

equipment costs (\$495 list price of Revolve per use) and depreciated cost of centrifugation (\$10 per use). Annualized difference in costs was also estimated. **RESULTS:** Base case assumed 100 AFGs per year (150mL of fat injected per case). Mean time to complete AFG was substantially faster using Revolve than centrifugation: 29.1 minutes versus 116.1 minutes (range: 25.1-32.0 versus 104.1-125.8 minutes, respectively). Mean volume of fat injected was greater for Revolve than centrifugation: 210.0mL versus 92.0mL (ranges: 179.0-241.2 versus 82.4-101.2mL, respectively). Consequently, rate of completing AFG was greater with Revolve than centrifugation: 5.2mL/min versus 1.3mL/min (range: 4.7-6.0 versus 1.2-1.4mL/min, respectively). Estimated cost savings for Revolve versus centrifugation was \$2,075 per case and \$207,476 per year. **CONCLUSIONS:** As popularity of AFG increases, evaluating economic impact of AFG systems becomes essential. Based on current findings, Revolve system results in substantial OR time and cost savings compared to centrifugation.

PMD75

INTEGRATING BIG DATA TO ASSESS THE ECONOMIC IMPACT OF THE IMPLANTABLE CARDIOVERTER DEFIBRILLATOR THERAPY

Madotto E, Conti S, Chiodini V, Mantovani LG, Fornari C, Cesana G
University of Milano - Bicocca, Monza, Italy

OBJECTIVES: The main purpose of this study was to link clinical and administrative healthcare databases in order to assess the economic impact of implantable cardioverter defibrillator (ICD) with or without cardiac resynchronization pacing (CRT-D) in Lombardy, the most populated Italian region providing universal healthcare coverage for about 10 million inhabitants. **METHODS:** Data were extracted from: i) data warehouse DENALI, that organizes healthcare administrative databases concerning all subjects covered by Lombardy Health System (HS); ii) national ICD database. After linking DENALI and clinical information extracted from the ICD database, we identified patients with ICD and followed them from the date of the first implant to 12/31/2010, recording hospitalizations, drugs and outpatient claims. Direct healthcare costs were analysed from the perspective of the HS. We estimated mean annual per-capita costs after the first ICD implant: overall and stratified by indication (primary and secondary prevention) or type of implanted device (single-chamber, dual-chamber and CRT-D). **RESULTS:** During the period 2003-2010, 12,525 subjects underwent a first ICD implant. Mean annual per-capita cost during follow-up was €6,086 (95%CI: 5,970-6,211): 72.7% due to hospitalizations (€4,422), 15.7% to pharmacological therapies (€957) and 11.6% to outpatient services (€706). No difference was observed between the mean annual expenditure for primary (€6,179; 95%CI: 6,001-6,353) and secondary (€5,996; 95%CI: 5,821-6,185) prevention. As for the type of implanted device, patients with CRT-D cost more than those with single-chamber or dual-chamber: respectively €6,592 (95%CI: 6,376-6,847), €5,728 (95%CI: 5,541-5,972) and €5,932 (95%CI: 5,717-6,117). The difference was attributable to hospitalization expenses. **CONCLUSIONS:** ICD use is growing and it is important to assess the efficacy and the burden of this therapy, given its economic implications. The combined use of clinical information from national ICD database and big administrative data could overcome the limitation of both data sources, leading to an improvement in the monitoring of ICD therapy.

PMD76

ECONOMIC AND PATIENT BURDEN OF LIPOHYPERTROPHY IN CHINESE PATIENTS WITH DIABETES

Chandran A¹, DiMario S¹, Hirsch L¹, Li Q², Sun Z³, Ji L⁴, Qin G⁵, Wei S⁶, Liu J⁶, Luan L⁶, Chapman R⁷, Inocencio T⁸

¹Becton Dickinson, Franklin Lakes, NJ, USA, ²The First Affiliated Hospital of Chongqing Medical University, Chongqing, China, ³Southeast University Zhongda Hospital, Nanjing, China, ⁴Peking University People's Hospital, Beijing, China, ⁵The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China, ⁶Becton Dickinson, Beijing, China, ⁷Avalere Health, Washington, DC, USA, ⁸Avalere Health LLC, Washington, DC, USA

