METHODS: Treatment failure (TF) in children suffering from RTI was derived from the German IMS Disease Analyzer-mediplus database totalling 20% of all treatments with clarithromycin suspension. TF is due to non-sensitivity to clarithromycin or incomplete intake of medication (non-compliance). The TF rate due to non-compliance on the clarithromycin suspension (13.5%) was calculated from the overall TF rate (20%) minus the average TF rate due to non-sensitivity (6.5%). The TF rate due to non-compliance on clarithromycin SipTechnology was 1.75% as estimated from clinical trial. Resource utilisation data for treatment of RTI and TF were obtained from a Delphi panel of paediatricians. The analysis was conducted from the perspective of the German Statutory Health Insurance (SHI), including direct costs for physician visits, laboratory values, drugs and hospitalizations. Cost data were derived from published sources for the year 2006. One-way sensitivity analyses were performed. RESULTS: The average costs of TF totalled €118.05 per case. With an RTI incidence of about 426,000 cases among German children aged 2–12 years and a reduction of TF from 20% to 8.25% (remaining TF due to non-sensitivity plus non-compliance on clarithromycin SipTechnology) for clarithromycin SipTechnology compared to clarithromycin suspension, the annual cost-savings for the SHI amount to about €5.9 million. Sensitivity analyses confirm the robustness of the results. CONCLUSIONS: Due to its improved compliance and consequently decreased TF rates, the treatment with clarithromycin SipTechnology is cost-saving for the German health care system compared to clarithromycin suspension.

RESPIRATORY DISEASES—Health Care Use & Policy Studies

PRSI1
PERCEPTIONS ABOUT BEHIND-THE-COUNTER AVAILABILITY OF PSEUDOEPHEDRINE
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OBJECTIVES: Recent federal legislations has mandated pharmacies to move pseudoephedrine (PSE) products from over-the-counter to behind-the-counter. We undertook a qualitative study that explored the public’s perceptions about this new policy.

METHODS: Ninety participants comprising of physicians, patients, and pharmacists responded to questions about perceived advantages and disadvantages of this policy, its influence on the treatment for a common cold, barriers to implementation, and personal impacts. Qualitative content analysis was performed through the immersion and crystallization process to identify emerging themes and salient topics. RESULTS: Advantages included more opportunities for pharmacist counseling, decreased access to pseudoephedrine by minors, less likelihood for misuse to occur, and less shoplifting. Disadvantages included rising prices for other cold remedies, less consumer autonomy, and more pharmacy workload. Implementation barriers included lack of consolidated purchase data between various pharmacies as well as discrepancies between store versus pharmacy hours of operation. Impact on treatment of colds consisted of substitution with other over-the-counter remedies and frequent clinic visits for prescription drugs. CONCLUSION: This exploratory study suggested actions that might improve the desired effect of the pseudoephedrine legislation: 1) establishing a universal system of linking purchase data among various pharmacies; 2) reducing the discrepancy between pharmacies’ and stores’ hours of operation; 3) providing additional support to help the pharmacy staff adapt to their new regulatory roles; 4) enhancing public awareness about the policy; and 5) studying the economic effects of this policy on the costs of cold remedies and health care expenditures.

PRSI10
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): HOSPITALIZATIONS AND COSTS BY SEVERITY OF ILLNESS
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OBJECTIVES: To examine use and cost of inpatient care by severity of COPD during one year. METHODS: Using 2004–2005 Massachusetts hospital discharge data, a cohort of patients with COPD (ICD-9 principal diagnosis codes: 491.2X, 492.X, 493.2, 496) assigned to v15APR-DRG 140 (COPD) was identified. A COPD inpatient stay profile was established starting with the first hospitalization (index stay) at any Massachusetts hospital in 2004 and included all subsequent inpatient stays for COPD within twelve months. Cases were examined by APR-DRG severity (mild, moderate, major, extreme). Charges (accommodations, ancillary services) adjusted by a 0.652 cost-to-charge ratio, medical inflation and geographic factors are reported as 2006 US$ costs. RESULTS: Of the 11,279 patients 60% were female, mean age was 69 years. More than half (54%) were classified as moderate severity; 22% as major, 21% as minor and 4% as extreme. For all COPD cases, the mean LOS was 4.7 days with a mean cost of $6671 per hospital stay. On average, LOS and cost increased by severity level from 3.5 days at $4745 for minor cases to 9 days at $15,997 for extreme cases. The inpatient case fatality rate (CFR) during the index stay ranged from <1% (minor severity) to 18% (extreme severity). During the subsequent year 5044 (46% of index survivors) had a COPD-related readmission. The readmission rate was 39% for minor cases (mean: 2.2; range: 1–15), 39% for moderate cases (mean: 2.1; range: 1–18), 38% for major cases (mean: 2.1; range: 1–12) and 20% for extreme cases (mean 2.3; range: 1–10). CONCLUSION: Almost half of patients receiving inpatient management for COPD will require multiple hospital admissions within a one year period. Severity of illness impacts duration and cost of hospital stay, inpatient CFR and readmission rate.

