PMD27

COST-MINIMIZATION ANALYSIS OF BIOPSY-BASED RISK STRATIFICATION TOOLS IN INTERMEDIATE AND HIGH RISK PROSTATE CANCER PATIENTS BASED ON RESULTS FROM PHYSICIAN CASE STUDIES

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OBJECTIVES: Prostate Cancer (PCa) disease management is challenging due to the uncertainty in risk at diagnosis. Patients classified by the American Urological Association (AUA) as intermediate (IR) or high risk (HR) may be guided to therapies that are expensive and unnecessarily impact quality of life. Prostate Px+ is a biopsy-based assay that provides improved prognostic information and aims to facilitate more appropriate disease management. We performed a cost-minimization analysis of PCa management according to standard care and of management post Px+, based on case studies reviewed by urologists. This study is an extension of previous IR work which employed theoretical treatment distributions rather than leveraging actual physician recommendations based on case studies. **METHODS:** 23 urologists nationwide reviewed case studies of PCa patients and recommended treatments with and without the Px+ results. 233 AUA IR (83%) and HR (17%) cases were analyzed. A decision analysis model, accounting for five primary treatments (radical prostatectomy, radiation therapy, primary hormonal therapy, brachytherapy and active surveillance) plus secondary treatments, was used to compare standard care with management post Px+ reclassification. Both primary treatment distributions and probabilities of Px+ reclassification were based on the physician case studies. The disease progression models were informed with costs and probabilities from the literature. The analysis is from Medicare's perspective with a 10 year time horizon. **RESULTS:** The expected cost per patient of standard management was $35,886 and $33,997 for Px+ (including the $3,200 list price), resulting in an expected cost savings of $1,889. One-way sensitivity analysis of 40 variables confirmed that modeled management post Px+ saves costs for all but three values of progression probabilities post radical prostatectomy. **CONCLUSIONS:** Personalized risk assessment tools such as Px+ improve PCa risk stratification of clinically challenging intermediate and high risk patients, impacting disease management and potentially saving costs over current standards.

PMD29

PATIENT TIME AND INDIRECT COSTS ASSOCIATED WITH SENSOR-AUGMENTED INSULIN PUMP THERAPY IN TYPE 1 DIABETES

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OBJECTIVES: In a recent randomized trial, sensor-augmented pump therapy (SAPT) demonstrated improved glucose control in Type 1 diabetes patients compared to multiple daily injections of insulin (MDI). It is important to evaluate patient time demands to achieve clinical benefits of SAPT. Using data from this trial, we compared reported estimates of weekly time, changes in time estimates across the 52-week study period, and indirect costs associated with diabetes-related care between treatments. **METHODS:** During the 52-week trial, patients (age 7-70 years, n=483) provided weekly time estimates for diabetes-related care. Given a distinct difference in the distributions of patient time between treatments during the pump initiation period, we used nonparametric bootstrapping to estimate the average weekly time difference and its associated uncertainty for Weeks 1-7. For Weeks 8-52, we applied a linear mixed model to evaluate the incremental time spent by patients on SAPT (versus MDI) and changes in weekly time for both treatments. We compared indirect costs using nonparametric bootstrapping. **RESULTS:** At baseline, MDI patients spent an average of 4.0 hours on diabetes-related care. During the pump initiation period, patients on SAPT versus MDI spent 1.9 hours more per week (95%CI: 1.2, 2.6). Following this period, SAPT patients spent 4.4 hours per week and MDI patients spent 3.4 hours per week on diabetes-related care (difference:1.0, 95%CI: 0.4, 1.7). On average, time spent by patients in both treatments decreased by 1.2 minutes per week (95%CI: −1.7,-0.7), across Weeks 8-52. Total indirect costs per patient averaged $4,600 with SAPT and $3,523 with MDI (difference: $1,077, 95%CI: $491, $1,638). **CONCLUSIONS:** Patients on SAPT versus MDI spent approximately two hours more per week on diabetes care during pump initiation and one hour more per week thereafter, resulting in higher indirect costs. This additional effort was associated with significant improvement in glycated hemoglobin levels with SAPT.

