**Penn State University Capstone Team**

**Project Overview**

**GOAL:**

Combine and Connect data in all tables to find…

1) Cost as defined by different variables

For example: cost/minute, cost/surgeon, cost/surgery, cost/patient

2) Personnel and Supplies specific to each step and activity in the peri-operative process

**PERSONNEL:**

There are 2 teams:

1. Penn State Health Team

-Physicians, Medical Students, Penn State Health Employees

1. Penn State University Team

-Penn State Professors, Penn State Students

**DATA:**

There are 2 sources of data:

1. Peri-operative data
2. TDABC data

\**Both are considered Protected Health Information (PHI) and can only be accessed by the Penn State Health Team*

How will the data be used?

1) The Penn State Health team will obtain both the 1) peri-operative and 2) TDABC data

2) The Penn State Health team will scrub the data of any PHI, thus creating clean/dummy data

3) The cleaned/dummy will be sent to the Penn State University team

4) The Penn State University team will create visualizations with the data by restricting the data model (if needed) and using computer coding

5) The data model and code framework will then be sent to the Penn State Health team

6) The original data, with PHI, will be uploaded onto the model and code framework built by the Penn State University Team

**GLOSSARY**

CPM: Cost per Minute

Duration: Time of activity, measured in minutes

Pre-op: Step that takes place before the patient enters the operating room (OR)

Post-op: Step that takes place after the patient leaves the operating room (OR)

PACU: Post-Anesthesia Care Unit. This is the location where the Post-op step takes places

Compensation: Base cost of personnel per year

Benefits Ratio: Additional cost of personnel on top of base cost per year

Cost per year: Total cost of personnel per year (Compensation + Compensation \* Benefits Ratio)

DRG: Diagnosis Related Group – This reflects how “healthy” the patient is overall, and how risky it is to do a specific surgery on the patient.

DRG helps to answer the questions:

-*Does this patient have any underlying complications/comorbidities”?*

*-Is it more/less expensive to do surgery on patients with complications/comorbidities?*

DRG will be listed as 1 of 3 numbers.

-467: Revision of Hip or Knee Replacement with Complication or Comorbidity

-469: Major Join Replacement of Lower Extremity with Major Complication or Comorbidity

-470: Major Joint Replacement of Lower Extremity with out Major Complication or Comorbidity

ICD: International Classification of Diseases