PRSI12
PROPENSITY OF PRESCRIBING FLUTICASONE/SALMETEROL COMBINATION IN A HIGH RISK MEDICAID POPULATION
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OBJECTIVES: The burden of chronic obstructive pulmonary disease (COPD) and asthma could be reduced through appropriate medication therapy management. This study examines the relative propensity of Maryland Medicaid managed care organization (MMMCO) patients with COPD and asthma or either alone, to be prescribed fluticasone/salmeterol combination (FSC). METHODS: All medical and prescription claims for MMMCO enrollees with a diagnosis of COPD (ICD-9 codes 491, 492, 496) and/or asthma (ICD-9 codes 493.2) in the primary, or secondary diagnosis field, were retrieved. Study patients were 40 and older, claiming at least one FSC or other COPD drug with a minimum 30 days supply. The propensity of being prescribed FSC was estimated as a logistic function of patient age, gender, race, general health (as measured by the Charlson Comorbidity Index), and diagnosis of COPD and/or asthma. RESULTS: Out of total 9131 patients, half were African-American, 70% were female and over half were over 50 years
old. After adjusting for confounders, patients with COPD and asthma were twice as likely to use FSC than those with Asthma alone (OR 1.99, 95% CI 1.73–2.29); patients with COPD alone were 66% less likely to receive FSC than those with Asthma alone (OR 0.34, 95% CI 0.28–0.41). African-Americans were a third less likely to be prescribed FSC than Caucasians (OR 0.69, 95% CI 0.61–0.78), and females about a third more likely than males to use FSC (OR 1.35; 95% CI 1.16–1.57). Age was not a significant predictor at the 0.05 level. CONCLUSION: The propensity to be prescribed FSC is significantly higher in patients with COPD/asthma than those with either disease alone. Race and gender significantly affect access to FSC in MIMMOO, even after adjusting for comorbidities. Cost to the patient was not a factor, as the copayment was $1 for any prescription.

STROKE—Clinical Outcomes Studies

EPIODOLOGY AND ECONOMIC BURDEN OF STROKE-RELATED RISK FACTORS: A SYSTEMATIC LITERATURE REVIEW
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OBJECTIVES: To determine the epidemiological risk factors associated with stroke, examine their influence on stroke-related costs, and identify areas that need further research. METHODS: A systematic literature search was performed (1996–2006) using PubMed® searches. Manual review of bibliographies allowed determination of additional articles. RESULTS: Out of a total of 41 included studies, 26 studies focused on stroke-associated risk factors, while 15 studies examined the economic burden of stroke. Apart from age and race [African-Americans have the highest per-capita stroke costs ($25,782)], followed by Hispanics ($17,201)], hypertension was the most prevalent clinical risk factor (58.1% to 75%), followed by diabetes. Relative risk for stroke was higher in women (increase of 2–6.5 fold) as compared to men (1.5–2 fold) with diabetes. Renal dysfunction, pregnancy, inflammation and infection, depression, chronic headache and migraine, metabolic syndrome, cancer, and AIDS were other risk factors identified. Total cost of stroke in United States was found to be approximately $58 billion [2006 American Heart Association]. Mean total cost per individual approximated $125,000. Subarachnoid hemorrhage was reported to be the costliest stroke sub-type. Hospitalizations and medications were the major cost components in stroke treatment. Studies have linked few risk factors, such as smoking and higher age, to increased stroke treatment costs, but the impact of the majority of risk factors on stroke costs has not been examined. CONCLUSION: Stroke has a significant economic impact on society, due to its morbidity and mortality burden. However, few studies have examined the impact of individual stroke-associated risk factors on stroke costs. Further research demonstrating economic link of common risk factors with stroke is warranted.

STROKE—Cost Studies

IMPLEMENTATION OF WIDESPREAD ACCESS TO ORGANIZED STROKE CARE IN CANADA
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OBJECTIVES: Despite solid evidence, measures for prevention, treatment and other health practices that could reduce mortality, disability and costs are not being used routinely in Canada. An economic model was developed to formally assess the potential clinical and economic impact of implementing a comprehensive stroke program. METHODS: A discrete event simulation was designed to assess the implications of various stroke strategies defined in terms of the usage of organized stroke units and clot-busting therapies, access to rehabilitation, stroke awareness and prevention campaigns. Stroke incidence, modified by whatever prevention practices are analyzed, is applied to the Canadian population to create the simulated patients with stroke. Each patient's management is simulated according to his characteristics and the interventions available given the strategy under consideration. Over time, patients are exposed to risks of: death, new stroke, change in functional level, and transfer to another location of care. Each event is processed in terms of its clinical consequences, resource use and cost. Data were obtained from the Registry of the Canadian Stroke Network, the Canadian Heart Health Survey, Statistics Canada and the Institute for Clinical and Evaluative Sciences. RESULTS: Implementation of widespread prevention and awareness campaigns would result in ∼127,000 fewer initial strokes over 20 years. Access to organized