was £4,142 compared to £3,762 on PE. Overall tumour response was 40.6% and 21.9% respectively and progression-free life years 0.575 and 0.358. Thus, the incremental cost-per-tumour-response of GC was £2,032 and the incremental cost-per-tumour-response of MVP was £4,044. Overall tumour response was 54.0% and 36.7% and one year survival 36% and 17% respectively. The incremental cost-per-tumour-response of GC was £6,240 and the incremental cost-per-survivor-at-one-year was £5,681. In extreme changes to underlying variables the incremental cost-per-progress-free-life-year £1,751. In overall tumour response was 40.6% and 21.9% respectively and progression. Covariates included age, gender, comorbidity indices (Chronic Disease Score and Charlson-Deyo), and ICD-9-based severity of illness indicators. Compliance was defined by calculating % days supply over a period of one year. Compliance was then converted to 7 ordinal categories in the regression model in order to identify dose-response associations or threshold/inflection points. RESULTS: Among diabetics, those who did not use any prescription medication showed the lowest total costs of care. However, among those patients who needed prescription medication to manage their illness, increased prescription drug costs among the most compliant are more than offset by decreases in medical care costs, for an estimated return on investment (ROI) of more than two-fold. A similar, but stronger, pattern was found among patients with CHF where the estimated ROI was three-fold or greater. CONCLUSIONS: For some medical conditions, the additional costs associated with increased compliance may be offset by lower medical costs, resulting in an ROI greater than one.

**INDIRECT COMPARISONS OF DRUGS USING META-ANALYSIS: VALIDATION OF RESULTS**

**CV1**

**THE VALUE OF COMPLIANCE: EVIDENCE FROM TWO PATIENT COHORTS**

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OBJECTIVES: To identify the association between compliance and the direct costs of care for two different clinical patient cohorts. METHODS: Using administrative claims data from Medstat MarketScan (tm) we assessed the association between prescription drug compliance and direct costs of care for two patient groups: a cohort of non-Medicare patients diagnosed as diabetics (N = 9960) and second cohort of non-Medicare patients diagnosed with congestive heart failure (CHF)(N = 935). Since patients who are more compliant tend to be older and have a greater number of comorbidities, and our goal was to isolate the association between compliance and medical care costs, we statistically controlled for differences in potential confounding variables using OLS regression. Covariates included age, gender, comorbidity indices (Chronic Disease Score and Charlson-Deyo), and ICD-9-based severity of illness indicators. Compliance was defined by calculating % days supply over a period of one year. Compliance was then converted to 7 ordinal categories in the regression model in order to identify dose-response associations or threshold/inflection points.

RESULTS: Among diabetics, those who did not use any prescription medication showed the lowest total costs of care. However, among those patients who needed prescription medication to manage their illness, increased prescription drug costs among the most compliant are more than offset by decreases in medical care costs, for an estimated return on investment (ROI) of more than two-fold. A similar, but stronger, pattern was found among patients with CHF where the estimated ROI was three-fold or greater. CONCLUSIONS: For some medical conditions, the additional costs associated with increased compliance may be offset by lower medical costs, resulting in an ROI greater than one.

**CV2**

**DO SHORT-ACTING OPIOATES IN OFF-PUMP BYPASS SURGERY REDUCE LENGTH OF STAY OR TOTAL HOSPITAL COSTS?**

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OBJECTIVES: The cost of remifentanil, a short-acting opiate, is approximately 10 times higher than fentanyl, a
longer-acting opiate. Short-acting opiates, however, have the potential to reduce time to extubation (TTE) and may, therefore, decrease length of stay (LOS) and hospital costs. Remifentanil was added to our institution’s formulary for use during off-pump bypass surgery. The objective of this analysis was to compare TTE, LOS and total hospital costs between patients who received remifentanil and fentanyl during off-pump bypass surgery. METHODS: The study was prospective and observational in design. Consecutive patients who underwent off-pump cardiac bypass surgery and received either remifentanil or fentanyl from September 1998 to August 1999 were included. Patient charges were converted to costs using cost-to-charge ratios. The percent of patients extubated in the operating room (OR), LOS and hospital costs were compared between the groups. RESULTS: Baseline demographics, including age, female patients, co-morbidities and intraoperative variables were similar between the remifentanil (n = 39) and fentanyl (n = 20) groups. Patients given remifentanil during surgery were significantly more likely to be extubated in the OR than patients given fentanyl (64% vs. 15%; p < 0.001). The mean LOS was similar in both groups (7.3 ± 3.1d vs. 8.3 ± 2.7d; p = 0.27). Patients who received remifentanil incurred lower ward ($3,973 ± 1,719 vs. $4,808 ± 1,794; p = 0.09), recovery room ($31 ± 40 vs. $65 ± 33; p = 0.002) and pulmonary function testing costs ($0 ± 0 vs. $34 ± 103; p = 0.045) than patients who received fentanyl. Anesthesia costs were higher among patients who received remifentanil ($476 ± 102 vs. $416 ± 130; p = 0.06). Medical and surgical supplies, OR, ICU, cardiac catheterization, laboratory, respiratory therapy, pharmacy, radiology and transfusion costs were similar between the 2 groups (p > 0.05). The total cost was $15,272 ± 5,556 and $15,616 ± 4,169 in the remifentanil and fentanyl groups, respectively (p = 0.81). CONCLUSION: Remifentanil, when used in off-pump bypass surgery, increases the likelihood of extubation in the OR. However, LOS and total hospital costs remain unchanged.

**THE COST-EFFECTIVENESS OF LIFETIME FACTOR VIII PROPHYLAXIS IN THE TREATMENT OF SEVERE HEMOPHILIA A**

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Prophylactic infusion of factor VIII has been shown to markedly reduce arthropathy in patients with severe hemophilia A. OBJECTIVE: The purpose of this model is to investigate the cost-effectiveness of prophylactic infusion of factor VIII relative to on-demand infusion therapy in patients with severe hemophilia A. METHODS: Two hypothetical cohorts were modeled; one cohort receiving prophylactic and the other on-demand infusions. Factor VIII infusion therapy begins at age 1 and continues unchanged over a patient’s lifetime. A recursive Markov model is used to estimate the expected costs and QALYs associated with each cohort. Costs and QALYs are calculated using backward induction in 5-year intervals incorporating the DEALE method. Data inputs are estimated from published literature. The analysis is completed from a societal perspective, uses a 3% discount rate, with costs in year 2000 U.S. dollars, and has a time horizon of 50 years. RESULTS: According to the model, patients re-