OBJECTIVES: To illustrate the relationships among sensitivity/specificity, disease prevalence and PPV/NPV, and demonstrate the impact on model results when disease prevalence is not considered. METHODS: Using the literature on the sensitivity and specificity of single-photon emission computed tomography (SPECT) and positron emission tomography (PET) of bone metastases. As an example, we derive the PPV/NPV taking prevalence into account. Then we derive the rate of FN and FP from the reported mean sensitivity/specificity as well as from the varying PPV/NPV. RESULTS: Mean sensitivity and specificity for PET were 0.9 and 0.9, and for SPECT were 0.8 and 0.8. Using PPV/NPV and a prevalence range from 0.3 to 0.7, FN varied from 0.08 to 0.33 and FP varied from 0.43 to 0.12. CONCLUSIONS: Models results can be significantly biased if prevalence is not taken into account when deriving FN and FP for economic models of diagnostic accuracy.

PMD41

SELECTING A SECONDARY DATA SOURCE FOR A LOW-VOLUME PROCEDURE IN A SPECIALTY POPULATION: A STUDY USING INPATIENT PEDIATRIC COLONOSCOPY

Anastassopoulos KP, Knight TG, Baik R

Cincinnati Market Access Services, Inc., Gahanna, OH, USA.

OBJECTIVES: The objective of this study was to compare estimates from survey and claims-oriented data to derive low-volume procedures within a specialty population (specifically, the annual number of inpatient colonoscopies performed in the United States (US) pediatric population with private insurance) to better understand the considerations when choosing a data source. METHODS: A retrospective analysis of US health insurance claims and national survey data was performed using the MarketScan® Consumer Panels (MarketScan® CPI) and the National Hospital Discharge Survey (NHDS), and the National Healthcare Cost and Utilization Project Kids’ Inpatient Database (KID). RESULTS: The annual estimate of inpatient, privately-insured pediatric colonoscopies was 1.08 times higher than 2006 (p = 0.01) that of supraventricular tachycardia. The overall, age, weight, BMI, selected comorbid conditions and use of antidepressants. Patients with pre-op BMI values of less than 30 did not experience sustained weight loss, on average, regardless of surgery type. Patients with pre-surgery BMI values of 30 to less than 35 fared better with banding (20 ± 8 % BMI loss) than with bypass (5 % BMI gain) at 2 years and significantly more patients with pre-surgery BMI > 35 had greater success, on the whole, with bypass surgery. CONCLUSIONS: The percent BMI loss over time by four cohorts of pre-surgery BMI show a trend that may be useful in predicting treatment success as defined by weight loss. This analysis of EMRs demonstrates potential clinical benefits when evaluating laparoscopic gastric bypass and banding in a real world setting.

PSU

FREQUENCIES, COSTS AND COMPLICATIONS OF CATHETER ABLATIONS FOR PEDIATRIC TACHYCARDIA: RESULTS FROM A NATIONAL PEDIATRIC INPATIENT DATABASE (YEARS 2000-2006)

Dossi VC1, Kelton C1, Czosek R2, Heaton PC1

University of Cincinnati, Cincinnati, OH, USA, 1Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, USA.

