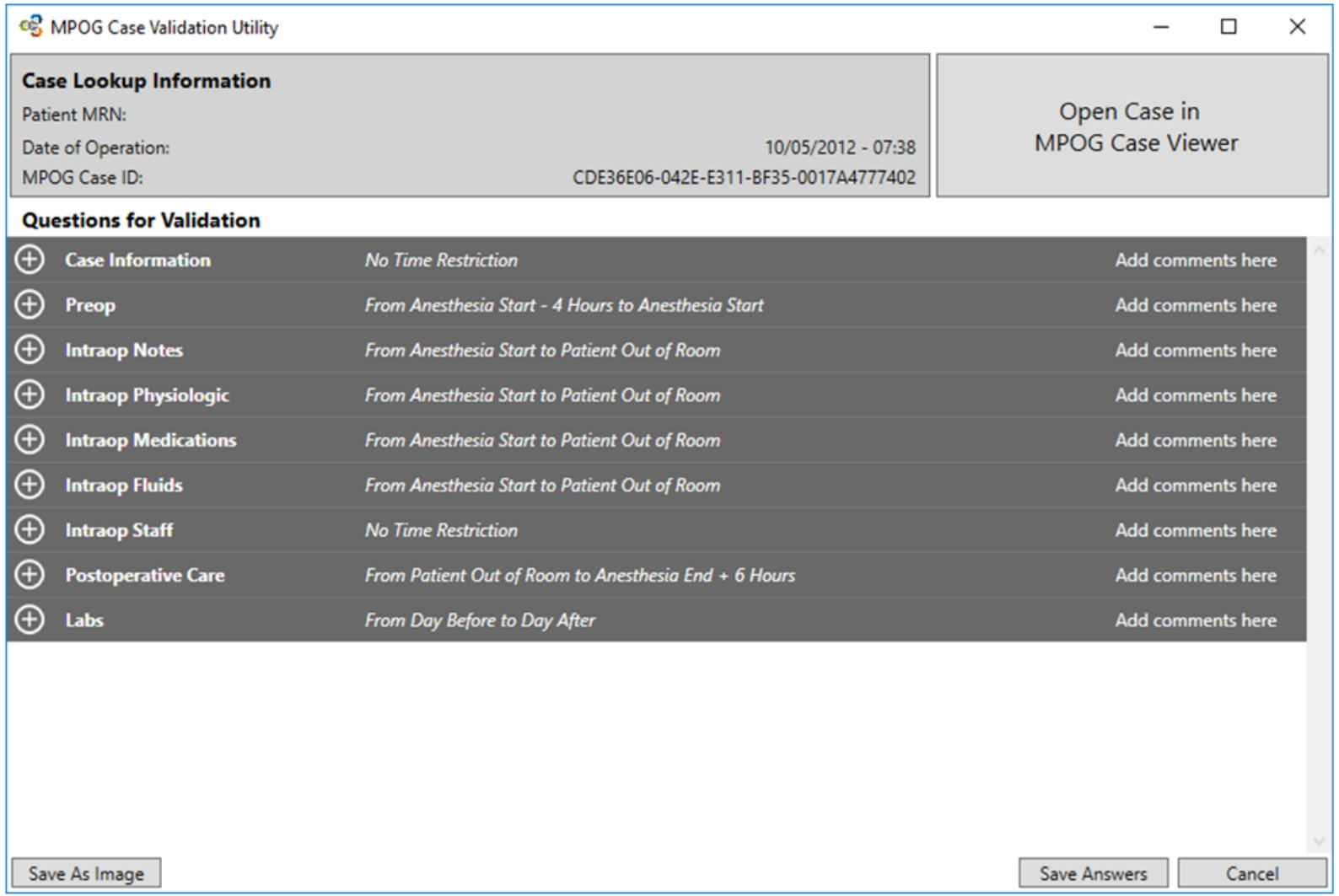
**Percentage of Cases with a PEEP Observation**

The selection has 226 cases available

| Procedure | Date | Has PEEP? |
|---|---|---|
| THYROIDECTOMY, TOTAL THYROIDECTOMY POSSIBLE PARTIAL STERNOTOMY WITH RLN MONITORING<br>THYROIDECTOMY, TOTAL THYROIDECTOMY POSSIBLE PARTIAL STERNOTOMY WITH RLN MONITORING<br>THYROIDECTOMY, TOTAL THYROIDECTOMY POSSIBLE PARTIAL STERNOTOMY WITH RLN MONITORING<br>THY | 05-01-2014 08:30 | Yes |
| LAPAROSCOPIC PROSTATECTOMY WITH DAVINCI, POSSIBLE RADICAL RETROPUBIC PROSTATECTOMY<br>RADICAL RETROPUBIC PROSTATECTOMY, POSSIBLE RADICAL RETROPUBIC PROSTATECTOMY | 05-01-2014 08:30 | Yes |
| IR NEUROLOGICAL EMBOLIZATION, IR NEURO Left ICA aneurysm: Endovascular occlusion | 05-01-2014 08:30 | Yes |
| AAA ENDO, EVAR | 05-01-2014 08:30 | Yes |
| COLONOSCOPY, POSSIBLE BIOPSY, COLONOSCOPY, POSSIBLE BIOPSY | 05-01-2014 09:30 | No |
| CYSTOSCOPY - RETROGRADE, CYSTOSCOPY - RETROGRADE PG URETERAL STENT PLACEMENT, CYSTOSCOPY - RETROGRADE PG | 05-01-2014 10:30 | No |
| ECCE IOL, RIGHT POSSIBLE PARS PLANA CAPSULOTOMY- HAVE OCUTOME LEAVE UNOPENED<br>POSTERIOR CAPSULOTOMY, RIGHT POSSIBLE PARS PLANA CAPSULOTOMY- HAVE OCUTOME LEAVE UNOPENED | 05-01-2014 10:30 | Yes |

Open Case | Cancel

# Case Validation




- New Order!
- Removed ht/wt questions
- Times in military time
- Removed Patient Info Section
- Case Info:
  - Patient name/age (from patient section)
  - Procedure
  - Type of Anesthetic

# Case Validation *(DRAFT)*

- **Labs (1 day before case date to 1 day after case date, thru midnight)**
    1. Was the hemoglobin (value) on (date) at (time)?
    2. Was the hematocrit (value) on (date) at (time)?
    3. Was the glucose (value) on (date) at (time)?
- **New Sections/Questions (Import Manager Sites ONLY)**

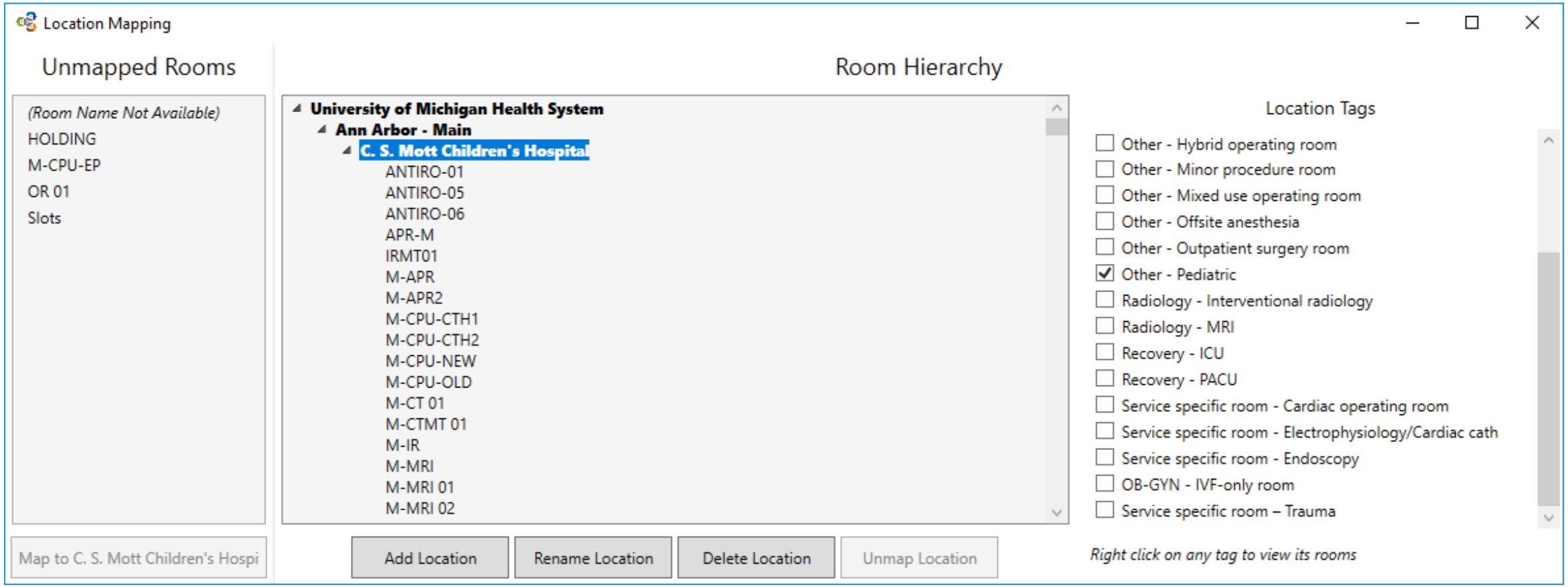
  Preoperative (4 hours before anesthesia start to anesthesia start)
    1. Was Patient In Facility at _____?
    2. Did the patient receive med/dose/unit via (route) at (time)? (Last medication given in that timeframe)
    3. Was the last BP:_____?

  Postoperative Care (Anesthesia End to 6 hours after anesthesia end)
    1. Did the patient receive med/dose/unit via (route) at (time)? (First medication given in that timeframe)
    2. Was (recovery room out/phase 1 out/phase 2 out) at (time)?
    3. Was the BP (value) at (time)? (closest to anes end)

# Location Mapping

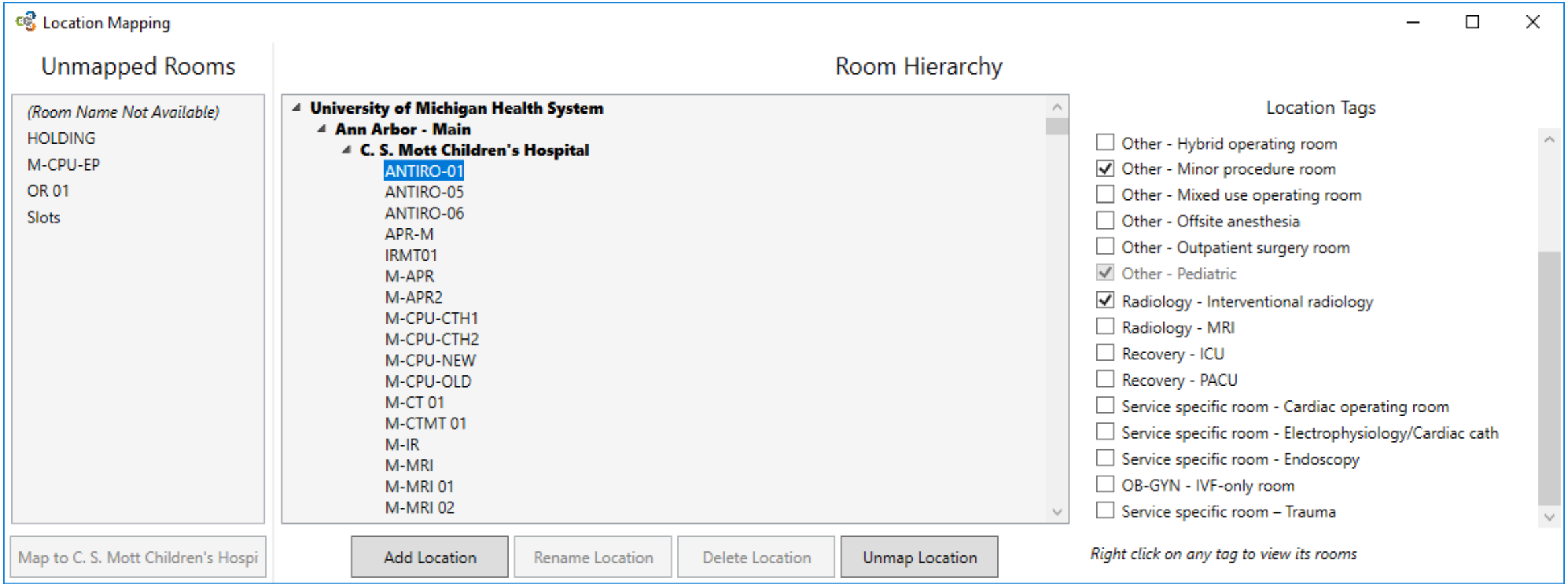
- Removed the Auto-Tag button (most sites are IM now)
- Will be able to click on a Tag and see all rooms assigned that tag more easily using ‘View Tag Members’
- Added functionality to be able to assign the same tags to multiple rooms using Cntl-Shift (multi-select option)
- If a header is mapped, everything underneath that header will be checked and disabled (grayed out)- See next slide for example

# Location Mapping: Current State




When assigning tags to ‘Parent’ Locations, all ‘Children’ listed under the ‘Parent’ inherit that tag(s).

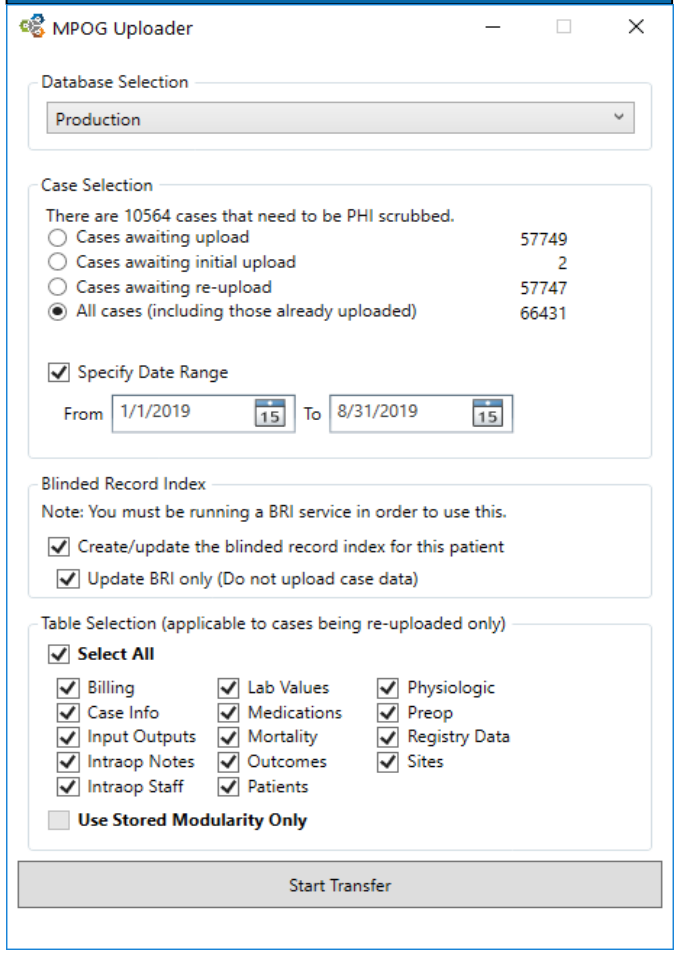
# Location Mapping



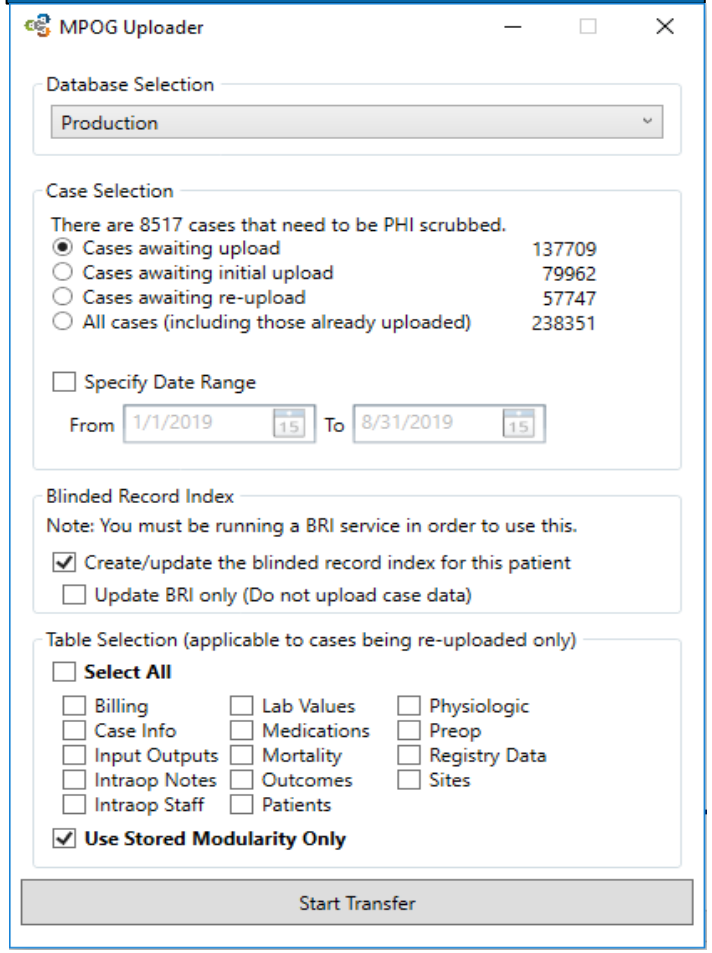

- It will now be more obvious that this is the case: inherited tag is grayed out.
- Must go to the parent to ‘un-tag’

# Blinded Record Index (BRI) Upload

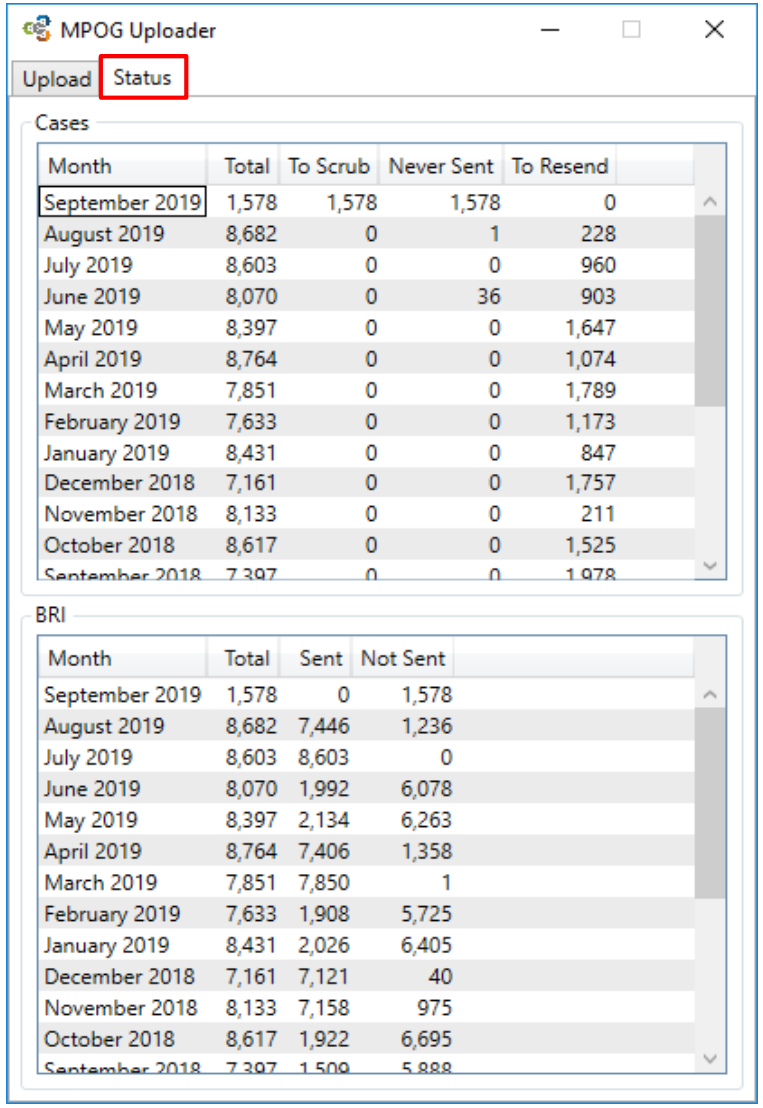
## Historical Upload




## Monthly Upload



# Blinded Record Index (BRI) Upload Tracking




Will also be adding an upload status bar for BRI within the transfer utility

# QUESTIONS?

Contact QI Coordinators with questions or suggestions:

**Kate Buehler**
kjbucrek@med.umich.edu
734-936-7525

**Meridith Bailey**
meridith@med.umich.edu
734-936-4096

**Brooke Szymanski**
bmiszy@med.umich.edu
734-232-5182

# MPOG Data Informs "*Protective*" Ventilation Strategies

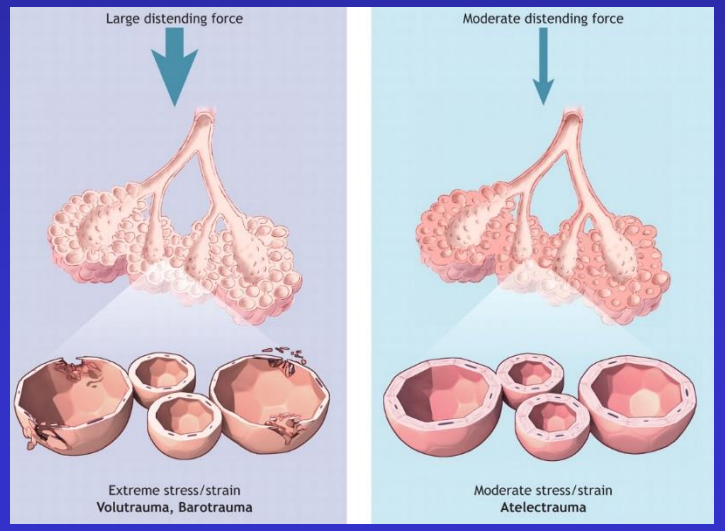
**Nicholas Douville, MD, PhD**
**Department of Anesthesiology**
**University of Michigan**

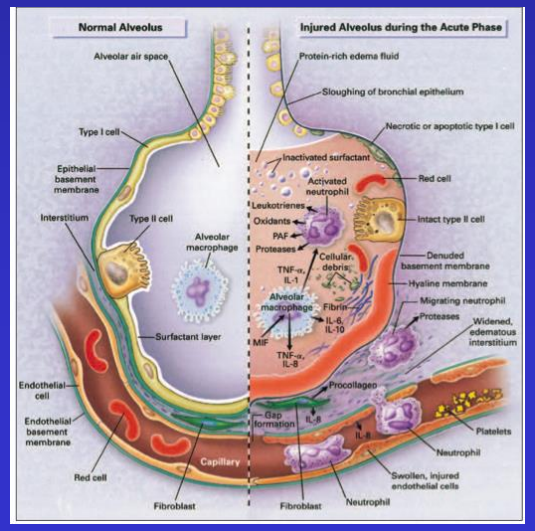
MICHIGAN MEDICINE

MPOG MULTICENTER PERIOPERATIVE OUTCOMES GROUP

# Background

- **Mechanical Ventilation can lead to clinically significant lung injury**
  - ***Volutrauma*** → low tidal volume ($V_T$)
  - ***Barotrauma*** → low driving pressures (ΔP)
    → low peak inspiratory pressure (PIP)
  - ***Atelectrauma*** → positive end expiratory pressure (PEEP)
  - ***Oxygen toxicity*** → Minimize $FiO_2$



# OR Ventilation Strategies -- Limitations

- Extrapolated from ICU literature (non-representative population)
  - Prolonged ventilation
  - Pre-existing lung disease
  - Different pathology
- Does not resolve contribution of individual components (dichotomized to “protective” or “non-protective”)
- Unique stresses based upon surgical procedure
  - Laparoscopic insufflation
  - Cardiopulmonary bypass
  - Single lung isolation
- Intraoperative complications exceedingly low → limits ability to adequately power studies
- Incomplete adoption (up to 14% of patients do NOT receive protective ventilation)

# Data YOU generate helps overcome these Limitations

- **MPOG:** Informs optimal protective ventilation strategy through research

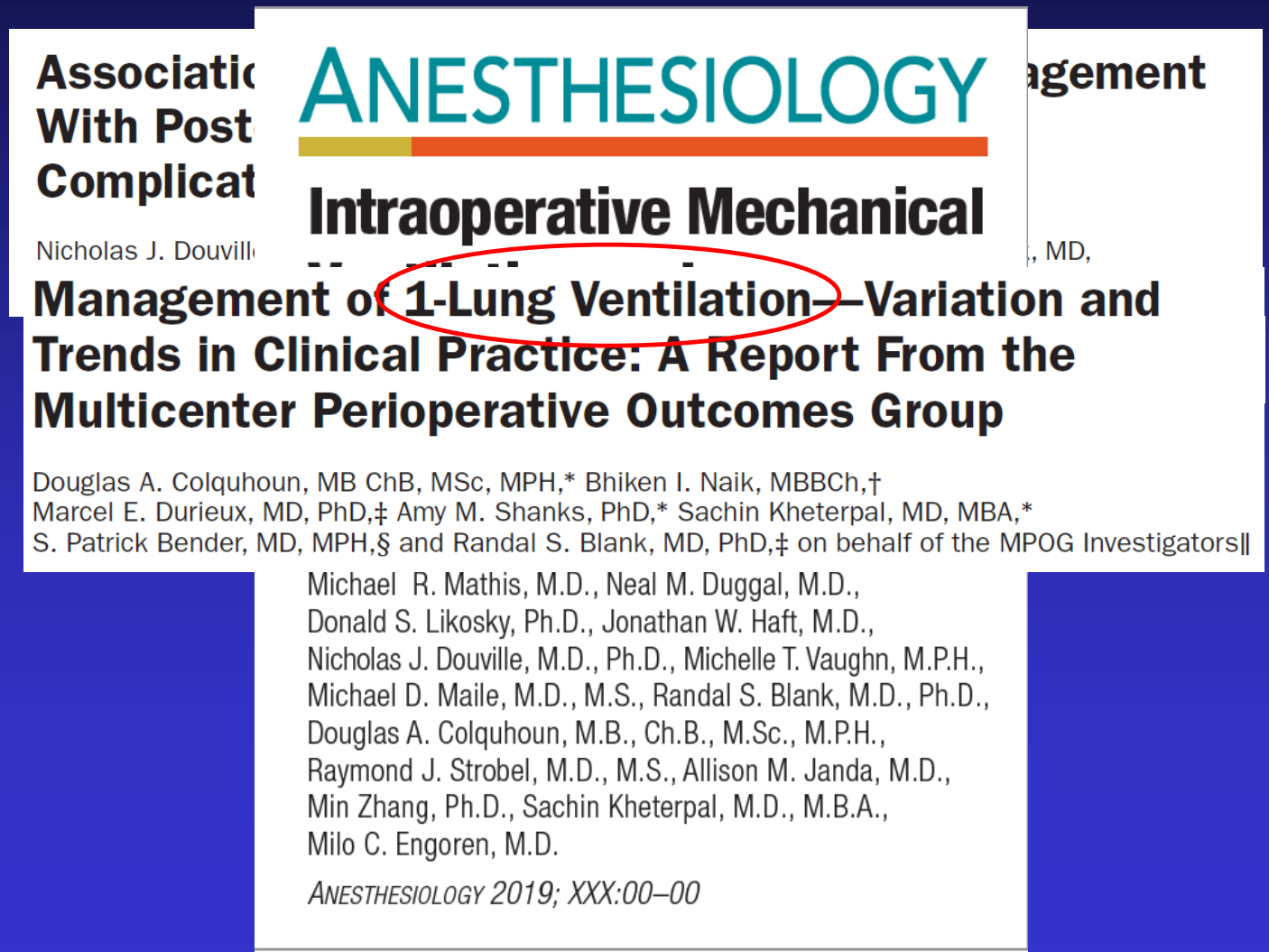
+

- **ASPIRE:** Promotes adoption of best practices informed by research

---

- **MISSION:** *improve the care of patients undergoing anesthesia by reducing unexplained variation in practice and collaborating with anesthesia providers across Michigan, the U.S., and globally*

# *Limitation: Unique stresses based upon surgical procedure*



Associatio
With Post
Complicat

Nicholas J. Douvill

ANESTHESIOLOGY

agement

, MD,

Intraoperative Mechanical

Management of 1-Lung Ventilation—Variation and Trends in Clinical Practice: A Report From the Multicenter Perioperative Outcomes Group

Douglas A. Colquhoun, MB ChB, MSc, MPH,* Bhiken I. Naik, MBBCh,†
Marcel E. Durieux, MD, PhD,‡ Amy M. Shanks, PhD,* Sachin Kheterpal, MD, MBA,*
S. Patrick Bender, MD, MPH,§ and Randal S. Blank, MD, PhD,‡ on behalf of the MPOG Investigators‖

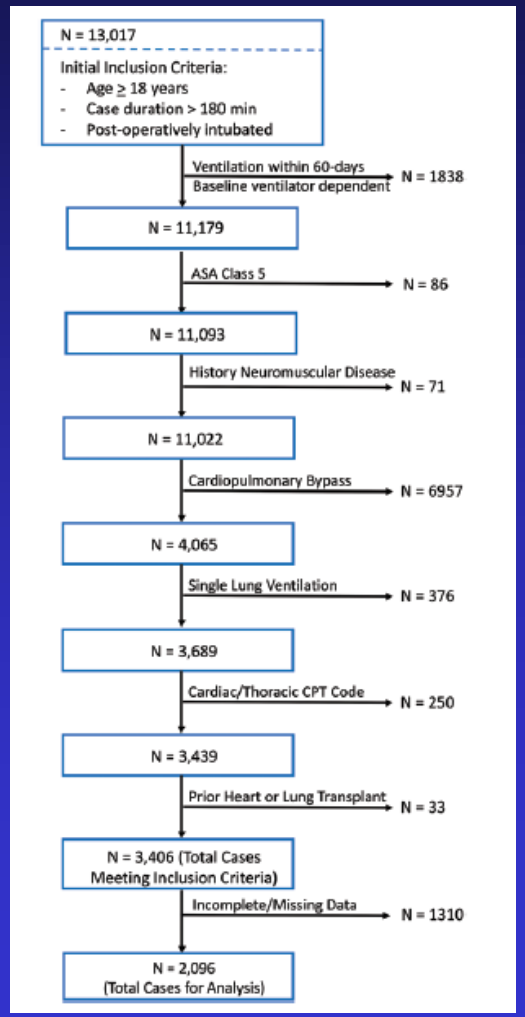
Michael R. Mathis, M.D., Neal M. Duggal, M.D.,
Donald S. Likosky, Ph.D., Jonathan W. Haft, M.D.,
Nicholas J. Douville, M.D., Ph.D., Michelle T. Vaughn, M.P.H.,
Michael D. Maile, M.D., M.S., Randal S. Blank, M.D., Ph.D.,
Douglas A. Colquhoun, M.B., Ch.B., M.Sc., M.P.H.,
Raymond J. Strobel, M.D., M.S., Allison M. Janda, M.D.,
Min Zhang, Ph.D., Sachin Kheterpal, M.D., M.B.A.,
Milo C. Engoren, M.D.

