there in terms of health care resource use and associated costs, e.g., costs of hospitalisations, diagnostic and surgical procedures, outpatient care and drug consumption. Panel and literature data was used for events not investigated in the clinical trials. Cost inputs were derived from Tampere University Hospital for year 1998. Days in remission and relapse were translated into Quality Adjusted Life Years (QALYs) using CD specific health-state utility data from the literature. RESULTS: The outcomes of the clinical trials were reflected in the model as a 26.4% reduction in annual number of relapses for the average patient in the budesonide CIR treatment group. Mean annual health care cost per patient was 17,740 FIM (2,000 USD) for the budesonide CIR patient and 16,608 FIM (1,877 USD) for the NMT patient. The difference between the groups amounted to a cost per gained QALY of 68,610 FIM (7,753 USD), which is well in line with what is considered a cost-effective treatment strategy. CONCLUSION: Budesonide CIR means fewer relapses per average patient and is a cost-effective treatment strategy for the treatment of Crohn’s disease in Finland.

Rapid Impact of Rabeprazole on Symptom Distress Among Patients with Gastroesophageal Reflux Disease

OBJECTIVES: Gastroesophageal reflux disease (GERD) is a common condition associated with a variety of symptoms, particularly heartburn. The purpose of this study was to assess patient-reported symptom distress in a randomized trial of rabeprazole (RAB), a proton pump inhibitor. METHODS: Symptom distress was measured using the Distress subscale of the GERD Symptom Assessment Scale (GSAS) that asks patients about the degree of bother they experience for 15 symptoms. Patients completed the GSAS at baseline and week 4. We evaluated the impact of treatment (RAB 10mg, RAB 20mg, or placebo) on mean change in GSAS Distress scores using an ANCOVA model. We also conducted a relative variability analysis using ANOVA models to determine which of 5 clinical indicators are most useful to explain changes in GSAS Distress scores. Mean change was assessed as a function of baseline daytime heartburn severity, baseline nighttime heartburn severity, time to first 24 hours without heartburn symptoms, complete daytime heartburn relief, and complete nighttime heartburn relief. RESULTS: The sample consisted of 169 patients (RAB10mg = 55, RAB 20mg = 56, placebo = 58). Overall, a significant difference in mean change in GSAS Distress scores was observed across treatment groups (p = 0.0007). Both the RAB 10mg and RAB 20mg groups reported significantly greater improvements in GSAS Distress scores than the placebo group (p = 0.0036 and p = 0.0004, respectively). Of the 5 clinical indicators examined, time to first 24 hours without heartburn explained the greatest amount of variability in GSAS Distress scores. Achieving complete daytime and complete nighttime heartburn relief also were significant factors. CONCLUSIONS: In clinical studies, RAB provided fast and consistent (both daytime and nighttime) heartburn relief. Given that speed of heartburn relief as well as achieving complete heartburn relief were significant factors explaining variability in patient-reported symptom distress, the positive impact of RAB on the GSAS distress scale was consistent with its clinical efficacy.

Cost-Effectiveness of ‘Test&Treat’ Helicobacter pylori Infected Dyspeptic Patients in a Primary Care Setting

OBJECTIVES: With recent recognition of the primary role of Helicobacter pylori (HP) in peptic ulcer disease, it has been proposed that patients with dyspepsia undergo noninvasive testing for HP, instead of endoscopy, followed by antibiotics if positive. We evaluated cost-effectiveness of ‘Test&Treat’ strategy versus empirical treatment for HP infection in dyspeptic patients presenting in the primary care setting. METHODS: The study was a one-year incremental cost (yr2000 US dollars) per quality-adjusted life year (QALY) model for dyspeptic patients age less than 45 years old in a primary care setting from a societal perspective. With ‘Test&Treat’ algorithm, patients were tested for HP infection using urea breath test. If positive, eradication was prescribed. Alternatively, patients were given conventional treatment of H2RA for four weeks. If not cured, HP would be eradicated empirically. Both direct and indirect costs were included. The model took into consideration preventing gastric cancer from eradication. Sensitivity analyses were performed on prevalence of HP infection, drug treatment efficacy, laboratory test costs, drug treatment costs, and drug treatment utility loss. RESULTS: At baseline, with HP prevalence of 40% and HP antibiotic eradication efficacy of 89%, results showed that ‘Test&Treat’ had an incremental cost-effective ratio (ICER) of $31,723/QALY. One-way sensitivity analysis showed that antibiotic treatment efficacies lower than 45–46% would exceed the societal threshold ICER of $50,000. CONCLUSIONS: The model showed that ‘Test&Treat’ was cost-effective for uncomplicated dyspeptic patients in primary care. Although NIH guidelines state that all ulcer patients with HP infection require eradication regimen, universal endoscopic diagnosis of ulcer causation (HP+/HP−) would not be cost-effective. However, treating all patients empirically could increase antibiotic resistance. The ‘Test&Treat’ strategy has the benefits of slowing antibiotic resistance while avoiding high endoscopy costs. The model was ro-
bust to changes of most parameters—most sensitive to prevalence and eradication efficacy changes.

