role in refractory GERD patients. The purpose of this cross-sectional survey study is to estimate the percentage of patients actively treated with PPI's (omeprazole and lansoprazole), who perceive control of their symptoms. The Gastrointestinal Symptom Rating Scale (GSRS), a validated rating scale to assess GERD patients' quality of life, was utilized. The study hypothesis is that 80% of the patients will perceive their symptom control is very good or excellent. **METHODS:** An unblinded self-administered questionnaire, including the GSRS, was mailed to 300 patients who were currently receiving GERD maintenance therapy with a PPI. Patients were asked questions regarding the duration and severity of symptoms, dosing of medication, contributing lifestyle factors and debilitation of disease. **RESULTS:** 153 questionnaires were returned fully completed, a 51% response rate. The surveyed patients were 60 ± 14 years with 89% of respondents being male. Of the PPI's prescribed 86% and 14% were lansoprazole and omeprazole respectively. The median total score of the GSRS was 19, representing mild to moderate patient symptomatology. **CONCLUSIONS:** 66% of respondents treated with currently prescribed PPI's had very good or excellent symptom control, however the need exists for a more effective PPI for adequate symptom control in 34% of patients.

PGI13

FACTORS ASSOCIATED WITH PHYSICIAN KNOWLEDGE OF WHETHER PRESCRIPTION DRUGS ARE ON FORMULARY

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OBJECTIVE: Prescription drug formularies have been used by many pharmacy benefit managers (PBMs) as a tool to control the rising costs of prescription drugs and became increasingly popular since the 1990s. Despite its popularity, little is known about how familiar physicians are with what prescriptions are on formulary. This study examines factors associated with physician knowledge of formulary. **METHODS:** The National Ambulatory Medical Care Survey (NAMCS) is a data series of annual survey of a national representative sample of physician office visits. It provides up to six medications associated with each office visit. The 1998 NAMCS collected information regarding the formulary status (yes, no, do not know, or not applicable) of each medication and provided a unique opportunities to assess physicians' knowledge of formulary. Univariate analyses as well as multivariate logit model were used to examine the association between physician knowledge of formulary and types of visits, physician specialty and practice locations. **RESULTS:** On average, 47% of physicians did not know whether the drug they prescribed was on formulary. Physicians whose patients belonged to an HMO and were paid by capitation were seven times more likely to know whether a drug was on formulary, compared to those whose patients were neither in an HMO nor capitated. Physicians in the South were 1.7 times more likely to know than those in the West, whereas the odd-ratios was 0.7 for those in the Midwest. Neither physician specialty (primary care physician versus specialist) nor patient history (new versus established patient) was found to be significantly associated with physician knowledge of formulary. **CONCLUSIONS:** It is important for PBMs to find mechanisms to increase physician awareness of whether a patient's medications are on formulary. Improving physicians' understanding of what medications were on formulary could potentially decrease prescription drug costs for health care plans and patients.

PGI14

HOW IMPORTANT IS APPROPRIATE EMPIRICAL ANTIBIOTIC TREATMENT FOR INTRA-ABDOMINAL INFECTIONS?

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OBJECTIVES: To assess the association between hospital costs and the appropriateness of empirical antibiotic treatment for community-acquired intra-abdominal infection. **METHODS:** Patients were identified from hospital discharges from three hospitals for 1993 to 1997. Medical records were obtained to validate the diagnosis and obtain details of antibiotic therapy and its outcome. Valid cases had macroscopic evidence of intra-abdominal infection at operation, therefore all cases had surgical control of infection in addition to antimicrobial therapy. Appropriateness of empirical therapy was assessed from the results of in-vitro sensitivity tests (culture positive cases) and compliance with local antibiotic policies (culture negative cases). **RESULTS:** We identified 294 valid cases of intra-abdominal infection of whom 162 (55%) were culture positive. Appropriate antibiotic treatment was associated with significantly shorter length of stay and lower investigation costs for patients with positive cultures but not for patients with negative cultures or no test/result (data not shown). Culture +ve cases, appropriate ($n = 129$) vs inappropriate ($n = 33$): mean length of stay 12 vs 22 days, $p = 0.0007$ boot strap t test, mean investigation cost £250 vs £409 $p = 0.04$, mean antibiotic cost £138 vs £128 $p = 0.9$. A log transformed linear regression analysis was carried out on the cost data for the culture positive cases adjusting for five independent variables. Inappropriate antibiotics, increasing age and a higher number of comorbidities and previous admissions were significantly associated with increased cost of hospital stay but not gender. This model accounted for 34% of the variance in cost of hospital stay. For the cost of investigations inappropriate treatment, increasing age and

number of comorbidities were all significant predictors accounting for 26% of variance in costs. Number of comorbidities was the only variable significantly associated with the cost of antibiotics. **CONCLUSIONS:** Appropriate empirical antibiotic treatment of patients with culture positive intra-abdominal infection is strongly associated with length of stay and hospital costs.