*ANESTHESIOLOGY 2019; XXX:00–00*

# *Limitation: Does Not Resolve Individual Contributions*

- Earlier studies dichotomized ventilation
  - **lung-protective ventilation**
  - **non protective ventilation**
- MPOG collects a more rich set of intraoperative parameters.
  - $V_T$
  - $V_T$ (predicted body weight)
  - ΔP
  - PIP
  - PEEP
  - $FiO_2$
  - $SpO_2$
- Permitting broader array of descriptive statistics
  - Time thresholds, extremes (5%, 25%, 75%, 95%)

# *Limitation: Intraoperative complications exceedingly low therefore unable to adequately power studies*



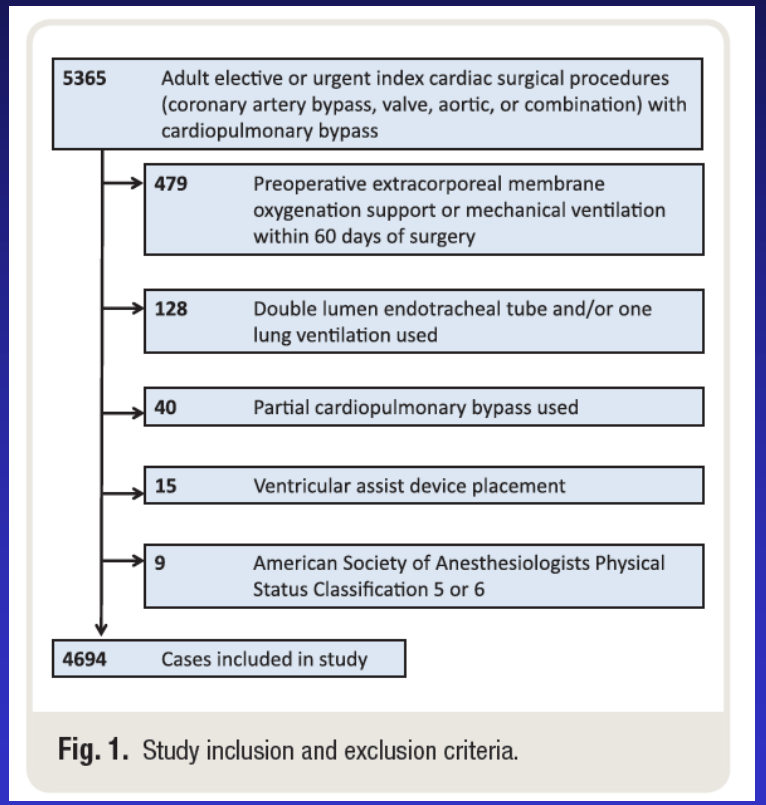



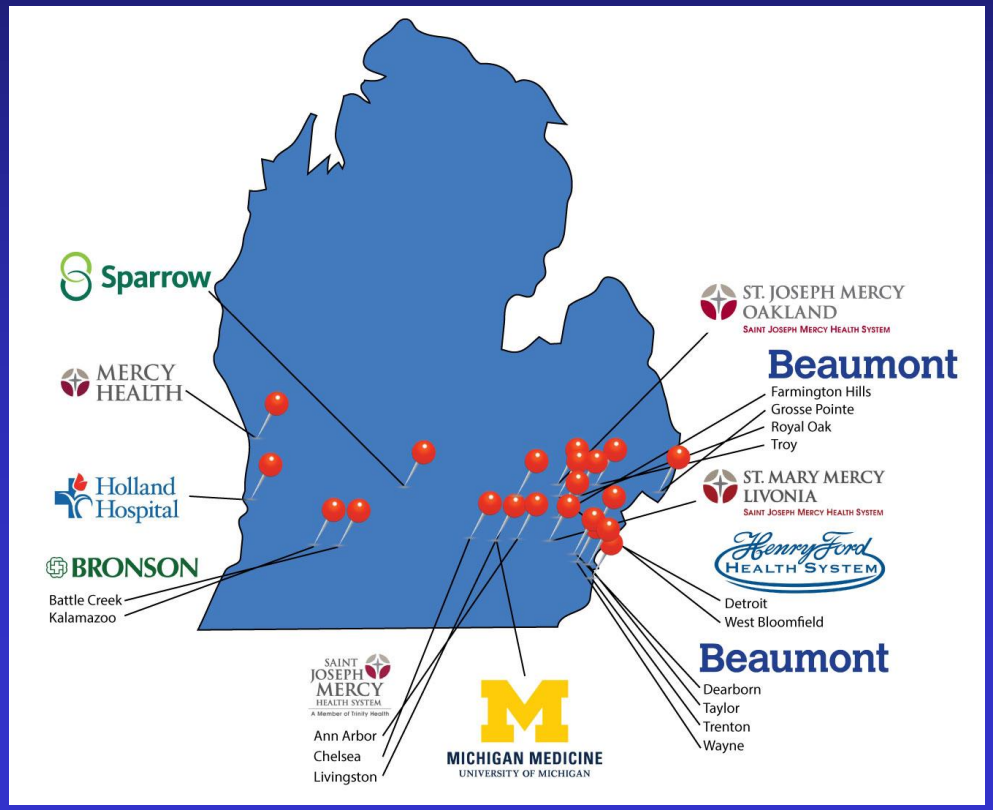

**Fig. 1.** Study inclusion and exclusion criteria.

**RESULTS**

Data from 5609 patients across the 4 institutions were included in the analysis. The 2 data periods (overall versus initial) were compared. The median period of 1LV was 117 minutes (inter-

***Limitation: Poor Compliance Nationally with Practice Recommendations***

***Solution: Education and Quality Improvement***



# ***Results*: Non-cardiac/Non-Thoracic Surgical Population**

- **Primary Outcome**: *minimum postoperative $PaO_2/FiO_2$*
  - Using multivariable linear regression, we found that:
    - Each additional hour with driving pressure >16 cm $H_2O$
    - Higher PEEP
    - Each additional hour with intraoperative $SpO_2$ <90%
  - were all independently associated with lower minimum postoperative $PaO_2/FiO_2$

# ***Results: Non-cardiac/Non-Thoracic Surgical Population***

- **Secondary Outcomes**: *30-Day Mortality*
  - each 100 mmHg increase in minimum postoperative $PaO_2/FiO_2$ was independently associated with a halving of the odds of death
  - Age, reduced cardiac ejection fraction on preoperative echocardiography, comorbidities, and intraoperative transfusion of packed red blood cells were also independently associated with mortality
  - No ventilation parameter was independently associated with mortality.

# ***Results*: Non-cardiac/Non-Thoracic Surgical Population**

- **Secondary Outcomes**: *Composite Postoperative Pulmonary Complications*
  - each 100 mm Hg higher minimum $PaO_2/FiO_2$ was associated with a lower likelihood of developing pulmonary complications
  - Time (hours) with $V_T$ >500 mL, prior history of cardiac arrhythmia, intraoperative NO use, low cardiac ejection fraction on preoperative echocardiography, and earlier year of surgery were associated with a higher likelihood of developing a class 1 pulmonary complication

# Conclusions

- Lower postoperative $Pao_2/Fio_2$ was associated with increased postoperative pulmonary complications and mortality after noncardiac surgery.
- Time with $V_T$ >500 mL and higher median $FiO_2$ were also associated with postoperative pulmonary complications, and their effects may be assessed using postoperative $PaO_2/FiO_2$.
- Among intraoperative parameters, median PEEP, median $FiO_2$, time with driving pressure >16 cm $H_2O$, and time with $SpO_2$ <90% were associated with decreased postoperative $PaO_2/FiO_2$.
- The use of the intermediate outcome, $PaO_2/FiO_2$, offers a promising target for future prospective studies


MPOG
MULTICENTER PERIOPERATIVE
OUTCOMES GROUP


ASPIRE
Anesthesiology Performance Improvement and Reporting Exchange

**Measure Abbreviation:** PUL 02

**Measure Description:** Percentage of cases with median tidal volumes equal to or less than 8 ml/kg.

**NQS Domain:** Patient Safety

**Measure Type:** Process

**Measure Summary:** PUL 02 measures
will measure the median tidal volume
this measure will exclude time before
when patients are not under positive
6).

**Inclusions:**
Patients undergoing endotracheal int

**Measure Abbreviation:** PUL 03

**Description:** Percentage of cases in which Positive End Expiratory Pressure (PEEP) is used for patients undergoing mechanical ventilation during anesthesia.

**Measure Type:** Process

**Measure Summary:** PUL 03 is an informational measure that analyzes PEEP usage across patients undergoing mechanical ventilation during anesthesia. PUL 03 will determine if PEEP was administered (as defined by median PEEP ≥ 2) and also analyze distribution of PEEP levels:

- No PEEP (<2 cm $H_2O$)
- Low PEEP (2-4 cm $H_2O$)
- Moderate PEEP (≥ 4 to < 8 cm $H_2O$)
- High PEEP (≥8 cm $H_2O$)

**Inclusions:**

Patients undergoing endotracheal intubation.

# ***Summary***

- Your hard work enables clinician-scientists to study complex problems that cannot be explored with traditional datasets
- These discoveries are used to assist clinicians in delivering safer, evidence-based anesthesia to our patients
- There are opportunities for both QI and research projects
    - **THANK YOU!!!**

# Research & Quality

## A Marriage Made in Heaven


***Sachin Kheterpal, MD MBA***

***Professor of Anesthesiology***

***Associate Dean for Research Information Technology***

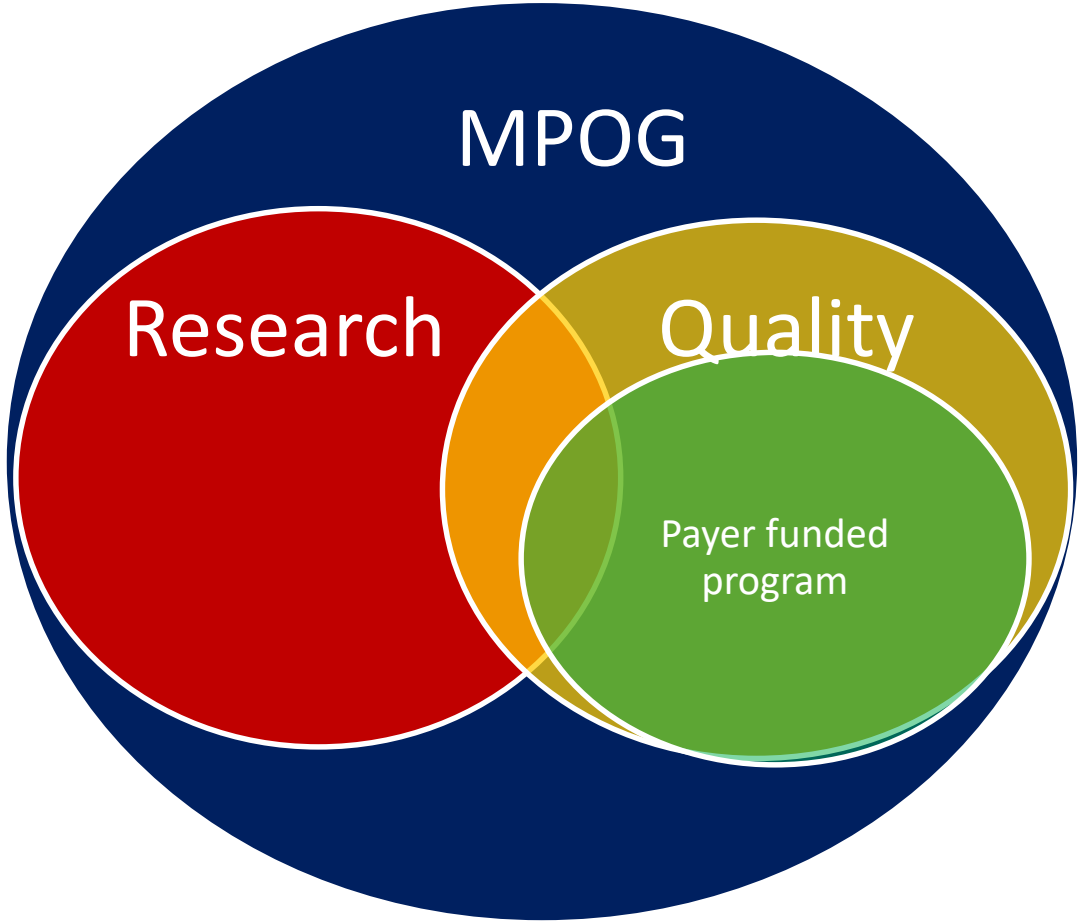
***University of Michigan Medical School***

***Co-Director, Precision Health @ University of Michigan***


MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

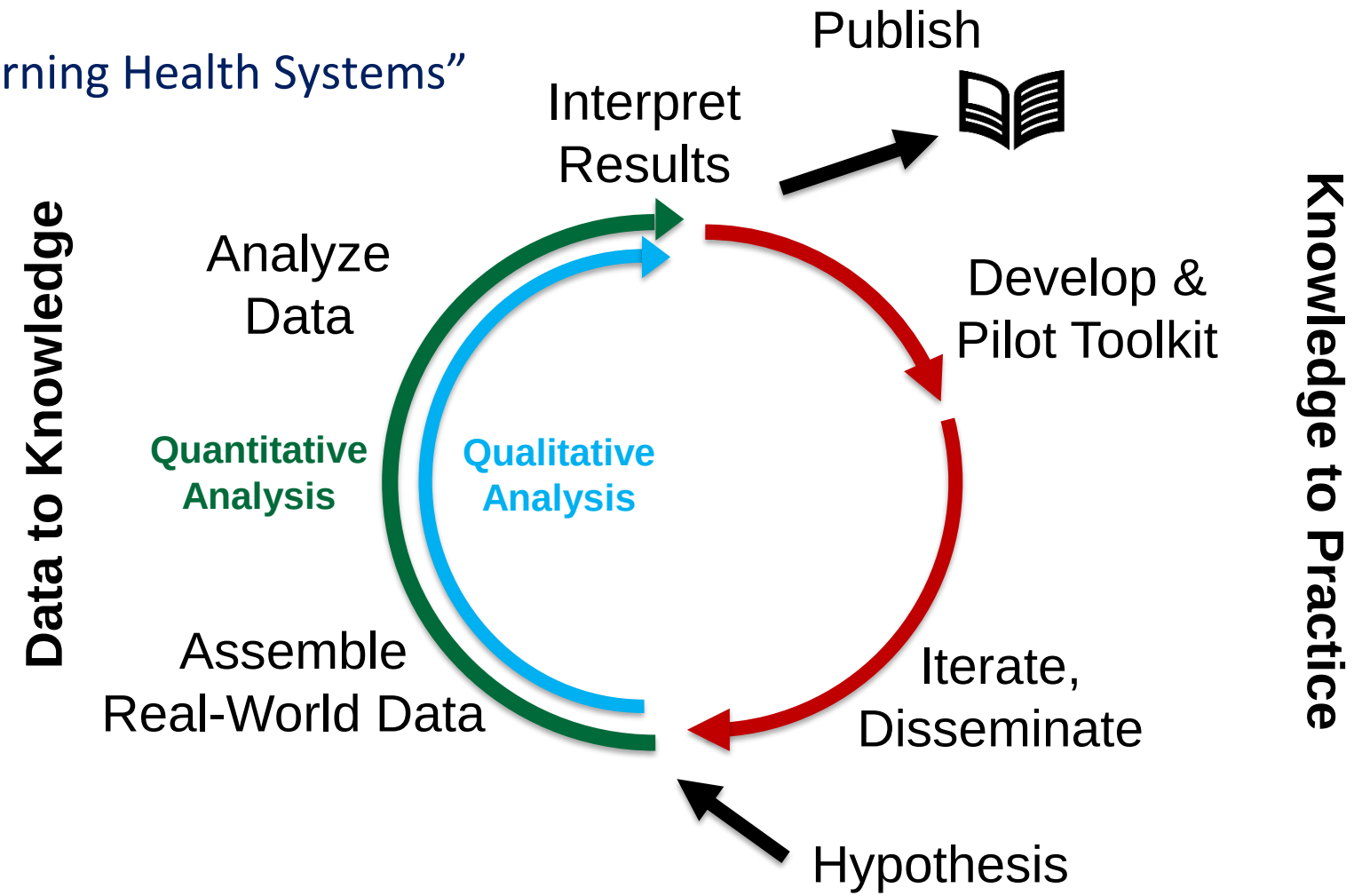
# Lesson #1

The marriage of research and quality improvement is essential


MPOG
Research
Quality
Payer funded program

# How do we improve care?

"Learning Health Systems"



# How do they compare?

## Research

- Data submitted q3-6 months
- PI cleans the data
- Peer review = a few advanced reviewers
- Novelty is encouraged
- Collaboration across disciplines & centers
- Seeks clinical impact
- Must evolve rapidly
- Needs high quality, reusable data elements

## Quality Improvement

- Data submitted q1 month
- Each center submits good data
- Peer review = every clinician
- Conservative consensus building
- Collaboration across disciplines & centers
- Seeks scientific foundation
- Must evolve rapidly
- Needs high quality, reusable data elements

# Developing a Research Study

- Examples of Research Studies Leveraging MPOG:
  - Descriptive Studies
  - Operational Analyses
  - Outcomes Studies
    - MPOG Data
    - MPOG + Surgical Registry

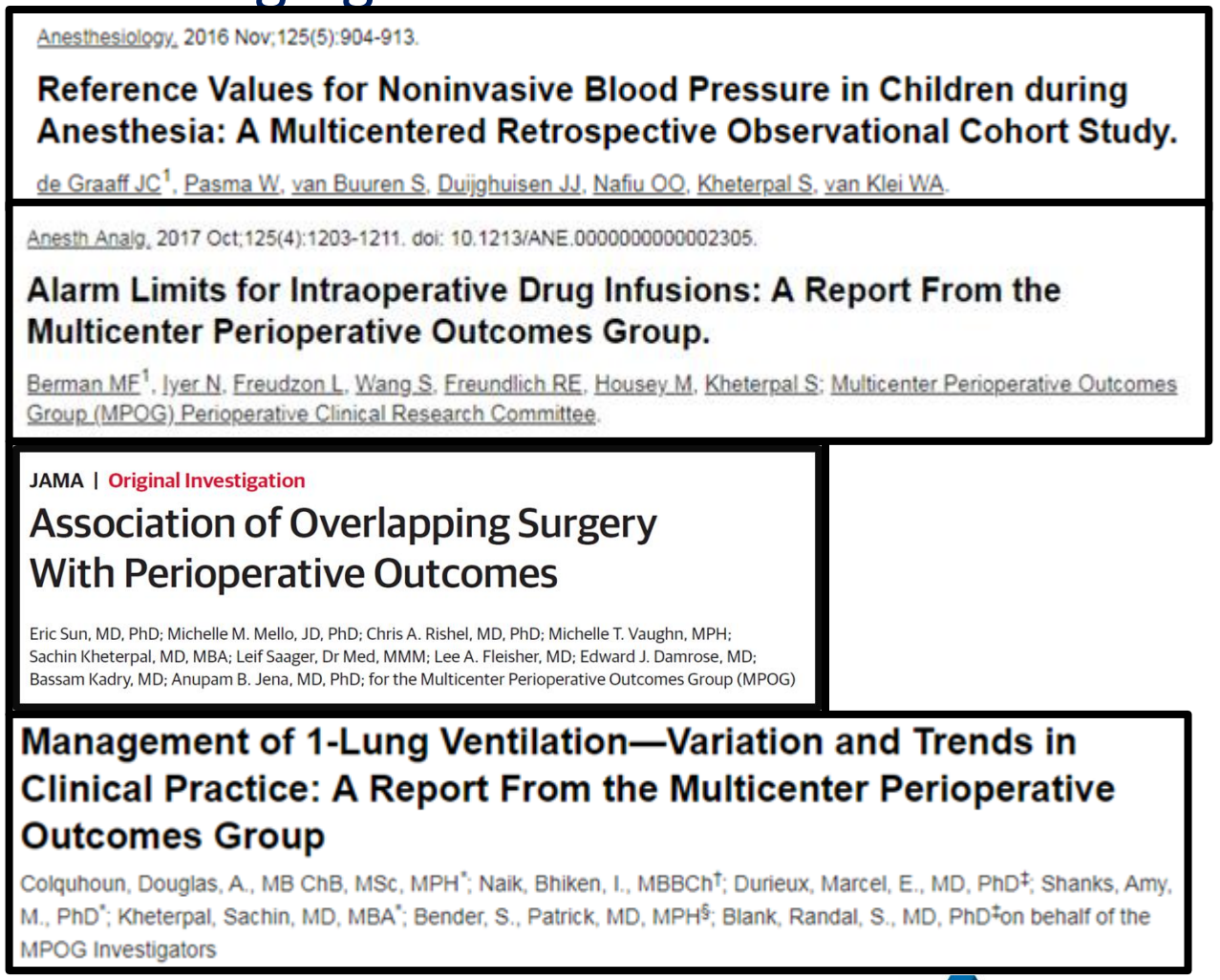
The Society of Thoracic Surgeons

ACS NSQIP®

Michigan Value Collaborative

MSQC Michigan Surgical Quality Collaborative

  - Enhanced Observational Studies (EOS)
  - Clinical Trials Network



Anesthesiology. 2016 Nov;125(5):904-913.

**Reference Values for Noninvasive Blood Pressure in Children during Anesthesia: A Multicentered Retrospective Observational Cohort Study.**

de Graaff JC[1], Pasma W, van Buuren S, Duijghuisen JJ, Nafiu OO, Kheterpal S, van Klei WA.

Anesth Analg. 2017 Oct;125(4):1203-1211. doi: 10.1213/ANE.0000000000002305.

**Alarm Limits for Intraoperative Drug Infusions: A Report From the Multicenter Perioperative Outcomes Group.**

Berman MF[1], Iyer N, Freudzon L, Wang S, Freundlich RE, Housey M, Kheterpal S; Multicenter Perioperative Outcomes Group (MPOG) Perioperative Clinical Research Committee.

JAMA | Original Investigation

**Association of Overlapping Surgery With Perioperative Outcomes**

Eric Sun, MD, PhD; Michelle M. Mello, JD, PhD; Chris A. Rishel, MD, PhD; Michelle T. Vaughn, MPH; Sachin Kheterpal, MD, MBA; Leif Saager, Dr Med, MMM; Lee A. Fleisher, MD; Edward J. Damrose, MD; Bassam Kadry, MD; Anupam B. Jena, MD, PhD; for the Multicenter Perioperative Outcomes Group (MPOG)

**Management of 1-Lung Ventilation—Variation and Trends in Clinical Practice: A Report From the Multicenter Perioperative Outcomes Group**

Colquhoun, Douglas, A., MB ChB, MSc, MPH*; Naik, Bhiken, I., MBBCh†; Durieux, Marcel, E., MD, PhD‡; Shanks, Amy, M., PhD*; Kheterpal, Sachin, MD, MBA*; Bender, S., Patrick, MD, MPH§; Blank, Randal, S., MD, PhD‡on behalf of the MPOG Investigators

MPOG

# Lesson #2

Pick the right questions

# How we pick a research topic

- What are you interested in?
- What topic would you LOVE to spend days reading?
- What bad outcomes have you seen?
- What matters to patients and clinicians?

You will hate the manuscript by the time it is published . . .