OBJECTIVES: Diabetes (DM) is rapidly growing in China, affecting >114 million people. Lipohypertrophy (LH) is a known, preventable complication amongst insulin-injecting DM patients. This study demonstrates the economic and patient burden of LH in China. **METHODS:** An observational study was conducted among 401 insulin-injecting adult patients with DM from 4 cities, 2 with and 2 without pen needle reimbursement (PNR). Demographics, medical history, direct and indirect costs, insurance and PNR status were collected via patient survey, followed by HbA1c tests and physical exam to assess LH. **RESULTS:** LH was present in 52.9% of participants. Patients were an average of 59.6 (SD=11.5) years old and took insulin 5.6 (SD=4.6) years, averaging 33.0 (SD=18.4) U/day. HbA1c was 8.2% (1.8) and 7.7% (1.5), respectively, in those with and without LH (p=0.003). LH was associated with higher daily insulin dose (38.1U vs 27.1U, p<0.001) and cost (RMB 8.2 vs 5.8, p<0.001). Those with LH averaged 2.3 (2.2) nodes, had higher frequency of PN reuse (median 13.0 vs 7.5, p=0.003), and greater total 6-month direct costs (RMB 5506.9 vs 5258.0, p=0.037). With 8.4 million insulin injectors in China, the estimated excess annual direct cost of LH is RMB 2.2 billion (\$360 million). Average pain scores (0-10) were higher if LH was present (2.7 vs. 2.0, p=0.021), if ≥3 nodes were present (3.8 vs. 2.3, p<0.001), and if PNs were not reimbursed (2.8 vs. 1.7, p<0.001). Patient satisfaction decreased as presence, number, and size of LH nodes increased (all p<0.05). **CONCLUSIONS:** Adverse effects and implications of LH reach over half of insulin-injecting patients in China. Assessing for LH and providing patient education on proper injection technique, including injection site rotation and reducing PN reuse, should be incorporated into routine DM management. Doing so may decrease this preventable complication, which may lessen LH-related economic and patient burdens.

PMD77

ECONOMIC ANALYSIS OF EVARREST[®] COMPARED WITH STANDARD OF CARE IN SOFT TISSUE AND HEPATIC SURGICAL BLEEDING: A U.S. HOSPITAL PERSPECTIVE

Corral M¹, Ferko N², Hogan A², Hollmann S², Jamous N³, Batiller J¹, Kocharian R¹

¹Ethicon Biosurgery, Somerville, NJ, USA, ²Cornerstone Research Group Inc., Burlington, ON, Canada, ³Ethicon Biosurgery, Berkshire, UK

OBJECTIVES: A recent Premier study reported that despite hemostat use, uncontrolled bleeding is prevalent across surgery types (32%-68%). Drawbacks of current hemostats include limitations with efficacy on first attempt and sub-optimal ease-of-use; thus, better hemostats are needed. A study was conducted to estimate the cost impact of a novel fibrin sealant patch (EVARREST[™]) versus standard of care (SoC) in soft tissue and hepatic surgical bleeding. **METHODS:** An economic model quantified 30-day cost impact of EVARREST from a U.S. hospital perspective. Key resources, from four trials, included quantity of initial treatment, re-treatment, operating time, hospitalization, transfusion risk, amount transfused, and ventilator utilization. SoC was composed of Surgicel (88% to 100% in soft tissue, 34% to 65% in hepatic tissue) and conventional methods (e.g., manual compression, thrombin). Transplant patients were excluded from analyses. The surgical analysis included resources clinically related to the significant hemostasis benefit of EVARREST vs. control (i.e., initial and re-treatment, operating time, transfusion). A hospital analysis included all resources collected. Published data on U.S. costs were applied to resource use. Sensitivity analyses were conducted on several variables including number of EVARREST products used. **RESULTS:** The surgical base-case analysis predicted that EVARREST was cost saving vs. SoC by \$59 per patient (sensitivity range: -\$300 to \$900). The hospital analysis predicts further resource reduction with EVARREST with cost-savings of \$2,789 per patient (sensitivity range: -\$1,830 to -\$3,338). Results were most sensitive to the number of pads used. Composite results were primarily driven by the large benefit achieved with EVARREST in severe soft-tissue bleeding. **CONCLUSIONS:** In problematic soft tissue and hepatic bleeding, EVARREST may result in important cost savings for hospitals, in addition to meeting an important unmet need. This analysis suggests EVARREST's impact on hospital cost may depend on surgical bleeding type and number of pads used. Further study in additional populations may confirm findings.