OBJECTIVES: Over the last two decades, catheter ablation (CA) has revolutionized the treatment of pediatric tachycardia by providing a relatively safe alternative to open-heart surgery or lifelong pharmacotherapy. Despite its high success rate, however, CA has some risk of major complications, such as complete or second-degree atrioventricular block, and a higher risk of minor complications, such as hematoma. No study to date has estimated national frequencies and costs for CA and its complications in children. The objectives were to: 1) determine the frequency of CA, 2) determine the extent of major and minor complications associated with CA, 3) estimate the average cost and length of stay (LOS) for children undergoing CA; and 4) predict the likelihood of major complications based on patient and hospital characteristics. METHODS: Data were obtained from the Kids’ Inpatient Database (KID) for the years 2000, 2003, and 2006. Discharges were selected if CA (ICD-9 code 37.34) was listed as a primary or secondary procedure. Costs were computed using the KID cost-to-charge ratios. Logistic regression was used to predict the frequency of complications. RESULTS: The national frequency of major complications ranged from 0.9% in 2000, 0.3% in 2003, and 0.3% in 2006. The total rate of CA in 2000, 2003, and 2006 were 2049, and, in 2006, 2254. CAs involving children 0-11 months old increased 2.8 fold between 2000 and 2006. The percentage of visits involving CA complications ranged from 5.56% in 2000 to 7.72% in 2006. In 2006, the mean cost and mean LOS for visits with CA were $19,425(±$1,022) and 2.39(±0.2) days. The frequency of major complications was 0.1% in 2000 and 0.07% in 2006. The frequency of major complications was 0.1% in 2000 and 0.07% in 2006. The frequency of major complications was 0.1% in 2000 and 0.07% in 2006. CONCLUSIONS: In 2006, the national inpatient cost of CA and its complications totaled $43,783,950. Since major complications are significantly more likely in young children (up to 6 years old), caution is required as more such procedures are performed in this age group.

PSU2

USING ELECTRONIC MEDICAL RECORDS TO IDENTIFY POTENTIAL PREDICTORS FOR BARIATRIC SURGERY SUCCESS

Benet S1, Hunter TD2, Steinbuch M3, Hegeman LF4, Francis D5, Seeley R1

1University of Cincinnati, Cincinnati, OH, USA. 2Johnson & Johnson, New Brunswick, NJ, USA. 3Jewish Hospital, Cincinnati, OH, USA. 4Johnson & Johnson, Cincinnati, OH, USA. 5Johnson & Johnson, Cincinnati, OH, USA.

OBJECTIVES: Bariatric surgery for the treatment of obesity and its underlying comorbid conditions is a well-tolerated and safe procedure. While a surgical approach is becoming the recommended method of treatment for morbid obesity, not all patients experience significant improvement. The objectives of this study were to utilize the GE Centricity electronic medical records (EMR) database to perform a retrospective chart review by age range and weight loss outcome based on weight loss following laparoscopic gastric banding or bypass surgery to identify predictors of weight loss following bariatric surgery. METHODS: Analyzable patient records were drawn from the GE Centricity database from January 1990 through March 2010. To be eligible for inclusion, patients had a recorded CPT Procedure Code of 43644/43645 or 43770; ≥18 years of age, and a valid recorded BMI within 6 months prior to procedure and at least one time point post surgery. Univariate and multi-variable analyses were performed using SAS version 9.2. RESULTS: There were some notable pre-surgery differences between bypass and band cohorts, including age, weight, BMI, selected comorbid conditions and use of antidepressants. Patients with pre-op BMI values of less than 30 did not experience sustained weight loss, on average, regardless of surgery type. Patients with pre-surgery BMI values of 30 to less than 35 fared better with banding (20 ± 8 % BMI loss) than with bypass (5 % BMI gain) at 2 years and significantly more patients with pre-surgery BMI > 35 had greater success, on the whole, with bypass surgery. CONCLUSIONS: The percent BMI loss over time by four cohorts of pre-surgery BMI show a trend that may be useful in predicting treatment success as defined by weight loss. This analysis of EMRs demonstrates potential clinical benefits when evaluating laparoscopic gastric bypass and banding in a real world setting.

PSU3

LONG-TERM CLINICAL EFFECTIVENESS AND STABILITY OF LASIK AND SURFACE ABLATION IN KOREA: A SYSTEMATIC REVIEW APPROACH

Lee NR1, Choi J2, Jung EJ2, Jung SY1, Lee EJ1, Ioo CK2

1National Evidence-based Healthcare Collaborating Agency (NECA), Seoul, South Korea, 2The Catholic University, Seoul, South Korea.