# The current literature

- You have to know the existing literature better than the experts
  - Does a knowledge gap currently exist?
  - Can the proposed project close that gap?
- Current literature
  - Patient sample size
  - Generalizability
  - Data elements collected

  Contemporary

  Quality of study
- PubMed search galore…
  - Get help..Medical library has lots to offer
  - Find the references in recent review article and scour it

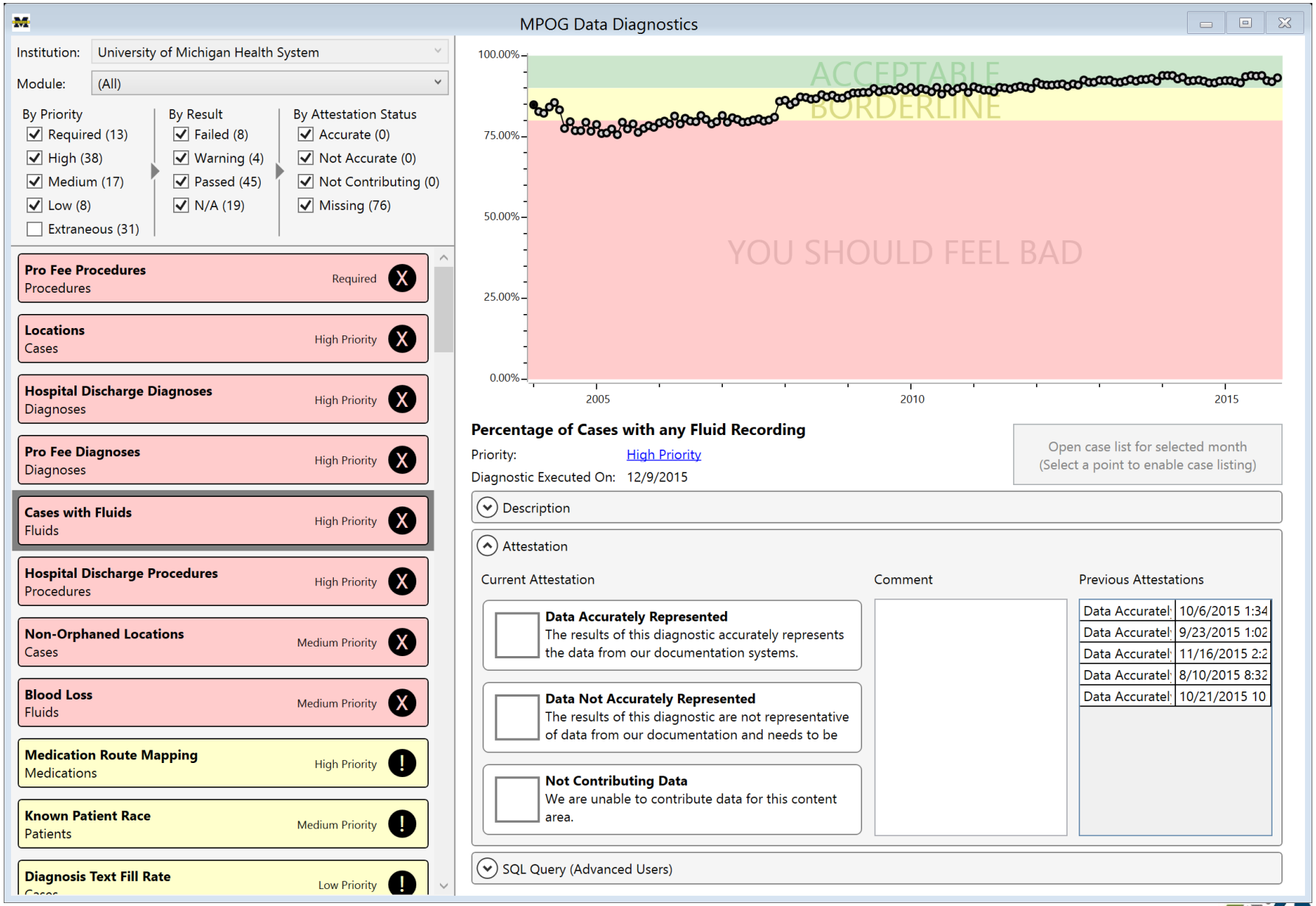
# The three E’s of evidence

- Efficacy
  - Can it work?
  - Prospective controlled trials with very specific protocols
- Effectiveness
  - Does it work?
  - Multicenter observational databases
- Efficiency
  - Is it worth it?
  - Longitudinal database incorporating clinical, cost, and quality of life data

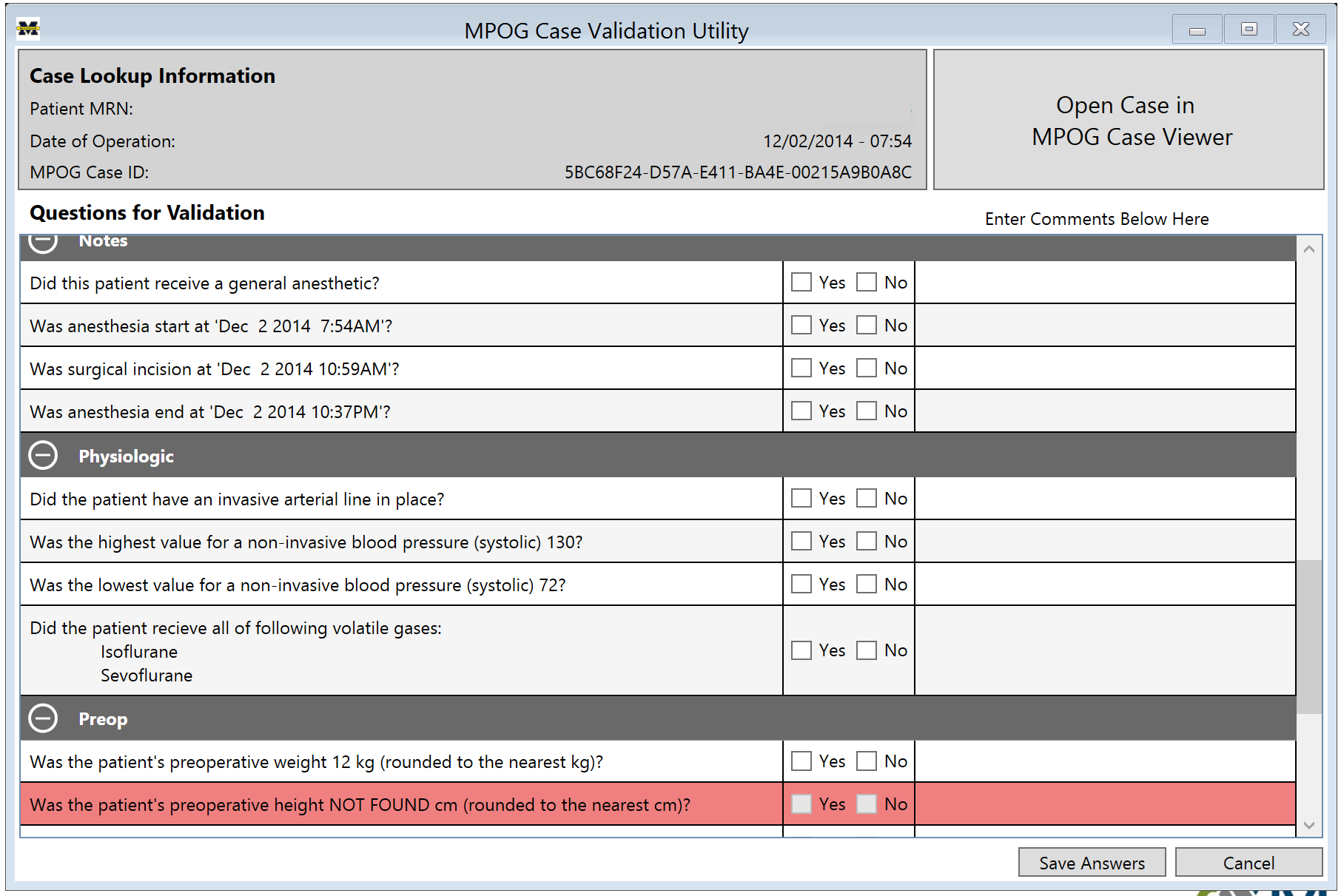
# Lesson #3

Research without rigorous data validation, curation, & self-serve data access is wasted effort

# Data quality obsession

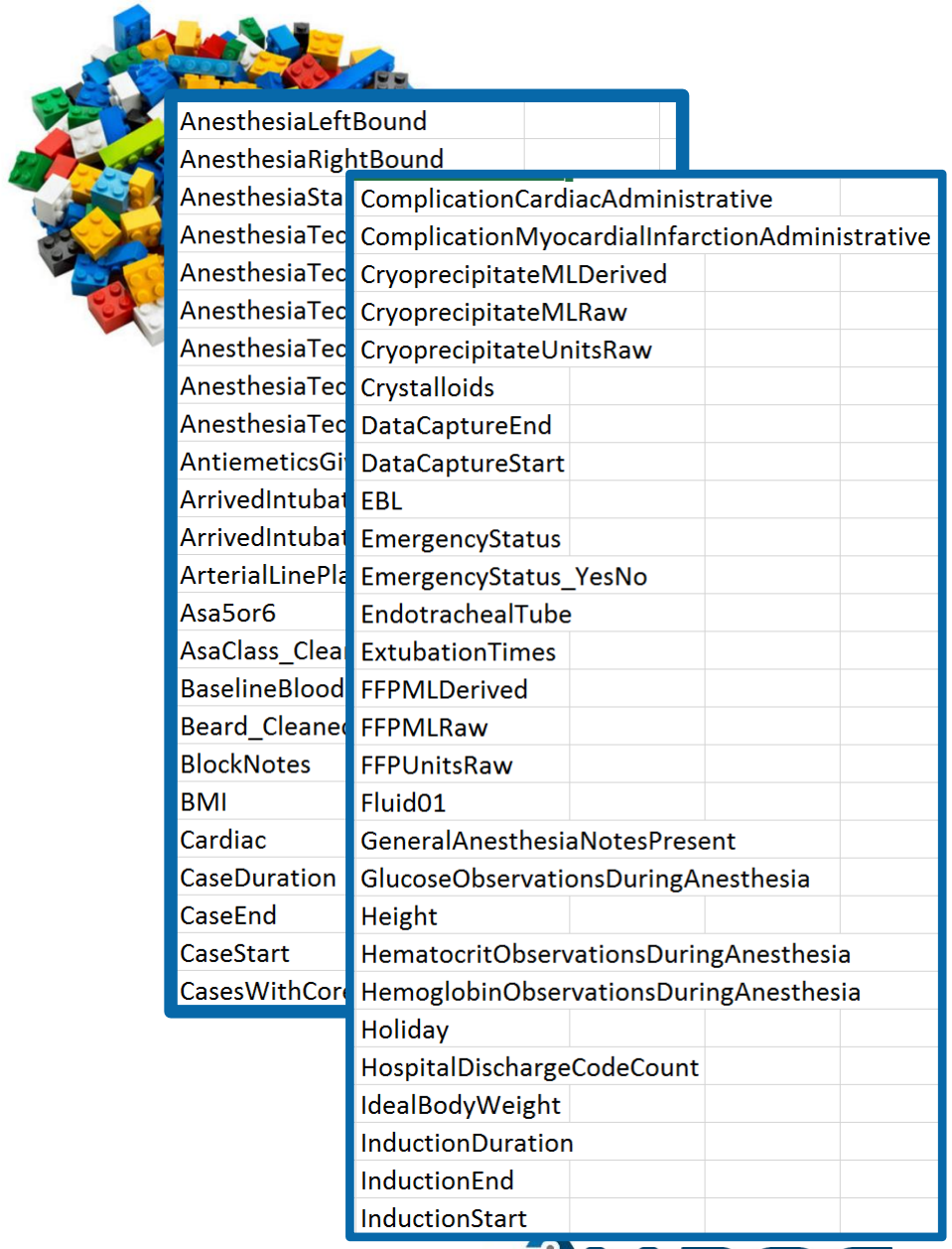


# “Nitty gritty” details



# Data curation

- For example, how do you define diabetes?
  - By ICD9/10, anesthesia H&P, medication, or lab value?
  - Does every project need to re-invent the wheel?
- Build reusable “phenotypes” for various analyses
  - Patient / case characteristics
    - Race, ASA status, comorbidities
    - Emergency, weekend, or cardiac case
  - Exposure variables
    - # of min of hypotension, crystalloid equivalents, PRBC
  - Outcomes
    - Acute kidney injury, 30 day mortality, pulmonary event
- Legos, not sculptures
- Making “technics” not “duplos”
- Go to: https://Phenotypes.mpog.org

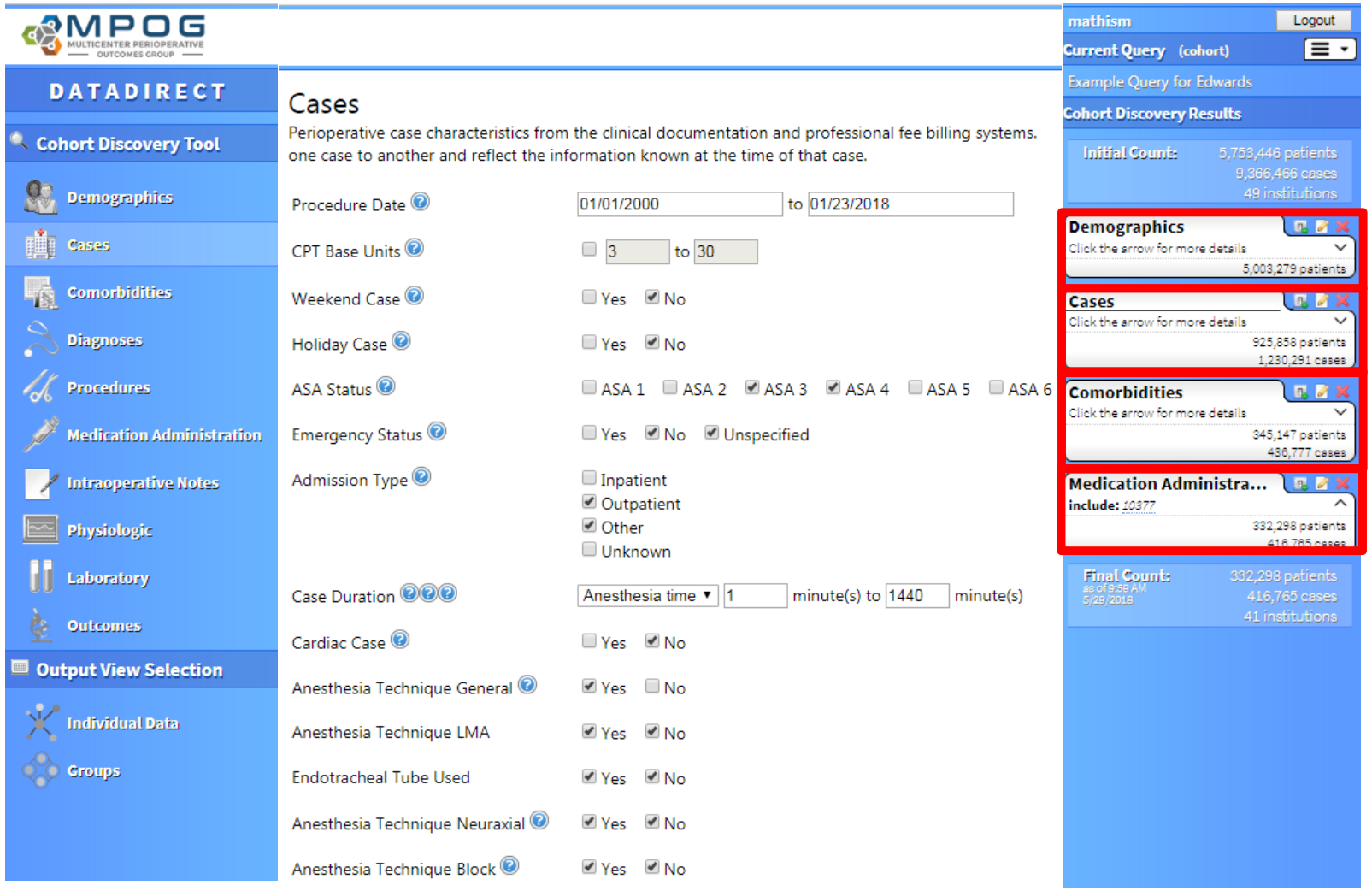


Lesson #4

# Tools make research & QI easier

# Developing a Research Study

- Cohort Discovery – DataDirect




*How many…*

*…adult females…*

*…undergoing elective non-cardiac surgery with general anesthesia…*

*…with hypertension, diabetes, or renal insufficiency…*

*…received heparin during the surgery?*

MPOG

# Developing a Research Study

- Peer Review & Study Registration
  - Single Center: ACRC
  - Multicenter: PCRC

CLINICAL RESEARCH
ANESTHESIOLOG
UNIVERSITY OF MICHIGA

MPOG
MULTICENTER PERIOPERATIVE
OUTCOMES GROUP

About Join Research Quality Apps Dow

## PCRC Review

When a proposal is submitted online to the PCRC, it will be reviewed within 60 days. The PCRC meets on th each month, from 10:00am – 12:00pm Eastern Time Zone. Proposals must be received two weeks prior to a considered for review. Proposals may be approved as is. If so, access will be provided to those data fields f database. Otherwise, the PCRC will make recommendations for changes so that a future submission will be

Members of the PCRC will evaluate proposals based on the following questions:

1. Is the study as presented in the Introduction complete and comprehensive?
2. Is the specific study question concisely presented?
3. Are the data (data fields) requested specifically delineated?
4. Will the data requested answer the question being asked?
5. Is the proposed statistical technique appropriate?
6. Is the literature review complete and comprehensive?

Submit research proposals as email enclosures to mpog-research@med.umich.edu.

Dashboard Login Website Logout

About Join Research Quality Apps Downloads Events/News

This site maintains a list of current research projects, along with their respective meeting notes and recordings below, to ensure productive collaboration in research areas. If you are interested in submitting a research project, first review this list to prevent duplication or competition. If you have a similar research area feel free to contact those involved in the project to determine if collaboration with that project is possible, or a closely related project may be appropriate.

Click on a project title to view a copy of the proposal.

Show 10 entries Search:

| Project # | Date Presented | Institution | First Author | Proposal and Supporting Documents | Status |
|---|---|---|---|---|---|
| PCRC-0056 | 03/12/2018 | Weill Cornell | White | The Association of Race with Utilization | Accepted |
| PCRC-0054 | 01/08/2018 | Virginia | Blank | Management of ventilation for | Accepted |
| PCRC-0052 | 01/26/2018 | Michigan | Shanks | Automated Identification and Validation of Detecting Physiologically | Accepted |

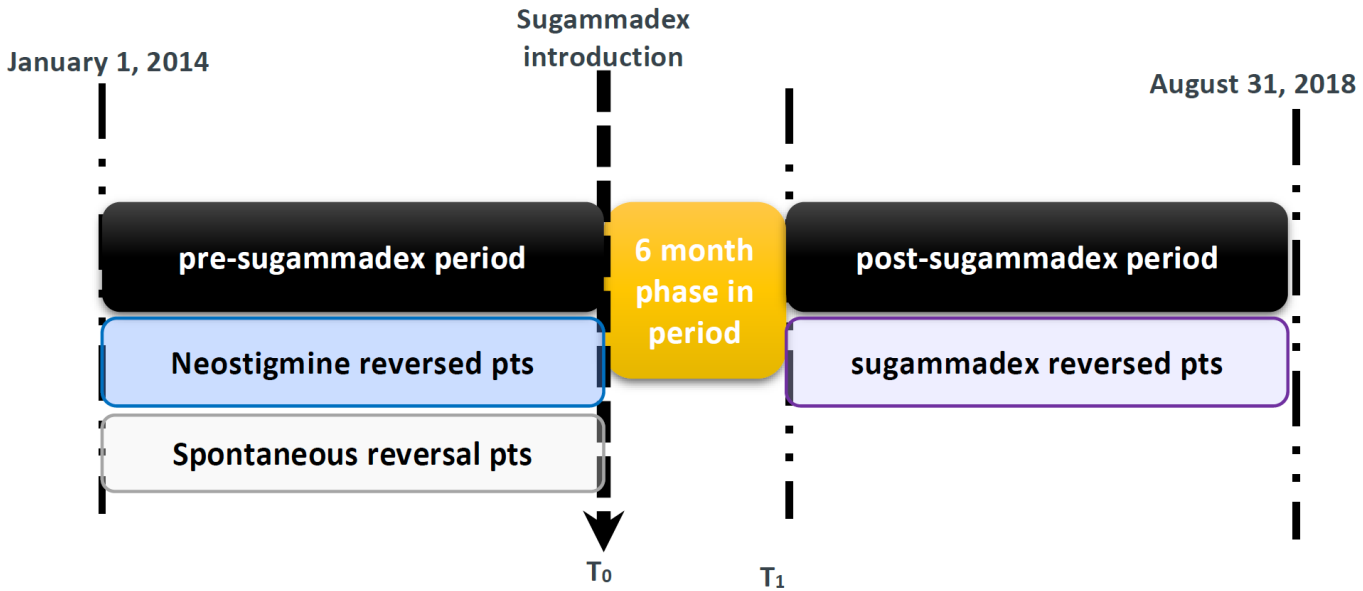
MPOG

# Where has research helped the quality mission of MPOG?

- Lung Protective Ventilation
- Acute Kidney Injury
- CPT prediction
- Patient linking
- Pulmonary complications

# MPOG analysis of sugammadex

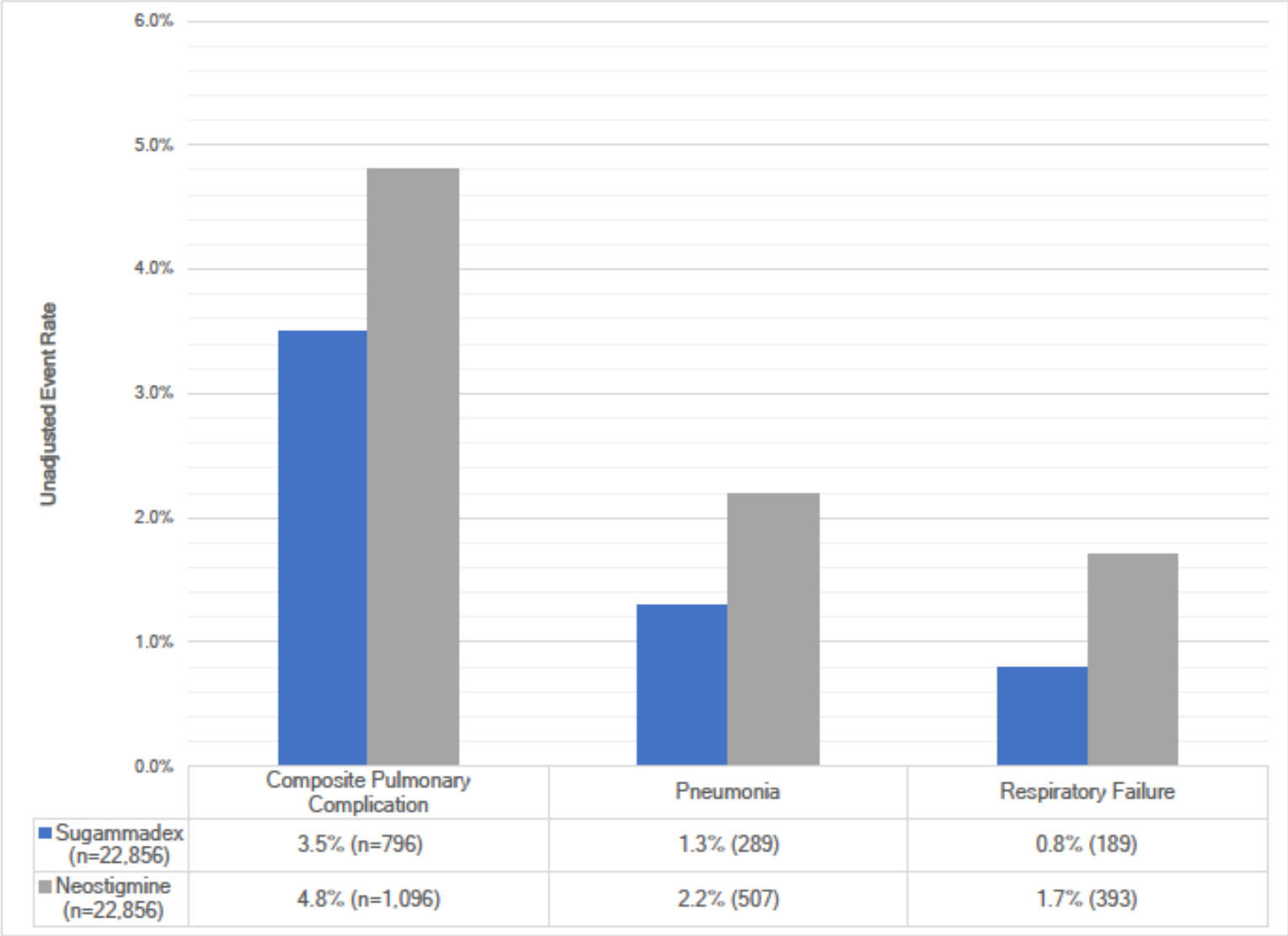
- 13 MPOG centers, 2014-2018




N= 122,025 cases eligible for matching
N= 23,899 sugammadex cases
N= 77,549 neostigmine cases
N= 20,577 spontaneous reversal cases

# Compare apples to apples

- “exact” matched on age, procedure, ASA status, obesity, cardiac disease, pulmonary disease, CHF, liver disease
- Adjust for last TOF before extubation, fluid balance, opioids, time from NMB to extubation, NMB to reversal




| | Composite Pulmonary Complication | Pneumonia | Respiratory Failure |
|---|---|---|---|
| Sugammadex (n=22,856) | 3.5% (n=796) | 1.3% (289) | 0.8% (189) |
| Neostigmine (n=22,856) | 4.8% (n=1,096) | 2.2% (507) | 1.7% (393) |

Figure 1: Major pulmonary complication event rates (unadjusted) in matched cohort of patients undergoing noncardiac inpatient surgery

MPOG

# How much does it matter?

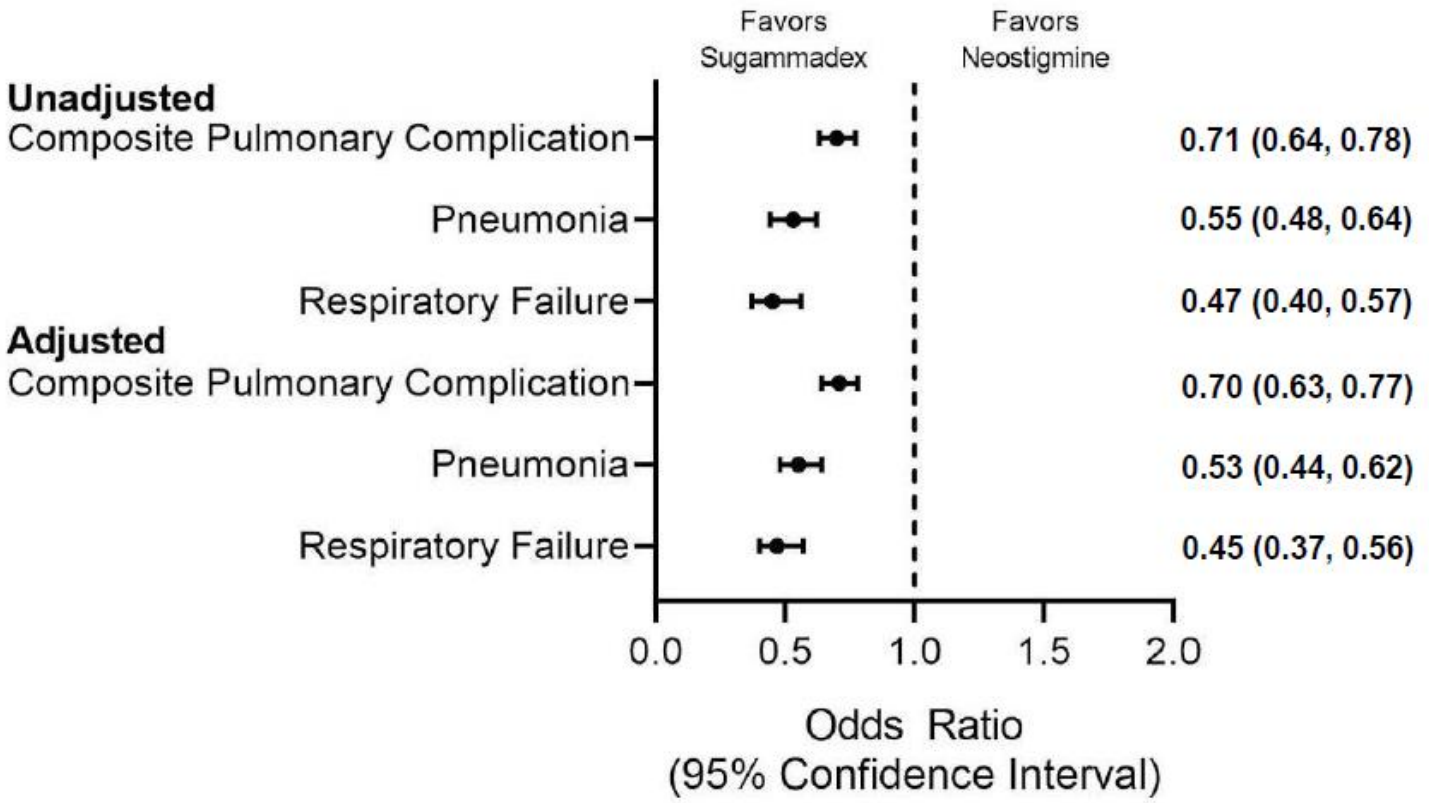



Figure 2: Unadjusted and adjusted association of sugammadex versus neostigmine administration with major pulmonary complications after inpatient noncardiac surgery

# Want to learn more about research process?

- https://medicine.umich.edu/dept/anesthesiology/research/outcomes-research

Zingerman's® DELICATESSEN

***LUNCH: 11:15 – 12:15***

MPOG

# Afternoon Agenda

- ACQR/Programmer Q & A
- ACQR Round Table Discussion
- Measure Updates
- Data Direct 2.0 Preview

# ACQR/Programmer Q & A

- IM Assistant – New User Guide
  - How to Interpret/use logs to troubleshoot data issues
- BRI Questions

# ACQR Round Table Discussion: Toolkits and EPIC Build

- SSI Toolkit Feedback
  - Did you find it helpful?
  - Have you shared with your team?
  - Recommendations for additional content
- Next Toolkit Ideas?
- Epic Build Discussion
  - What variables or structured builds have you worked with your Epic team to add to enable participation with ASPIRE measures?
  - Any recommendations for how to be successful with these modifications/additions?
  - Are you willing to share your build with another health system?

# Import Manager Assistant

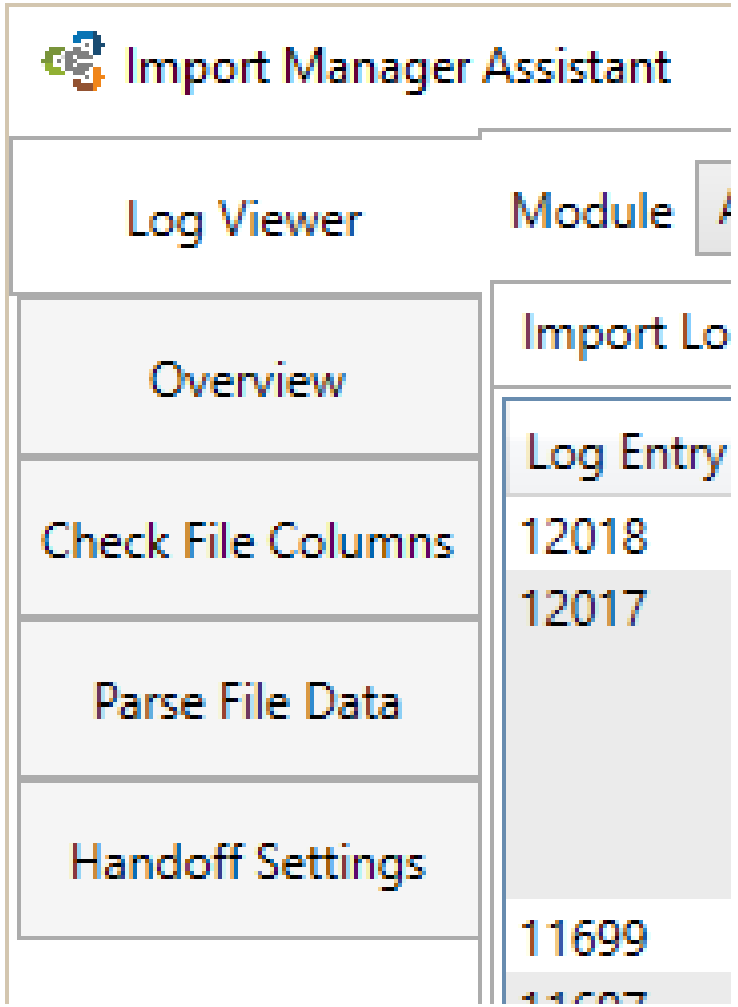
Primarily for technical staff, but useful for:

- ***Viewing logs/handoff queue*:** Where is my data? Is it coming? Did any errors occur?
- ***Overall status of data import***: At a quick glance, how is the import going? What am I waiting for? What issues have arisen?
- ***File column issues***: For files that have an issue with the number of columns, which rows are affected? Do they have too many or too few columns? How many columns are there supposed to be?
- ***Viewing imported files***: What do the underlying files look like?
- ***Handoff Settings***: What are the settings for handoff?

