

disease and medical expenses of the metabolic syndrome are higher than that of non metabolic syndrome.

PHP24

TRENDS OF PATIENT COSTS PER CASE IN ALBERTA, CANADA

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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 outpatients 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.

PHP25

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

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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.

PHP26

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

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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, –\$6592, 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 = 0.032, 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.

PHP27

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

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