

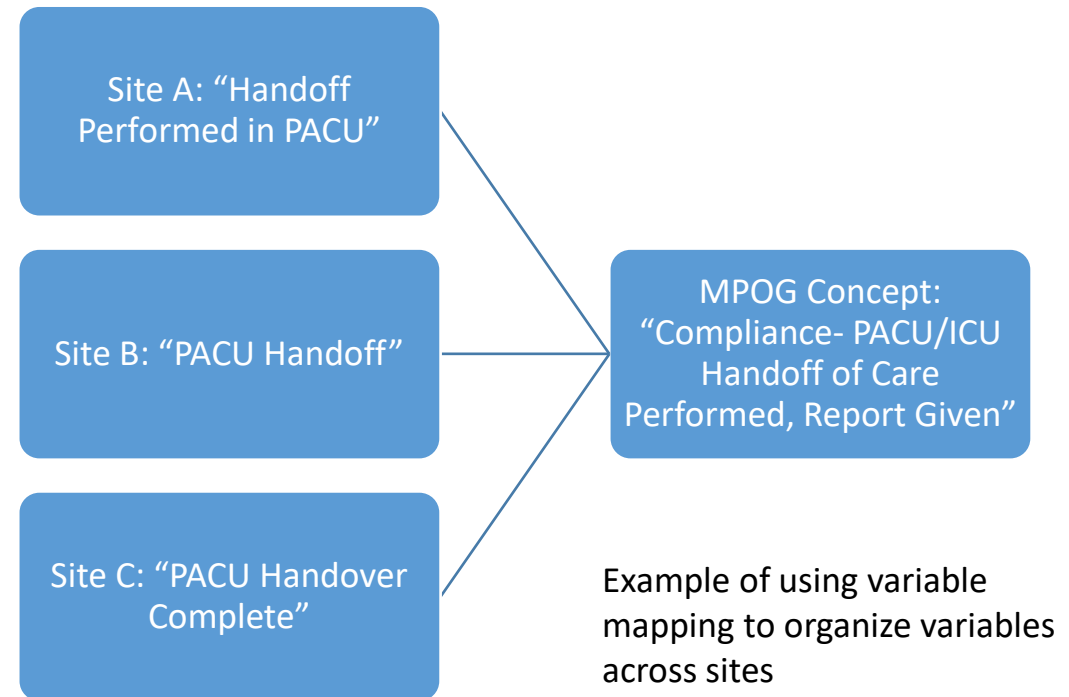


Getting Started: Variable Mapping Utility



Variable Mapping

- The Variable Mapping utility provides sites the ability to map electronic health record (EHR) variables to standardized MPOG concepts.
- This process of standardizing terms across multiple EHRs and across multiple sites allows for common data elements to be used for research or quality improvement purposes.



Variable Mapping

- Once a variable is mapped, source data from the local EHR will always map to the corresponding MPOG concept automatically unless mapping is modified.
- The MPOG Variable Mapping utility simplifies the mapping process by allowing MPOG clinical reviewers to select data variables (source concepts) and match them to corresponding MPOG concepts

Variable Mapping

- **Important Note:** Institutional data needs to be pulled into the MPOG database before mapping can begin.
- Typically, sites begin mapping with a small amount of data (one day to one week) and then load more data after mapping is started.
- Usually, sites will automate the process of applying mappings after one month of data is loaded and mapped in the database.
- Automatic updates are typically scheduled to occur each night.
- Once a variable is mapped, it will automatically be mapped to that concept when additional information is imported.

Using the Variable Mapper

- Open the MPOG Suite and select “Variable Mapping”

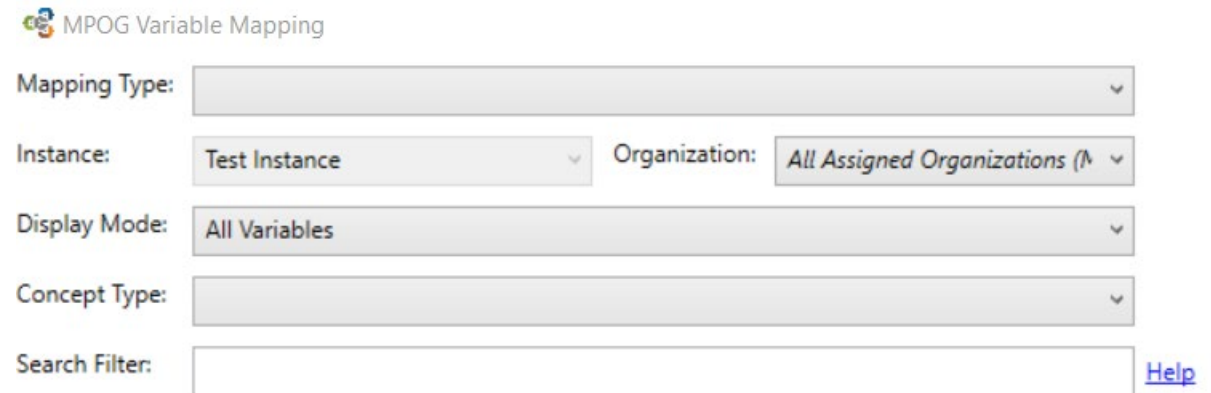


- The 'Variable Mapping' utility should open and look similar to the image below. The left side of the utility will list your institution (AIMS) variables and the right side will list MPOG concepts available to map to.
- You will also notice six fields within the MPOG Variable Mapping application that allow you to filter by category. These include Mapping Type, Instance, Organization, Display Mode, Concept Type, and Search Filter.

The screenshot shows the 'MPOG Variable Mapping' application window. On the left, under the heading 'AIMS Variables', there is a table with columns: ID, Org, Name, Times Used, Mapped As, MPOG ID, and Type. The table is currently empty. Above the table are several filter fields: 'Mapping Type' (dropdown), 'Instance' (dropdown with 'MPOG_MAS' selected), 'Organization' (dropdown with 'University of Michigan Ann A' selected), 'Display Mode' (dropdown with 'All Variables' selected), 'Concept Type' (dropdown), and 'Search Filter' (text input with a 'Help' link). On the right, under the heading 'MPOG Concepts', there is a table with columns: Name, ID, and Type. This table is also empty. Above it are 'Import' and 'Export' buttons, and 'Options' for 'Auto Search On' and 'Auto Select On'. Below the 'MPOG Concepts' table are buttons for 'Map', 'Unmap', 'Exclude', 'Skip', 'Premappings', 'Mapping History', and 'Examine'.

