MULTIPLE DAILY INJECTION THERAPY (MDI) VERSUS DURABLE INSULIN PUMP THERAPY IN TYPE II DIABETICS: A BREAK EVEN ANALYSIS

CONCLUSIONS: The prevalence of AF in selected countries was forecasted to grow substantially in both developing and developed countries. As the world’s population at risk for cardiovascular disease becomes more accessible, the economic burden of AF will continue to rise as well.

PMD17 CLINICAL AND ECONOMIC OUTCOMES DERIVED FROM THE USE OF A CHLORHEXIDINE – IMPREGNATED SPONGE (BIOPATCH®) FOR THE PREVENTION OF CAPSULE-RELATED BLOODSTREAM INFECTIONS IN INTENSIVE CARE UNITS IN MEXICO

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OBJECTIVES: Estimate the expected number of catheter-related bloodstream infec-
tions (CRBSIs) and the associated costs derived from the adoption of a chlorhexi-
dine-impregnated sponge (Biopatch®) plus central venous catheter (CVC) tradi-
tional standard of care in intensive care units (ICUs) versus CVC traditional stand-
dard of care in public hospitals.

METHODS: A decision tree was developed to estimate the clinical and econometric
consequences of adding Biopatch® to CVC traditional standard of care in adult
population. ICUs’ annual catheter-days were estimated using local average occu-
pancy, number of placed catheters and length of stay published statistics. The
effectiveness variable was the CRBSI rate / 1000 catheter-days, obtained from
published literature and used to estimate annual CRBSIs. It was assumed that once a
patient developed a CRBSI, he incurred in additional length of stay and received the
correspondent pharmacologic treatment; only one infection per patient was al-
lowed. Cost data were obtained from published literature and the public institu-
tion’s price data base; the cost for Biopatch was internally assessed. The consid-
ered time horizon was one year, thus no annual discount rate was used. Costs were
inflation-adjusted and expressed in 2011 Mexican pesos. Bivariate sensitivity analy-
ses were performed to assess uncertainty.

RESULTS: The addition of Biopatch to CVC traditional standard of care in ICUs resulted in a 70% reduction of expected annual CRBSIs and 0.8% less total costs when compared to the traditional standard of
care alone, thus representing a cost-saving alternative. Results were robust to
<25% variations in the price of the sponge, ICU occupancy and CRBSI rates, even in the
extreme scenarios.

CONCLUSIONS: The adoption of a Biopatch® plus CVC traditional standard of care strategy in adult population at ICUs results in significant clinical and economic benefits for the hospital, as it reduces CRBSI incidence and resource utilization.

PMD18 BYPASS THERAPY ASSAY TESTING AS A STRATEGY TO REDUCE TREATMENT COSTS FOR HEMOPHILIA PATIENTS WITH INHIBITORS

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OBJECTIVES: Published studies suggest that bypass therapy assay testing can be used to effectively predict treatment response and dosing requirements for an individual hemophilia patient with inhibitors. This study aims to evaluate the costs and clinical benefits of this approach. The bypass therapy assay testing versus no testing on different treatments for mild to moderate bleeding hemophilia patient with inhibitors. This study also investigates the cost implications if testing assays could predict the optimum dose for new type of therapies like concomitant therapy.

METHODS: A decision tree simulation model was used to simulate inhibitor treat-
ment costs and outcomes from a US third party payer perspective. All estimates of
costs were obtained from the literature or expert opinion and were adjusted to 2011 US dollars. Based on a previous published model, the efficacy of APCDC and rFVIIa were predicted to be high in the no testing scenario while assay testing was assumed to improve the efficacy of both the products by 10%. Probabilistic sensi-
tivity analysis was used to determine the robustness of the model’s results. The model was developed using Microsoft Excel and @Risk.

RESULTS: If bypass therapy assay testing successfully predicts the treatment response and improves treat-
mant efficacy by just 10%, cost savings of $6939 for APCDC and $7699 for rFVIIa treatment were observed per bleeder episode. Further, if testing successfully pre-
dicts the optimum dose for concomitant therapy on the onset of bleeding, signifi-
cant cost savings were observed when compared to rFVIIa and APCDC therapies
alone. The results were sensitive to frequency of dosing, efficacy, rebled rate and drug price.

CONCLUSIONS: Bypass therapy assay testing is recommended for re-
ducing costs while optimizing treatment response and dose before administering
in treatment in hemophilia patients with inhibitors.

PMD19 MULTIPLE DAILY INJECTION THERAPY (MDI) VERSUS DURABLE INSULIN PUMP THERAPY IN TYPE II DIABETICS: A COMPARATIVE PROSPECTIVE STUDY

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OBJECTIVES: To compare cost of care among Type II diabetic patients using an
insulin pump delivery system versus alternate methods of insulin delivery (focus on multiple daily injectors [MDIs] using administrative claims data. METHODS: This study used 2009 MarketScan® Research Database data. Patients were included if they were continuously enrolled throughout 2009 and were classified as Type II diabetic based on a combination of diagnosis codes and medication claims with the final application of age where diagnosis was indeterminate. Patients were then classified as MDIs and insulin pump users based on HCPCS codes and the use of rapid or short acting insulin prescriptions. Treatment costs were the focus and included pumps, pump supplies, insulin, and drugs. Costs of complications and hospitalizations were not included. The study utilized a break-even analysis to capture both the fixed and variable costs associated with insulin pump versus MDI therapy across different cost percentiles of insulin and other drug costs compared with MDI patients, resulting in less associated costs. Insulin pumps last approximately four years, and their value proposition increases with the level of insulin use re-
quired. Break-even analysis revealed patients at the top 10th percentile of expen-
ditures for insulin and other drugs generated savings through lower use of insulin, which offset the insulin pump cost in ~3 years (1,071 days).

