patients or for patients with CHD, and patients of control group were in routine clinical practice. All patients were observed during 12 months. Economic efficiency in both cases was evaluated on the basis of "cost of illness" and "cost-effectiveness" analysis. **RESULTS:** In hypertensive patients we received the following results. The cost-efficiency ratio for decreasing blood pressure on 1% was $216.6 in the treatment group and $1179 in the control group. The results of patients' education in CHD patient were the following: The cost-efficiency ratio for decreasing angina attacks frequency on 1% was S974 in treatment group and 2838$ in control group. The cost-efficiency ratio for decreasing cholesterol on 1% was $2857 in the treatment group and S4365 in the control group. The cost-efficiency ratio for decreasing blood pressure on 1% was $1606 in the treatment group and $9316 in the control group. **CONCLUSION:** Educational preventive technologies for patients with cardiovascular diseases are cost-effective over a one-year period.

PCV43

OPTIMIZATION OF DIAGNOSIS AND TREATMENT OF CORONARY ARTERY DISEASE IN CHINA WITH USE OF CORONARY CT ANGIOGRAPHY

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OBJECTIVE: Diagnosis of coronary artery disease (CAD) in China using coronary angiography (CA) is challenging due to high disease prevalence and limited resources. It has been estimated that up to 50% of Chinese patients are negative for CAD upon CA. Coronary CT Angiography (CTA) may provide an opportunity to minimize unnecessary invasive diagnostic procedures and increase patient access to diagnosis of CAD in a cost-effective manner. This study was conducted to evaluate the potential costs and efficiency of utilizing CTA in combination with CA to optimize diagnosis and care of patients with suspected CAD in China. **METHODS:** We conducted a cost-consequences analysis from the perspective of Fuwai Hospital in Beijing. We developed a decision-analytic model comparing a diagnostic strategy of CA only with a strategy of CTA in combination with CA for patients with low to moderate pre-test probability (based on Duke Clinical Score) of significant disease. All CA-positive patients were assumed to receive percutaneous coronary intervention (PCI). CTA diagnostic accuracy data and cost estimates were obtained from Fuwai Hospital and other inputs were derived from the published literature. **RESULTS:** In the base-case analysis, assuming a CAD prevalence of 39% (range 18–64%) in the low to moderate risk patient population, utilization of CTA in combination with CA lead to a cost savings of $559 (USD) per patient (range $680–$416) compared to the CA only diagnosis strategy. The hospital cost per diagnosis of CAD was $12,483 (CTA + CA) (range $14,197–$11,900) and $13,418 (CA only) (range $17,406–$12,100), and the proportion of catheter lab diagnoses leading to PCI increased from 39% (range 18–64%) to 73% (range 48–88%). **CONCLUSION:** Our study suggests that CTA implementation in China could optimize the patient population that undergoes invasive CA procedures and provide cost-savings for Chinese hospitals.

PCV44

RELATIONSHIP BETWEEN THE OBESITY PARADOX AND HEALTH CARE EXPENDITURES IN SUBJECTS WITH CARDIOVASCULAR DISEASE USING THE MEDICAL EXPENDITURE PANEL SURVEY