Variable Mapping Fields

- **Mapping Type:** This is a general mapping category that can be further filtered to subcategories
- **Instance:** This field will be populated with your default database instance (for sites that have more than one IM database).
- **Organization:** This field will be populated with your institutional name.
- **Display Mode:** This feature allows you to filter by 'All Variables,' 'Unmapped Variables,' 'Mapped Variables,' 'Pre-Mapped Variables,' 'Excluded Variables,' or 'Skipped Variables.'

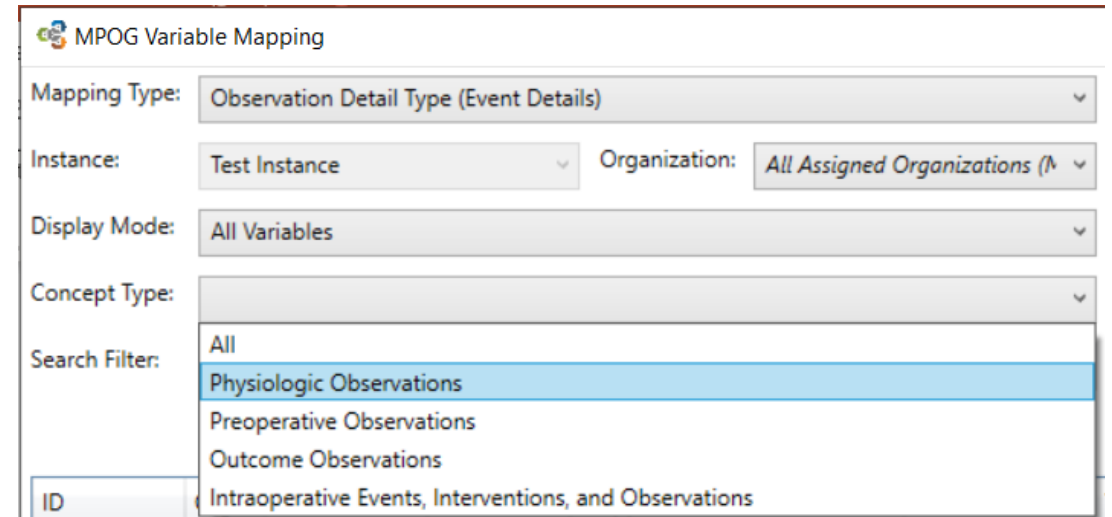


The screenshot shows the 'MPOG Variable Mapping' interface. It features several dropdown menus and a search filter. The 'Mapping Type' dropdown is currently empty. The 'Instance' dropdown is set to 'Test Instance'. The 'Organization' dropdown is set to 'All Assigned Organizations (Merged)'. The 'Display Mode' dropdown is set to 'All Variables'. The 'Concept Type' dropdown is currently empty. The 'Search Filter' is an empty text input field. A 'Help' link is visible to the right of the search filter.

**There may be additional sites in the dropdown menu for multi-site institutions in which you are assigned (i.e., Henry Ford Detroit, Henry Ford West Bloomfield). For institutions with multiple sites, It is recommended that mapping is completed under All Assigned Organizations (Merged).*

Variable Mapping Fields

- **Concept Type:** This function allows you to sort the variables that have been mapped to an MPOG concept by concept type: Physiologic Observations, Preoperative Observations, Outcome Observations, and Intraoperative Events, Interventions, and Observations
 - Default setting is 'All' concept types. When looking at unmapped, skipped, or excluded variables, the concept type should be set to 'All' in order to see the variables.
- **Search Filter:** This function allows you to search for a specific AIMS variable.
 - Can search by original variable ID using prefix "ID" (example "ID:1448")
 - Can search by the concept ID/name fields by using prefix "mapped:" (example "mapped:propofol")




The screenshot displays the 'MPOG Variable Mapping' interface. It features several filter fields: 'Mapping Type' set to 'Observation Detail Type (Event Details)', 'Instance' set to 'Test Instance', and 'Organization' set to 'All Assigned Organizations'. The 'Display Mode' is set to 'All Variables'. The 'Concept Type' dropdown is open, showing a list of options: 'All', 'Physiologic Observations' (which is highlighted in blue), 'Preoperative Observations', 'Outcome Observations', and 'Intraoperative Events, Interventions, and Observations'. Below the dropdown, there is an 'ID' input field.

- To utilize the category filter option, click on the 'Mapping Type' field. A dropdown menu will appear, and you may select from the various options
- Select from the desired category from the 'Mapping Type' dropdown menu, as shown below

The screenshot displays the 'MPOG Variable Mapping' application window. On the left, a sidebar contains several fields: 'Mapping Type:', 'Instance:', 'Display Mode:', 'Concept Type:', and 'Search Filter:'. The 'Mapping Type:' dropdown menu is open, showing a list of categories including 'Administration Route', 'Administration Type (Inputs/Outputs/Meds)', 'Admission Type', 'Ethnicity', 'Gender', 'Lab Type', 'Observation Detail Type (Event Details)', 'Observation Type (Events/Physiologic/Outcomes)', 'Procedure Service', 'Race', 'Staff Type', and 'Units of Measurement (Administration)'. The 'Administration Route' option is currently selected. To the right of the sidebar, there are buttons for 'Import' and 'Export'. Below these are two buttons labeled 'Auto Search On' and 'Auto Select On'. A 'Search Filter:' text input field is located below the buttons. On the far right, there is a table with columns 'Name', 'ID', and 'Type'. Below the table, there are buttons for 'Map', 'Unmap', 'Exclude', and 'Skip'. At the bottom of the interface, there are buttons for 'Premappings', 'Mapping History', and 'Examine'.

- In the example below, we have selected the Mapping Type 'Race.'

 MPOG Variable Mapping

Mapping Type: Race

Instance: MPOG_MAS Organization: University of Michigan Ann Arbor

Display Mode: All Variables

Concept Type:

Search Filter: [Help](#)

- Once 'Race' has been selected from the dropdown menu, you will notice a variety of race related variables populate the window below. You may notice variables on the left side of the screen already appear green (mapped) if premapping has been completed.

- Click the 'Race' variable you wish to map. Once the row has been selected, it will turn blue and a corresponding auto-searched MPOG concept will appear in the 'Description' field on the right side. If several options appear, you can click on one of the bold terms above the MPOG concept window to narrow the search. If the desired concept does not appear, use the search filter on the right side to modify your search.
- In this example, we have selected 'American Indian/Alaska Native.'

