# Moving Health Care Forward: A 10 Year Retrospective Cohort Evaluation of Pre and Post Robotic Surgery, Creating a Digital Data Bank and an Algorithm for Optimal Utilization of Surgical Resources when Considering Patient Biometrics

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The United States spends $300 billion dollars a year on health care. Health care resources need to be prudently managed. Over 600,000 hysterectomies are done yearly. The cost of a hysterectomy varies by the method performed. Hysterectomies represent one small slice of the health care pie, it is an important one. A digital data bank was created from the electronic medical record at a major metropolitan hospital. The goal is to identify when the expensive robotic equipment is necessary, useful or unnecessary. Information evaluated was from more than 800 patient's clinic notes, pre-op histories, anesthesia records, lab results, radiographic reports, pathology reports, post-op notes and clinic follow up notes. A protocol describing the analysis objectives, criteria for patient selection, data elements of interest, and statistical methods were submitted to the hospital Internal Review Board (IRB) and clinical faculty. Permission was given to proceed. Data shows that patients with previous vaginal births are suited for vaginal approach; patients with multiple previous pelvic surgeries do well with abdominal and robotic approach and patients with a uterus weighing less than 350 grams are better suited for the laparoscopic and vaginal approach. Total laparoscopic approach should be eliminated because of the high rate of complications. When comparing complication rates, using the G- test, the p-value was found to be.00522 showing that the robotic approach had significantly more complications. Our conclusion is in the form of an algorithm. This algorithm gives surgeons and patients insight to selection of the best hysterectomy method on a case by case approach.

**Awards Won:**