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OBJECTIVE: To examine how found 'obesity paradox'—a paradoxical decrease in morbidity and mortality with increasing BMI in subjects with cardiovascular disease (CVD)—relates to health care-expenditures using Medical Expenditure Panel Survey (MEPS). **METHODS:** We performed cross-sectional analyses of 11,385 adults from the 2005 MEPS, a national survey of noninstitutionalized civilian population in the United States. Subjects with CVD (coronary heart disease, myocardial infarction, stroke, and hypertension) were determined from self-reports. Mean expenditures per capita were estimated for NIH BMI categories (under, normal, overweight, obese I, II, and III) using a two-part exponential conditional model (ECM) adjusted for age, race, wage, occupation, type of health insurance, degree level, and smoking status. The first part of the model was logistic regression to predict the probability of incurring any expenditures. For the second part, we used ECM since the log-scale expenditure data was not leptokurtotic and was heteroscedastic. We performed Box-Cox test and Park test to find the link function and distribution family. Average expenditures in 2005 U.S. dollars were calculated by multiplying each person's probability of incurring any expense and expenditures. **RESULTS:** About 67% of subjects with CVD (N = 2596) and 65% of subjects without CVD (N = 8789) were overweight or obese. Using gamma distribution with log link function, mean expenditures in CVD-group by BMI categories were $3247, $3040, $3098, $2966, $3500, and $3375 (p = non-significant). Those in subjects without CVD were $1857, $2327, $2389, $2534, $3179, and $3783 (p < 0.001). Age, smoking status, and Medicare were associated with expenditures in CVD-group. **CONCLUSION:** Health care-expenditures did not significantly differ among BMI categories in subjects with CVD whereas health care-expenditures were increasing with BMI in subjects without CVD. This could be due to the influence of CVD-care costs across weight categories in CVD-group. We did not find a obesity paradox in health care-expenditures in subjects with CVD.

PCV45

ECONOMIC IMPACT OF STROKE-RELATED COMORBID CONDITIONS ON THE TREATMENT OF STROKE: AN ANALYSIS OF MEDICARE BENEFICIARIES IN THE UNITED STATES

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OBJECTIVE: Few cost-of-illness studies in stroke have examined the incremental impact of comorbid condition(s). The aim of this study was to assess the costs of stroke management attributable to stroke and comorbid conditions using data from the Medicare program in the United States (U.S.). **METHODS:** Medicare beneficiaries diagnosed with hemorrhagic (HS) and ischemic (IS) stroke from 2002–2005 were identified from a 5% random sample of Medicare outcomes and care database. Direct costs were assessed from the perspective of the Medicare program. Descriptive and multivariate analyses were performed. Data were analyzed from one year prior to the index event through four

years following that event. **RESULTS:** A total of 10,335 patients were identified; 8444 with IS and 1891 with HS. Increases in medical costs during the four year post index period were as follows for HS patients: without co-morbidities, $14,745; with hypertension, $22,667; with hypertension plus type 2 diabetes (T2D), $29,662; with hypertension plus congestive heart failure (CHF), $26,768; with hypertension plus T2D plus CHF, $34,302. For IS patients, these costs were $17,000 for IS-only patients, but ranged from $21,344–$30,987 for IS patients with other comorbidities. Results from multivariate analyses supported the validity of the descriptive statistics. **CONCLUSION:** Comorbidities/risk factors contribute substantial incremental costs to the already high economic burden of both HS and IS stroke.

COSTS OF ACUTE MYOCARDIAL INFARCTION IN HUNGARY; 2003–2005

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OBJECTIVE: The morbidity of acute myocardial infarction (AMI) is remarkable in Hungary, therefore it is inevitable to understand the disease burden more accurately. Our aim was to assess the burden of AMI in Hungary between 2003 and 2005. We studied how much burden AMI patients impose on the financer (National Health Insurer Fund Administration—NHIFA) in the inpatient and outpatient care and we estimated the size of indirect social costs, too. **METHODS:** We extracted the data of 'new' AMI patients (ICD-10: I21 main diagnosis but not treated with the same diagnosis in the previous 24 months) hospitalized in May 2003 from the database of the financer. We analyzed inpatient treatment costs of these patients in the period of 12 months before the AMI and in the following first and second 12 months. Data were distributed by sex and age (age groups: 25–44, 45–64, over 65). Other costs were estimated after expert consultations. **RESULTS:** Average health insurance costs of AMI's active hospital care in the first 12 months are generally higher in females as in males; €1905.2 vs. €1564.4 (65 and over), €1716.4 vs. €1557.6 (45–64) and €918.0 vs. €962.4 (25–44). The burden in the chronic care is €60–160 per patient in the first year, which is similar to the active care costs in the 23rd to 24th months after the AMI (€88–216). **CONCLUSION:** NHIFA was estimated to spend 17.6 million Euros on direct health care on behalf of the nearly 12,000 annual AMI patients in the first 12 months. Avoiding one AMI could save €1380–2260 (depending on gender and age) direct health care cost in the first 12 months. According to our estimate, the annual indirect costs of AMI exceed €3.36 million (€711.3/patient) in the working age group.