MPOG Variable Mapping

Mapping Type: Race

Instance: MPOG_MAS Organization: University of Michigan Ann A

Display Mode: All Variables

Search Filter: [Help](#)

ID	Org	Name	Times Used	Mapped As	Type
W	University of W	White	4,065,168	White	Race
B	University of B	Black	401,327	Black	Race
O	University of O	Asian or Pacific Islander	246,701	Asian or Pacific Islander	Race
H	University of H	Unknown	105,059	Unknown	Race
A	University of A	Asian or Pacific Islander	95,157	Asian or Pacific Islander	Race
U	University of U	Unknown	37,987	Unknown	Race
D	University of D	Unknown	7,932	Unknown	Race
<No ID Given	University of <No ID Given>	Unknown	7,416	Unknown	Race
P	University of P	Asian or Pacific Islander	2,961	Asian or Pacific Islander	Race
1	University of 1	Unknown Concept	653	Unknown Concept	Meta
F	University of F	Unknown Concept	355	Unknown Concept	Meta
6	University of 6	Unknown Concept	141	Unknown Concept	Meta
2	University of 2	Unknown Concept	137	Unknown Concept	Meta
C	University of C	Unknown Concept	109	Unknown Concept	Meta
K	University of K	Unknown Concept	31	Unknown Concept	Meta
V	University of V	Unknown Concept	7	Unknown Concept	Meta
7	University of 7	Unknown Concept	6	Unknown Concept	Meta
5	University of 5	Unknown Concept	4	Unknown Concept	Meta

Options: Auto Search On Auto Select On

Search Filter: am

U

Map: American Indian or Alaska Native 304 Race

Unmap

Exclude

Skip

Premappings

Mapping History

Examine

- Click the MPOG Variable you wish to map to. This will highlight it in blue.
- Click 'Map'. Your variable is now mapped to an MPOG Concept and will turn green. You can also map by double clicking the MPOG concept. The “Mapped As” column will be updated to reflect this change

MPOG Variable Mapping

Mapping Type: Race

Instance: MPOG_MAS Organization: University of Michigan Ann A

Display Mode: All Variables

Search Filter: am

ID	Org	Name	Times Used	Mapped As	Type
W	University of W		4,065,168	White	Race
B	University of B		401,327	Black	Race
O	University of O		246,701	Asian or Pacific Islander	Race
H	University of H		105,059	Unknown	Race
A	University of A		95,157	Asian or Pacific Islander	Race
U	University of U		37,987	Unknown	Race
D	University of D		7,932	Unknown	Race
<No ID Given	University of <No ID Given>		7,416	Unknown	Race
P	University of P		2,961	Asian or Pacific Islander	Race
1	University of 1		653	Unknown Concept	Meta
F	University of F		355	Unknown Concept	Meta
6	University of 6		141	Unknown Concept	Meta
2	University of 2		137	Unknown Concept	Meta
C	University of C		109	Unknown Concept	Meta
K	University of K		31	Unknown Concept	Meta
V	University of V		7	Unknown Concept	Meta
7	University of 7		6	Unknown Concept	Meta
5	University of 5		4	Unknown Concept	Meta

Options: Auto Search On Auto Select On

Search Filter: am

U

Map

Unmap

Exclude

Skip


Premappings

Mapping History

Examine

Name	ID	Type
American Indian or Alaska Native	304	Race

- You may also filter by 'Display Mode' to sort the variables and help to focus mapping efforts. The categories are 'All Variables,' 'Pre-Mapped Variables Only,' 'Mapped Variables Only,' 'Unmapped Variables Only,' 'Excluded Variables Only,' and 'Skipped Variables Only.' By selecting from the dropdown menu, only the variables within the selected category will appear.

 MPOG Variable Mapping

Mapping Type: Race

Instance: MPOG_MAS Organization: University of Michigan Ann Arbor

Display Mode: All Variables

Concept Type: All Variables

Search Filter: Mapped Variables Only

Unmapped Variables Only

Excluded Variables Only

Skipped Variables Only

ID	Org	Name	Times Used	Mapped As	MPOG ID	T
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Excluding Variables

- The 'Exclude' function allows you to exclude selected variables from mapping.
- The Exclude function is only available in specific mapping types.
 - Administration Type (Inputs/Outputs/Meds)
 - Observation Type (Events/Physiologic/Outcomes)
 - Observation Type Detail (Event Details)
 - Lab Type

Times Used	Mapped As	Type	Map	Name	ID
695,248	Postoperative vital signs - respir	Intraop H		Intubation Endotracheal Tube S	501.
693,732	Misc - IV access	Intraop H		Intubation Endotracheal Tube T	501.
693,732	Misc - IV access	Intraop H		Epidural catheter type or brand	501.
693,732	Misc - IV access	Intraop H		Tracheostomy Tube Type	502.
693,732	Misc - IV access	Intraop H	Exclude	Neuraxial technique sterile prep	503.
693,732	Misc - IV access	Intraop H		Vaporizer Setting (%)	306.
668,456	Compliance - Prophylactic antib	Intraop H		Aldrete Score	307.
648,652	Warming attempts -- convective	Intraop H		Confusion Assessment Method	308.
648,652	Warming attempts -- convective	Intraop H		Patient warming method - gen	312.
628,269	Monitoring - Temperature prob	Intraop H		Pleth Variability Index	312.
582,551	Categorized note - Emergence	Intraop H		Aldrete Score: Activity	315.
560,706	NPO status	Intraop H		Aldrete Score: Respiration	315.
471,878	Intubation Endotracheal Tube Si	Intraop H		Aldrete Score: Circulation	315.
471,379	Intubation Endotracheal Tube Sx	Intraop H		Aldrete Score: Consciousness	315.
471,325	Intubation Endotracheal Tube Ty	Intraop H		Aldrete Score: SpO2/Oxygenati	316.
444,217	Positioning - Eye protection -- d	Intraop H		Fetal Heart Rate Category	316.
402,938	Monitoring - Neuromuscular blk	Intraop H		Fetal Heart Rate- Decelerations	318.
374,362	Airway - Oxygen via nasal cann	Intraop H		Fetal Heart Rate- Accelerations	318.
344,057	Airway - Mask Ventilation Diff	Intraop H		Tidal Volume Cat	318.

- Highlight the variable(s) you wish to exclude from mapping and click 'Exclude'
- Excluded variables will turn pink.