OBJECTIVES: This study is aimed to provide evidence for clinical effectiveness and stability after laser in situ keratomileusis (LASIK) and surface ablation surgery (LASIK-Laser-Assisted Subepithelial Keratomileusis, PRK, phototherapeutic keratectomy (PTK)) for myopia in Korea. METHODS: We searched electronic database including Ovid-Medline, EMBASE, the Cochran Library and Korean domestic database such as Embase, Korea Med, NDSL, Kinti, KISS, and KIOJ(Journal of the Korean Ophthalmological Society). Two independent reviewers extracted data and assessed the quality using MINORS (Methodological index for Non-Randomized Studies). The changes of UCVA(uncorrected visual acuity) and manifest refractive from pre-surgery were estimated using the random-effect model. Cochrane-Q-statistic and I2-statistic were used to assess heterogeneity. Subgroup analyses were performed by length of follow-up(from 6 month to 84 month)and myopia degree under 6D(diopter) and over 6D. RESULTS: Fifteen observational studies were included for meta analysis and all study patients were Korean. After LASIK surgery, compare to before surgery, UCVA was improved 0.5 decimal in high myopia group(95% CI: 0.20-0.70). According to subgroup analysis in high myopia group, the group of 6D—10D UCVA was improved 0.63 decimal in high myopia group and 0.27 decimal in low myopia group. Also, after surface ablation surgery, UCVA change in high myopia group(over—6D) was 0.83 decimal and in mild myopia group(under—6D) was 0.61 decimal. In addition to UCVA change was decreased over follow up time. However, after surface ablation surgery manifest refractive change was 7.45 diopter in high myopia and 4.0 diopter in mild myopia group. Also, over follow up time, refractive change was decreased. CONCLUSIONS: This study provides the evidence that UCVA was decreased according to over time and in high myopia group. Also, Refractive change was found in follow up in cooperation with over time, but increased in high myopia group. Our study is the first one to evaluate clinical effectiveness and stability of LASIK and surface ablation surgery in Korea through systematic review.

PSU4

SURGEON’S VOLUME-OUTCOMES RELATIONSHIP FOR LOBECTOMIES AND WEDGE RESECTIONS FOR CANCER USING VIDEO-ASSISTED THORACOSCOPIC TECHNIQUES

David C1, Gunnarsson C2, Moore M2, Howington J1, Miller D1, Maddaus M2, McKenna Jr. R1, Meyers B1, Swanson S5

1University of Pennsylvania, Philadelphia, PA, USA; 2University of Texas Southwestern Medical Center at Dallas, TX, USA; 3NorthShore University HealthSystem, Evanston, IL, USA; 4The Emory Clinic, Inc. Atlanta, GA, USA; 5University of Minnesota, Minneapolis, MN, USA; 6Cedars-Sinai Medical Center, Los Angeles, CA, USA; 7Washington University in St. Louis, St. Louis, MO, USA; 8Baylor and Women’s Hospital and The Dana Farber Cancer Institute, Old Greenwich, CT, USA.

OBJECTIVES: This study quantifies the benefits of surgeon’s volume on outcomes in lung surgery: lobectomies and wedge resections. The goal of this analysis is to analyze the impact of each type of technique (VATS lobectomy and wedge resection) and adverse events. METHODS: This study utilizes the Premier hospital database which contains clinical and utilization information on patients receiving care in over 600 US hospitals. Eligible patients were those of any age undergoing lobectomy or wedge resection using VATS for cancer treatment. Volume measures use addi-
tional data for patients undergoing lenticulectomy or wedge resection using open thacous. Our measure of volume represents the aggregate experience level of the surgeon per six month window. Multivariable logistic regression analyses were estimated for the binary outcome - adverse events. Ordinary Least Squares (OLS) regression was used for continuous outcomes: hospital costs, surgery time, length of stay, and number of adverse events. In addition, the following explanatory vari-

ables were included: patient demographics, diagnosis, comorbid conditions, pa-
tient severity index and hospital characteristics. RESULTS: Of 717 patients in the database, 622 underwent lenticulectomy or wedge resection, a total of 267 patients underwent lenticulectomy (n=716) or wedge resection (n=1982) using VATS. More than 70% of these procedures were performed by thoracic surgeons (n=1896). A positive volume-outcome relationship appeared as follows: The relationship is stronger for cost and utilization outcomes versus adverse events, for thoracic surgeons versus other surgeons and for VATS lenticulectomy procedures versus VATS wedge resection procedures. Finally, we find that while there was a reduction in cost and resource utilization associated with greater experience with VATS, these outcomes were not strongly linked with greater experience with open procedures. CONCLUSIONS: There is a reduction in cost and resource utilization associated with greater expe-

rience with VATS. Greater experience with open procedures does not correlate with better VATS outcomes.