# Import Manager Assistant

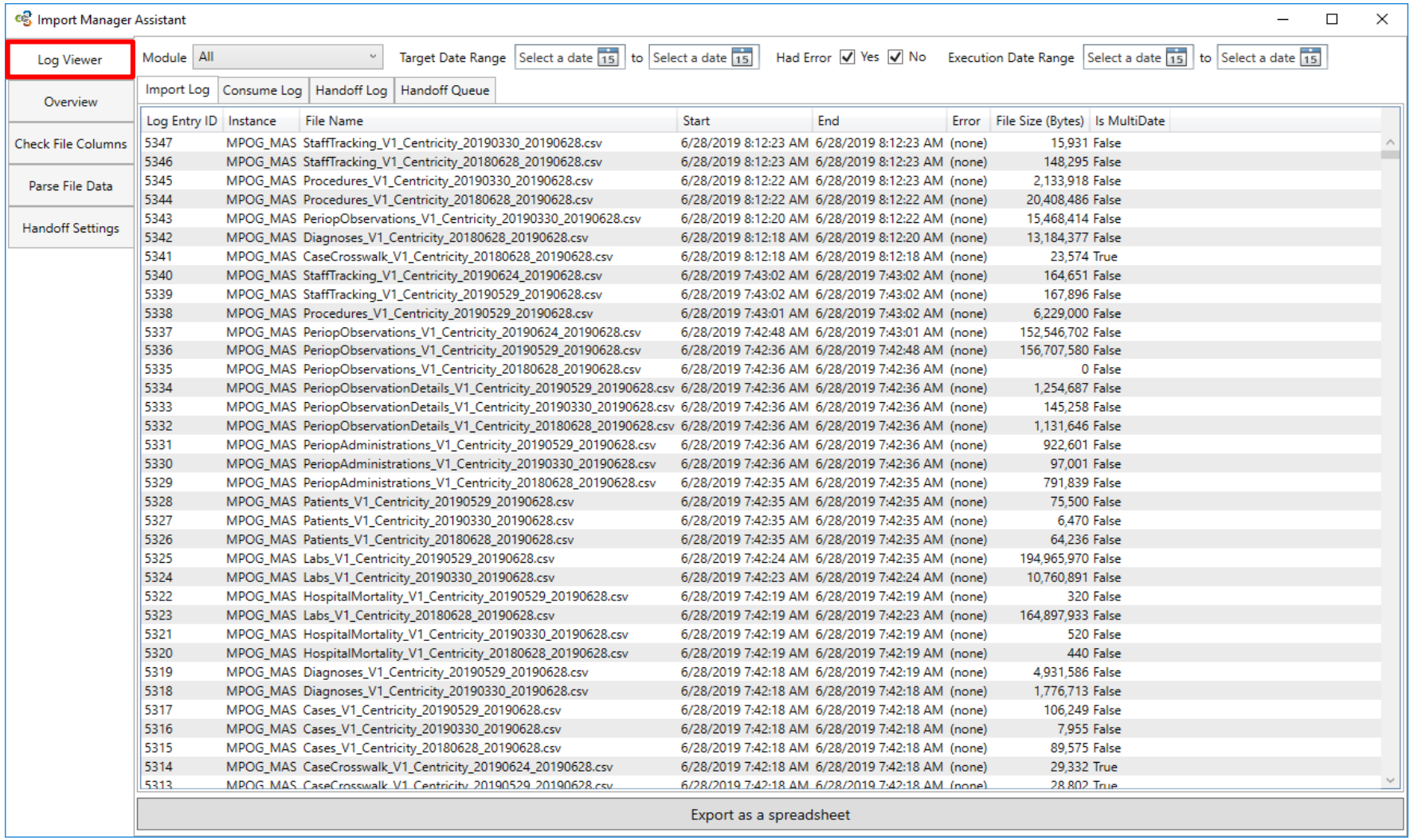
There are five tabs to address these issues:

- ***Log Viewer***: This tab displays the various import manager logs and the handoff queue.
- ***Overview***: This tab contains a color-coded grid representing the current status of import manager. This is a summary view of the logs.
- ***Check File Columns***: This tab enables the user to see which rows in an imported file have the incorrect number of columns.
- ***Parse File Data***: This tab enables the user to view the contents of an imported file.
- ***Handoff Settings***: This tab contains the current settings for handoff for this instance.



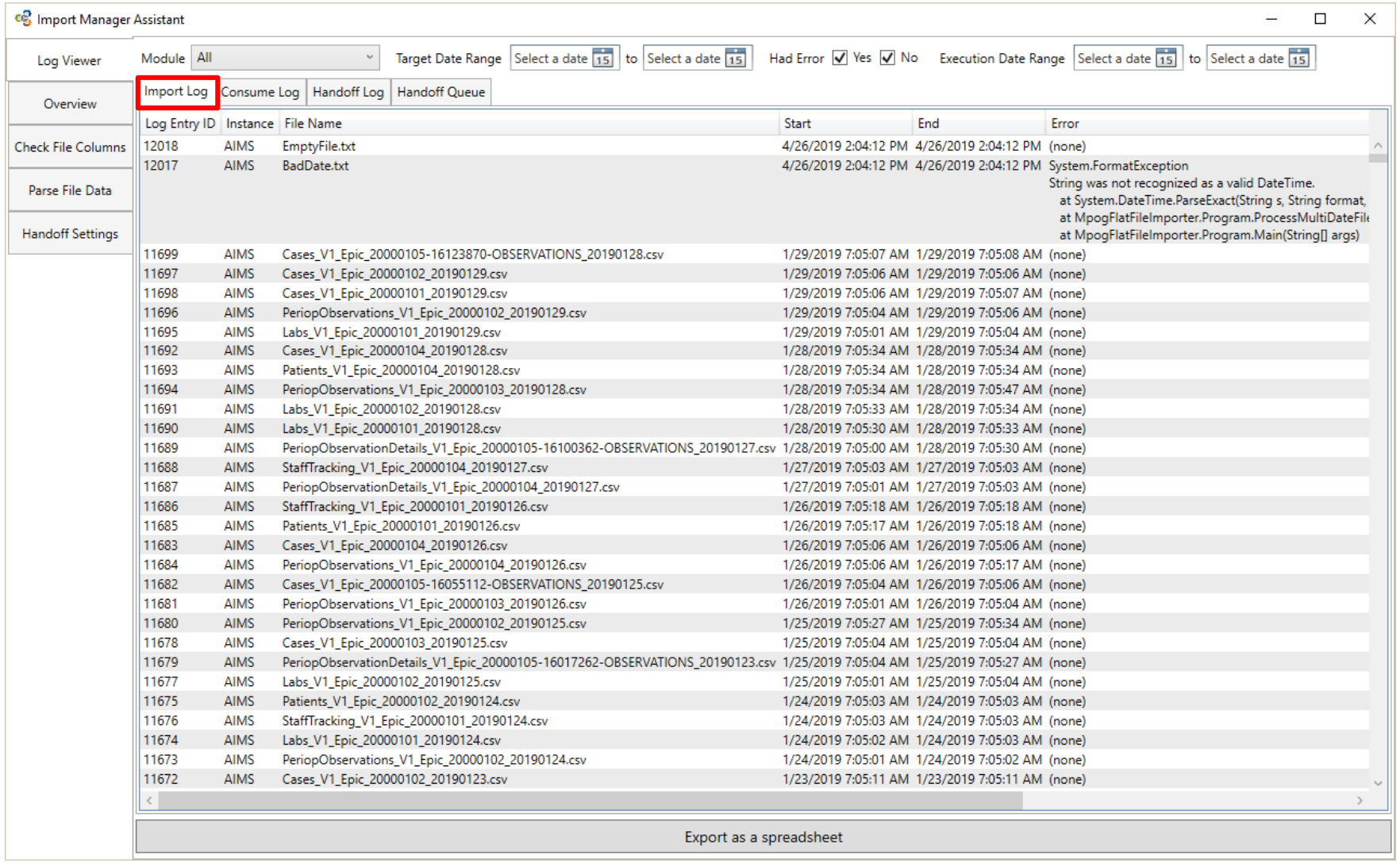
# First Tab: Log Viewer

The Log Viewer tab displays the import, consume, and handoff logs as well as the handoff queue .



# Log Viewer: Import Log

The import log shows which files have been brought into the import manager database (step 1 of 3).

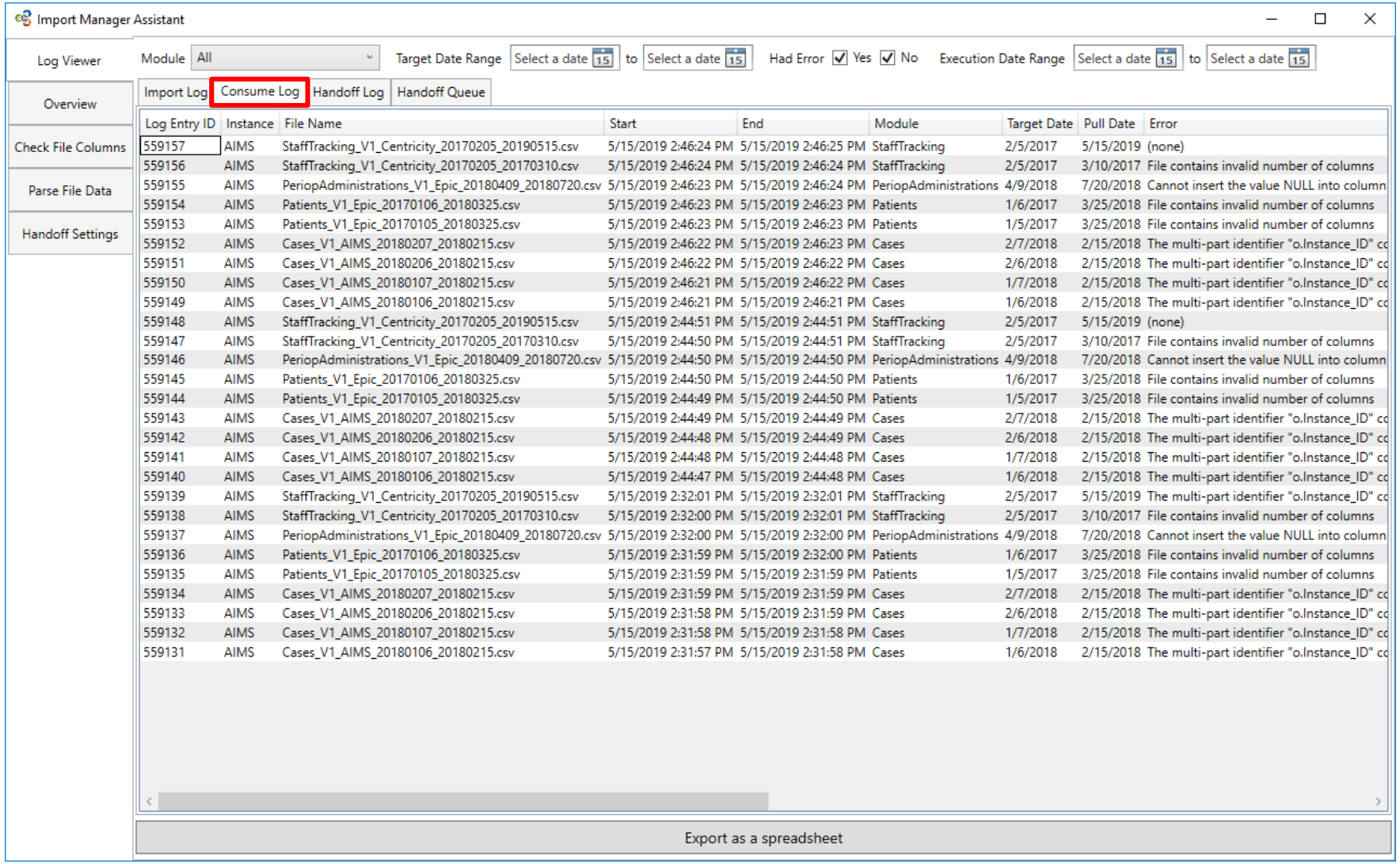



| Log Entry ID | Instance | File Name | Start | End | Error |
|---|---|---|---|---|---|
| 12018 | AIMS | EmptyFile.txt | 4/26/2019 2:04:12 PM | 4/26/2019 2:04:12 PM | (none) |
| 12017 | AIMS | BadDate.txt | 4/26/2019 2:04:12 PM | 4/26/2019 2:04:12 PM | System.FormatException String was not recognized as a valid DateTime. at System.DateTime.ParseExact(String s, String format, at MpogFlatFileImporter.Program.ProcessMultiDateFil at MpogFlatFileImporter.Program.Main(String[] args) |
| 11699 | AIMS | Cases_V1_Epic_20000105-16123870-OBSERVATIONS_20190128.csv | 1/29/2019 7:05:07 AM | 1/29/2019 7:05:08 AM | (none) |
| 11697 | AIMS | Cases_V1_Epic_20000102_20190129.csv | 1/29/2019 7:05:06 AM | 1/29/2019 7:05:06 AM | (none) |
| 11698 | AIMS | Cases_V1_Epic_20000101_20190129.csv | 1/29/2019 7:05:06 AM | 1/29/2019 7:05:07 AM | (none) |
| 11696 | AIMS | PeriopObservations_V1_Epic_20000102_20190129.csv | 1/29/2019 7:05:04 AM | 1/29/2019 7:05:06 AM | (none) |
| 11695 | AIMS | Labs_V1_Epic_20000101_20190129.csv | 1/29/2019 7:05:01 AM | 1/29/2019 7:05:04 AM | (none) |
| 11692 | AIMS | Cases_V1_Epic_20000104_20190128.csv | 1/28/2019 7:05:34 AM | 1/28/2019 7:05:34 AM | (none) |
| 11693 | AIMS | Patients_V1_Epic_20000104_20190128.csv | 1/28/2019 7:05:34 AM | 1/28/2019 7:05:34 AM | (none) |
| 11694 | AIMS | PeriopObservations_V1_Epic_20000103_20190128.csv | 1/28/2019 7:05:34 AM | 1/28/2019 7:05:47 AM | (none) |
| 11691 | AIMS | Labs_V1_Epic_20000102_20190128.csv | 1/28/2019 7:05:33 AM | 1/28/2019 7:05:34 AM | (none) |
| 11690 | AIMS | Labs_V1_Epic_20000101_20190128.csv | 1/28/2019 7:05:30 AM | 1/28/2019 7:05:33 AM | (none) |
| 11689 | AIMS | PeriopObservationDetails_V1_Epic_20000105-16100362-OBSERVATIONS_20190127.csv | 1/28/2019 7:05:00 AM | 1/28/2019 7:05:30 AM | (none) |
| 11688 | AIMS | StaffTracking_V1_Epic_20000104_20190127.csv | 1/27/2019 7:05:03 AM | 1/27/2019 7:05:03 AM | (none) |
| 11687 | AIMS | PeriopObservationDetails_V1_Epic_20000104_20190127.csv | 1/27/2019 7:05:01 AM | 1/27/2019 7:05:03 AM | (none) |
| 11686 | AIMS | StaffTracking_V1_Epic_20000101_20190126.csv | 1/26/2019 7:05:18 AM | 1/26/2019 7:05:18 AM | (none) |
| 11685 | AIMS | Patients_V1_Epic_20000101_20190126.csv | 1/26/2019 7:05:17 AM | 1/26/2019 7:05:18 AM | (none) |
| 11683 | AIMS | Cases_V1_Epic_20000104_20190126.csv | 1/26/2019 7:05:06 AM | 1/26/2019 7:05:06 AM | (none) |
| 11684 | AIMS | PeriopObservations_V1_Epic_20000104_20190126.csv | 1/26/2019 7:05:06 AM | 1/26/2019 7:05:17 AM | (none) |
| 11682 | AIMS | Cases_V1_Epic_20000105-16055112-OBSERVATIONS_20190125.csv | 1/26/2019 7:05:04 AM | 1/26/2019 7:05:06 AM | (none) |
| 11681 | AIMS | PeriopObservations_V1_Epic_20000103_20190126.csv | 1/26/2019 7:05:01 AM | 1/26/2019 7:05:04 AM | (none) |
| 11680 | AIMS | PeriopObservations_V1_Epic_20000102_20190125.csv | 1/25/2019 7:05:27 AM | 1/25/2019 7:05:34 AM | (none) |
| 11678 | AIMS | Cases_V1_Epic_20000103_20190125.csv | 1/25/2019 7:05:04 AM | 1/25/2019 7:05:04 AM | (none) |
| 11679 | AIMS | PeriopObservationDetails_V1_Epic_20000105-16017262-OBSERVATIONS_20190123.csv | 1/25/2019 7:05:04 AM | 1/25/2019 7:05:27 AM | (none) |
| 11677 | AIMS | Labs_V1_Epic_20000102_20190125.csv | 1/25/2019 7:05:01 AM | 1/25/2019 7:05:04 AM | (none) |
| 11675 | AIMS | Patients_V1_Epic_20000102_20190124.csv | 1/24/2019 7:05:03 AM | 1/24/2019 7:05:03 AM | (none) |
| 11676 | AIMS | StaffTracking_V1_Epic_20000101_20190124.csv | 1/24/2019 7:05:03 AM | 1/24/2019 7:05:03 AM | (none) |
| 11674 | AIMS | Labs_V1_Epic_20000101_20190124.csv | 1/24/2019 7:05:02 AM | 1/24/2019 7:05:03 AM | (none) |
| 11673 | AIMS | PeriopObservations_V1_Epic_20000102_20190124.csv | 1/24/2019 7:05:01 AM | 1/24/2019 7:05:02 AM | (none) |
| 11672 | AIMS | Cases_V1_Epic_20000102_20190123.csv | 1/23/2019 7:05:11 AM | 1/23/2019 7:05:11 AM | (none) |

- If there is an end time and no error, the import was successful.
- If there is not an end time, either the import is in progress or was interrupted.
- An error means the file was not imported and will be retried during the next import run.

# Log Viewer: Consume Log

The consume log shows which data has been brought into the staging tables (step 2 of 3).



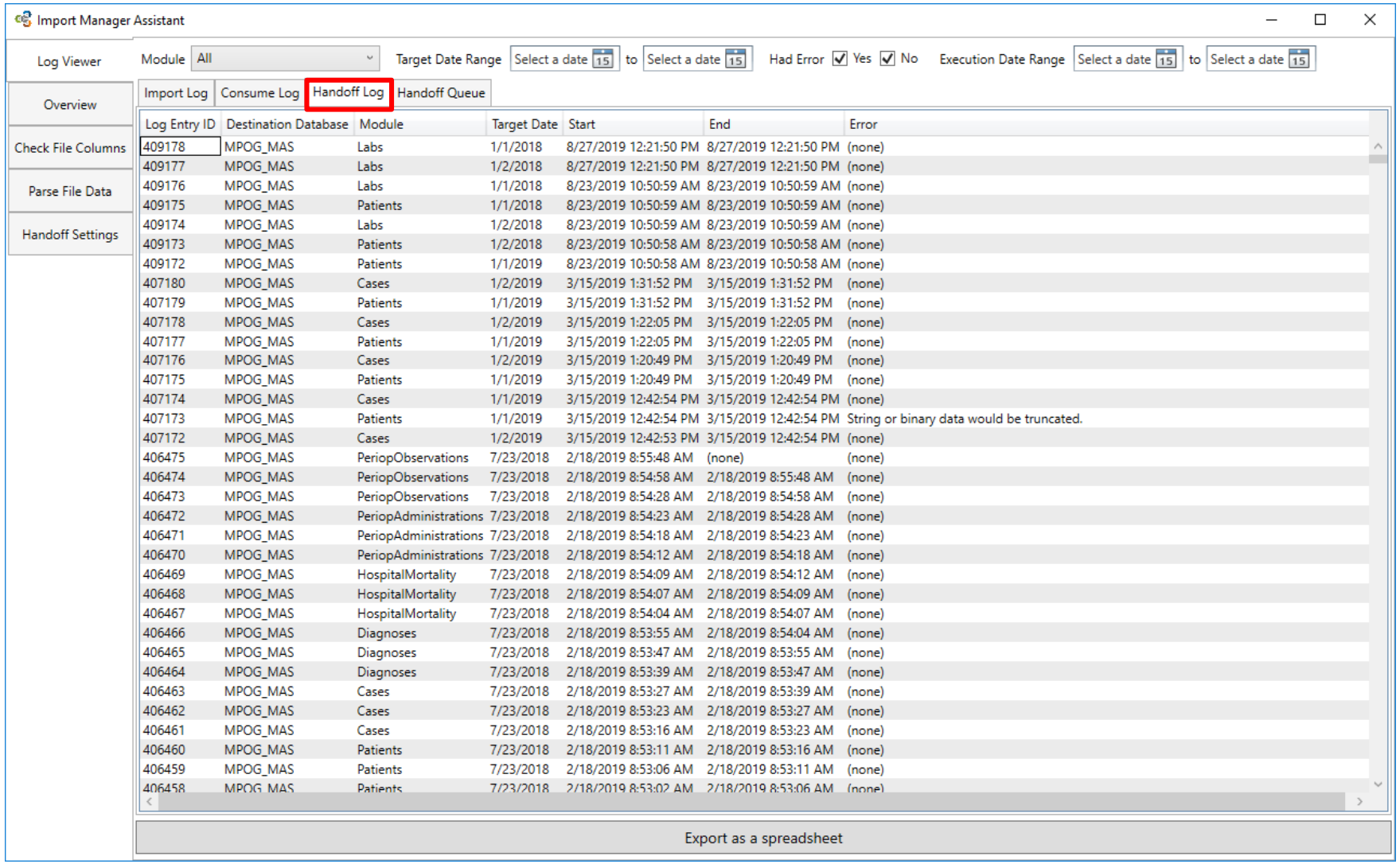

- The same applies here with end times and error messages.
- Start and end times refer to when the consume occurred.
- Target date refers to the date of the data itself (typically date of service).
- Pull date refers to the date that the data was extracted.
- Module refers to the type of data.

# Log Viewer: Data within each module

| Module | Data Contained |
|---|---|
| **Cases** | Date of Service<br>Operating Room<br>Admission Type<br>Surgical Service<br>Procedure Text<br>Diagnosis Text<br>Organization (used to determine which MPOG_MAS database to use) |
| **Diagnoses** | Hospital Discharge Diagnosis and Professional Fee Diagnosis Codes |
| **HospitalMortality** | Date of Death (in facility only) |
| **Labs** | Formal Labs and  Point-of-care Labs |
| **Patients** | Patient name<br>MRN<br>Gender<br>Ethnicity<br>Race |
| **Payers** | Insurance and other payer data (QCDR participants only) |
| **PeriopAdministrations** | Fluids and Medications |
| **PeriopObservations** | Preoperative Notes<br>Intraoperative Notes<br>Monitor Data |
| **Procedures** | Professional Fee Procedure Codes<br>Hospital Discharge Procedure Codes |
| **StaffTracking** | Staff sign ins/outs and role (e.g. attending) |

# Log Viewer: Handoff Log

The handoff log shows which data has been processed into the final databases (step 3 of 3).




End times and error messages interpretations apply here as well.

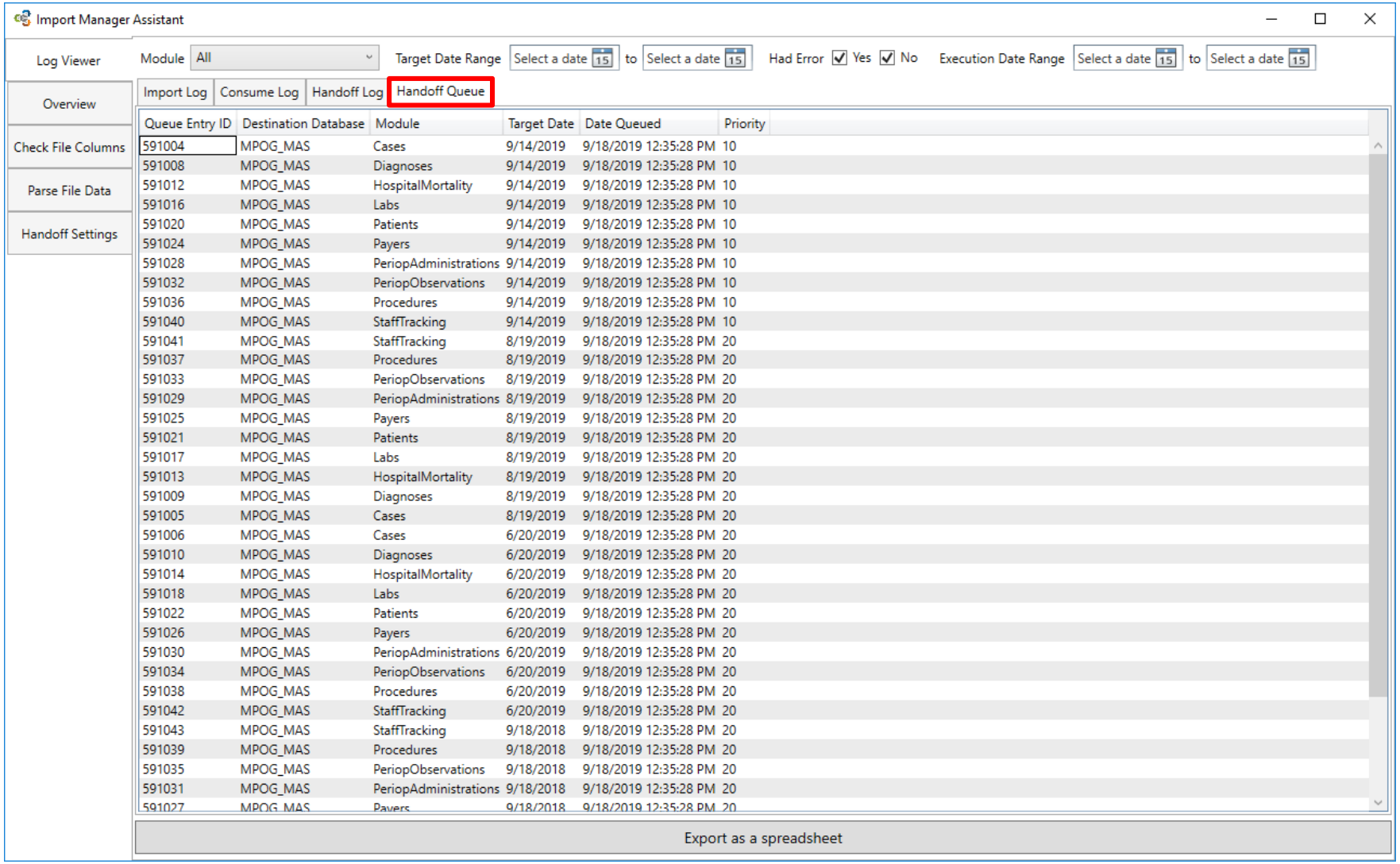
Destination database refers to final MPOG_MAS database the data was inserted into (if handoff was successful).

Target date, start and end date/times, and module carry the same meanings.

If there is an error message or there is no end date listed, the data was NOT brought into the final database.