MPOG Variable Mapping

Mapping Type: Observation Detail Type

Instance: MPOG_MAS Organization: University of Michigan Ann A

Display Mode: Mapped Variables Only

Search Filter: [Help](#)

ID	Org	Name	Times Used	Mapped As	Type
29134	University of	Taped at @	134	Intubation Endotracheal Tube S	Intraop N
47910	University of	Blade/View	129	Intubation view note	Intraop N
38178	University of	Concerns	124	Airway - Laryngeal Mask Airway	Intraop N
7758	University of	Stopped indicator	124	Variable Excluded from Import	Meta
8559	University of	Paresthesia	120	Neuraxial insertion parasthesia y	Intraop N
8563	University of	Aspiration	118	Neuraxial insertion aspiration of	Intraop N
15814	University of	Skin Depth	116	Epidural catheter withdrawn to c	Intraop N
36891	University of	Position Confirmed by	110	Categorized note - Positioning	Intraop N
15905	University of	Sensory Level	108	Neuraxial technique - Bilateral S	Intraop N
8570	University of	Test Dose	108	Epidural test dose administered	Intraop N
8595	University of	Catheter status	106	Epidural anesthesia catheter pla	Intraop N
40011	University of	Type of Medication	92	Misc - Medication Free Text Enti	Intraop N
47914	University of	Cricoid Pressure	89	Intubation - cricoid pressure ap	Intraop N
36542	University of	Nurse's Name	86	Variable Excluded from Import	Meta
36543	University of	Pain Score	86	Pain Score (Generic)	Physiolog
36544	University of	Repositioned	86	Positioning - Patient position	Intraop N
44130	University of	Motor Blockade	82	Regional - Motor response to st	Intraop N
5976	University of	Attempts	82	Neuraxial technique number of	Intraop N
36568	University of	Sensory Level	82	Neuraxial technique - Bilateral S	Intraop N

Skipping Variables

- The 'Skip' function allows you to skip a variable that you are purposefully leaving unmapped.
- Select the variable on the left and click on 'Skip'
- The variable row will turn yellow
- Examples of variables to be marked 'Skipped'
 - Variables that MPOG does not have a concept for
 - Variables that you have reviewed and determined that they do not need to be mapped at this time
 - Peripheral IV placement/assessment

Times Used	Mapped As	Type	Map	Name	ID
695,248	Postoperative vital signs - respir	Intraop N		Intubation Endotracheal Tube S	501:
693,732	Misc - IV access	Intraop N		Intubation Endotracheal Tube T	501:
693,732	Misc - IV access	Intraop N		Epidural catheter type or brand	501:
693,732	Misc - IV access	Intraop N		Tracheostomy Tube Type	502:
693,732	Misc - IV access	Intraop N		Neuraxial technique sterile prep	503:
693,732	Misc - IV access	Intraop N		Vaporizer Setting (%)	306:
668,456	Compliance - Prophylactic antib	Intraop N		Aldrete Score	307:
648,652	Warming attempts -- convective	Intraop N		Confusion Assessment Method	308:
648,652	Warming attempts -- convective	Intraop N		Patient warming method - gen	312:
628,269	Monitoring - Temperature prob	Intraop N		Pleth Variability Index	312:
582,551	Categorized note - Emergence	Intraop N		Aldrete Score: Activity	315:
560,706	NPO status	Intraop N		Aldrete Score: Respiration	315:
471,878	Intubation Endotracheal Tube Si	Intraop N		Aldrete Score: Circulation	315:
471,379	Intubation Endotracheal Tube Si	Intraop N		Aldrete Score: Consciousness	315:
471,325	Intubation Endotracheal Tube Tj	Intraop N		Aldrete Score: SpO2/Oxygenati	316:
444,217	Positioning - Eye protection -- d	Intraop N		Fetal Heart Rate Category	316:
402,938	Monitoring - Neuromuscular blc	Intraop N		Fetal Heart Rate- Decelerations	318:
374,362	Airway - Oxygen via nasal cannu	Intraop N		Fetal Heart Rate- Accelerations	318:
344,057	Airway - Mask Ventilation Diff	Intraop N		Tidal Volume Est	318:

Unmap

- The 'Unmap' feature allows you to unmap incorrectly mapped variables at any time.
- Simply select and highlight the variable on the left side and click 'Unmap'.
- The variable will then turn white.

Times Used	Mapped As	Type	Map	Name	ID
695,248	Postoperative vital signs - respir	Intraop N		Intubation Endotracheal Tube S	501.
693,732	Misc - IV access	Intraop N	Unmap	Intubation Endotracheal Tube T	501.
693,732	Misc - IV access	Intraop N		Epidural catheter type or brand	501.
693,732	Misc - IV access	Intraop N		Tracheostomy Tube Type	502.
693,732	Misc - IV access	Intraop N		Neuraxial technique sterile prep	503.
693,732	Misc - IV access	Intraop N		Vaporizer Setting (%)	306.
668,456	Compliance - Prophylactic antib	Intraop N		Aldrete Score	307.
648,652	Warming attempts -- convective	Intraop N		Confusion Assessment Method	308.
648,652	Warming attempts -- convective	Intraop N		Patient warming method - gen	312.
628,269	Monitoring - Temperature prob	Intraop N		Pleth Variability Index	312.
582,551	Categorized note - Emergence	Intraop N		Aldrete Score: Activity	315.
560,706	NPO status	Intraop N		Aldrete Score: Respiration	315.
471,878	Intubation Endotracheal Tube Si	Intraop N		Aldrete Score: Circulation	315.
471,379	Intubation Endotracheal Tube Si	Intraop N		Aldrete Score: Consciousness	315.
471,325	Intubation Endotracheal Tube Ty	Intraop N		Aldrete Score: SpO2/Oxygenati	316.
444,217	Positioning - Eye protection -- d	Intraop N		Fetal Heart Rate Category	316.
402,938	Monitoring - Neuromuscular blk	Intraop N		Fetal Heart Rate- Decelerations	318.
374,362	Airway - Oxygen via nasal cann	Intraop N		Fetal Heart Rate- Accelerations	318.
344,057	Airway - Mask Ventilation Diff	Intraop N		Tidal Volume Set	319.