PSUS
LONG-TERM CLINICAL SAFETY OF LASIK AND SURFACE ABLATION IN SOUTH KOREA THROUGH LINKAGE OF RETROSPECTIVE COHORT AND NATIONWIDE CLAIMS DATABASE
Lee EJ1, Choi JE1, Jung SY1, Jeong JH1, Lee NR1, Joo CK2
1National Evidence-based Healthcare Collaborating Agency (NECA), Seoul, South Korea
2Department of Ophthalmology and Visual Science, Catholic University College of Medicine, Seoul, South Korea

OBJECTIVES: To assess the long-term safety of Laser in situ keratomilieusis (LASIK) and surface ablation surgery for myopia in South Korea. METHODS: A retrospective cohort and a baseline database from a retrospective cohort with a baseline database and nationwide claims database can make up for loss to fol-

low-up in retrospective cohort study. Although it is difficult to explain the causality of surgery, we could ascertain there was no serious eye disease after surgery. Surgery – Cost Studies

PSUS
ANALYSIS OF FACTORS INFLUENCING INPATIENT MORTALITY AND COSTS AMONG PEDIATRIC HEART TRANSPLANTATION RECIPIENTS
Olive EL1, Nolan RE1, Skrepnek C2
1University of Arizona College of Pharmacy, Tucson, AZ, USA
2University of Arizona, Tucson, AZ, USA

OBJECTIVES: To assess the relationship of patient, payer, and hospital characteris-
tics with cost and mortality in pediatric heart transplant recipients. METHODS: Data from the 1997, 2000, 2003, and 2006 Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) Kids’ Inpatient Da-

tabase (KID) were utilized. Pediatric patients aged 0-17 years receiving heart trans-

plants occurring in a children’s unit of a general hospital. CONCLUSIONS: Multiple patient and hospital characteristics appear to significantly predict inpatient mor-
tality and costs in pediatric heart transplant recipients.

PSUS
A DISCRETE EVENT SIMULATION MODEL TO ESTIMATE THE LONG TERM OUTCOMES OF BARIATRIC SURGERY IN MEXICO
Sánchez DOE1, Cabría HA1, Anaya PA2, Meléndez C2,3
1Johnson & Johnson Medical, Mexico City, D.F., Mexico, 2Fundación Medicina para la Salud AC, Mexico City, Mexico

OBJECTIVES: Estimate the return of investment (ROI) on bariatric surgery vs. con-

ventional, non-surgical approach as treatment for morbid obesity from the Mexi-
can public health system perspective in the long term. METHODS: The individual experience of a morbidly-obese patient was assessed using a discrete event simu-

lation model built in Arena. RESULTS: Patients were created with unique, randomly as-

signed clinical and epidemiologic characteristics, cloned and sent to either bariat-
ric surgery (BS) or conventional treatment – pharmacologic treatment of associated comorbidities and lifestyle modifications (control arm). Evaluated comorbidities were type 2 diabetes, hypertension and hypercholesterolemia. Preoperative preval-

ences and up-to year 2 recovery rates were taken from published meta-analyses. 2- and 10-year prevalences were derived from incidence and recovery rates shown in SOS study, in-between prevalences were interpolated assuming exponential growth, thus allowing clinical state worsening in both arms. Additional assumptions include infrastructure restrictions, no perioperative complications and short-

term mortality. 5% of patients in control group were allowed to have surgery after year 5. Considered costs included the bariatric procedure and comorbidity-specific pharmacologic treatment, taken from public health institution’s DRGs. Simulation was run with 150 patients and 10 iterations using a 4.5% annual dis-