MEDICARE OUTLIER PAYMENTS FOR CORONARY ARTERY BYPASS GRAFTING

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OBJECTIVE: To examine variation in outlier payments across U.S. hospitals and the extent which variation is explained by patient and hospital factors, including quality of care. **METHODS:** Using the national Medicare claims database for 2002, we examined outlier payments in patients undergoing coronary artery bypass grafting (CABG) (n = 165,226). We then categorized hospitals performing these procedures according to their outlier payment rates. Using multiple logistic regres-

sion, we explored the relationships between hospital outlier payment rates, patient case mix and hospital quality, as reflected by risk-adjusted mortality rates. **RESULTS:** The proportion of patients associated with outlier payments was 14% (CABG). Average outlier payments were considerable: $24,000 per patient, costing Medicare more than half a billion dollars. Risk factors for outlier payments were race and admission acuity. Higher hospital and surgeon volumes and teaching status were associated with lower rates of outlier payments. There was a negative correlation between risk-adjusted mortality rates and outlier payments. The proportion of outlier payments was greater than 20 percent. Measurable patient and hospital factors explained a small proportion of variation across hospitals. **CONCLUSION:** Outlier payments in CABG are an important component of medical costs with inpatient surgery. Although explained in part by quality, reasons for wide variation in outlier payments across hospitals remain to be clarified.

LIKELIHOOD AND COST OF ADVERSE EVENTS IN ATRIAL FIBRILLATION ARE ASSOCIATED WITH CHOICE OF ACUTE CONVERSION THERAPY

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OBJECTIVE: We evaluated the likelihood and cost of adverse events (AE) by choice of acute conversion therapy for atrial fibrillation (AF) in hospitalized patients. **METHODS:** We extracted Premier Perspective(tm) 2004–2005 discharges with primary AF diagnosis and treatment with electric conversion (EC) or IV anti-arrhythmic agent (AA; either amiodarone, ibutilide or procainamide). We estimated odds ratios and inpatient costs attributable to any AE, hypotension AE, or dysrhythmia AE based on treatment, adjusting for comorbid, demographic and hospital-specific factors. **RESULTS:** Out of 74,072 discharges initially treated with EC (32%), amiodarone (49%), ibutilide (11%) or procainamide (8%), approximately 28% (20,808) had a treatment-related AE. Of these, 24% had hypotension and 37% experienced dysrhythmia. Odds ratios for any AE were significantly higher when initial treatment was amiodarone vs. EC (OR; 95% CI) (1.24; 1.20–1.29), amiodarone vs. procainamide (1.36; 1.27–1.46) and amiodarone vs. ibutilide (1.58; 1.48–1.68). A similar pattern was observed for hypotension AE. Initial treatment with EC increased the likelihood of dysrhythmia AE vs. amiodarone (1.23; 1.16–1.30), ibutilide (1.21; 1.11–1.33) and procainamide (1.29; 1.16–1.44). Adjusted costs for discharges with any AE were significantly higher vs. discharges without AE (P < 0.0001). AE among patients receiving an AA had the highest cost impact, contributing an average of $2702 in additional adjusted costs. Hypotension and dysrhythmia AE among patients receiving AA were associated with $1232 and $1054 in additional adjusted costs, respectively (P < 0.0001). Among patients receiving EC, any AE, dysrhythmia and hypotension AE were associated with $2128 (P < 0.0001), $1655 (P < 0.0001) and no significant (P = 0.21) increase in costs, respectively. **CONCLUSION:** The likelihood of AE is associated with choice of initial AF therapy. Patients initially treated with amiodarone have the highest likelihood of AE, particularly hypotension AE; those treated initially with EC have a higher likelihood of dysrhythmia AE. Incremental costs attributable to AE are substantial in this population.