Mapping Multiple Variables

- You may have multiple variables that you wish to map to the same concept.
 - You can either click on the variable on the left side and drag to highlight multiple rows or hold down ctrl and click on the variables to multi-select
- Then select the concept you wish to map the variables to and click 'Map'
- You can also do this for multiple variables that you wish to Exclude, Skip, or Unmap

The screenshot displays the MPOG Variable Mapping tool. At the top, there are dropdown menus for 'Mapping Type' (set to 'Administration Type (Inputs/Outputs/Meas)'), 'Instance' (set to 'MPOG_MAS'), and 'Organization' (set to 'University of Michigan Ann Arbor'). A 'Search Filter' box contains the text 'acetaminophen'. Below these is a table with columns: ID, Org, Name, Times Used, Mapped As, and Type. The table lists various acetaminophen formulations from the University of Michigan Ann Arbor, such as 'acetaminophen 500 mg tablet' and 'acetaminophen 100 mg/5 mL oral liquid'. To the right of the table is a sidebar with 'Options' (a blue button), a 'Search Filter' box (containing 'acetaminophen 500'), and a list of mapped concepts including 'acetaminophen 500', 'HYDROCODONE / A', 'PROPPOXYPHENE W', 'OXYCODONE / ACE', 'HYDROCODONE / J', 'CODEINE / ACETAM', 'CODEINE / ACETAN', 'OXYCODONE / ACE', 'HYDROCODONE S', 'HYDROCODONE T', 'ACETAMINOPHEN', 'ACETAMINOPHEN', 'ASPRIN/ACETAMIN', and 'ACETAMINOPHEN'. At the bottom of the sidebar are buttons for 'Map', 'Unmap', 'Exclude', and 'Skip'.

Groups to Map First

- Race
- Gender
- Ethnicity
- Procedure Service
- Admission Type
- Staff Type

Groups to Map Next

- *Lab Type*

- 1st--Map labs that are important to surgical/anesthesia care (Hgb, Hct, Creatinine, Glucose, Troponin, potassium)
- 2nd--map microbiology and virology labs that we have concepts for (i.e. coronavirus, COVID Antibody testing, blood cultures, wound cultures, etc.)
- 3rd--map remaining labs that we have concepts for (i.e. WBC, blood gases) . If we do not have a concept for a variable, it is okay to leave it unmapped or skipped.

- *Administration Type (Inputs/Outputs/Meds)*

- This category includes IN's and OUT's such as fluids, medications, blood products, EBL and urine output.
- Exclude “volume (mL)” medication variables.

****Exclude all physiologic and gas flow variables from this mapping group**

Groups to Map Last

- *Administration Route*
 - **Do Not Exclude** in this category – map unspecified concepts to “Other” or leave unmapped
- *Units of Measurement (Administration)*
 - **Do not Exclude** in this category – leave those variables without a corresponding MPOG concept unmapped
- *Observation Detail Type (Event Details)*
 - These are observation Details. Map Observation Type first.
- *Observation Type (Events/Physiologic/Outcomes)*

Additional Functions within Variable Mapping

- Examine
- Export History
- Premappings
- Auto Search
- Auto Select
- Export
- Import

Mapping Type:

Instance: Organization:

Display Mode:

Search Filter: [Help](#)

ID	Org	Name	Times Used	Mapped As	Type
9374	University of	NFF-CV BP Art 2 Sys	2,079	BP Sys Invasive Unspecified Site	Physiologic
504	Multiple	NFF-IRR	27,468	CPOM measure Operation on in Outcome	
1448	Multiple	NFF- End Tidal CO2	37,234	End Tidal CO2 %	Physiologic
4304	Multiple	Meds Medications	2,910	General - Medications - Current Preop	
11921	Multiple	OB Pregnancy Diagnosis	5	Monitoring - Temperature probe Intraop N	
201404	Multiple	Monitor Nitrous Exp	36,379	Positive End Expiratory Pressure	Physiologic
15	Multiple	NFF-CV Pulse	36,227	Postoperative vital signs - pulse	Intraop N
201407	Multiple	Monitor Oxygen Exp	36,155	Postoperative vital signs - pulse	Intraop N
40939	Multiple	Patient Position: Patient ti	5	Preinduction - Patient transport	Intraop N
9066	Multiple	CBD - SpO2 HR	35,679	Throat Pack Out	Intraop N
41400	University of	ROTEM Results - Type of	18	Unknown Concept	Meta
6715	University of	Ventilator turned off after	5	Unknown Concept	Meta
20900	University of	Circulatory Arrest End	5	Unknown Concept	Meta
51825	Multiple	Cardiology Attending pre	5	Unknown Concept	Meta
31934	University of	Autologous Whole Blood	5	Unknown Concept	Meta
41102	Multiple	Positive bilateral breath s	5	Unknown Concept	Meta
36546	Multiple	COBAN Nurse __ assisting	5	Unknown Concept	Meta
39996	Multiple	Groin Access Achieved	5	Unknown Concept	Meta
35862	University of	CPB Time - Active Comm	5	Unknown Concept	Meta

Options:

Search Filter:

Map

Unmap

Exclude

Skip

Premappings

Mapping History

Examine

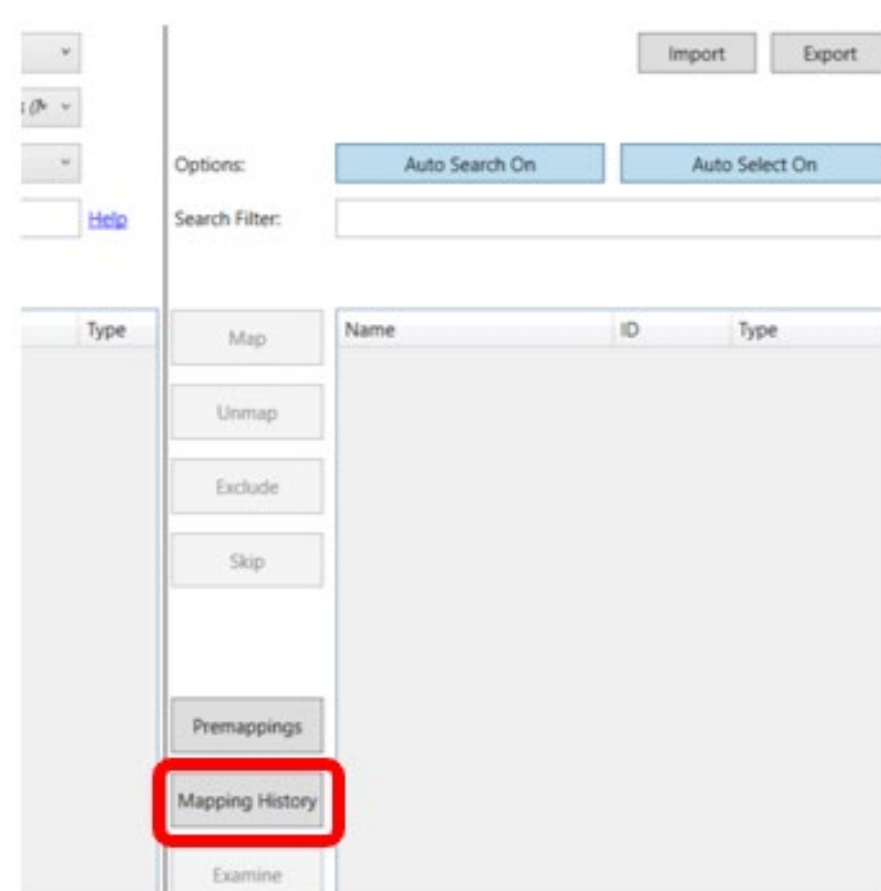
Examine

- The ‘Examine’ function allows you to view the institution (AIMS) variable in greater detail. Associated values, times, and field details can assist in choosing the best MPOG concept for mapping.
- Highlight the variable row you wish to examine and click “Examine”.
 - A window will open containing detailed information related to the selected variable and a sample case list.
 - MRNs are also available so the user can open an example case in the electronic health record for additional context for any variable in question.

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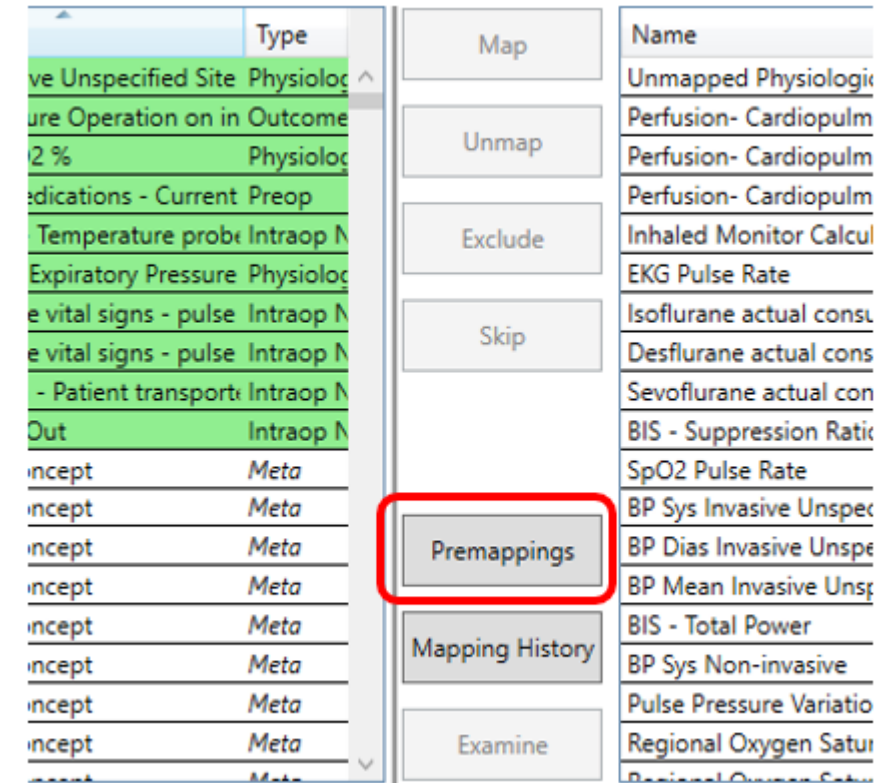
Mapping History

- This function will pull the mapping logs to show which user completed each mapping and when that mapping was completed. It will be exported to your computer as an Excel file.



Epic Sites Only: Pre-Mapped Variables

- Epic sites use similar AIMS IDs (variable IDs), which can be mapped to the same concept.
- Once per year, MPOG will review the common Epic AIMS IDs and update the pre-mapping for these variables.
- **New sites:** Pre-mapping is applied before the site begins variable mapping.
- **Existing sites:** Can review the latest update to pre-mappings and adopt as appropriate for their site
 - Click on the 'Pre-mappings' button at the bottom middle of the Variable Mapping tool to either accept or reject recommended mappings.
 - Choose the 'Pre-Mappings Only' Display Mode to review those variables that have already been pre-mapped



Auto Search

- While auto search is ON, the variable name that is selected on the left-hand side will auto populate in the search filter on the right side. Clicking the auto search button will turn this function OFF and will not auto populate the search filter.

The screenshot displays the MPOG Variable Mapping application window. On the left, there are configuration options: Mapping Type (Observation Type (Events/Physiologic/Outcomes)), Instance (Test Instance), Organization (All Assigned Organizations), Display Mode (Unmapped Variables Only), and a Search Filter field. Below these is a table of mapped variables with columns: ID, Org, Name, Times Used, Mapped As, and Type. The table lists various physiological monitors and their mappings. On the right, there are 'Import' and 'Export' buttons, and an 'Options' section with 'Auto Search On' (highlighted with a red box) and 'Auto Select On' buttons. Below the options is another 'Search Filter' field. At the bottom right, there is a 'Map' button and a table of unmapped variables with columns: Name, ID, and Type. The 'Map' button is also highlighted with a red box.

ID	Org	Name	Times Used	Mapped As	Type
201408	Multiple	Monitor Oxygen Insp	36,511	Unknown Concept	Meta
201405	Multiple	Monitor Nitrous Insp	36,379	Unknown Concept	Meta
42603	Multiple	Vent Flows O2	35,871	Unknown Concept	Meta
651	Multiple	NFF-Pul Vent PEEP	35,766	Unknown Concept	Meta
457	Multiple	NFF-Pul Vent PIP	35,762	Unknown Concept	Meta
450	Multiple	NFF-Pul FiO2 %	35,542	Unknown Concept	Meta
201020	Multiple	Vent Mean Airway pressu	35,526	Unknown Concept	Meta
201032	Multiple	Vent vent mode	35,413	Unknown Concept	Meta
201041	Multiple	Vent Tidal volume set (m	28,757	Unknown Concept	Meta
453	Multiple	NFF-Pul Vent TV Spont	27,051	Unknown Concept	Meta
200308	Multiple	Monitor ST1	25,562	Unknown Concept	Meta
200309	Multiple	Monitor ST2	25,415	Unknown Concept	Meta
200310	Multiple	Monitor ST3	24,946	Unknown Concept	Meta
201415	Multiple	Monitor ST aVF	23,005	Unknown Concept	Meta
201416	Multiple	Monitor ST aVL	23,005	Unknown Concept	Meta
201417	Multiple	Monitor ST aVR	23,005	Unknown Concept	Meta
201399	Multiple	Monitor Isoflurane Foran	18,302	Unknown Concept	Meta
201400	Multiple	Monitor Isoflurane Foran	18,302	Unknown Concept	Meta