PMD78

ECONOMIC IMPACT OF USING HARMONIC SCALPEL TECHNOLOGY IN SURGERY

Hsiao C, Clymer JW, Cheng H

Ethicon Inc., Cincinnati, OH, USA

OBJECTIVES: The Harmonic[®] scalpel has demonstrated clinical and surgical benefits as an effective and efficient alternative to traditional electrosurgery. However, ultrasonic devices incur higher device cost than electrosurgery. The aim of this study is to review the economic evidence comparing total procedural costs performed with ultrasonic devices to conventional techniques. **METHODS:** A comprehensive literature review was conducted to identify publications where ultrasonic energy devices were used in comparison with conventional surgical techniques for the period 2004-2014. No restriction on the surgical specialty was applied. Primary inclusion criteria were: 1) randomized-controlled studies; 2) human studies; 3) total procedure cost was evaluated for economic impact. Articles were reviewed to collect direct and indirect cost information such as OR time, blood loss, hospital length of stay, resource and surgical consumables, as well as quality of life data. **RESULTS:** For 39 articles identified for full-text screening, 9 articles were evaluated based on the inclusion criteria. Therapeutic areas included breast, colon, and thyroid surgery. All economic studies considered total medical direct costs. Except for one article that showed ultrasonic devices to be more expensive and one that showed no economic difference, all other articles demonstrated that the higher cost of the Harmonic[®] device is offset by improved clinical outcomes and efficiency without an increase in surgical complications, especially in complicated procedures entailing considerable loss of blood or longer operative time. The average overall cost savings ranged from \$85 to \$400 USD per patient. Two studies estimated the incremental cost-effective ratio and both indicated the Harmonic[®] device to be superior compared to conventional technique. **CONCLUSIONS:** Ultrasonic devices shorten OR time and improve clinical outcomes in a variety of procedures investigated without an increase in complications, and thus can be considered as a cost effective alternative to conventional surgical techniques.

PMD79

HEMOSTASIS EFFICACY OF EVARREST[™] COMPARED TO TACHOSIL[®] IN LIVER AND OTHER SURGICAL BLEEDING: AN INDIRECT COMPARISON

Corral M¹, Jamous N², Ferko N³, Bourque M³

¹Ethicon Biosurgery, Somerville, NJ, USA, ²Ethicon Biosurgery, Berkshire, UK, ³Cornerstone Research Group Inc., Burlington, ON, Canada

OBJECTIVES: Surgical bleeding remains prevalent and associated with substantial burden. Such bleeding can be more difficult to manage in certain surgeries (e.g., liver). Hemostats with a fibrinogen, thrombin and patch component may be especially beneficial for problematic bleeding types; however, direct comparative data are limited. This study indirectly compared the hemostats EVARREST and TachoSil. **METHODS:** A structured literature search identified studies of fibrin sealants combined with use of a pad, patch, fleece or sponge, for surgical bleeding. The search was restricted to RCTs, 2000 onward, studies including standard of care (SoC) and time to hemostasis (TTH). EVARREST (4 trials) and TachoSil (6 trials) were identified as the comparators. Pair-wise meta-analyses were completed using a random-effects model for hemostat vs. SoC. An adjusted indirect comparison was conducted using Bucher methodology and ITC software (Wells, 2009) for calculating the mean difference (MD) in TTH between EVARREST and TachoSil with 95% confidence intervals (CI). Mean TTH was analysed as it is a well-accepted, recommended measure. Typically, TTH measurements began at either 3 or 4 minutes. SoC was used as the 'anchor' to perform the indirect comparison and consisted of either conventional methods or topical hemostats. Indirect comparisons were completed for all surgery types and a liver surgery subgroup. **RESULTS:** A total of 894 patients were assessed. Across surgery types, the adjusted indirect comparison demonstrated EVARREST reduced mean TTH by 1.15 minutes compared to TachoSil (MD: -1.15; 95%CI: -3.29, 0.99), however, this difference was not statistically significant. In the subgroup of liver surgical bleeding, EVARREST significantly reduced mean TTH by 2.73 minutes (MD: -2.73; 95%CI: -4.48, -0.981). **CONCLUSIONS:** This analysis suggests EVARREST may provide better hemostasis than TachoSil, particu-