Medical Device/Diagnostics – Patient-Reported Outcomes & Preference-Based Studies

PMD30

IMPACT OF ACCESS TO A USUAL SOURCE OF CARE ON COMPLIANCE TO BREAST AND CERVICAL CANCER SCREENING

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OBJECTIVES: Trends in compliance to cancer screening among women have been decreasing during the last ten years. In addition, *Healthy People 2010* has noticed a decline in the prevalence of a usual source of care in the American women. The objective of this study was to assess the impact of access to a usual source of care on compliance to mammography and PAP smear screening. **METHODS:** The 2007 Medical Expenditure Panel Survey (MEPS) data was used. Screening guidelines gives by the American Cancer Society were used as a measure of compliance. Multivariate logistic regressions were performed to determine associations between access to a usual source of care and compliance to mammography and PAP smear while controlling for appropriate demographic characteristics. Sample was weighted and analysis was performed using SPSS (PASW) 17.0. **RESULTS:** 80% of the US non-institutionalized women population had a usual source of care in 2007. 59.1% women aged 41-70 years showed compliance to mammography guidelines. Women who had a usual source of care, had a higher likelihood of mammography compliance (OR=2.540; CI: 2.535 – 2.545). 80.2% women aged 22-70 years were compliant to PAP smear. Women who had a usual source of care showed a higher likelihood of PAP smear compliance (OR=2.041; CI: 2.038 – 2.044). **CONCLUSIONS:** The results indicate that prevalence of mammography and PAP smear is decreasing and is still below the required *Healthy People 2010* objectives of 70% and 90% respectively. Access to a usual source of care is essential for increased compliance with mammography and PAP smear screening. This study indicates that amendments made at the entry level of the healthcare system might help achieve better health outcomes in the future. Public policies should be developed to encourage the concept of a usual source of care so as to achieve increased use of preventive care.

PMD31

IMPACT OF GASTRIC ELECTRIC STIMULATION ON HEALTH STATE UTILITIES OF DIABETIC GASTROPARESIS PATIENTS: RESULTS FROM A PROSPECTIVE CLINICAL TRIAL

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OBJECTIVES: Diabetic gastroparesis (DG) poses a significant economic and clinical burden due to poorly understood physiological mechanisms and unresponsiveness to many medical treatments. Gastric electric stimulation (GES) is a treatment modality that aims to reduce symptoms of nausea and vomiting associated with gastroparesis in medically refractory patients. The aims of this analysis were: 1) to compare HRQOL in DG patients to patients with common chronic diseases; and 2) to determine the impact of GES on health state utilities. **METHODS:** HRQOL data was collected during a prospective randomized controlled trial where a gastric electric stimulator was implanted in patients with refractory DG (n=55). Following implant, the device was turned ON for 1.5 months after which patients were randomized to groups having consecutive cross over periods with the device turned ON or OFF. Per protocol, after cross over the device was turned ON for the remaining period of the trial. SF-36 results at baseline and at 12 months were used for analysis. Domain scores were compared to published population norms and average scores for common chronic conditions. Scores were also used to compute health state utilities using Nichols and colleagues' mapping algorithm. **RESULTS:** Mean SF-36 domain scores for enrolled patients were lower than scores published for population norms, and for persons with diabetes and other chronic conditions. Mean health state utility values for patients prior to device implantation was 0.54 (0.50-0.59); implanting GES resulted in an improvement in health state utilities to 0.65 (0.60-0.71), which was statistically significant ($p<0.001$). **CONCLUSIONS:** Patients with refractory DG had significantly worse health state utilities compared to patients with serious medical conditions. Using GES for a period of approximately 9 months resulted in significant improvements in HRQOL for patients whose DG was refractory to currently available medications.

PMD34

PREFERENCES FOR GENETIC TESTING TO ASSESS COLON-CANCER RISKS

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OBJECTIVES: To elicit preferences for genetic testing and estimate the relative importance and value of features of genetic testing for colon cancer. **METHODS:** United States residents aged 50 years and older completed a web-enabled, choice-format conjoint survey. The survey presented subjects with 9 test-choice questions. Each question required evaluating a pair of hypothetical blood-test profiles defined by chance of developing colon cancer, chance of receiving a false-negative result, person who receives the genetic-test results, and personal cost versus a no-test option. Test-choice questions were based on a predetermined experimental design with known statistical properties. The survey also elicited preferences for colorectal-cancer risk reduction conditional on information that subjects had Lynch syndrome gene associated with a high risk for colon cancer. Subjects were asked to choose between a given number of lifetime colonoscopies or a colectomy at specified costs to reduce the risk of dying from colorectal cancer. Random-parameters logit was used to estimate model parameters, predicted testing probabilities for specific tests, and the money-equivalent value of genetic information. **RESULTS:** A total of 451 subjects completed the survey. Given the range of levels of each attribute in the study, the most important attribute was cost, followed by who else sees the test results, the genetic-testing preference, and chance of a false-negative test result. For the "best" test compared with no test where the best test has 0% chance of a false-negative test result, results are disclosed to a physician, and cost is $500; the predicted probability of choosing the test is 97% (CI: 95%-99%). Setting the test attributes to the mean effect, the overall monetary value for genetic testing was $622. **CONCLUSIONS:** Cost and the potential for insurance discrimination based on genetics are the most important considerations in testing decisions and are more important than test accuracy and reduction of cancer risk.