Name	ID	Type
Unmapped Physiologic Conc	3000	Physiologic
Perfusion- Cardiopulmonary	3001	Physiologic
Perfusion- Cardiopulmonary	3002	Physiologic
Perfusion- Cardiopulmonary	3003	Physiologic
Inhaled Monitor Calculated	3004	Physiologic
EKG Pulse Rate	3005	Physiologic
Isoflurane actual consumpti	3006	Physiologic
Desflurane actual consumpti	3007	Physiologic
Sevoflurane actual consumpr	3008	Physiologic
BiS - Suppression Ratio	3009	Physiologic
SpO2 Pulse Rate	3010	Physiologic
BP Sys Invasive Unspecified	3011	Physiologic
BP Dias Invasive Unspecified	3012	Physiologic
BP Mean Invasive Unspecifi	3013	Physiologic
BiS - Total Power	3014	Physiologic
BP Sys Non-invasive	3015	Physiologic
Pulse Pressure Variation	3016	Physiologic
Regional Oxygen Saturation	3017	Physiologic

Auto Select

- After mapping a variable on the left-hand side, having auto select ON will automatically jump to the next variable. To turn this function OFF, click the “auto select” button.

The screenshot displays the MPOG Variable Mapping application. On the left, there's a table of variables with columns: ID, Org, Name, Times Used, Mapped As, and Type. The table lists various medical variables like 'Monitor (Oxygen Insp)', 'Monitor (Nitrous Insp)', 'Vent (Flows O2)', etc. On the right, there's a control panel with 'Import' and 'Export' buttons at the top. Below them, the 'Options' section contains two buttons: 'Auto Search On' and 'Auto Select On'. The 'Auto Select On' button is highlighted with a red rectangular box. Below the options is a 'Search Filter' input field. At the bottom right, there's another table showing mapped variables with columns: Name, ID, and Type. This table lists items like 'Unmapped Physiologic Conc', 'Perfusion- Cardiopulmonary', etc.

Export

- You can export all variables and their mappings to an Excel spreadsheet through the export button

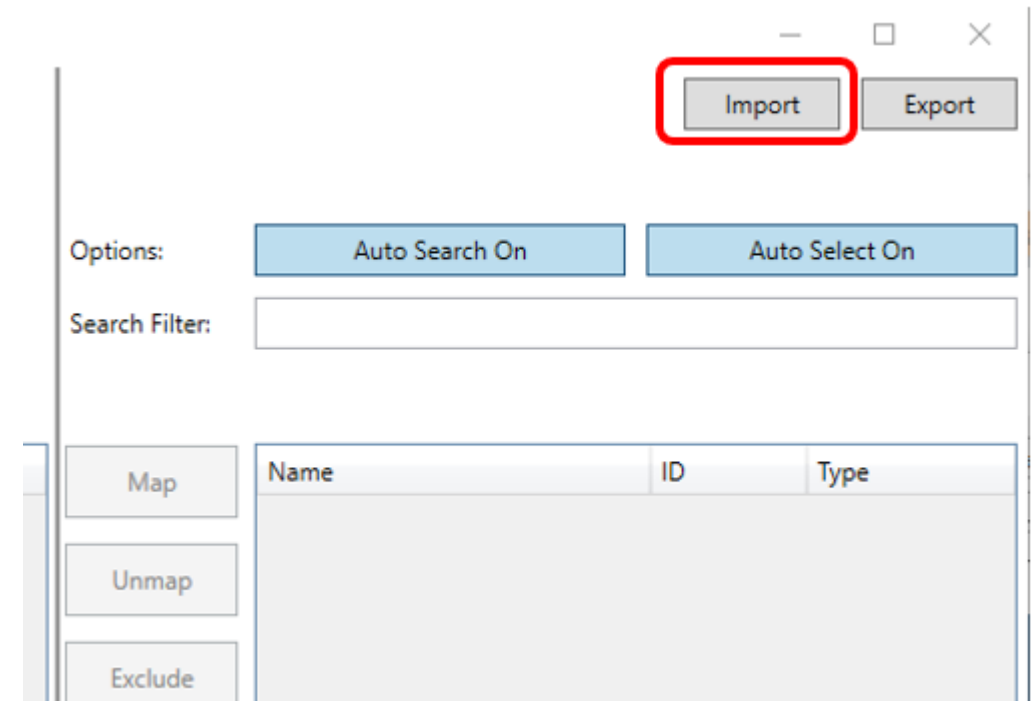
The screenshot displays the MPOG Variable Mapping application interface. At the top, there are several dropdown menus for 'Mapping Type' (set to 'Observation Type (Events/Physiologic/Outcomes)'), 'Instance' (set to 'Test Instance'), and 'Organization' (set to 'All Assigned Organizations (1)'). Below these is a 'Display Mode' dropdown (set to 'Unmapped Variables Only') and a 'Search Filter' input field. On the right side, there are 'Import' and 'Export' buttons, with the 'Export' button highlighted by a red rectangle. Below the buttons are 'Options' for 'Auto Search On' and 'Auto Select On', and another 'Search Filter' input field. The main area is divided into two tables. The left table lists variables with columns: ID, Org, Name, Times Used, Mapped As, and Type. The right table lists mapped variables with columns: Name, ID, and Type. The 'Export' button is located in the top right corner of the application window.