count rate. Results are shown in years and 2010 inflation-adjusted MXP. 95% con-

fidence intervals were estimated. RESULTS: 10-year accumulated cost for a BS pa-

tient was $125,902 ($125,041-$126,763), and $259,413 ($258,098-$260,728) for a control arm patient. CONCLUSIONS: The estimated ROI after surgery showed that bariatric surgery is cost-effective, with costs differences are due to the reduced resource utilization after surgery resulting from resolution of comorbidities. CONCLUSIONS: Inversion is BS offsets its cost and is recouped within a reasonable time, thus allowing institutions to reduce the burden imposed by morbid obesity. Long-run data for other associated comorbidities is needed, as their inclusion in the analysis could decrease ROI.

PSUS
PATTERNS OF ACUTE CLOPIDOGREL USE AND INPATIENT COSTS IN ACUTE CORONARY SYNDROME PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING
Gudovin Bergeson J2,3, Bell K7, Gilchrist Bergson J7, Mc Morrow D3, Graham J7
2Thomson Reuters, Washington, DC, USA, 3Bristol-Myers Squibb, Plainsboro, NJ, USA, 4Thomson Reuters, Cambridge, MA, USA

OBJECTIVES: Treatment guidelines stipulate that clopidogrel should be interrupted ≤5 days prior to elective coronary artery bypass grafting (CABG) to reduce the risk of bleeding. However, if urgent CABG is indicated, experienced surgeons may per-

form CABG in <5 days. This study is the first to describe patterns of acute clopi-

dogrel use and inpatient costs among acute coronary syndrome (ACS) patients undergoing CABG, which will aid treatment decision makers in cost-bene-

fits/costs of antplatelet therapies in real-world practices. METHODS: The study used the MarketScan® Commercial, Medicare, and Hospital Drug Databases, com-

paring administrative healthcare data for over 63 million individuals. ACS epi-

sodes, defined as hospitalizations for ACS (primary ICD-9-CM diagnosis 410.xx, 411.xx), occurring between 1/1/2005-6/30/2009 were identified from patients aged ≥18 years. Outcomes included costs and lengths of stay (LOS) of ACS episodes with CABG and, among clopidogrel-treated patients, number of days between the day CABG was performed and the last clopidogrel dose administered. Analyses were descriptive. RESULTS: 160,168 ACS episodes were identified; mean patient age = 63.5 years. CABG episodes comprised 9.3% (14,896/160,168) of ACS episodes. The mean LOS was 9.8 [SD 6.8] days per CABG episode. Mean inpatient costs were 371,140 [SD 668,012] per CABG episode. Among clopidogrel-treated patients with inpatient drug who underwent CABG (n=8,101), the mean days between the day CABG was performed and the last dose of clopidogrel administered was 3.3 [SD 2.6] days and the majority (62.1%) underwent surgery within 2-3 days after their last clopidogrel dose. The mean incremental increase in inpatient costs associated with 1 extra LOS day was $1,950. CONCLUSIONS: Data suggest that surgeons commonly perform CABG within <5 days after clopidogrel administration. However, among patients for whom urgent CABG is not indicated, withholding CABG may only minimally affect inpatient costs and must be considered in the broader context of patient management.

PSUS
ECONOMIC EVALUATION OF THE CURRENT TREND TOWARDS MORE UNCEMENTED FIXATION IN PRIMARY TOTAL HIP ARTHROPLASTIES AND THE POTENTIAL IMPACT OF CHANGES IN THE DEVELOPMENT IN ENGLAND AND WALES
Kontakis A, Gaiser S
1Heraeus Medical GmbH, Wehrheim, Germany

OBJECTIVES: The purpose of the study was to quantify the potential effect of the current trend toward more uncemented primary total hip arthroplasties (THAs) in terms of hospital costs and number of revisions over a 10 year period (2011 to 2021) in England and Wales. In addition the potential impact of changes of this develop-

ment was evaluated. METHODS: Registry data from the National Joint Registry for England and Wales from 2004 to 2009 was used to predict the numbers of THAs and