counterfactual was combined with cost of illness data to estimate the generic cost-effectiveness of prevention and medical care for the selected disease clusters. RESULTS: The total increase in disability adjusted life expectancy due to prevention and medical care was 5.3 years: 1.7 years for infectious diseases, 0.6 years for cancers, and 3.1 years for cardiovascular diseases. This increase was larger for females than for males: 6.3 years and 4.3 years, respectively. The increase can be disentangled into an increase in life expectancy of 3.9 years and 1.4 decrease in years lived with disability. The average costs per DALY gained were 2,000 euro for cardiovascular disease, 3,400 euro for infectious diseases, and 16,000 euro for cancers. CONCLUSION: For the selected disease clusters, the average cost-effectiveness of health care is far below current acceptable thresholds. We assessed the likely health contribution of sociocultural and socioeconomic factors as opposed to health care with help of the best available knowledge, but many questions remain unanswered.

**IMPACT OF DISCONTINUITY IN HEALTH INSURANCE ON RESOURCE UTILIZATION**

Shah ND, Banerjee R

1. Mayo Clinic, Rochester, MN, USA

**OBJECTIVES:** Public insurance for the poor (Medicaid) in the United States often results in poor continuity of coverage due to the phenomenon of “churning.” Churning occurs when individuals lose and regain coverage in a short period of time. Gaps occur within the Medicaid program because of changes in family circumstances that make individuals ineligible for public insurance or because of administrative complexity that result in failure to renew coverage. The purpose of this study is to evaluate the impact of insurance transitions on health care utilization among beneficiaries with interruption in Medicaid coverage. These findings point to the need for further research to assess the impact of churning in this population.

**RESULTS:** Our sample has 35,779 individuals, 2,448 had more than one transition. We find that individuals with multiple transitions tend to have 46% more hospitalizations and use the emergency room 13% more. However, these individuals have 37% lower prescription drug utilization and 12% less outpatient physician visits relative to those who are continuously insured by Medicaid. CONCLUSION: Utilization of emergency and inpatient services were significantly higher, while use of outpatient care and prescription drugs was significantly lower for beneficiaries with interruption in Medicaid coverage. These findings point to the need for further research to assess the impact of churning in this population.

**RELATIONSHIP BETWEEN RISKS FOR LIFESTYLE-RELATED DISEASES AND MEDICAL EXPENSES AFTER 10 YEARS OF METABOLIC SYNDROME**

Sakamaki H1, Kitazawa T2, Hasegawa T3

1. Meijo University, Nagoya, Japan. 2. Toho University School of Medicine, Tokyo, Japan

**OBJECTIVES:** This study was conducted to clarify the relationship between lifestyle-related diseases and medical expenses after 10 years of metabolic syndrome. METHODS: The subjects of analysis were 2163 people who were randomly selected from a population insured by the government-managed health insurance. The test results of 1993 were used to divide the subjects into the following 4 groups, and the diseases and medical expenses of each group were examined for 2003. Group 1 had no abnormality in any of the four test results: BMI, blood pressure, lipid levels, and glucose metabolism. Group 2 was not obese but had abnormality in one or more of the other three tested categories. Group 3 was only obese or obese and had abnormality in one of the other three tested categories. Group 4 had metabolic syndrome. In this study, the lifestyle-related diseases were diabetes, hypertension, hyperlipidemia, cerebrovascular disease, and ischemic heart disease. RESULTS: The risk of each lifestyle-related disease was examined by odds ratio adjusted by sex and age in comparing Groups 2, 3, and 4 with Group 1. The odds ratios of Groups 2, 3, and 4 were higher than that of Group 1. In Group 4, there were significant differences in all diseases. Analysis of covariance adjusted for sex and age was performed, and medical expenses were compared between each group. As a result, the total amount of annual medical expenses in 2003 was 52,470 yen for Group 1, 82,120 yen for Group 2, 72,720 yen for Group 3, and 109,660 yen for Group 4. The medical expenses were significantly higher in Group 4 compared with Group 1. CONCLUSION: The risks of lifestyle-related
disease and medical expenses of the metabolic syndrome are higher than that of non metabolic syndrome.

**TPS24**

**TRENDS OF PATIENT COSTS PER CASE IN ALBERTA, CANADA**

Thanh NX

Institute of Health Economics, Edmonton, AB, Canada

**OBJECTIVES:** This paper describes the trends of costs per case for both inpatients and outpatients in Alberta, Canada from February 2001 to May 2004. **METHODS:** Data on length of stay, direct costs, indirect costs, average costs per case and number of cases studied by the 478 Case Mix Groups with 4 complexity levels (for inpatients) and 430 groups of the Ambulatory Care Classification Systems (for outpatients) were retrieved from the annual reports of health costing in Alberta.

**RESULTS:** During the studied period, direct costs of medical services considerably increased while overhead costs for administrative services, human resources, IT, maintenance, registration, records and food services slightly increased thereby lowering the share of indirect costs from 26% in February 2001 to 21% in May 2004 for both inpatients and outpatients. On average, the average costs per case yearly increased by 10.5% for inpatients and 8.2%, 10.5%, 8.9% and 10.9% for inpatients with complexity levels of 1, 2, 3, and 4, respectively. The results also showed that average length of stay per inpatient case over this period of time increased in all complexity levels, indicating that not only price of health services but also the quantity of health services increased. Driven factors of the increase in price of health services could be medical price inflation, growth in intensity of health services, and growth in defensive medicine which could also contribute to the increase in quantity of health services. However, these need further investigations. **CONCLUSION:** In conclusion, the increasing trend of patient costs per case from February 2001 to May 2004 is one of the evidences explaining the skyrocketing growth of overall health care costs in the province of Alberta, Canada during the same time period.