PG115

COMPUTERIZED ASSESSMENT OF COMPLICATIONS FOLLOWING COLORECTAL SURGERY

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OBJECTIVES: Historically, complication rates following colorectal surgery were stratified by disease process, type of operation, or anesthesia risk derived after an intensive review of the medical record. Newer computer applications purport to shorten this process and predict the probability of postoperative complications by distinguishing them from comorbidities that are co-mingled on uniform discharge codes. We analyzed CaduCIS software (CareScience, Inc., Philadelphia, PA) which uses discharge codes to see if its predictions of comorbidity and complications accurately track the medical record. **METHODS:** Two-hundred and seventy patients were analyzed using principal and secondary diagnoses coded on discharge. Coding inaccuracies of clinical occurrences were identified by physician review of each medical record. The actual incidences of 17 common preoperative comorbidities and 11 postoperative complications were compared to computerized predictions by applying standard statistical tests. **RESULTS:** The overall incidence of complications obtained by physician (actual) review was 47%, compared to 46% by computer. The computerized predicted distribution of comorbidities was similar to the actual occurrences in 15 of 17 categories. Analysis showed a statistical difference between the computer-predicted and "actual" complication rates in 5 of the 11 categories; however these differences (underestimates) were due to charting and coding inaccuracies, not to computerized errors. The most common preoperative comorbidities and complications were cardiopulmonary (47% and 28%, respectively). **CONCLUSIONS:** The computer-system's accurate measurement of the overall complication rate supports the claim that aggregate complication estimates derived from readily available administrative data are sufficient for across-the-board comparisons among hospitals. The computerized system can generate such measurements in a fraction of the time is takes to manually review the medical records. As uniform discharge coding of co-mingled comorbidity and complications are increasingly used to rapidly compute surgical outcomes, colon and rectal surgeons need to ensure compatibility of the actual and coded medical record.

PG116

ANALYSIS OF THE LONG-TERM COSTS, SAVINGS AND EFFECTS GENERATED BY INFLIXIMAB TO NORMALIZE QUALITY OF LIFE IN PATIENTS WITH CROHN'S DISEASE

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OBJECTIVES: Infliximab (Remicade) (I) 5mg/kg is effective to control refractory Crohn's disease in 81% and to improve fistulas in 68% of patients, thus greatly improving quality of life (QoL). The objective of this study was to calculate the direct costs and savings generated by I to achieve this improvement of QoL. **METHODS:** This mirror-image study was carried out in 48 patients, of which 22 had fistulas, all responding to therapy. Patients were followed for 6 to 24 months prior and 6 to 24 months after I. All direct costs to the Belgian public payer were recorded separately for every 6 month time period before and after I, in order to control for a bias due to changed management regardless of I. The cost of I was calculated separately. IBDQ scores were recorded before and after I for each period. **RESULTS:** There was an important build up of costs in each period before I: −2–1.5y: 1,002 (±459) Euro; −1.5–1.0y: 1,486 (±459) Euro; −1.0–0.5: 2,114 (±391) Euro; −0.5–0: 2,427 (±302) Euro. After I there was a sharp decrease of the cost of care (excluding the cost of I) to 1,760 (±239) Euro (0+0.5y) and 1,380 (±264) Euro (+0.5+1.0y). The decrease was statistically significant ($p=0.016$). The average cost of I in the first six months was 4,850 (±327) Euro and in the second six months 1,300 (±280) Euro. The IBDQ increased from 147.8 (SE 8.4) to 187.8 (SE 7.0). The total direct cost of care after I, adjusted for the non-responders, was calculated to be 17.0 Euro per day of normalised QoL. **CONCLUSIONS:** Although the cost of infliximab is substantial, the total direct cost to produce a normal QoL in the entire year after therapy is quite acceptable, providing that patients not responding are not further treated.

PG117

COMPARISON OF GENERIC VERSUS DISEASE SPECIFIC TOOLS FOR THE MEASUREMENT OF HEALTH-RELATED QUALITY OF LIFE IN CROHN'S DISEASE

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Health-related quality of life (HRQoL) research suggests that, due to unique characteristics of a disease state, disease specific tools are better discriminators of health status than generic tools. **OBJECTIVE:** To compare generic (SF-12) versus disease specific (SIBDQ) quality of life tools in a cohort of patients receiving treatment for Crohn's Disease (CD). **METHODS:** Structural Equation