# Log Viewer: Handoff Queue

Handoff queue displays data that will be handed off, but hasn't been

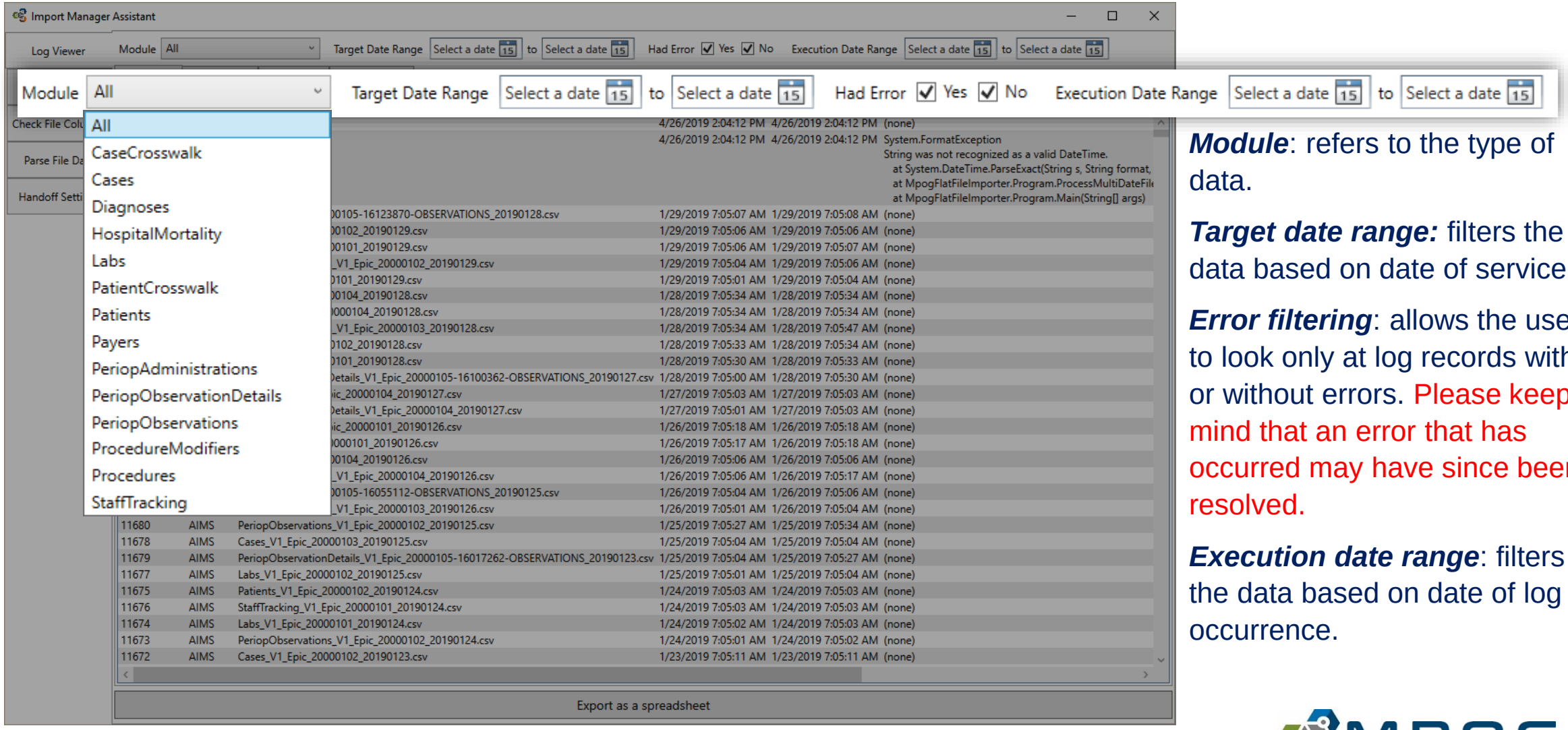



| Queue Entry ID | Destination Database | Module | Target Date | Date Queued | Priority |
|---|---|---|---|---|---|
| 591004 | MPOG_MAS | Cases | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591008 | MPOG_MAS | Diagnoses | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591012 | MPOG_MAS | HospitalMortality | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591016 | MPOG_MAS | Labs | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591020 | MPOG_MAS | Patients | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591024 | MPOG_MAS | Payers | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591028 | MPOG_MAS | PeriopAdministrations | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591032 | MPOG_MAS | PeriopObservations | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591036 | MPOG_MAS | Procedures | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591040 | MPOG_MAS | StaffTracking | 9/14/2019 | 9/18/2019 12:35:28 PM | 10 |
| 591041 | MPOG_MAS | StaffTracking | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591037 | MPOG_MAS | Procedures | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591033 | MPOG_MAS | PeriopObservations | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591029 | MPOG_MAS | PeriopAdministrations | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591025 | MPOG_MAS | Payers | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591021 | MPOG_MAS | Patients | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591017 | MPOG_MAS | Labs | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591013 | MPOG_MAS | HospitalMortality | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591009 | MPOG_MAS | Diagnoses | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591005 | MPOG_MAS | Cases | 8/19/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591006 | MPOG_MAS | Cases | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591010 | MPOG_MAS | Diagnoses | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591014 | MPOG_MAS | HospitalMortality | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591018 | MPOG_MAS | Labs | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591022 | MPOG_MAS | Patients | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591026 | MPOG_MAS | Payers | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591030 | MPOG_MAS | PeriopAdministrations | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591034 | MPOG_MAS | PeriopObservations | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591038 | MPOG_MAS | Procedures | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591042 | MPOG_MAS | StaffTracking | 6/20/2019 | 9/18/2019 12:35:28 PM | 20 |
| 591043 | MPOG_MAS | StaffTracking | 9/18/2018 | 9/18/2019 12:35:28 PM | 20 |
| 591039 | MPOG_MAS | Procedures | 9/18/2018 | 9/18/2019 12:35:28 PM | 20 |
| 591035 | MPOG_MAS | PeriopObservations | 9/18/2018 | 9/18/2019 12:35:28 PM | 20 |
| 591031 | MPOG_MAS | PeriopAdministrations | 9/18/2018 | 9/18/2019 12:35:28 PM | 20 |
| 591027 | MPOG_MAS | Payers | 9/18/2018 | 9/18/2019 12:35:28 PM | 20 |

- Data will be handed off by lowest priority number, then by most recent target date.
- Priority meanings:
  - **10**: Brand new data
  - **20**: Re-extracted data
  - **30**: Remapped data
  - **50**: Missed cases
  - **60**: Missed labs
  - Other priority numbers: Custom
- Destination database, module, and target date have same meanings as other tabs.

# Log Viewer: Filters

All logs and the queue can be filtered (filters affect all tabs).




***Module***: refers to the type of data.

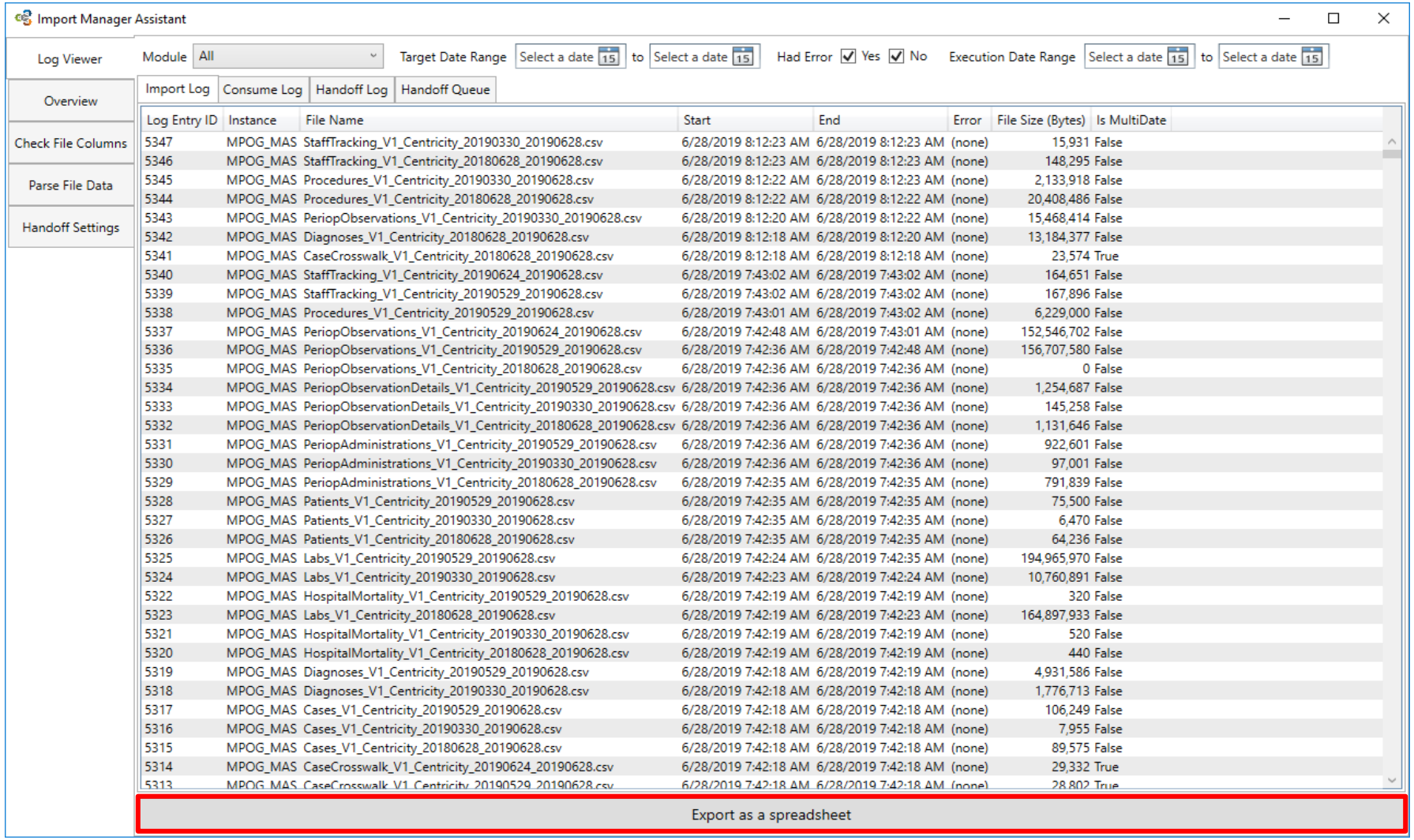
***Target date range:*** filters the data based on date of service.

***Error filtering***: allows the user to look only at log records with or without errors. Please keep in mind that an error that has occurred may have since been resolved.

***Execution date range***: filters the data based on date of log occurrence.

# Log Viewer: Export as spreadsheet

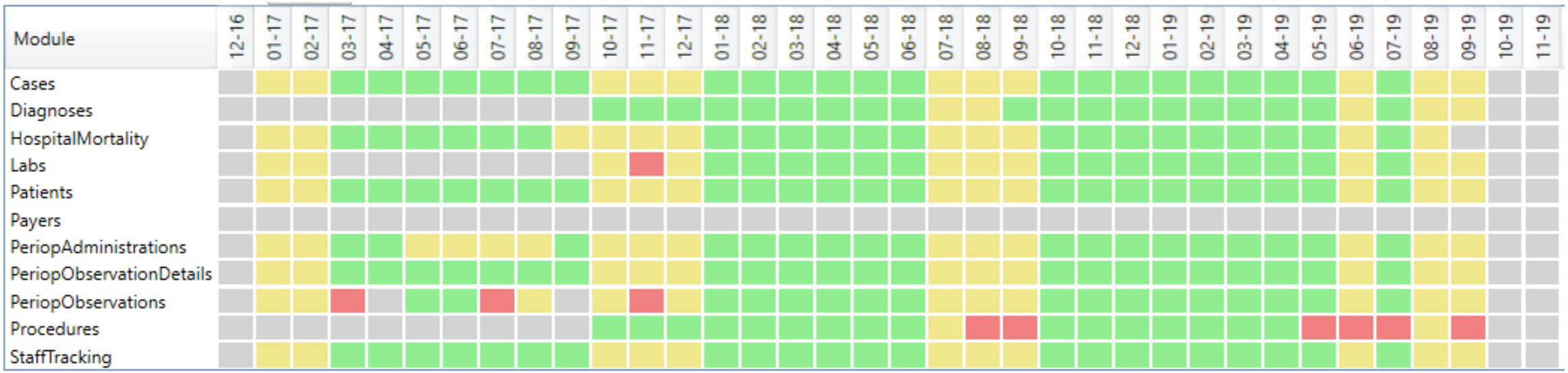
Data from the log viewer tab can be exported as a spreadsheet.




- Each of the logs and the queue will be in the spreadsheet as a separate tab.
- Exported spreadsheet will have the same filters applied as the application.
- Only the 10,000 most recent rows are shown in the application, but the spreadsheet doesn't have a limit.

# Second Tab: Overview

The overview tab provides a color-coded grid that summarizes the log information.

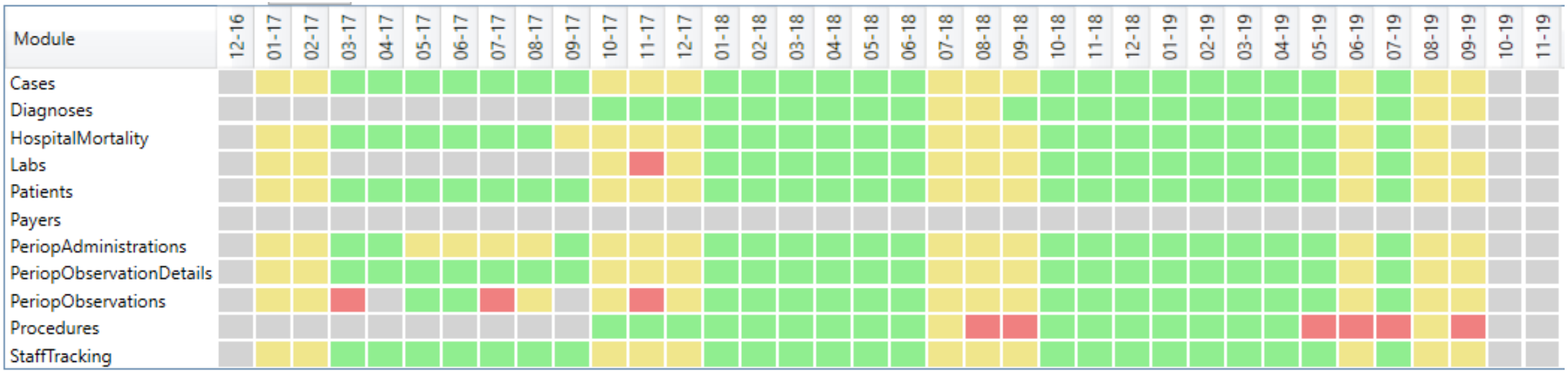



The columns represent months of data, while rows represent modules (types of data). Each box shows the overall status of that type of data for that month.

The box colors have the following meanings :

- *Green* - indicates data that has successfully completed all Import Manager steps.
- *Yellow* - indicates data that has successfully completed some steps, but still has further steps to complete.
- *Red* - indicates one or more errors.
- *Grey* - indicates missing data.

# Overview Continued…



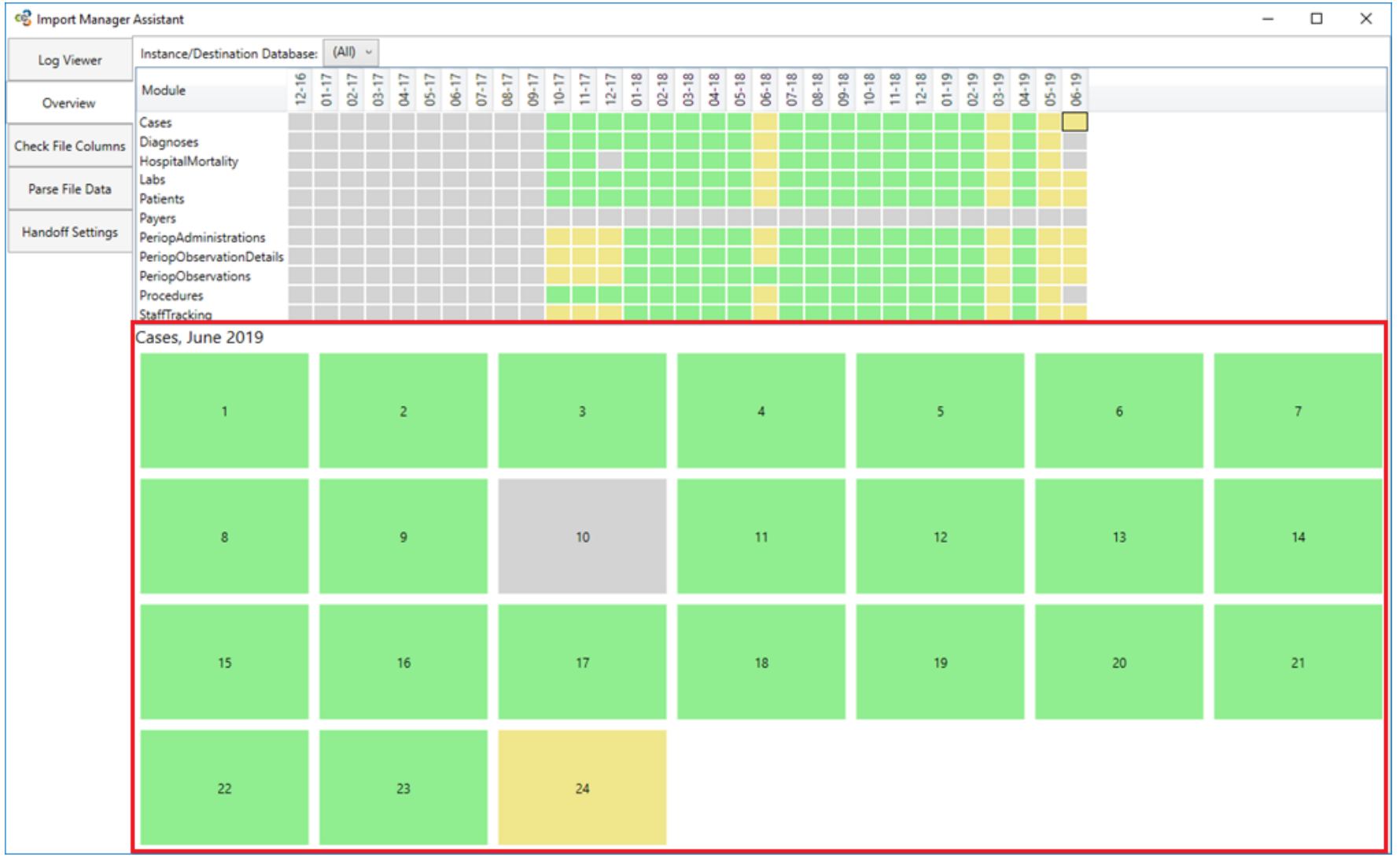

The color for a month will indicate the status in the following order:

1. If there are any errors for any day that month, display the month as red.
2. If there are not any errors but data is still being processed for one or more days, display yellow.
3. If there are not any errors, no data is being processed, but there are one or more days without any data, display grey.

If every day of the month has successfully completed processing, display green.

# Overview Continued…

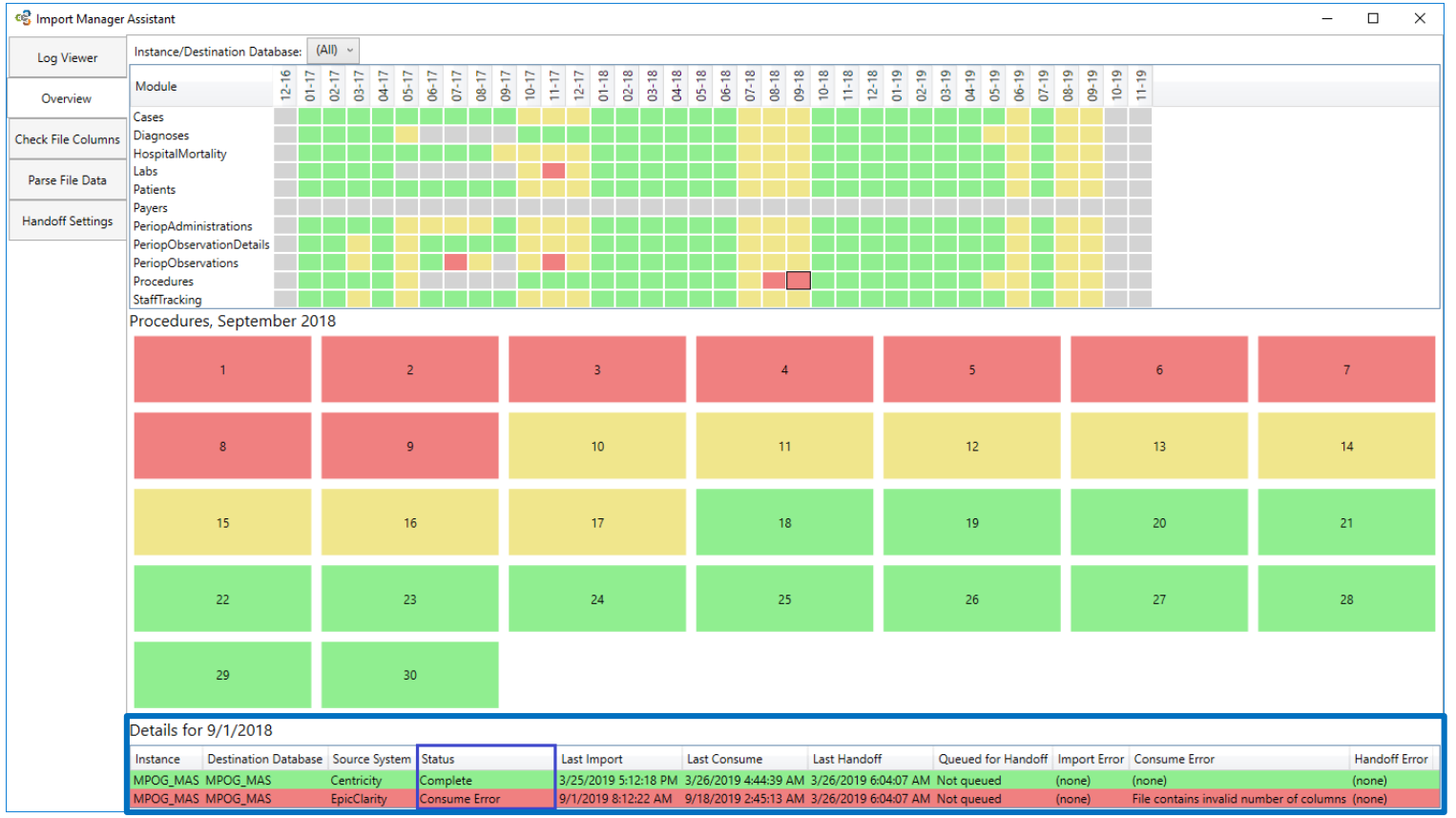
Any month/module box can be clicked to drill down to the status of each day.



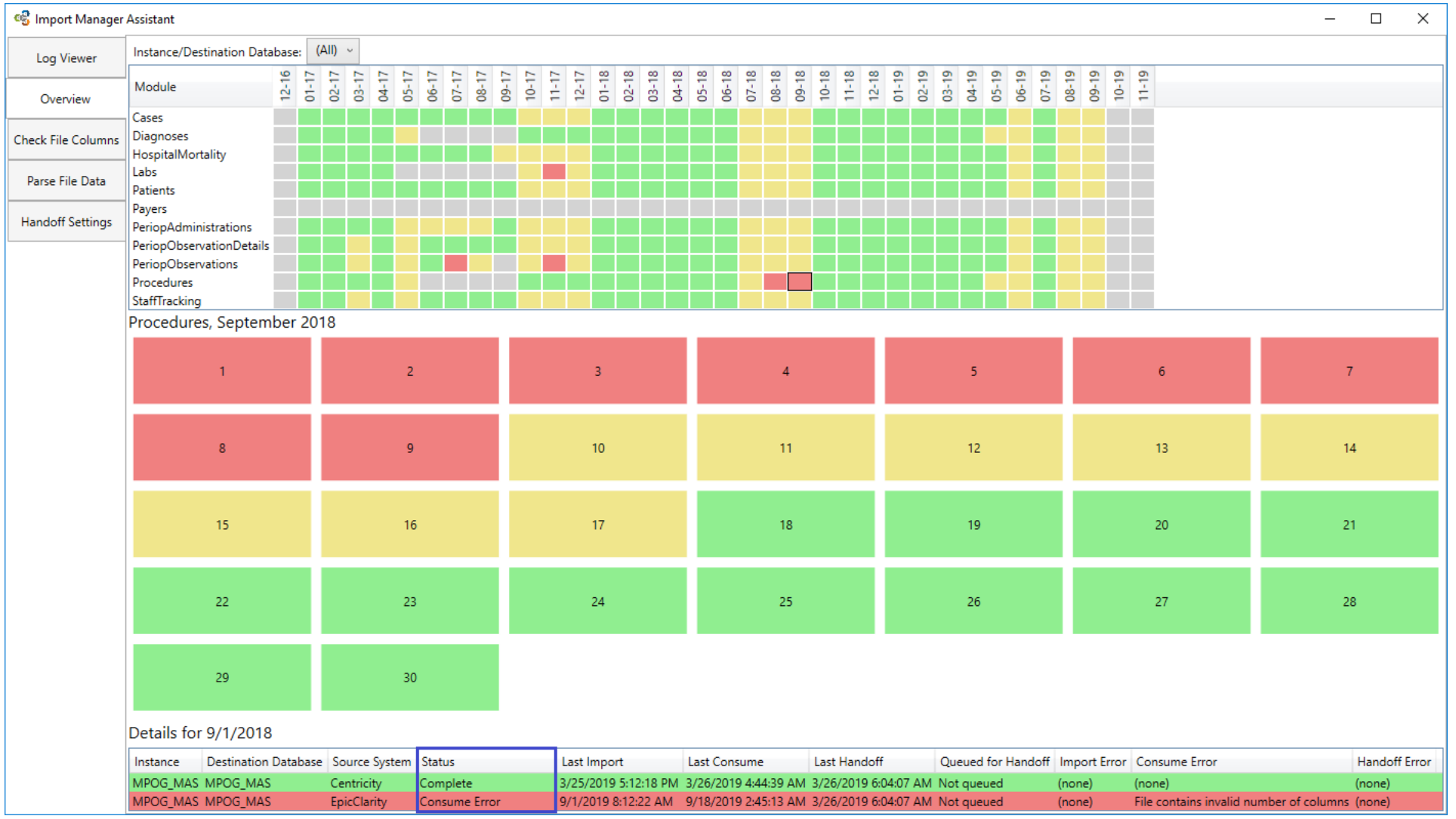
# Overview Continued…

Click on any day to drill down to the source system. The source system indicates where the data was extracted from (electronic health record, billing software, etc.).

More details about errors are shown here. Refer to the status column to see where the data currently is in the process.

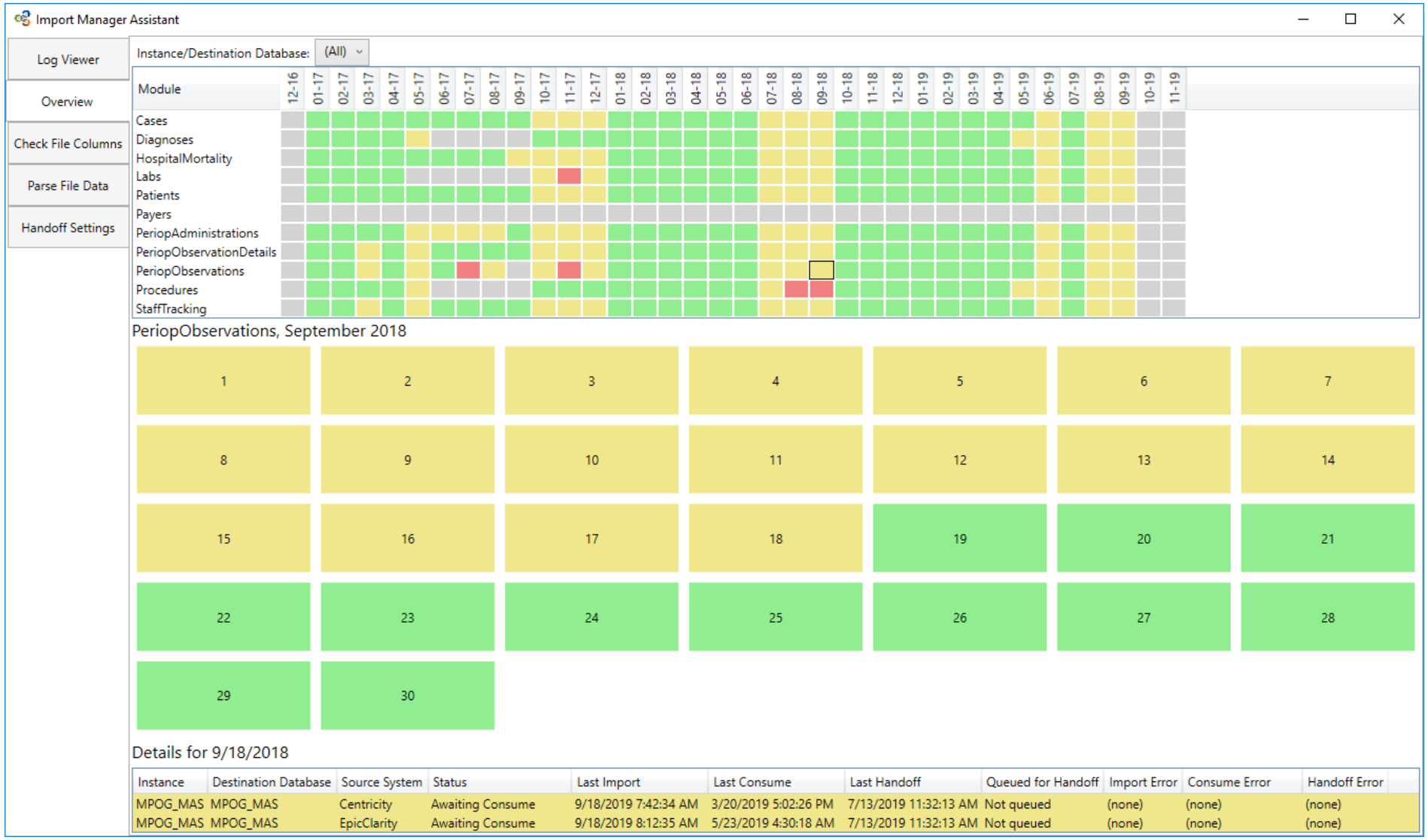


# Overview Example #1: Red status



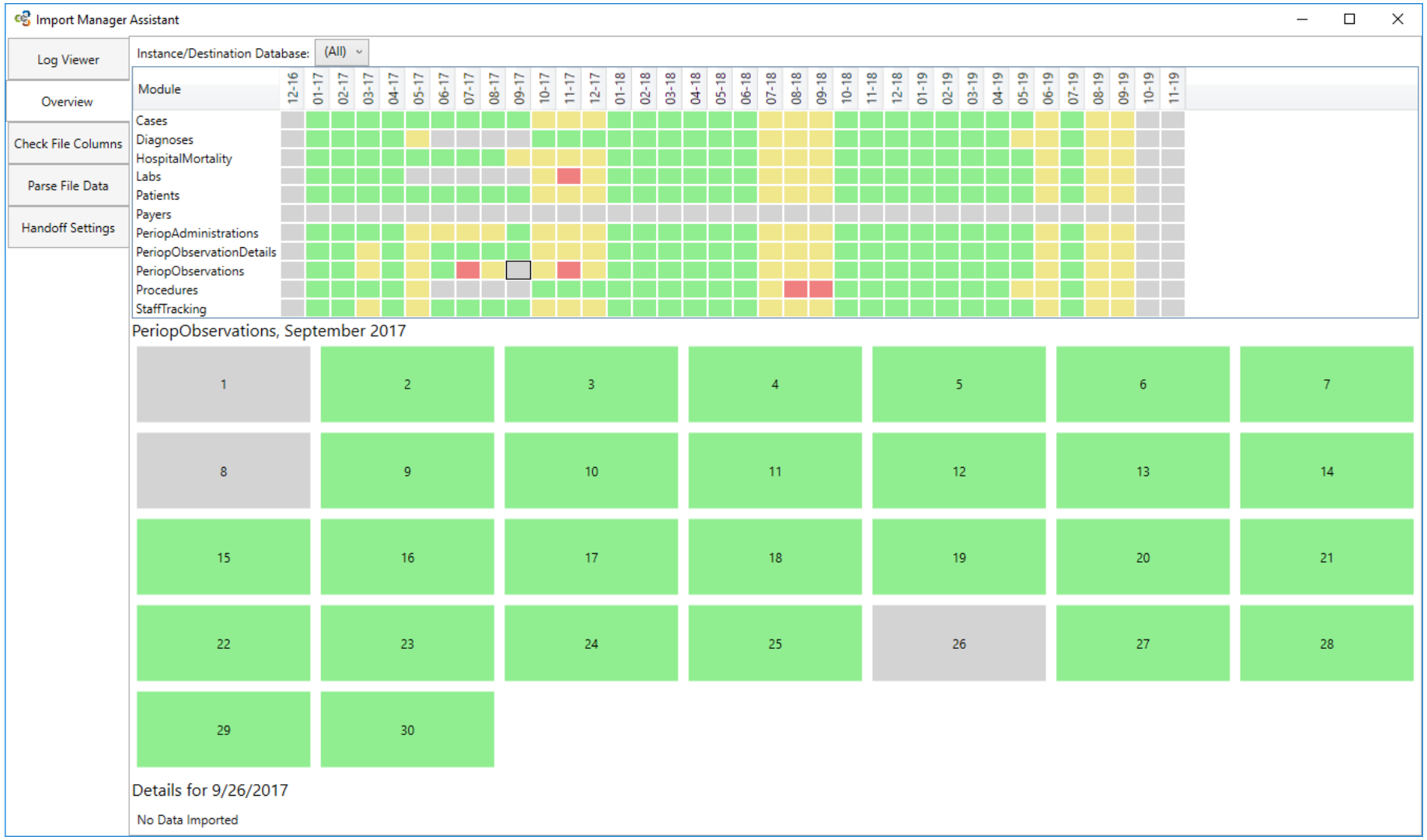

Consume error (wrong number of columns in file) causes day and month to show red.