ID	Org	Name	Times Used	Mapped As	Type
201408	Multiple	Monitor Oxygen Insp	36,511	Unknown Concept	Meta
201405	Multiple	Monitor Nitrous Insp	36,379	Unknown Concept	Meta
42603	Multiple	Vent Flows O2	35,871	Unknown Concept	Meta
651	Multiple	NFF-Pul Vent PEEP	35,766	Unknown Concept	Meta
457	Multiple	NFF-Pul Vent PIP	35,762	Unknown Concept	Meta
450	Multiple	NFF-Pul FIO2 %	35,542	Unknown Concept	Meta
201020	Multiple	Vent Mean Airway press.	35,526	Unknown Concept	Meta
201032	Multiple	Vent vent mode	35,413	Unknown Concept	Meta
201041	Multiple	Vent Tidal volume set (m	28,757	Unknown Concept	Meta
453	Multiple	NFF-Pul Vent TV Spont	27,051	Unknown Concept	Meta
200308	Multiple	Monitor ST1	25,562	Unknown Concept	Meta
200309	Multiple	Monitor ST2	25,415	Unknown Concept	Meta
200310	Multiple	Monitor ST3	24,946	Unknown Concept	Meta
201415	Multiple	Monitor ST aVF	23,005	Unknown Concept	Meta
201416	Multiple	Monitor ST aVL	23,005	Unknown Concept	Meta
201417	Multiple	Monitor ST aVR	23,005	Unknown Concept	Meta
201399	Multiple	Monitor Isoflurane Foran	18,302	Unknown Concept	Meta
201400	Multiple	Monitor Isoflurane Foran	18,302	Unknown Concept	Meta

Name	ID	Type
Unmapped Physiologic Conc	3000	Physiologic
Perfusion- Cardiopulmonary	3001	Physiologic
Perfusion- Cardiopulmonary	3002	Physiologic
Perfusion- Cardiopulmonary	3003	Physiologic
Inhaled Monitor Calculated I	3004	Physiologic
EKG Pulse Rate	3005	Physiologic
Isoflurane actual consumptic	3006	Physiologic
Desflurane actual consumpti	3007	Physiologic
Sevoflurane actual consumpr	3008	Physiologic
BIS - Suppression Ratio	3009	Physiologic
SpO2 Pulse Rate	3010	Physiologic
BP Sys Invasive Unspecified	3011	Physiologic
BP Dias Invasive Unspecified	3012	Physiologic
BP Mean Invasive Unspecifie	3013	Physiologic
BIS - Total Power	3014	Physiologic
BP Sys Non-invasive	3015	Physiologic
Pulse Pressure Variation	3016	Physiologic
Regional Oxygen Saturation	3017	Physiologic

Import

- At times, MPOG may ask you to export and send your variable mapping spreadsheet for mapping review/updates.
- MPOG can make the mapping updates on your spreadsheet and send it back to you
- In order for the updates to be complete, you'll need to save it to your computer or shared location, open Variable Mapping from the MPOG App Suite, and click on 'Import' in the top right corner. Select this file and then review and accept (or reject) the mapping changes.
 - Choose the 'Recommended' setting the next time that you transfer to update your data at MPOG Central (see 'Monthly Upload – Transfer to MPOG Central')



How Mapping Translates to MPOG Case Viewer

The **‘type’** of MPOG concept you map to an AIMS variable will determine where the data within that variable will display in Case Viewer.

- Those mapped to *‘Physiologic’* and *‘Intraop Note’* type concepts will populate in the **Chart** section of case viewer
- Those mapped to *‘Preop’* type concepts will populate in the **H&P** section of case viewer
- Those mapped to *‘Outcomes’* type concepts will populate in the **Outcomes** section of case viewer

Name	ID	Type
BP Combined Invasive Unspecified Site 3	3706	Physiologic
BP Combined Aorta	3707	Physiologic
BP Combined Invasive Unspecified Site 5	3708	Physiologic
Unmapped Intraoperative Note Concept	50000	Intraop Notes
AACD Time Room Ready Date/Time	50001	Intraop Notes
AACD Anesthesia Start Date/Time	50002	Intraop Notes
Respiratory - Oral steroids required	71230	Preop
Respiratory - Prior intubation for pulmonary	71235	Preop
Respiratory - Most recent exacerbation (Date	71240	Preop
Unmapped Outcome Concept	90000	Outcomes
Intraoperative observed quality assurance evi	90001	Outcomes
Postoperative visit patient pain score	90002	Outcomes

Tips for Mapping Success

- Focus on mapping variables with high row counts ('Times Used').
- Once you have mapped the majority of high row count variables, you can begin to focus your attention to mapping the lower row count variables that may be relevant for anesthesia research or quality purposes.

ID	Org	Name	Times Used	Mapped As
1600000310	University of	Heart Rate Source	14,656	Unknown Concept
40877	University of	Perfus Stockert Air Needl	13,003	Unknown Concept
40876	University of	Perfus Stockert Air Needl	13,003	Unknown Concept
40886	University of	Perfus Stockert CP RPM	13,003	Unknown Concept
40890	University of	Perfus Stockert LV Vent(n	13,002	Unknown Concept
40895	University of	Perfus Stockert Pump Suc	13,002	Unknown Concept
40889	University of	Perfus Stockert LV Vent R	13,002	Unknown Concept
40894	University of	Perfus Stockert Pump Suc	13,002	Unknown Concept
16011780	University of	BP Method	10,304	Unknown Concept
3040103232	University of	Pulse Oximetry Type	9,689	Unknown Concept

- Utilizing the [MPOG Concept Browser](#) utility will facilitate efficient identification of corresponding MPOG concepts. Please reference the *Module: Getting Started-Concept Browser* for more information

Concept Browser

Please select a concept type and query string

Concept type
[All concept types] ▼

Query string
propofol

Count Mode
Concept occurrences ▼

☒ Hide inactive concepts

Submit

ID	Concept Name	Concept Type	# of Occurrences
10377	PROPOFOL	Intraoperative Medications (Administered Mixtures)	16,421,110
10378	PROPOFOL W/ REMIFENTANIL 10 MG/ML + 5 MCG/ML	Intraoperative Medications (Administered Mixtures)	247
10453	PROPOFOL W/ KETAMINE 10 MG/ML + 1 MG/ML	Intraoperative Medications (Administered Mixtures)	6,602
10572	PROPOFOL W/ KETAMINE 10MG/ML + UNSPECIFIED KETAMINE	Intraoperative Medications (Administered Mixtures)	342
10577	PROPOFOL W/ KETAMINE 10 MG/ML + 0.5 MG/ML	Intraoperative Medications (Administered Mixtures)	1,148
10578	PROPOFOL W/ KETAMINE 10 MG/ML + 1.5 MG/ML	Intraoperative Medications (Administered Mixtures)	21
10579	PROPOFOL W/ KETAMINE 10 MG/ML + 2 MG/ML	Intraoperative Medications (Administered Mixtures)	711
10597	PROPOFOL W/ ALFENTANIL 10 MG/ML + 50 MCG/ML	Intraoperative Medications (Administered Mixtures)	863

Additional Mapping Tips

Review these modules on the [MPOG website](#) for additional tips.

- Variable Mapping Tips - Epic Sites
- Variable Mapping Tips - Non-Epic sites
- Mapping Search Terms