CONCLUSIONS: Although durable insulin pumps have an upfront cost, they are better able to control insulin delivery. The reduced drug-related expenditures offset initial pump invest-
ment within three years for the most costly cohort of insulin users.

PMD20 IMPLICATED COST SAVING FOR ARTHROSCOPIC SUBACROMIAL BYPASS THERAPY AS A STRATEGY TO REDUCE TREATMENT VALUE IN HEALTH 15 (2012) A1–A256

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OBJECTIVES: To estimate and compare the cost of arthroscopic subacromial bypass therapy (SAB) using VAP® VUE™ Radiofrequency System with COOLPULSE® 90 Electrode (COOLPULSE) and the ArthroCare® Quantum™ System with Super TurboVac® electrode (Super TurboVac). METHODS: An in-vitro study of 72 bovine tendon specimens was used with COOLPULSE 90 and Super TurboVac. These de-
vices are indicated at their default ablation settings (200 and 220 Watts for COOL-
PULSE and TurboVac, respectively) for multiple trials. The tissue removal rate was determined by measuring the tissue mass before and after ablation. The measure was repeated and averages were calculated. Average length of time needed for tis-
seinmeasures in SAD procedures and data on the unit cost of health room (OR)
time were obtained from clinical model for arthroscopic procedure and published
literature. 2011 IMS data were used to calculate the average selling price for COOL-
PULSE and Super TurboVac. RESULTS: The in-vitro study showed the average ab-
lation rates for COOLPULSE (no clogs were found with COOLPULSE) and Super
TurboVac (excluding data from clogged runs for Super TurboVac) were 1.12 ± 0.22
gram/minute and 0.93 ± 0.21 gram/minute, respectively (p < 0.001). Average time
for SAD from literature and clinical modeling was 13 minutes and the estimated
cost of OR time in the US was $20/min. The average costs of ablation using
COOLPULSE and Super TurboVac were estimated to be $436 and $480, respectively.

CONCLUSIONS: Tissue removal rate in arthroscopic procedures is important for
surgical efficacy, for procedure duration that directly benefits patients, and for
the cost. The in-vitro study demonstrated that COOLPULSE achieved significantly higher tissue removal rates compared to Super TurboVac which may result in cost
savings to a surgery facility.

PMD21 INDUSTRIAL-SCALE SILICONE IN BREAST IMPLANTS: EVALUATING COST IMPLICATIONS OF DIFFERENT EXPLANTATION STRATEGIES

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OBJECTIVES: In December 2011, French health authorities agreed to reimburse the
explantation of defective Poly Implant Prothèse (PIP) breast implants, triggering
responses from other national policy makers. Spurred by public concern and media
coverage, the UK health secretary announced that the National Health Service (NHS)
would remove and replace the defective devices it had installed. Using the
UK as a case study, we evaluated three PIP-related policy scenarios that have been
instituted internationally. A cost comparison model was developed to assess the
cost implications of different explantation scenarios and to identify key cost driv-
ers from the perspective of the NHS. METHODS: The model explored the following
scenarios: (a) immediate removal of all PIP breast implants; (b) targeted removal of
ruptured implants; (c) symptom surveillance, with no extraordinary removal of
implants. Complication (e.g. rupture, silicone leakage) rates were taken from the
medical literature. Event management and screening costs were drawn from NHS
Reference Costs (2009-2010). Sensitivity analyses were conducted using a range of
costs, complication rates and patient numbers. RESULTS: Regardless of observed
rupture rates, reimbursing all explantations was the costliest option, followed by cost
of a target removal of ruptured implants. The apparently low rate of complications, the least costly option was a policy of symptom surveillance, where explantation stemmed from presentation of rupture-related symptoms.

CONCLUSIONS: The dearth of implant-related complication data makes analysis of
cost implications extremely risky challenging. Until reliable data about the clinical implications of the faulty implants are gathered, policy makers will struggle to accurately assess the relative budget impact of their recommendations. Even then, heterogeneity among the devices exported to different countries may confound predictions. More
broadly, the lack of complication data highlighted by this study indicates a need for improved regulation and monitoring of medical devices to ensure future policy
decisions are better informed.

PMD22 COMPARATIVE COST BETWEEN VERTEBROPLASTY AND KYPHOPLASTY FOR THE TREATMENT OF VERTEBRAL COMPRESSION FRACTURES

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OBJECTIVES: The decision to perform kyphoplasty versus vertebroplasty is often
made without considering the relatively higher procedural risks associated with
kyphoplasty. In this study, we presented a cost comparison for these two procedures
for the treatment of vertebral compression fractures.