# Overview Example #2: Yellow status



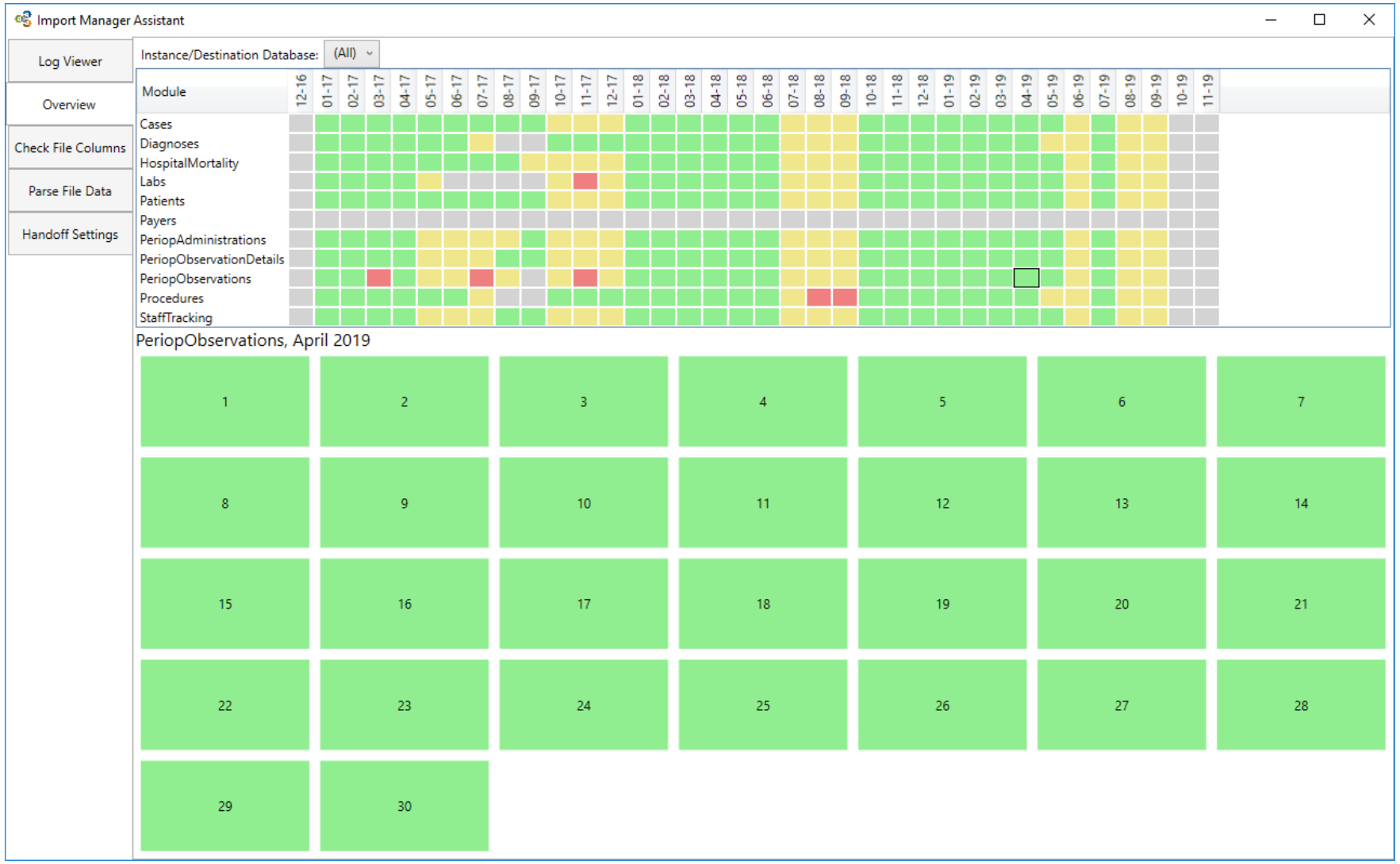

Not yet consumed data showing as yellow.

# Overview Example #3: Grey status



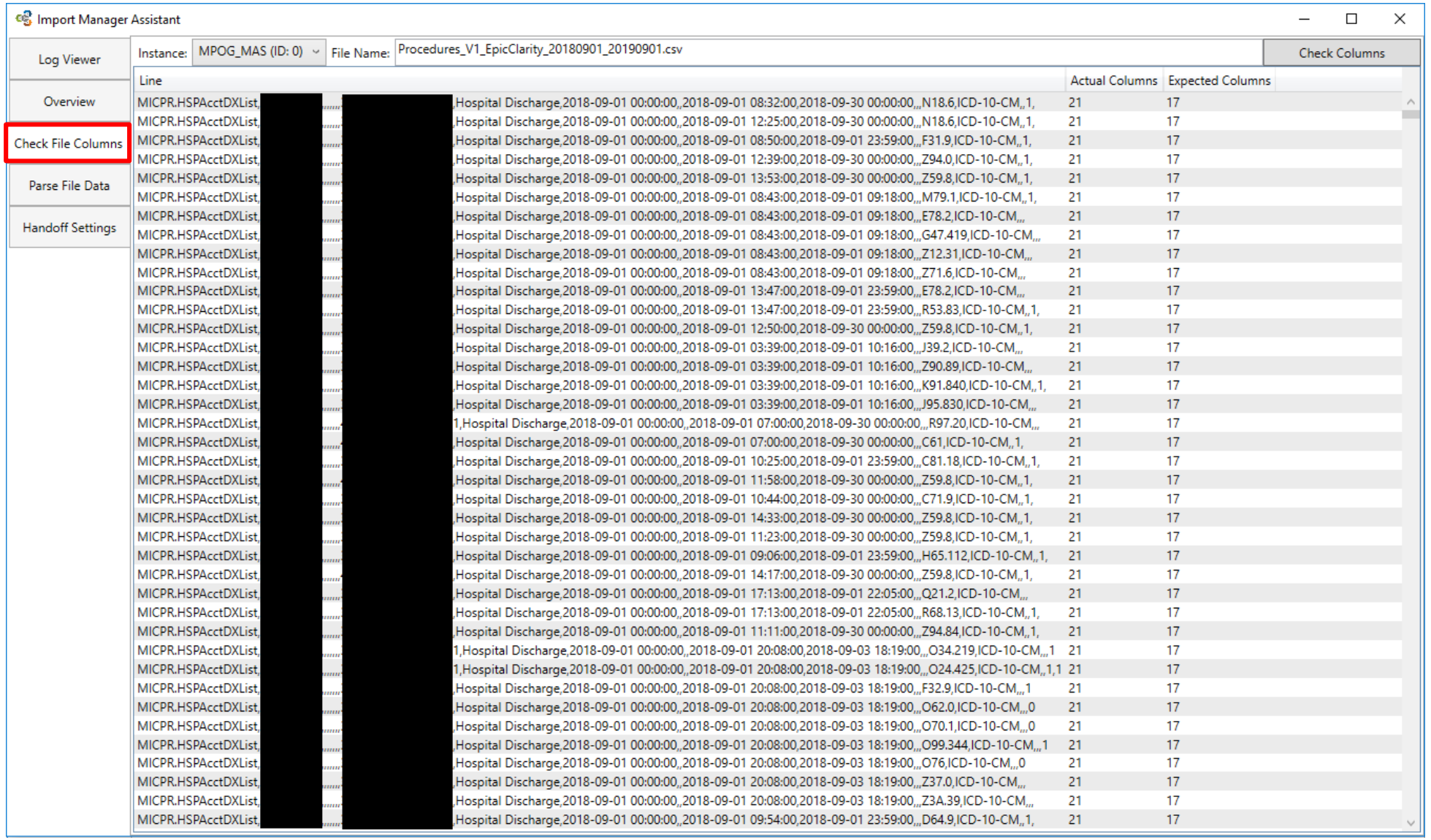

Missing data (days 1, 8, and 26) show as grey.

# Overview Example #4: Green status




All data available is now in the database for this module/month!

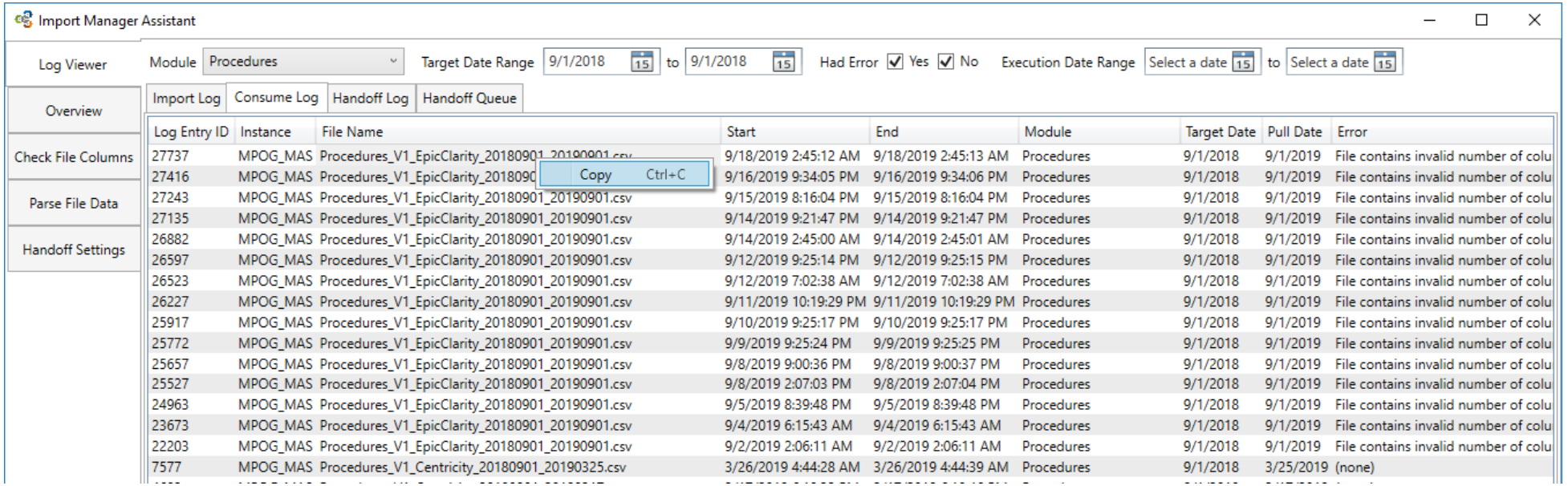
# Third Tab: Check File Columns




Use this tab when there is an error indicating a file has the wrong number of columns. The rows shown here have either too many or too few columns.

Extract writers will find this very useful.

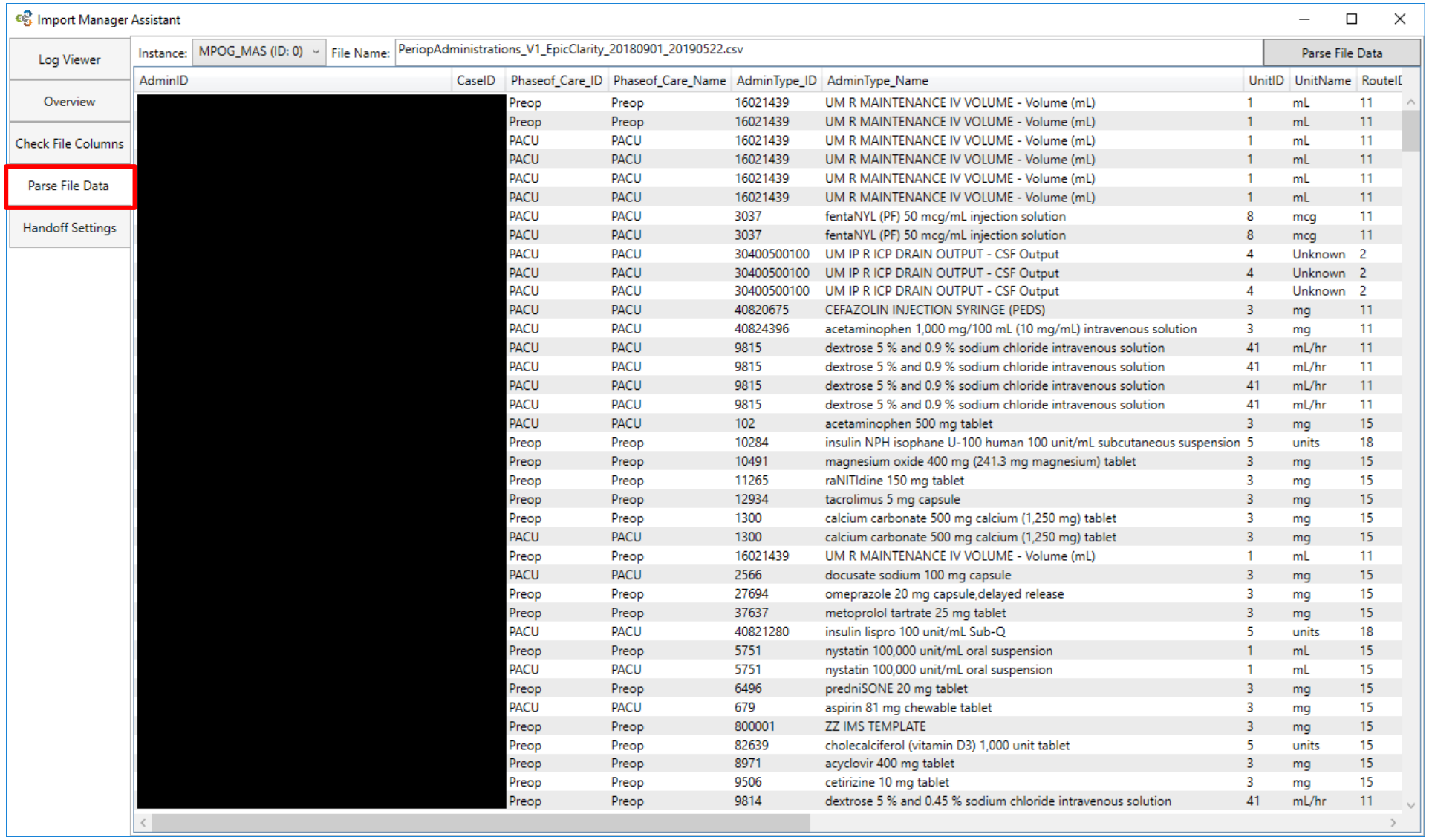
# Check File Columns: How to get a file name




| Log Entry ID | Instance | File Name | Start | End | Module | Target Date | Pull Date | Error |
|---|---|---|---|---|---|---|---|---|
| 27737 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/18/2019 2:45:12 AM | 9/18/2019 2:45:13 AM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 27416 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/16/2019 9:34:05 PM | 9/16/2019 9:34:06 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 27243 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/15/2019 8:16:04 PM | 9/15/2019 8:16:04 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 27135 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/14/2019 9:21:47 PM | 9/14/2019 9:21:47 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 26882 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/14/2019 2:45:00 AM | 9/14/2019 2:45:01 AM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 26597 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/12/2019 9:25:14 PM | 9/12/2019 9:25:15 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 26523 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/12/2019 7:02:38 AM | 9/12/2019 7:02:38 AM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 26227 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/11/2019 10:19:29 PM | 9/11/2019 10:19:29 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 25917 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/10/2019 9:25:17 PM | 9/10/2019 9:25:17 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 25772 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/9/2019 9:25:24 PM | 9/9/2019 9:25:25 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 25657 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/8/2019 9:00:36 PM | 9/8/2019 9:00:37 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 25527 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/8/2019 2:07:03 PM | 9/8/2019 2:07:04 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 24963 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/5/2019 8:39:48 PM | 9/5/2019 8:39:48 PM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 23673 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/4/2019 6:15:43 AM | 9/4/2019 6:15:43 AM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 22203 | MPOG_MAS | Procedures_V1_EpicClarity_20180901_20190901.csv | 9/2/2019 2:06:11 AM | 9/2/2019 2:06:11 AM | Procedures | 9/1/2018 | 9/1/2019 | File contains invalid number of colu |
| 7577 | MPOG_MAS | Procedures_V1_Centricity_20180901_20190325.csv | 3/26/2019 4:44:28 AM | 3/26/2019 4:44:39 AM | Procedures | 9/1/2018 | 3/25/2019 | (none) |

File names can be obtained by copying and pasting them from the Log Viewer tab. To do so, right click on any file name and click “Copy”.

# Fourth Tab: Parse File Data




| AdminID | CaseID | Phaseof_Care_ID | Phaseof_Care_Name | AdminType_ID | AdminType_Name | UnitID | UnitName | RouteID |
|---|---|---|---|---|---|---|---|---|
| [redacted] | | Preop | Preop | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | Preop | Preop | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 3037 | fentaNYL (PF) 50 mcg/mL injection solution | 8 | mcg | 11 |
| | | PACU | PACU | 3037 | fentaNYL (PF) 50 mcg/mL injection solution | 8 | mcg | 11 |
| | | PACU | PACU | 30400500100 | UM IP R ICP DRAIN OUTPUT - CSF Output | 4 | Unknown | 2 |
| | | PACU | PACU | 30400500100 | UM IP R ICP DRAIN OUTPUT - CSF Output | 4 | Unknown | 2 |
| | | PACU | PACU | 30400500100 | UM IP R ICP DRAIN OUTPUT - CSF Output | 4 | Unknown | 2 |
| | | PACU | PACU | 40820675 | CEFAZOLIN INJECTION SYRINGE (PEDS) | 3 | mg | 11 |
| | | PACU | PACU | 40824396 | acetaminophen 1,000 mg/100 mL (10 mg/mL) intravenous solution | 3 | mg | 11 |
| | | PACU | PACU | 9815 | dextrose 5 % and 0.9 % sodium chloride intravenous solution | 41 | mL/hr | 11 |
| | | PACU | PACU | 9815 | dextrose 5 % and 0.9 % sodium chloride intravenous solution | 41 | mL/hr | 11 |
| | | PACU | PACU | 9815 | dextrose 5 % and 0.9 % sodium chloride intravenous solution | 41 | mL/hr | 11 |
| | | PACU | PACU | 9815 | dextrose 5 % and 0.9 % sodium chloride intravenous solution | 41 | mL/hr | 11 |
| | | PACU | PACU | 102 | acetaminophen 500 mg tablet | 3 | mg | 15 |
| | | Preop | Preop | 10284 | insulin NPH isophane U-100 human 100 unit/mL subcutaneous suspension | 5 | units | 18 |
| | | Preop | Preop | 10491 | magnesium oxide 400 mg (241.3 mg magnesium) tablet | 3 | mg | 15 |
| | | Preop | Preop | 11265 | raNITIdine 150 mg tablet | 3 | mg | 15 |
| | | Preop | Preop | 12934 | tacrolimus 5 mg capsule | 3 | mg | 15 |
| | | Preop | Preop | 1300 | calcium carbonate 500 mg calcium (1,250 mg) tablet | 3 | mg | 15 |
| | | PACU | PACU | 1300 | calcium carbonate 500 mg calcium (1,250 mg) tablet | 3 | mg | 15 |
| | | Preop | Preop | 16021439 | UM R MAINTENANCE IV VOLUME - Volume (mL) | 1 | mL | 11 |
| | | PACU | PACU | 2566 | docusate sodium 100 mg capsule | 3 | mg | 15 |
| | | Preop | Preop | 27694 | omeprazole 20 mg capsule,delayed release | 3 | mg | 15 |
| | | Preop | Preop | 37637 | metoprolol tartrate 25 mg tablet | 3 | mg | 15 |
| | | PACU | PACU | 40821280 | insulin lispro 100 unit/mL Sub-Q | 5 | units | 18 |
| | | Preop | Preop | 5751 | nystatin 100,000 unit/mL oral suspension | 1 | mL | 15 |
| | | PACU | PACU | 5751 | nystatin 100,000 unit/mL oral suspension | 1 | mL | 15 |
| | | Preop | Preop | 6496 | predniSONE 20 mg tablet | 3 | mg | 15 |
| | | PACU | PACU | 679 | aspirin 81 mg chewable tablet | 3 | mg | 15 |
| | | Preop | Preop | 800001 | ZZ IMS TEMPLATE | 3 | mg | 15 |
| | | Preop | Preop | 82639 | cholecalciferol (vitamin D3) 1,000 unit tablet | 5 | units | 15 |
| | | Preop | Preop | 8971 | acyclovir 400 mg tablet | 3 | mg | 15 |
| | | Preop | Preop | 9506 | cetirizine 10 mg tablet | 3 | mg | 15 |
| | | Preop | Preop | 9814 | dextrose 5 % and 0.45 % sodium chloride intravenous solution | 41 | mL/hr | 11 |

Use this tab to see the underlying data in any imported file. This may be useful to see if a data element went missing during the import manager process or if it is missing from the extract.

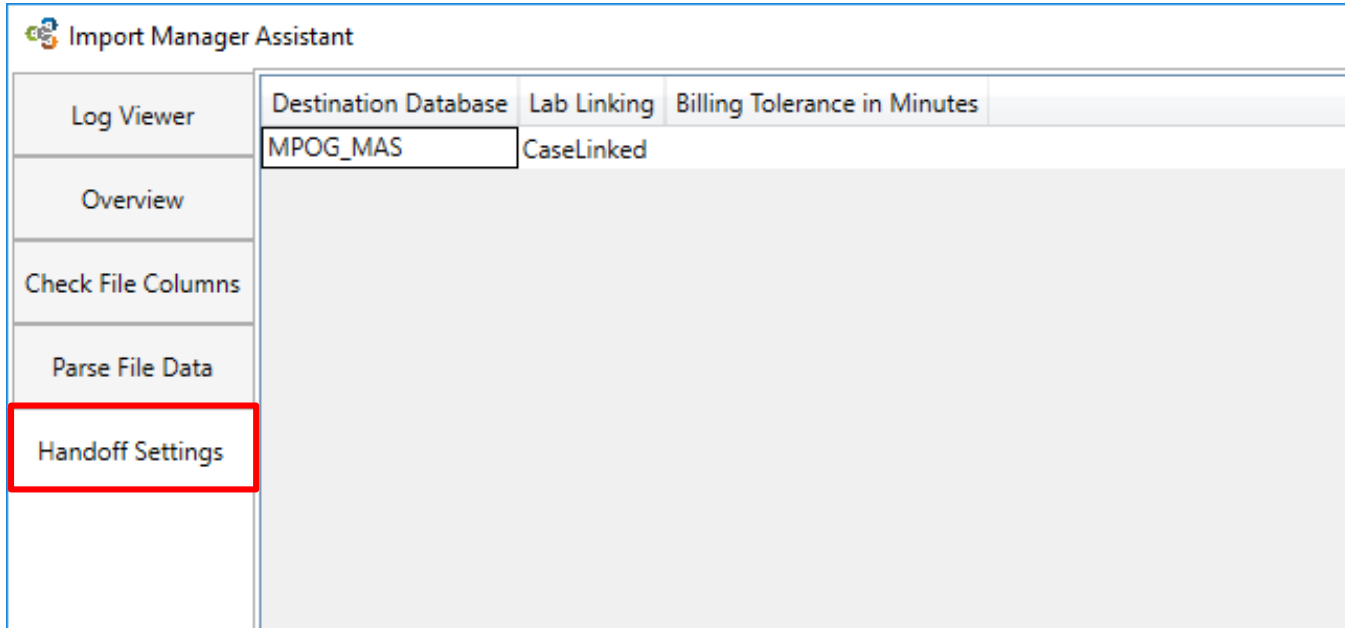
MPOG

# Fifth Tab: Handoff Settings

The fifth tab contains the settings for handoff.

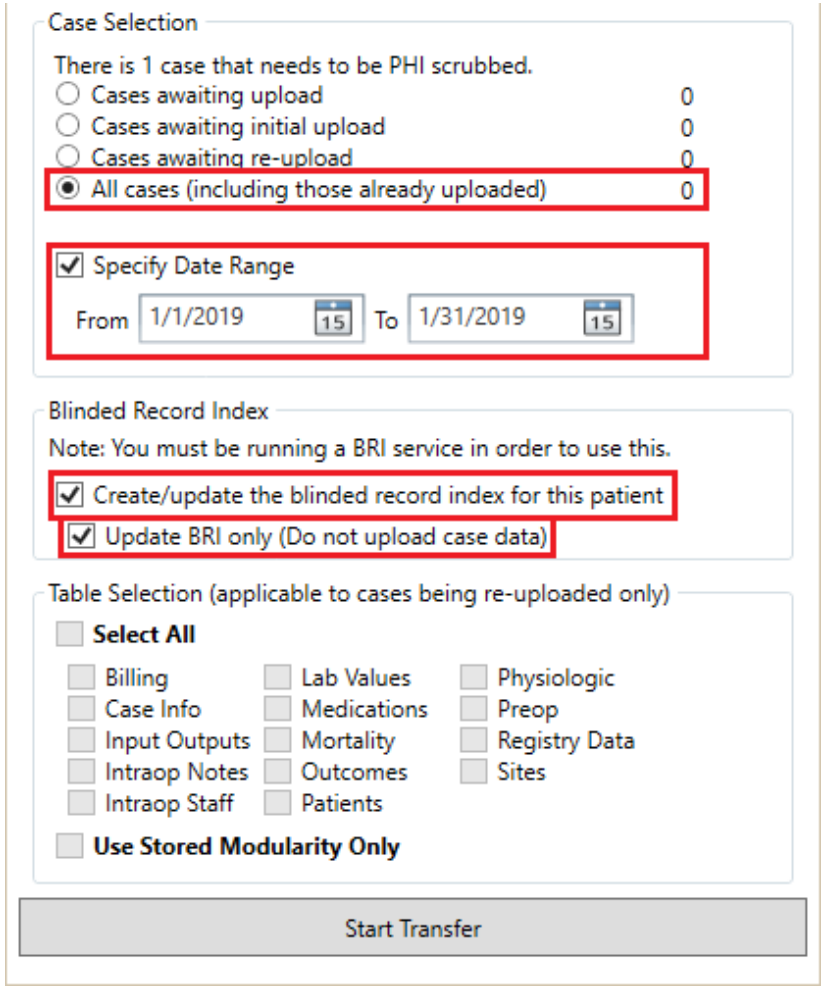
- Lab linking refers to which labs are included in a given target date.
  - CaseLinked should be used if all labs for the patients that had a case that day were pulled.
  - DateLinked should be used if all labs taken that day are included in the file.
- Billing tolerance in minutes adjusts how close timing of a billing code and a case start time can be to be considered a match.