**TPS25**

**MEDICATION ADHERENCE IN POST-TRANSPLANT IMMUNOSUPPRESSION: THE ECONOMIC IMPACT OF DRUG-REGIMEN COMPLEXITY**

Hansen R1, Seifelden R1, Noe LL1

1ICON Lifecycle Sciences Group, San Francisco, CA, USA, 2Astellas Pharma US, Inc, Deerfield, IL, USA

**OBJECTIVES:** The purpose of this analysis was to review medication adherence issues among patients with chronic disease and among solid-organ-transplant recipients to elucidate the clinical and economic impact of nonadherence and to explore the potential impact of reducing drug-regimen complexity on adherence and outcomes. **METHODS:** We conducted a targeted literature review to outline adherence rates and to summarize the clinical and economic outcomes of nonadherence, for both chronic-disease patients and patients receiving post-transplant immunosuppression. The impact of dosing complexity on adherence rates was also reviewed. **RESULTS:** Typical adherence rates among chronic-disease patients are approximately 50%, and these low adherence rates have an estimated economic impact of $100–300 billion annually in the US. Among adult renal transplant recipients in the US, the median rate of nonadherence is 22%; it is associated with an estimated 903 acute rejection episodes, 1319 graft losses (36% of transplant failures), and costs approaching $115 million annually. An inverse relationship exists between dosing frequency and adherence in various chronic diseases, with once-daily dosing resulting in the highest adherence rates. Reducing drug regimen complexity may positively impact clinical and patient-reported outcomes, as well as health care costs. Overall costs are reduced when the costs of less frequently administered drugs are outweighed by the savings achieved through improved adherence rates and better health outcomes. **CONCLUSION:** If trends among patients with chronic diseases apply, once-daily dosing regimens may improve adherence rates by approximately 6–14% among renal transplant patients and could substantially reduce the number and costs of acute rejection episodes and graft failures. Further research is needed to determine the exact clinical and economic impact of these regimens.

**TPS26**

**THE EFFECT OF INJURY SEVERITY AND TRAUMA CENTER DESIGNATION ON INPATIENT COSTS AND OUTCOMES IN HOSPITAL ADMISSIONS FOR TРАUMATIC INJURY IN THE UNITED STATES**

Davis KL1, Candrilli SD1, Mitra D1, Tortella BJ2, Joshi AV2

1RTI Health Solutions, Research Triangle Park, NC, USA, 2Novo Nordisk Inc, Princeton, NJ, USA

**OBJECTIVES:** To generate national estimates of the effect of injury severity and admitting facilities’ trauma center designation on inpatient costs, length of stay (LOS), and probability of death in hospital admissions for traumatic injury in the US. **METHODS:** Discharge data from the 2002 HCUP Nationwide Inpatient Sample were analyzed for 54,370 admissions (weighted N = 267,306) to US trauma centers for blunt or penetrating traumatic injury. Data on admitting facilities’ trauma center designation (Level I, II, or III/IV) were obtained from the American Hospital Association. For each admission, injury severity was calculated using the ICDMAP90 software. Regression analyses were used to estimate the incremental effect of injury severity and admitting facilities’ trauma level on inpatient costs, LOS, and probability of death, controlling for injury type and other patient characteristics. **RESULTS:** Relative to critical injuries (ISS = 25+), low severity (ISS = 0–9), moderate severity (ISS = 10–15) and severe (ISS = 16–24) injuries were associated with substantially decreased costs (~$7467, ~$6539, and ~$5537, respectively; all P < 0.0001), LOS (~9.7, ~8.3, and ~5.3 days, respectively; all P < 0.0001), and probability of death (odds ratios = 0.32, 0.046, and 0.077, respectively; all P < 0.0001). Relative to Level I trauma centers, Level II and Level III/IV centers were associated with lower costs (~$3407 [P = 0.0051] and ~$4454 [P < 0.0001], respectively), LOS (~0.6 [P = 0.0505] and ~1.8 [P < 0.0001] days, respectively), and probability of death (odds ratios = 0.818 [P = 0.0090] and 0.732 [P = 0.0515], respectively). **CONCLUSION:** To our knowledge, this is the first study to quantify the incremental effect of injury severity and admitting facilities’ trauma center designation on inpatient costs, LOS, and probability of death in a representative multi-payer US population. Higher injury severity, as well as admission to more specialized trauma centers, was associated with increased costs, LOS, and probability of death. Results of this study may help health care decision makers more efficiently allocate resources for treatment of traumatic injuries.

**TPS27**

**A NEW REGRESSION MODEL AND QUALITY PERFORMANCE ADJUSTMENT IN PHYSICIAN ECONOMIC PROFILING**

Zhao Y1, Robinson M1, Legorreta AP2, Gilmore A1

1Health Benchmarks, Inc, Woodland Hills, CA, USA, 2UCLA School of Public Health, Woodland Hills, CA, USA

**OBJECTIVES:** We previously reported a regression approach designed to improve the predictive accuracy of risk adjustment