Research data variables from Anesthesia Research Database

1) Patient Specific (EASY)
   - Patient name
   - Medical Record #
   - Encounter #
   - Patient class (Inpatient or outpatient)
   - Age
   - Gender
   - ASA Code
   - Height
   - Weight

2) Case Specific (EASY)
   - Procedure
   - Surgical diagnosis
   - CPT codes (not accurate)
   - ICD-9 Codes (not accurate / not complete)
   - Anesthesia team members and their coverage of the case
   - OR location
   - Case events and times
     - Anesthesia Start,
     - In Room,
     - Anesthesia Ready, (consistent at HMC only after April 4, 2012)
     - Procedure Start,
     - Procedure End,
     - Leave OR,
     - Anesthesia End
   - Surgery Type (not accurate, only at UWMC)
   - Surgeon name and ID
   - Anesthesia Type

3) Data from patient monitor (SOMEWHAT EASY)
   Data sampled every minute. Data recording time and values for:
   
   - Heart Rate (from ECG)
   - Pulse Rate (From Plethysmograph)
   - Non-invasive blood pressure – Systolic, diastolic and mean
   - Arterial blood pressure – Systolic, diastolic and mean
   - Central Venous Pressure
   - Pulmonary Artery Pressure (Systolic and Mean)
   - SpO2
   - Respiratory rate
   - EtCO2
   - FiO2
   - FiCO2
   - Expired inhalational agent concentrations
   - FiN2O
   - BIS
   - EMG – (from BIS monitor)
   - Continuous Cardiac Output (Only at UWMC for Cardiac and Liver rooms)
- SvO2 (Only at UWMC for Cardiac and Liver rooms)
- ICP (Only at HMC)

4) Data from Ventilator/Anesthesia Machine (SOMewhat EASY)
   Data sampled every minute. Data recording time and values for:
   - Set Tidal Volume
   - Measured Tidal Volume
   - Peak Inspiratory Pressure
   - PEEP
   - Ventilation Rate
   - O2 Flow (Only at UWMC)
   - Air Flow (Only at UWMC)
   - N2O Flow (Only at UWMC)

5) Bolus and Infusion Meds (SOMewhat EASY)
   - Medication name
   - Medication ID
   - Medication type
   - Dose Time
   - Dose amount
   - Dose Unit
   - Concentration

6) Fluids (SOMewhat EASY)
   - Fluid name
   - Fluid ID
   - Fluid type
   - Amount Time
   - Amount

7) Lab results (Including Blood gases, Point of Care Glucose (only at UWMC), STAT Labs and Coagulation tests)
   - Lab Name
   - Lab Type
   - Lab Code
   - Sample time
   - Sample type
   - Result Value

8) Procedure notes: (DIFFIUCULT & VARIABLE)
   Note that data from procedure notes are difficult to extract because individual data elements are not saved as separate fields. As a long term strategy, we would parse these notes to extract relevant data elements and save them in a database table. Till that happens, we may need to write computer programs to parse the information for each data request.
   - General Anesthesia Note (text blob)
     - Time
     - Presence of such a note
     - Context Codes (Consistent only after April 4, 2012)
     - Techniques & devices
   - Regional Block Note (text blob)
     - Time
- Presence of such a note
- Context Codes (Consistent only after April 4, 2012)
- Techniques and type block

- MAC Note (text blob)
  - Time
  - Presence of such a note
  - Context Codes (Consistent only after April 4, 2012)

- Invasive Procedures Note
  - Time
  - Presence of such a note
  - Invasive procedure type – Arterial, Central Venous, Pulmonary artery, CSF Drain, Jugular Vein, Bronchoscopy
  - Context Codes (Consistent only after April 4, 2012)
  - Personnel type performing the procedure (Consistent only after April 4, 2012)

- Emergence Note
  - Time
  - Presence of such a note
  - Context Codes (Consistent only after April 4, 2012)

- Postop Note
  - Time
  - Presence of such a note
  - Context Codes (Consistent only after April 4, 2012)

- Special Events related to cardiac, transplant and OB cases
  - Time
  - Presence of such a note
  - Context Codes (Consistent only after April 4, 2012)
  - On/Off pump event
  - Start/End Aortic X Clamp
  - Start/End Anhepatic period
  - Birth time

- Procedure notes related to special techniques (One lung ventilation, Deliberate Hypotension, Deliberate Hypothermia, High Fresh Gas Flow)
  - Time
  - Presence of such a note
  - Context Codes

- Quality Measures Note (Antibiotic, Betablocker, Temperature, Glucose management, DVT Prophylaxis plans)
  - Time
  - Presence of such a note
  - Context Codes

9) Miscellaneous (SOMEWHAET EASY)
- ECG Rhythm
- IV Lines – Sizes and sites
- End of case parameters (Only at HMC up until April 4, 2012)
Research data from AMALGA

Preoperative (For HMC only after Feb 15, 2014)

- Pre-Anesthesia Assessment note details
  - Review of systems (medical history)
  - Social Behavior
  - Physical exam
  - Past surgical Hx
- Preoperative labs
- Medications
- Allergies

Postoperative

- Postoperative labs
- Postoperative Medications (IVEW)
- Postoperative vitals (IVIEW)
- PONV
- Other IVIEW comments
- PACU length of stay (Not reliable before 2015)
- Hospital LOS
- Elements from Anesthesia Postoperative Assessment note
- Discharge ICD and CPT codes