Do **NOT** change these values without consulting MPOG staff.

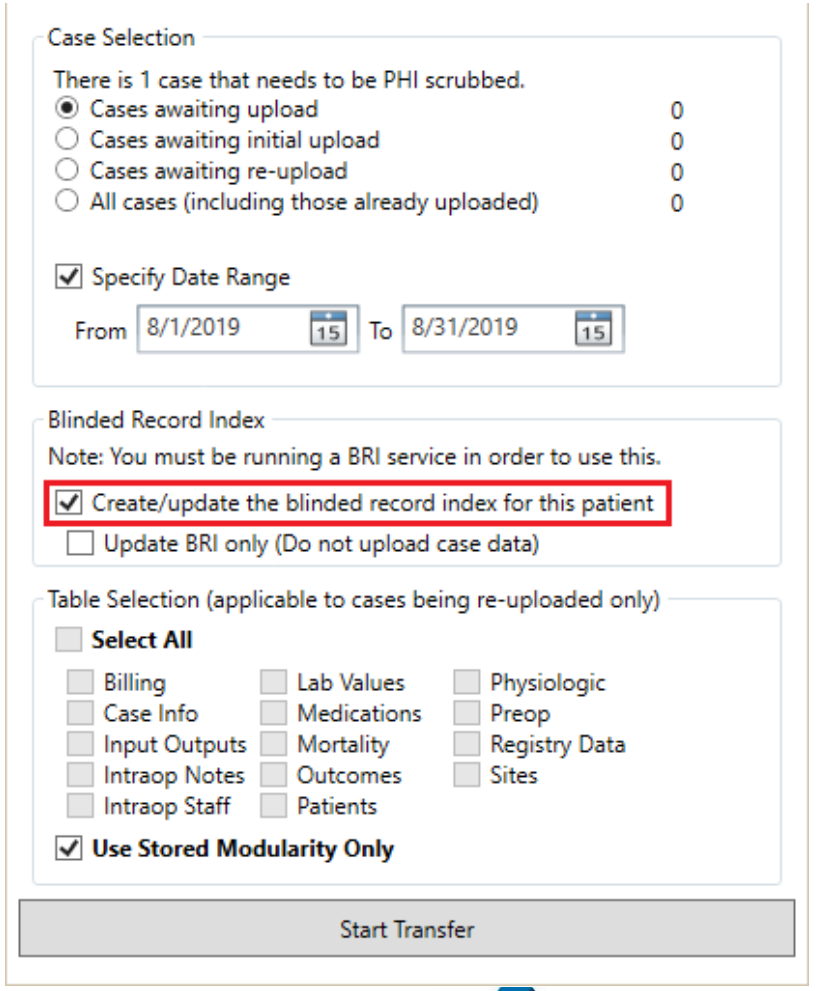


# Submitting BRI

## Historical Load

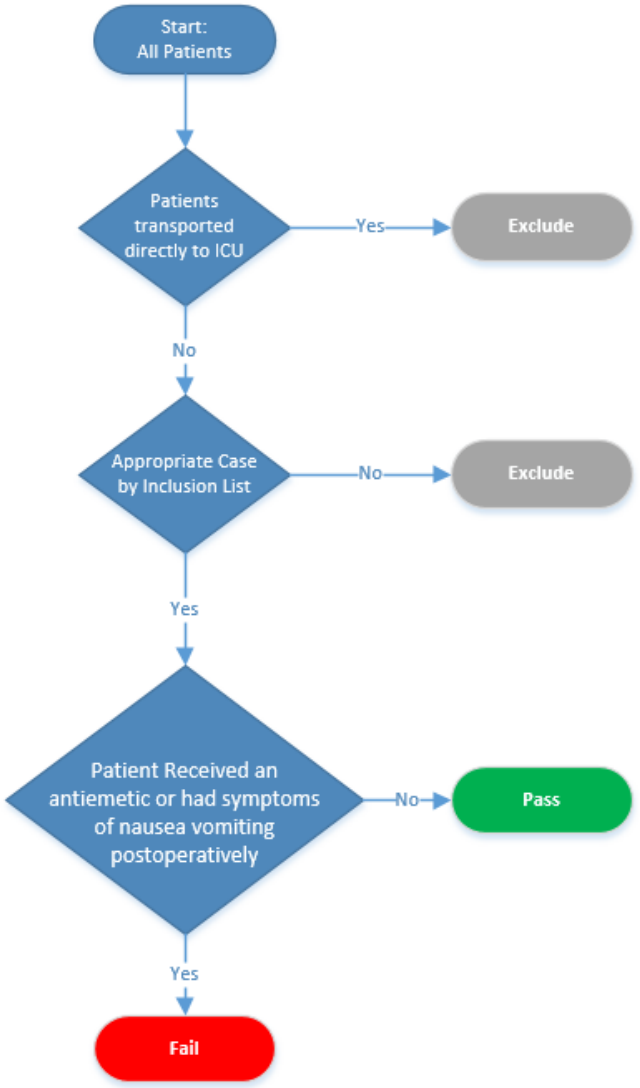



## Monthly Load



# PONV 03 – Outcome Measure

- ***Success***
  - Patient does not report nausea, have an emesis event or receive an antiemetic during the immediate postoperative period.
- ***Measure Bounds***
  - **Measure Start**:
    - Recovery Room In Date/Time. If not available then,
    - Phase I Recovery Room In Date/Time. If not available then,
    - Phase II Recovery Room In Date/Time. If not available then,
    - Patient out of Room. If not available then,
    - Data Capture End. If not available then,
    - Anesthesia End.
  - **Measure End:** Anesthesia End + 6 hours
- ***Responsible provider***:
  - All providers for a given case who are signed in ≥ 40 minutes. If a given case is ≤ 60 minutes, all providers are responsible.

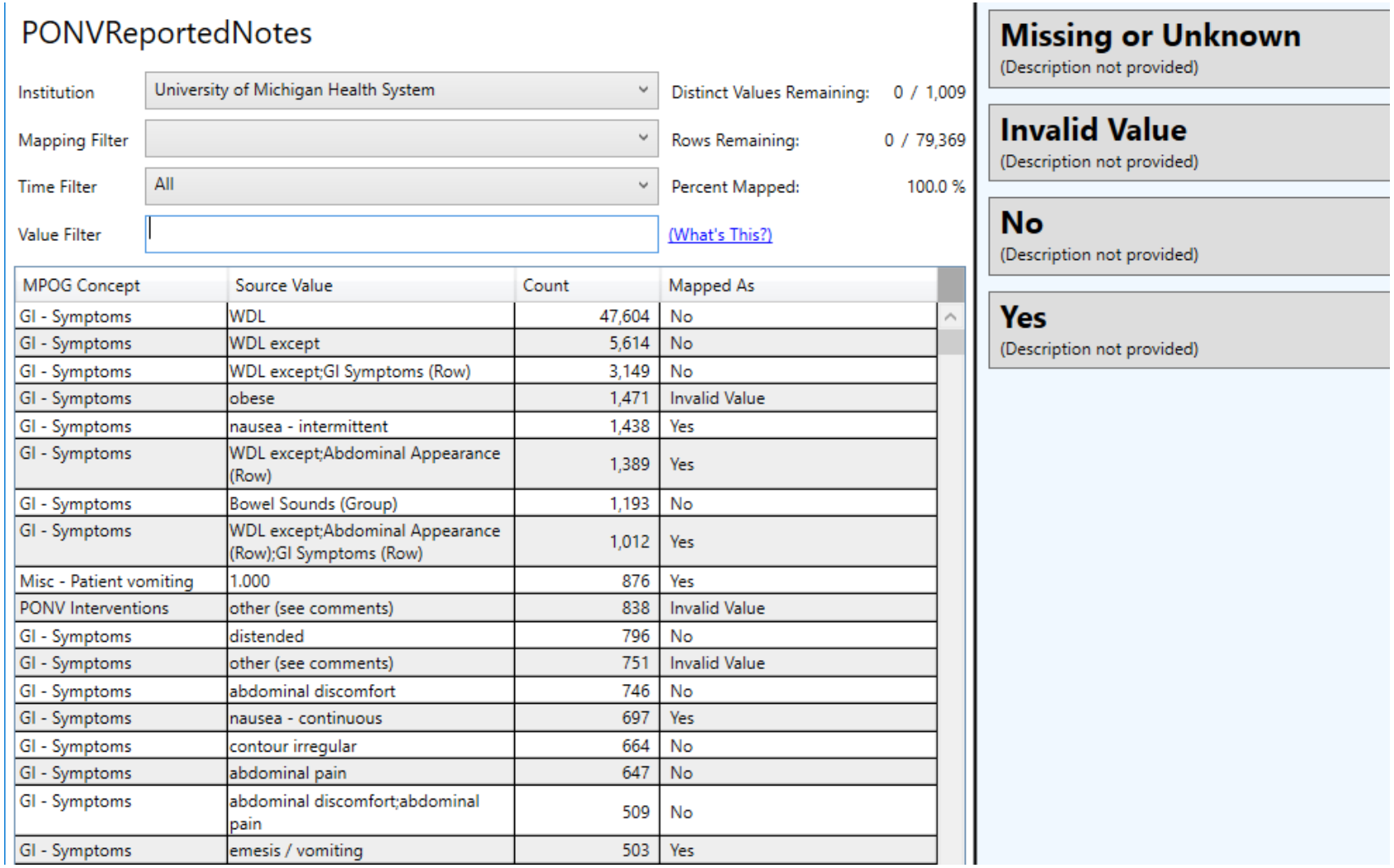


# PONV 03 – Outcomes Measure

- ***Inclusion***
  - All patients regardless of age
  - C-Sections (CPT: 01961, 01968)
- ***Exclusion***
  - Patients transferred directly to the ICU
  - Labor Epidurals
  - Organ Harvest
  - Liver Transplant Surgery
  - Obstetric Non-Operative Procedure Rooms (Rooms tagged as OB-GYN – Labor and Delivery)
  - Obstetric Non-Operative Procedures with procedure text: “Labor Epidural”

| PONV Outcomes MPOG Concept IDs: | |
|---|---|
| **50227** | GI – Symptoms |
| **50636** | Misc - Patient Vomiting |
| **50219** | Emesis Occurrence |
| **10503** | Emesis |
| **90010** | PONV Assessment |
| **90371** | Postoperative Nausea and/or Vomiting |
| **90009** | PONV Interventions |

# PONV Outcomes – Collation Mapping



PONVReportedNotes

Institution: University of Michigan Health System
Mapping Filter:
Time Filter: All
Value Filter:
(What's This?)

Distinct Values Remaining: 0 / 1,009
Rows Remaining: 0 / 79,369
Percent Mapped: 100.0 %

| MPOG Concept | Source Value | Count | Mapped As |
|---|---|---|---|
| GI - Symptoms | WDL | 47,604 | No |
| GI - Symptoms | WDL except | 5,614 | No |
| GI - Symptoms | WDL except;GI Symptoms (Row) | 3,149 | No |
| GI - Symptoms | obese | 1,471 | Invalid Value |
| GI - Symptoms | nausea - intermittent | 1,438 | Yes |
| GI - Symptoms | WDL except;Abdominal Appearance (Row) | 1,389 | Yes |
| GI - Symptoms | Bowel Sounds (Group) | 1,193 | No |
| GI - Symptoms | WDL except;Abdominal Appearance (Row);GI Symptoms (Row) | 1,012 | Yes |
| Misc - Patient vomiting | 1.000 | 876 | Yes |
| PONV Interventions | other (see comments) | 838 | Invalid Value |
| GI - Symptoms | distended | 796 | No |
| GI - Symptoms | other (see comments) | 751 | Invalid Value |
| GI - Symptoms | abdominal discomfort | 746 | No |
| GI - Symptoms | nausea - continuous | 697 | Yes |
| GI - Symptoms | contour irregular | 664 | No |
| GI - Symptoms | abdominal pain | 647 | No |
| GI - Symptoms | abdominal discomfort;abdominal pain | 509 | No |
| GI - Symptoms | emesis / vomiting | 503 | Yes |

**Missing or Unknown**
(Description not provided)

**Invalid Value**
(Description not provided)

**No**
(Description not provided)

**Yes**
(Description not provided)

# BP 03 – Process Measure

- Similar measure to BP 01 with tightened parameters based on most recent literature review.

**BP 01**: Percentage of cases where intraoperative hypotension (MAP < 55 mmHg) was sustained for less than 20 minutes

**BP 03**: Percentage of cases where intraoperative hypotension (MAP **< 65 mmHg**) was sustained for less than **15 minutes**

# SUS 01 Measure

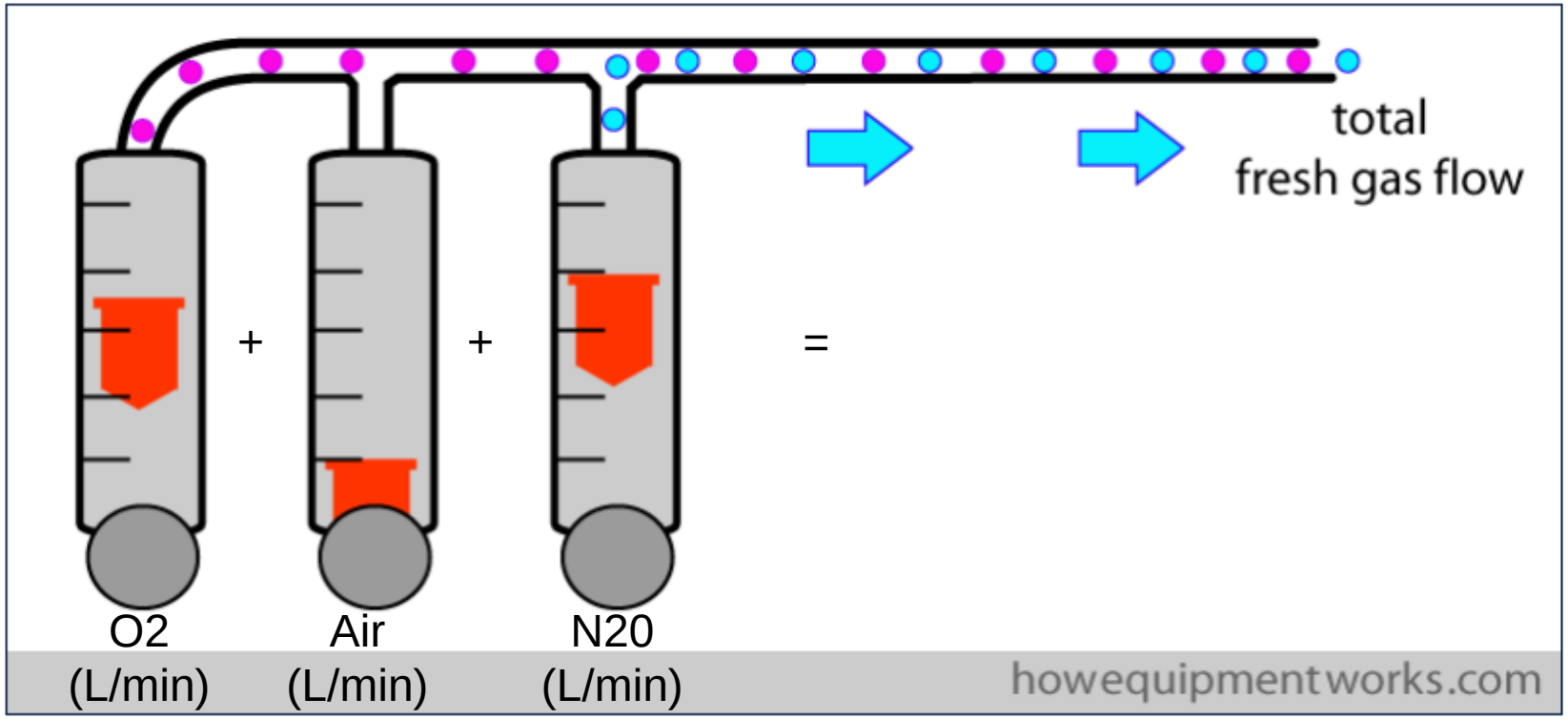
**Description:** Percentage of cases with mean fresh gas flow (FGF) equal to, or less than 3L/min, during administration of halogenated hydrocarbons and/or nitrous oxide

**Rationale:** Halogenated agents and nitrous oxide leaking or vented into the atmosphere are environmental pollutants. Reducing fresh gas flows can reduce cost of anesthesia without compromising patient care.

**Inclusions:** Patients administered halogenated hydrocarbons and/or nitrous oxide, for greater than or equal to 30 minutes from placement of the airway device to removal of the airway device.

**Success:** Mean FGF equal to, or less than 3L/minute when inspired halogenated hydrocarbons is >0.2%, or nitrous oxide FGF >0.2L/min, during the maintenance period of anesthesia.

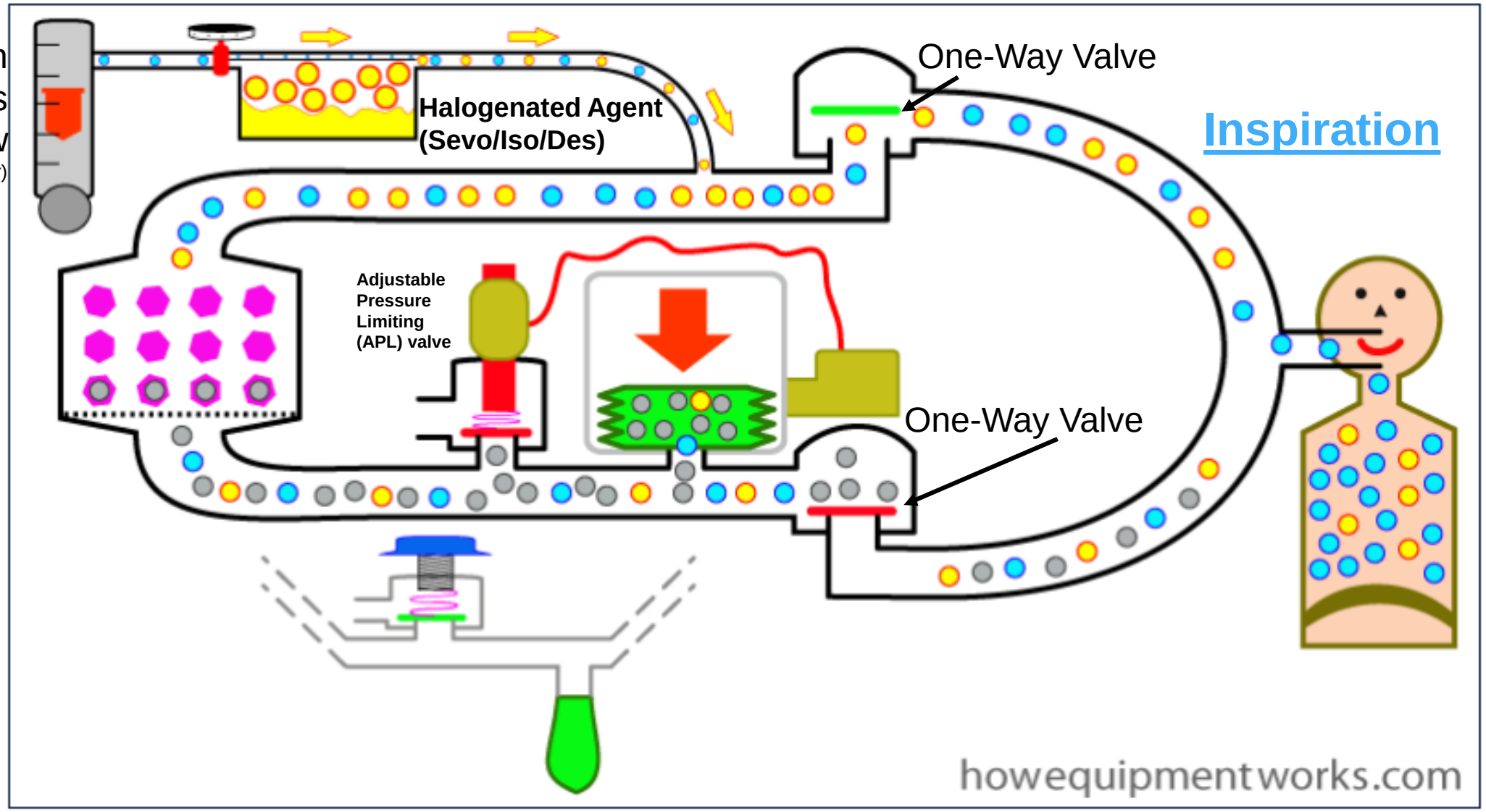
# SUS 01 Explained



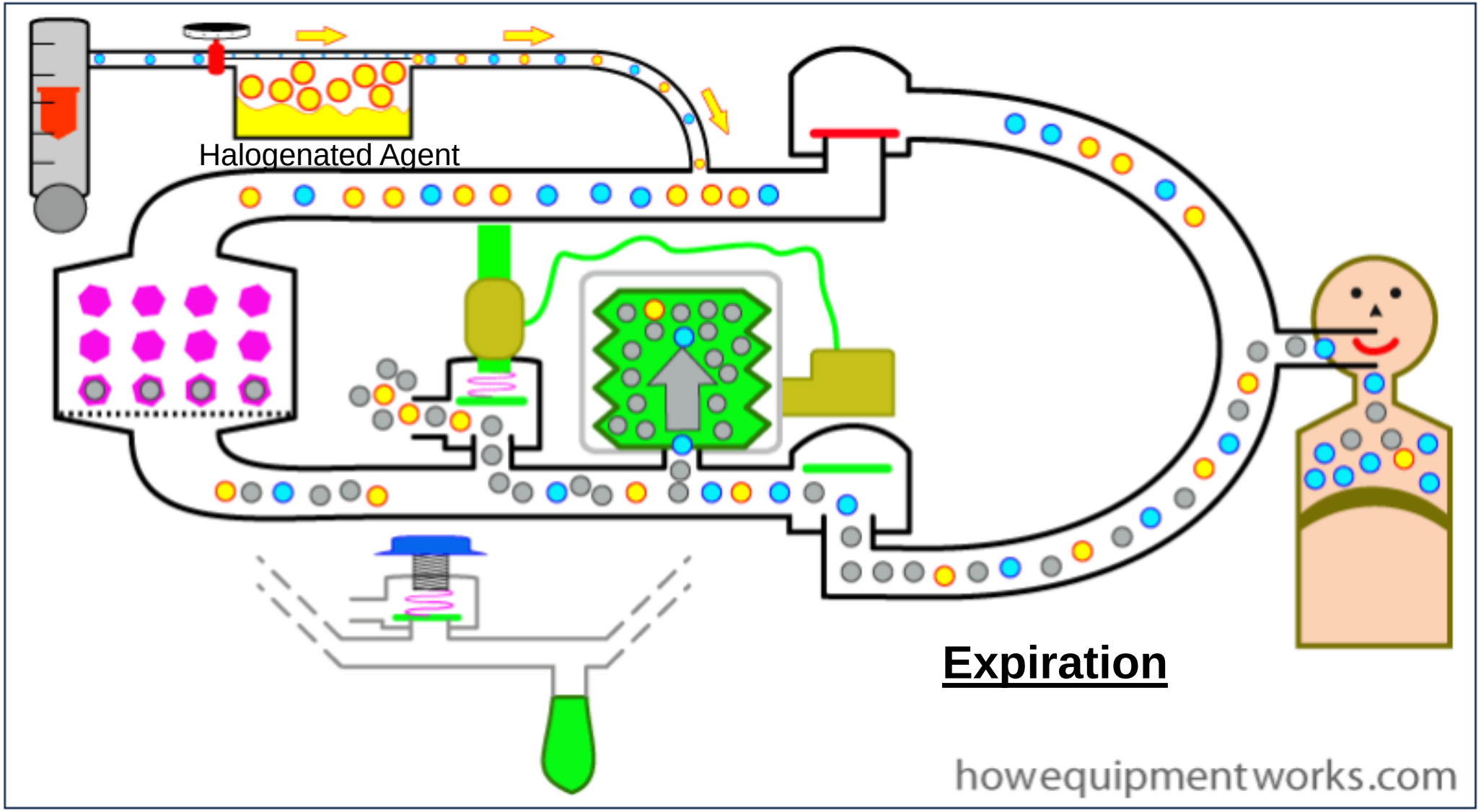

1) Determine # of minutes N2O or a halogenated agent was running: count minutes where %inspired (sevo/iso/des/N2O) was documented- must be ≥30 minutes to include the case.

2) Calculate the average L/min of total fresh gas flow by determining the total L/min (O2 + Air + Nitrous Oxide) for each minute that agent/N2O was on, and divide by the total number of minutes that a halogenated agent or N2O was running.

# SUS 01 Rationale Explained

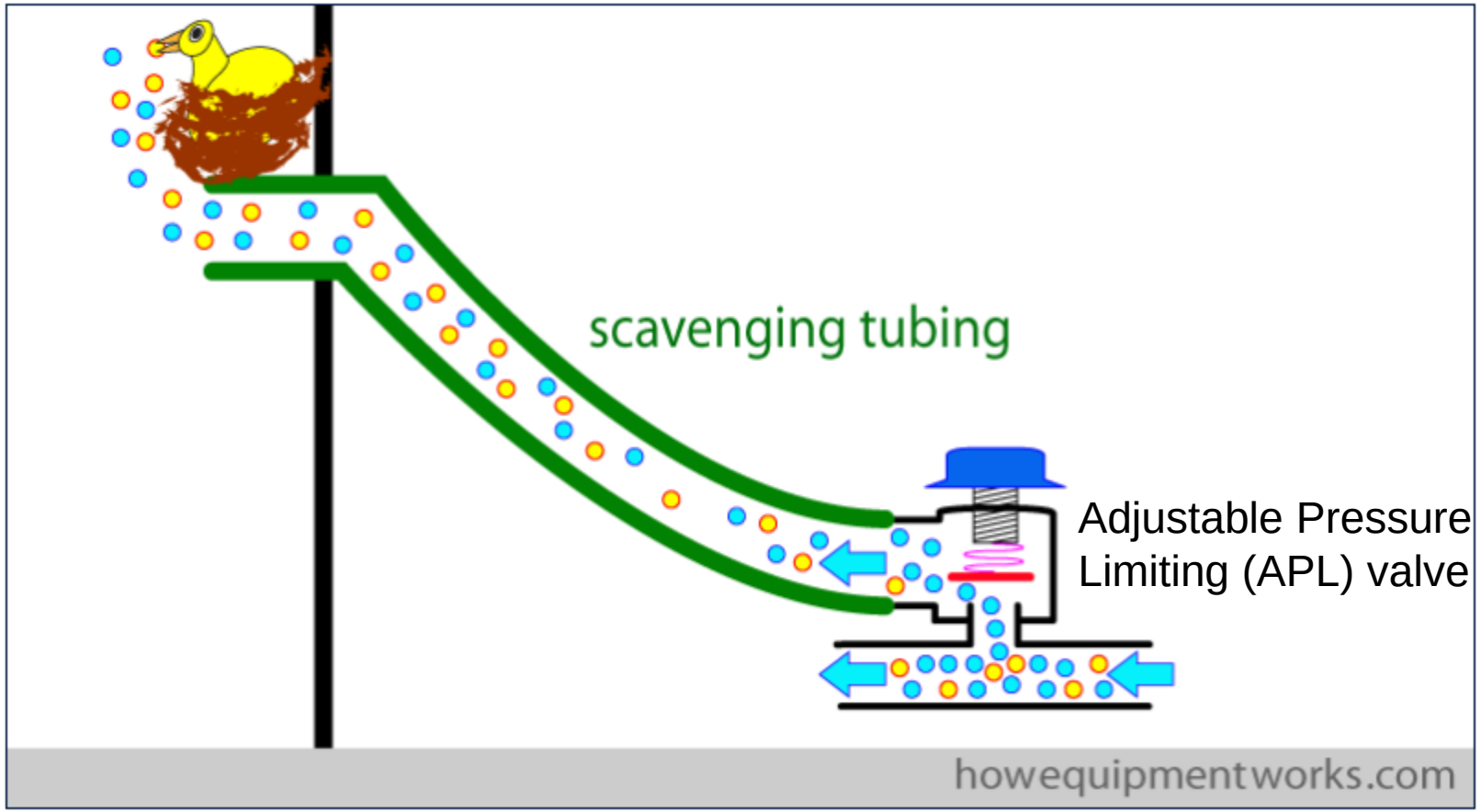


# SUS 01 Rationale Continued




For more information, visit this website: https://www.howequipmentworks.com/circle_breathing_system/

# SUS 01: How halogenated agents (gases) and N2O make it outside the OR and into our universe




For more information, visit this website: https://www.howequipmentworks.com/circle_breathing_system/

# SUS 01: Why is % inspired agent measured instead of % expired?

- The patient will continue to expire halogenated agent (N2O) even after the agent(s) have been turned off.
- Flows are increased upon induction to ‘flush’ the agent into the patient and anesthetize them (this is usually a short period)
- Flow are increased again upon emergence to ‘flush’ the agent out of the patient and allow them to wake up (this can take longer)
- Providers don’t want to be measured on their fresh gas flow rate (which could be high) during emergence when the agents are turned off but the patient may still be expiring agents.
- If we only measure the flows from ‘agent on’ to ‘agent off,’ we limit the risk of inflating our average due to high flow with emergence.