**PG10**

IRRITABLE BOWEL SYNDROME COSTS SICKNESS FUNDS DM 2.8 BILLION PER YEAR

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**BACKGROUND:** With a prevalence of up to 20%, Irritable Bowel Syndrome (IBS) could cost the German Sickness Funds (GKV) more than DM 28 billion (10.5% of its total expenditures) per year. Despite these potentially tremendous costs it is a fairly obscure disease in terms of proper diagnosis and lacking effective treatment. **OBJECTIVE:** To assess diagnosis and treatment options of IBS using strict Rome-II criteria. **METHODS:** Face-to-face interviews of patients (121) and physicians (147 GPs, 53 internists). **RESULTS:** The patient survey (age 14–74 yrs.; strict Rome-II criteria) puts the prevalence of IBS (constipated and alternating type) in Germany at around 2.3% (1.4 million). This figure correlates well with previous findings. The patients responded that they experienced an average of 7 episodes per year, each lasting about 4–5 days. Some 11% of them suffer permanently. Of the physicians questioned, only 73% recognize IBS when given the symptoms; 57% of these actually classify it accordingly while an alternative diagnosis is “irritable colon” (24%). When choosing a drug, daily treatment costs outweigh every other factor of the physicians relevant set (efficacy, onset, side-effects, mode of action etc.) by about 3:1. In consequence a drug treatment is initiated in (only) 40% of the cases. This is also due to a lack of effective and specific treatment which could help to reduce the frequency of episodes. Results of another study put the direct costs of the average IBS patient at around DM 1,729 per year. Combining this with the above findings results in a more realistic figure of around DM 988 million in direct costs per year (0.37% of total GKV expenditures). **CONCLUSION:** These comparably high costs (insulin treated diabetes: DM 1,217 p.a.) could be significantly reduced by DM 247 for each episode prevented through proper diagnosis and consequent treatment with a specific and effective medication.

**PG11**

CHARACTERIZATION AND MARKOV MODELING OF GASTROESOPHAGEAL REFLUX DISEASE STATES IN A LARGE HEALTH CARE PLAN

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**OBJECTIVES:** The objective was to describe the disease state (DS) transition patterns of gastroesophageal reflux disease (GERD) by applying a multi-state model assuming a Markov process. **METHODS:** This retrospective study utilized administrative claims for subjects with GERD from a large Midwest USA health care plan. Subjects were tracked for six, six-month time periods (baseline and five followups). Within each time period, ICD-9 diagnosis codes were used to categorize subjects’ GERD into four DS plus a non-symptomatic state: DS0 [no GERD diagnosis], DS1 [mild esophagitis], DS2 [reflux esophagitis], DS3 [esophageal ulceration], and DS4 [striktures and complications]. GERD transition probabilities and patterns were analyzed in a five-state Markov framework. Disease regressions and progressions were allowed. The effects of patient and provider covariables on transition probabilities were modeled using logistic regression techniques. **RESULTS:** A total of 7575 subjects with GERD were analyzed. In the five followup periods combined, 79% of the subjects were in GERD DS0, 6% in DS1, 8% in DS2, 2% in DS3, and 5% in DS4. For all initial DS, the most frequent transition path was to regress to DS0 (becoming non-symptomatic) and the second most common was to stay in the initial disease state. For subjects ending a time period in DS1, 89% regressed to DS0 in the next time period, while 6% stayed in DS1, 3% progressed to DS2, 1% progressed to DS3, and 1% progressed to DS4. Multivariate modeling of risk factors influencing transitions showed that progressing from DS1 is associated with age >70, a proton pump inhibitor prescription, and absence of a diagnostic procedure. **CONCLUSIONS:** The Markov analysis showed that subjects with GERD commonly have their symptoms regress, with only a small percent progressing. The Markov model is a useful methodology to research disease states in a retrospective database setting within a health care plan.

**PG12**

ESTIMATING POTENTIAL UTILIZATION OF ESOMEPRAZOLE BY ASSESSING GERD SYMPTOM CONTROL ON TRADITIONAL PPI’S

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**OBJECTIVES:** Approximately one-half of the American population experiences weekly symptoms of gastroesophageal reflux disease (GERD). With the hypothesis that not all patients are completely symptom free on proton pump inhibitor’s (PPI’s), the pharmaceutical industry is formulating more potent anti-secretory drug therapies. In November of 2000 the FDA approved esomeprazole for the treatment of Erosive Esophagitis (EE). Esomeprazole is a more potent inhibitor of gastrin and gastric acid, with clinical studies demonstrating quicker symptom relief with more complete 24-hour acid control. If complete acid control translates into better long-term symptom relief for chronic symptomatic GERD it may play a vital