# DataDirect 2.0 Overview

**Mike Mathis, MD**

Associate Research Director

Multicenter Perioperative Outcomes Group (MPOG)

ACQR Retreat- September 20, 2019

MPOG
MULTICENTER PERIOPERATIVE
OUTCOMES GROUP

# Objectives

- DataDirect as a tool used for quality and research
- Overview of the new application
- Enhancements for upcoming year

# Problem Statement

- Enable data to be accessible for:
  - Research studies
  - Quality Improvement Initiatives
- ...***without needing:***
  - Anything to do with SQL, Python, Java, R, or SPSS
  - To be a first-degree relative of your hospital's CMIO

# What is DataDirect?

- Tool allowing health providers who are *NOT* computer scientists to access data
- User-friendly way to query data stored in MPOG Central database
- Uses **filters** to identify a cohort of patients for:
  - Research study
  - Quality improvement project
- Limited data set – no PHI except date of service and MPOG Case IDs

# How to Obtain Access

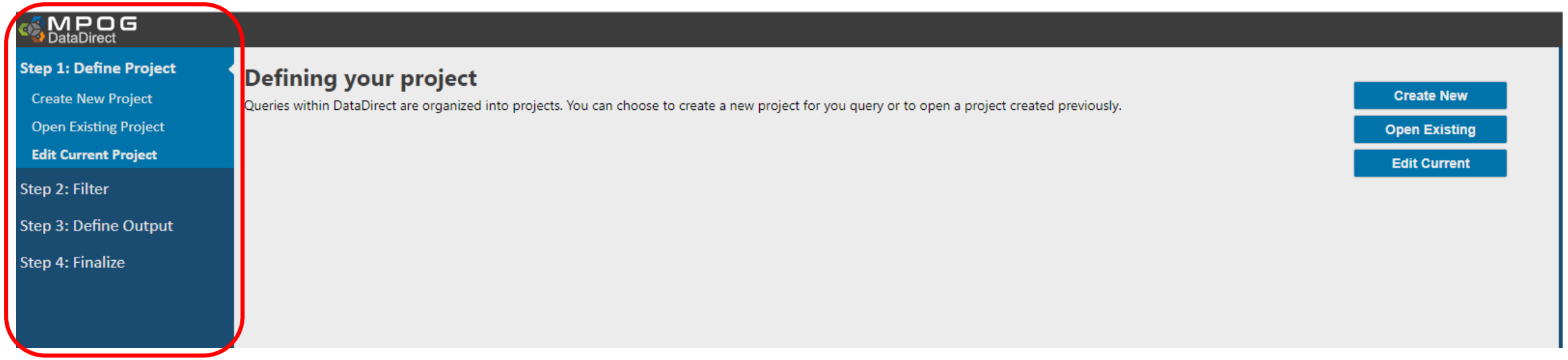
- Accessed via the web: DataDirect
- New User Guide Coming Soon!
- All users need to complete DataDirect Security Checklist and Authorization Form
- DataDirect roles are assigned by MPOG based on the user's role in MPOG
  - Quality Champions/ACQRs
  - Researchers
- Access expires every 6 months- must renew to maintain access

# DataDirect 2.0: Getting Started

- Intuitive, step-by-step instructions for how to setup your query

## STEP 1: Define your project

  - New
  - Open Existing
  - Edit Current



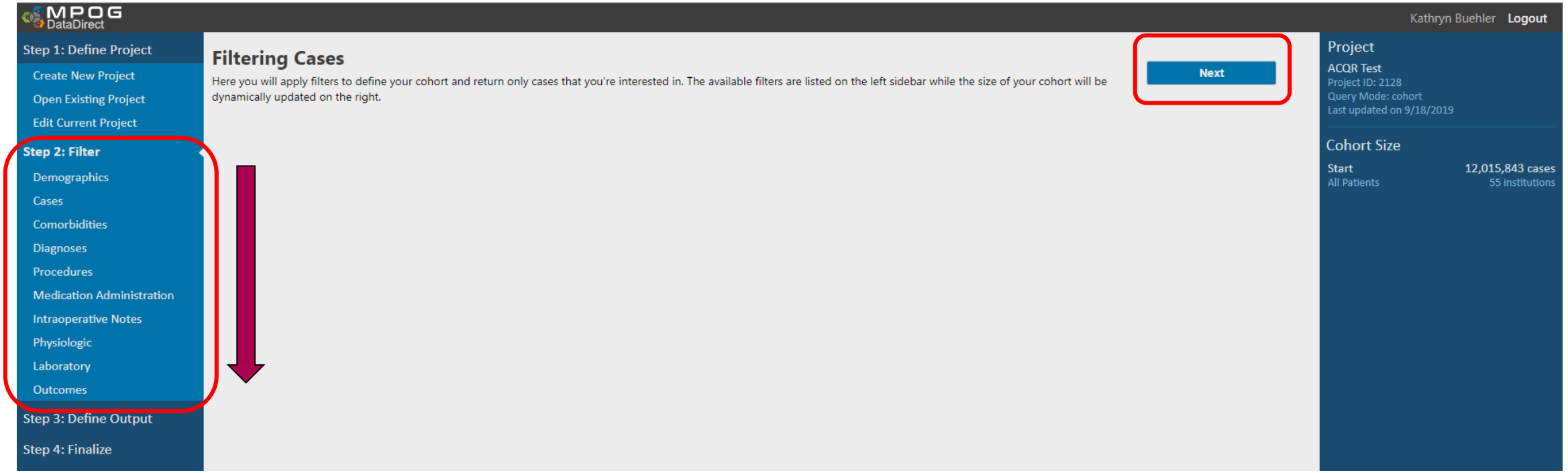

- Task bar on the left side allows for easy navigation through the tool

# Creating a New Query


## Query Modes

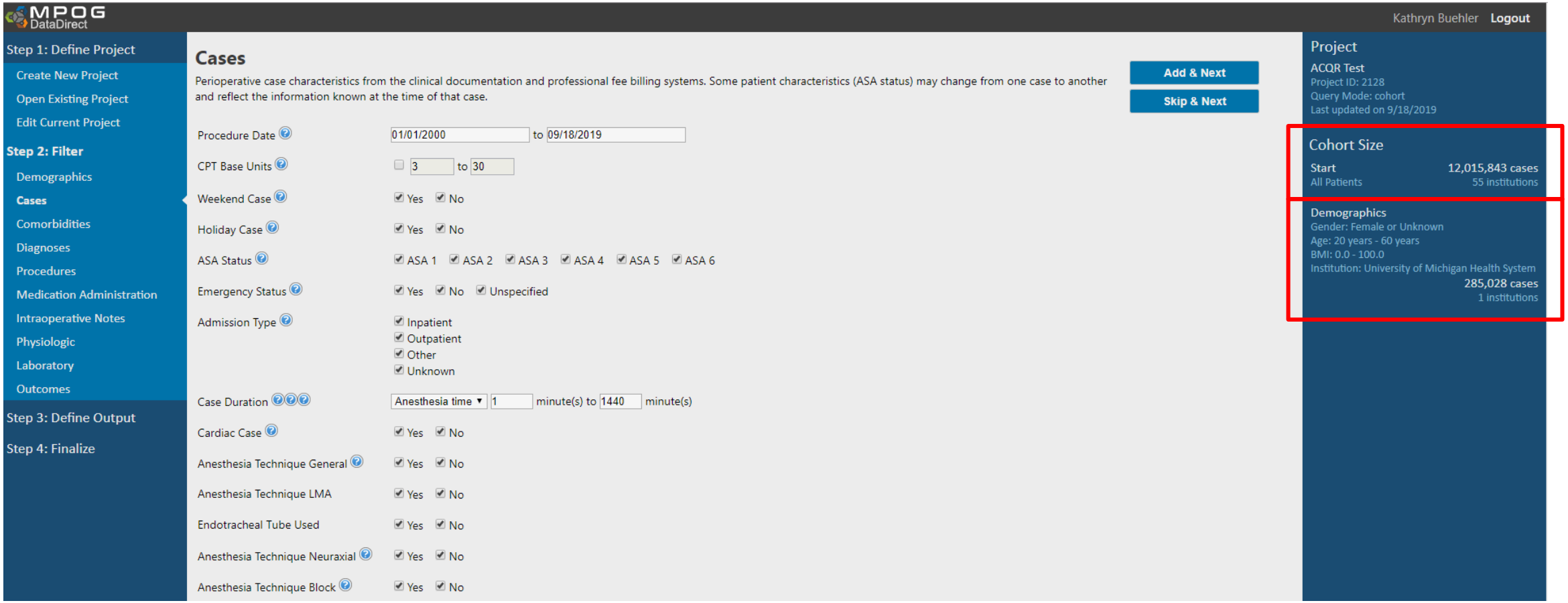
- **Cohort Only**: Generates *count* to determine *feasibilty*; no ability to download data
- PCRC Proposal (Research)
  - **Single Center** – data query + raw data (site approval)
  - **Multi-center** - data query + raw data (needs multicenter approval)
- **Quality Report**: cohort count, data query, case list for **site**

# STEP 2: Filtering Cases

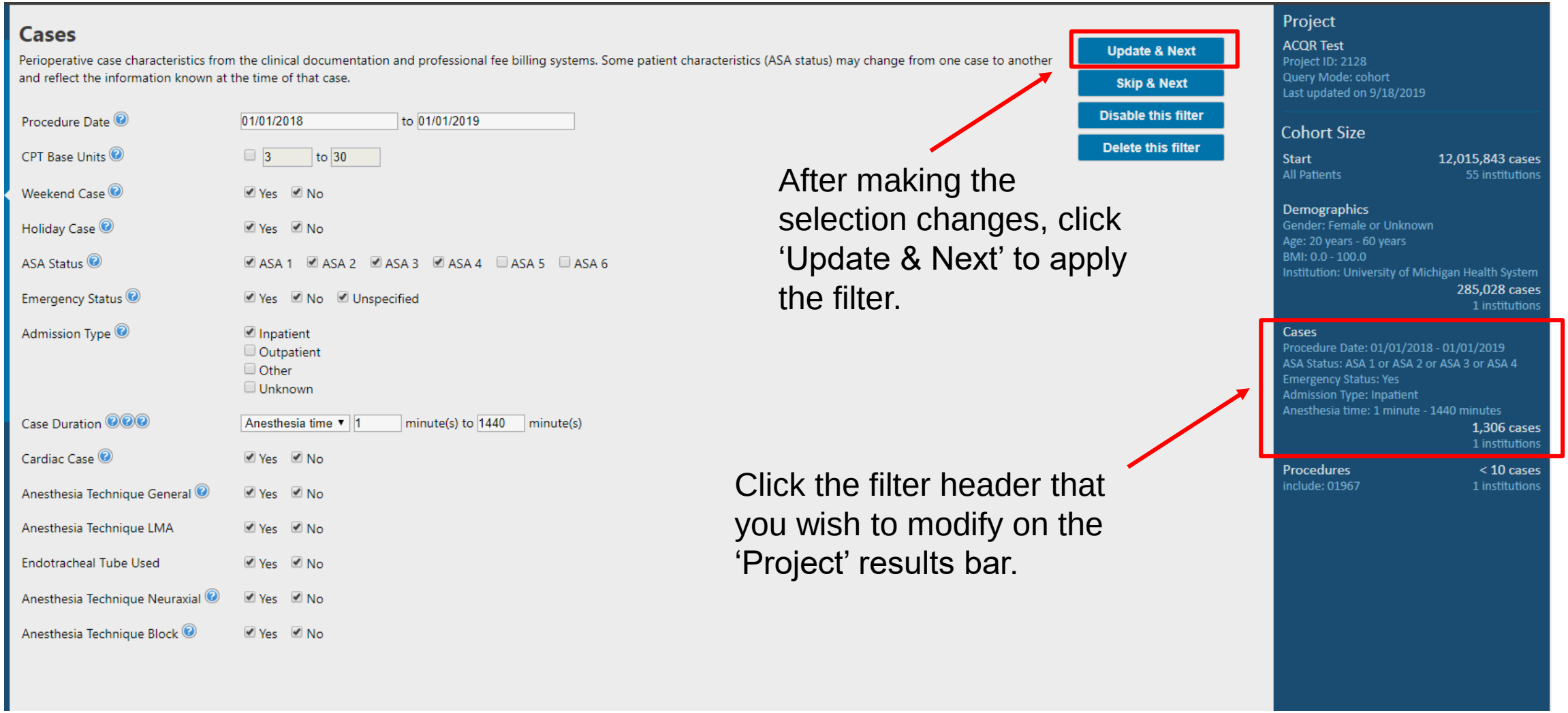


# STEP 2: Filtering Cases- Demographics

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



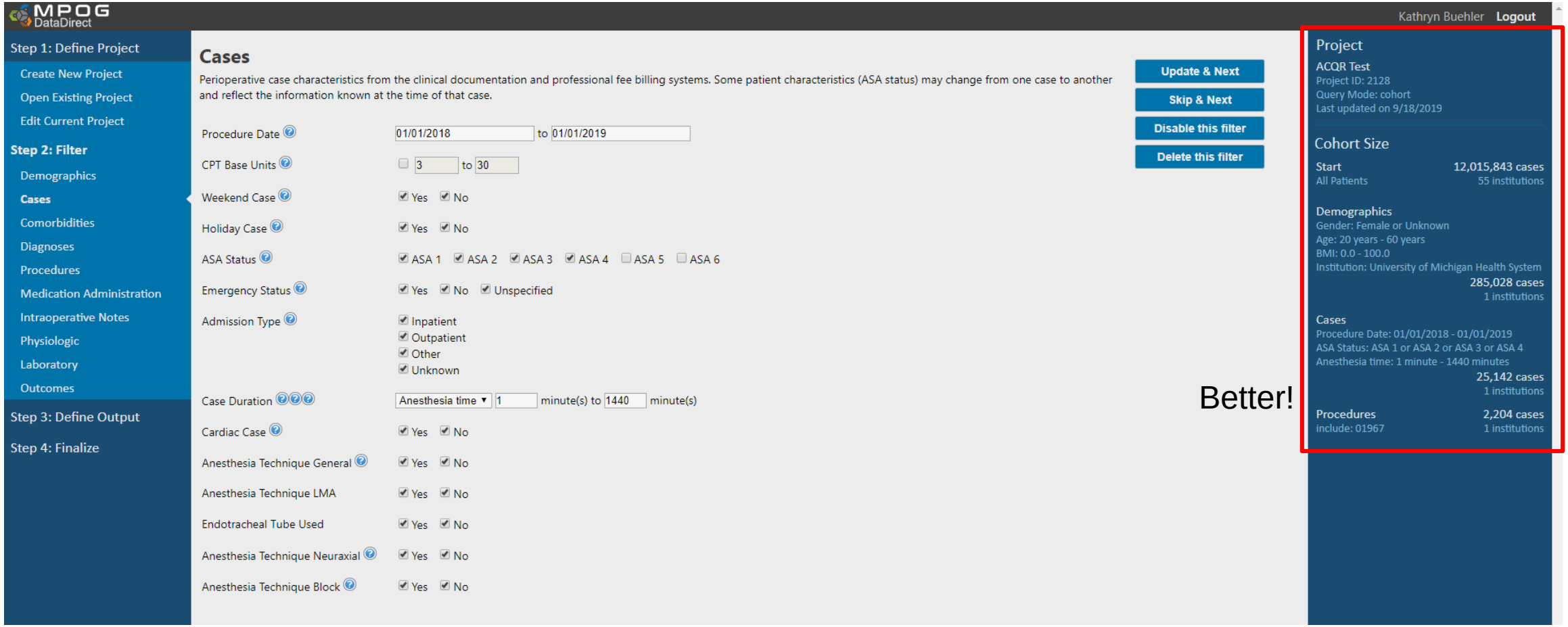
# STEP 2: Filtering Cases- Modifying selected filters




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

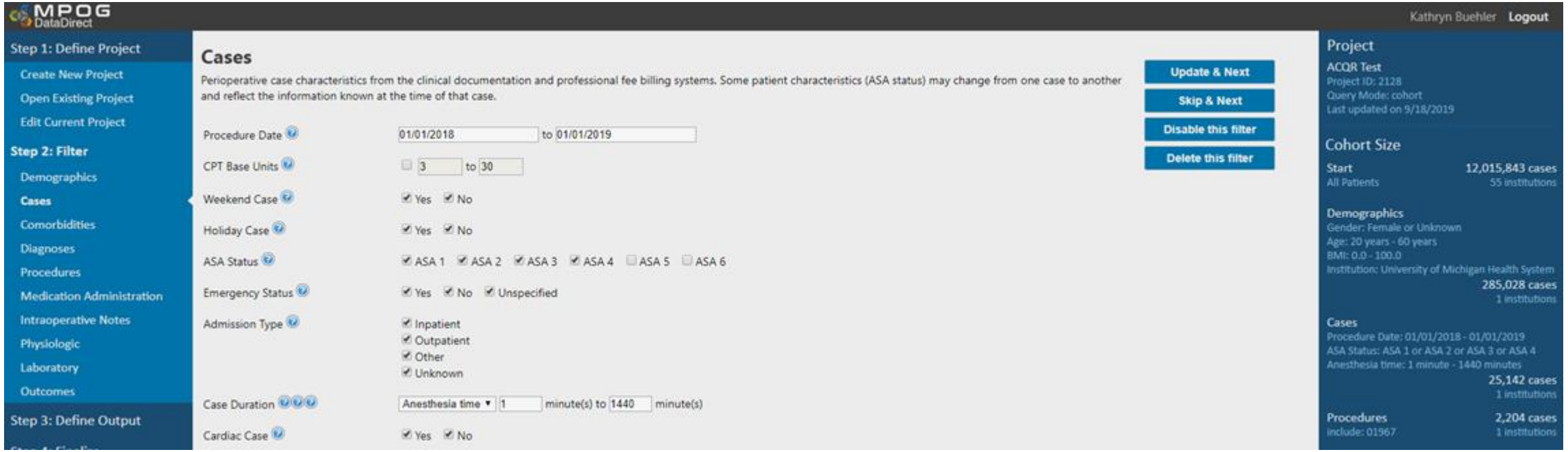
Click the filter header that you wish to modify on the 'Project' results bar.

# STEP 2: Filtering Cases- Modifying selected filters

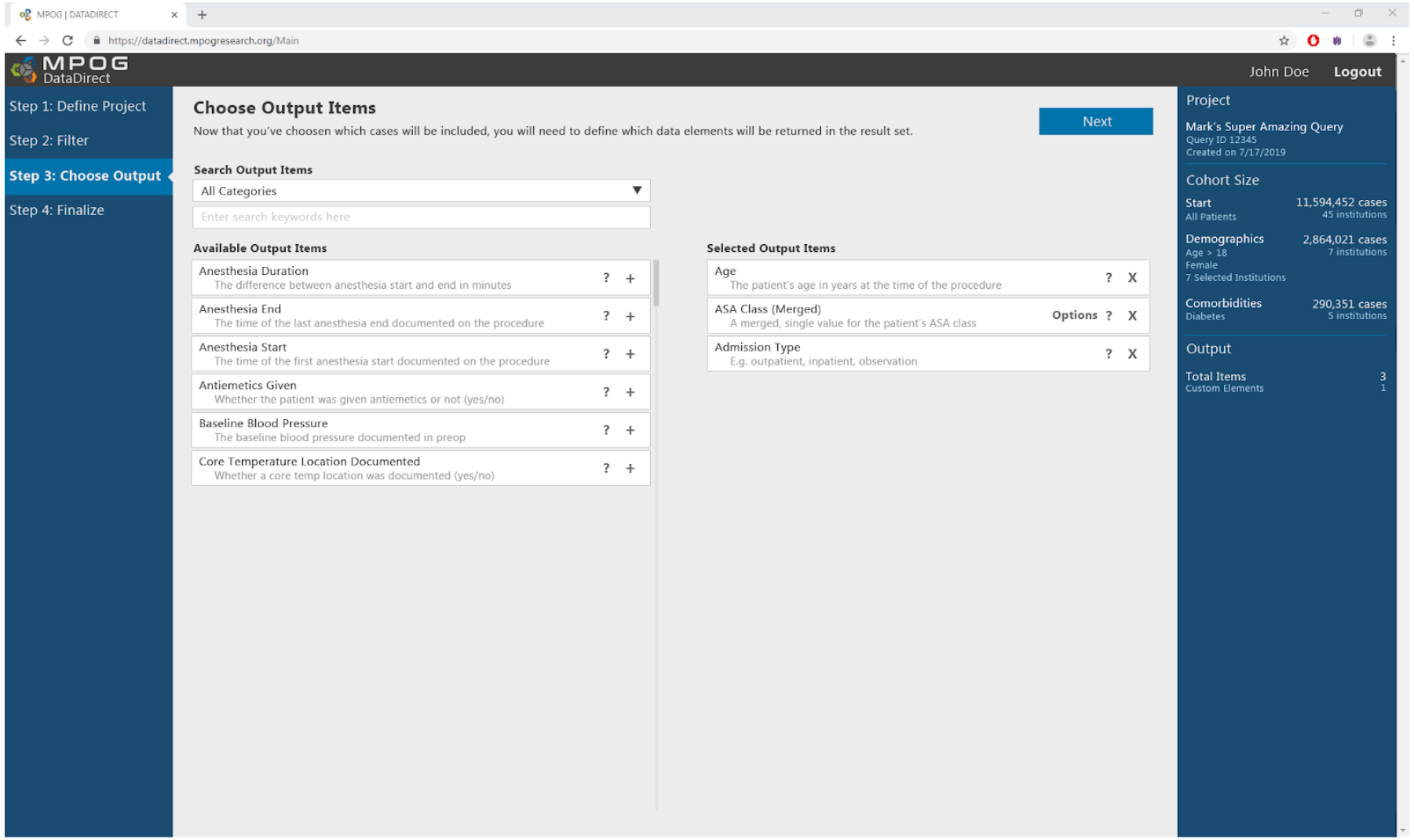


# STEP 2: Filtering Cases Summary

- Finalize all filters as prompted by the guided step-by-step process
- As filters are added, counts for the cohort size will continue to refresh in real-time
- 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

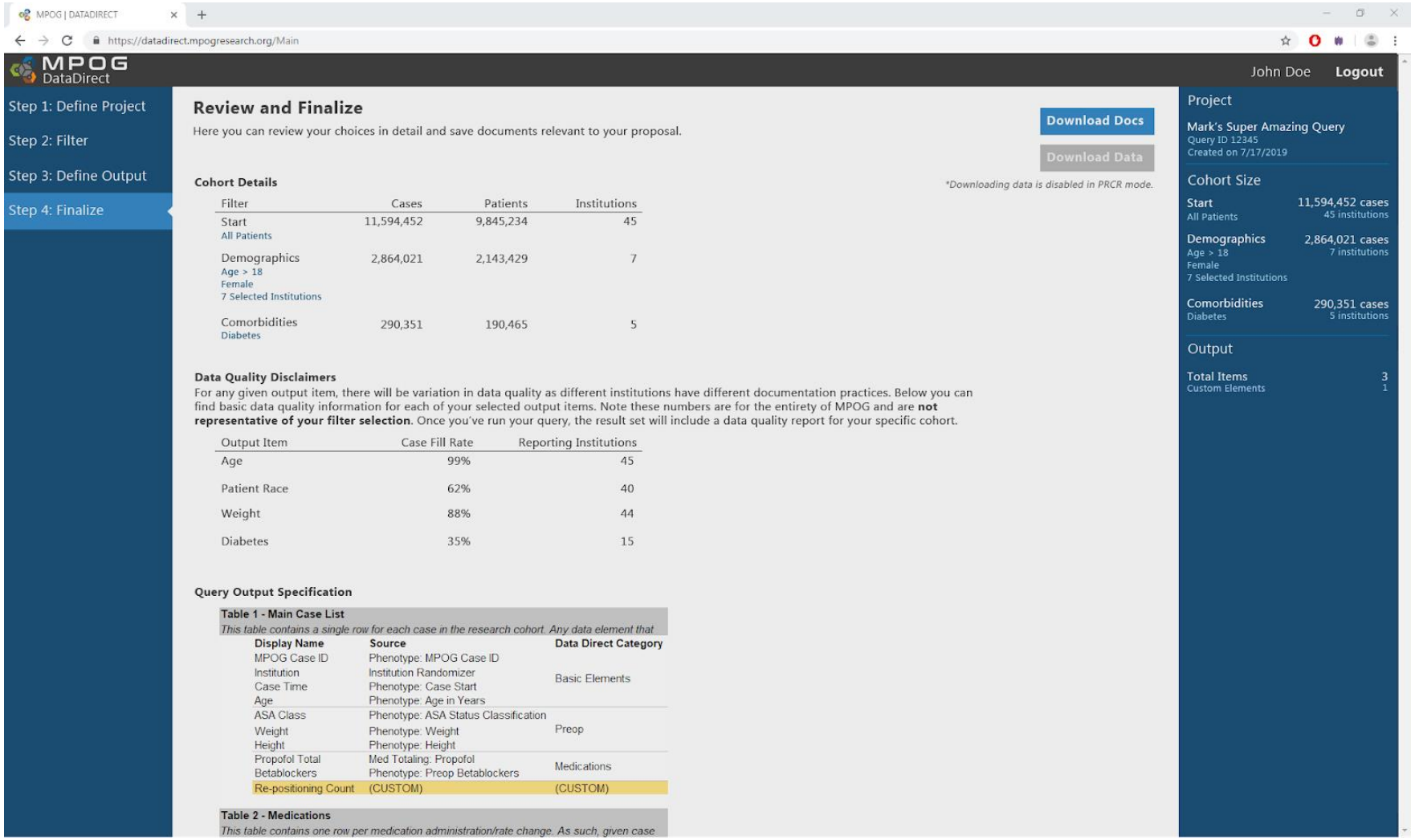


# STEP 3: Define Outputs

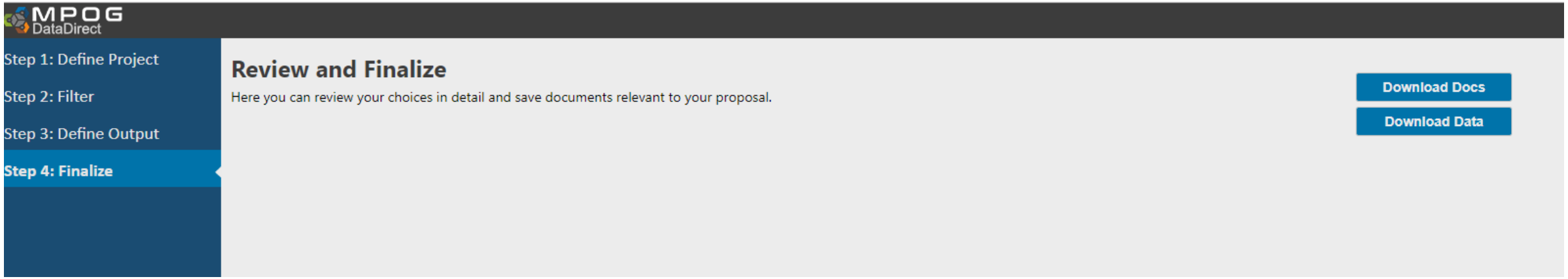



- **<u>Outputs</u>** = Column headers for your downloadable Excel file
- Outputs are available on the left side of the screen - click (+) to add to right side of the screen
- Final selection of outputs are listed on the right, some are defaults that can be removed, if desired

# STEP 4: Review and Finalize



# STEP 4: Review and Finalize




- Based on query mode, different options:
- **Download Query Specification** (Research Mode, Quality Report Modes)
- **Download Data**: Output of your institution's data for the query (Quality Report Mode)
- **No download option** (Cohort Only Mode)

# Next Steps

- Add quality measures and MPOG outcomes as additional filters
- Add “Quality of Data” as a part of report
  - Sample data
  - Fill rates
  - Data distribution
  - Reporting institutions
- Option to set up repeating reports (auto-sent via email)

THANK YOU!
Questions?

MPOG
MULTICENTER PERIOPERATIVE
OUTCOMES GROUP

# Reminders and Wrap-Up

- **MPOG Application Suite upgrades**
  - Scheduled for the week of October 28th, the Suite might be temporarily inaccessible during that time. MPOG technical team will schedule a 30 minute meeting with each site's technical team to apply upgrade.
- **Continue to update Provider Contacts**
- **Mark Your Calendars!!**
  - 2020 ACQR Retreat: September 18th
- **Q & A**

# Safe Travels and Thank You for Joining us Today!