PREDICTORS OF HOSPITALIZATION AND EMERGENCY ROOM USE IN A MEDICAID MANAGED CARE ASTHMATIC POPULATION

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OBJECTIVE: To develop a predictive risk-assessment model for asthmatics of a Medicaid managed care population using claims data. The model weighs the predictive value of commonly collected variables to identify members at risk for hospitalizations and emergency room utilization. METHODS: For this retrospective cohort study, asthmatics continuously enrolled from January 1, 1998 through December 31, 1998 were identified. Asthmatics were defined as members with: (1) at least one medical claim with an ICD-9 code (493.00–493.9) for asthma (between 18–65 years of age) or (2) at least one prescription for any asthma-related drug for patients between 18–44 years of age. Patients receiving beta-agonists must have had at least 2 prescriptions during the 1-year study period. Patients were defined as high- or low-risk based on asthma-related resource use for a 6-month period (7/1/98–12/31/98). Claims from the prior six months were used to obtain predictive variables. A multivariate predictive model was developed using classification and regression tree analyses. RESULTS: We identified 5299 asthmatics of which 13% (694/5299) were classified as high-risk. The model identified high-risk patients with a sensitivity 91%, specificity 27%, positive predictive value 30%. We assigned a higher weight for misclassifying high-risk verses low-risk recipients. The sensitivity of the model outperformed individual predictive variables with the exception of primary care visits. Variables identified as having relative importance include (in order of importance): ER utilization, hospitalizations, number of oral steroid prescriptions, number of asthma prescriptions, and number of primary care visits. CONCLUSION: We conclude that claims data can identify high-risk patients with a high sensitivity, so as to allow for timely intervention. The limitation, however, is poor specificity.

ANNUAL COST OF TREATING ASTHMA IN A MANAGED CARE POPULATION

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OBJECTIVE: To determine the average annual cost of treating asthma in a managed care population. METHODS: All subjects contained within Pharmetric’s Integrated Outcomes database possessing a diagnosis of asthma (ICD-9-CM = 493) during 1996–1998 were eligible for study inclusion. Patients were required to have 12 months of data following the first (index) asthma diagnosis present. Patients with the diagnosis of chronic obstructive pulmonary disease and coronary failure were excluded. Asthma specific and total medical charges were captured for the study period, as well as asthma-related and general hospitalizations. Charges, hospitalization and emergency department (ED) visit rates were compared across age categories (6–17, 18–44, 45+). RESULTS: 77,603 patients met the inclusion criteria. The mean age was 30.9 years (SE = 0.061), and 60.6% of the sample was female. The mean annual asthma specific charges per patient was $926.68 (SE = 9.59). Inpatient charges accounted for 48.9% of asthma-related expenses, while outpatient and pharmacy charges accounted for 25.0% and 24.6% respectively. Asthma-related costs increased with age (6–17: $683.61; 18–44: $962.24; 45+: $1177.80). 10.0% of the identified patients were hospitalized for asthma within 12 months of index diagnosis. The rate of asthma-related hospitalization was similar across the three age categories. In addition, 5.3% of patients visited the ED due to asthma exacerbation during the 12 months of observation, with the rate of ED visits decreasing with age (6–17: 5.11%; 18–44: 5.87%; 45+: 3.45%). CONCLUSION: A substantial portion of asthmatics in this study required inpatient or emergency room care related to an asthma exacerbation. As hospitalization for asthma is often considered an avoidable outcome, these results point to the inadequacies of current preventive asthma treatment.

Surgical Procedures & Resource Use Research PSG

INPATIENT UTILIZATION OF MEDICAL SERVICES ASSOCIATED WITH PERIPHERAL ARTERIAL DISEASE-RELATED INPATIENT PROCEDURES IN THE DEPARTMENT OF DEFENSE

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OBJECTIVE: The objective of this study was to describe the inpatient procedural medical care utilization the first ten years after initial inpatient confirmation of peripheral arterial disease (PAD). METHODS: We performed a retrospective review of the computer records of all the beneficiaries of the Department of Defense health care system since 1970. Over 8000 subjects with an initial inpatient confirmation of PAD between 1/1/80 and 12/31/85 were reviewed for ten years following the initial visit. RESULTS: The utilization of PAD-related invasive procedures gradually increased over the first eight years, and rose sharply in the 9th and 10th years after initial diagnosis. The utilization of examination procedures was highest in the 1st, 5th–7th, 9th and 10th years. Procedures involving bypass and amputation had the highest utilization among invasive procedures, while procedures involving arteriography and ultrasonography accounted for 89%
of all examination procedures. Bypass and repair of vessel procedures gradually rose throughout the ten years after initial diagnosis, while amputations and skin grafts remained relatively constant. Procedures involving arteriography rose until year 5 and then tapered off, while utilization of ultrasonography rose in year 7 and tapered off. The Point Prevalence of inpatient confirmed PAD was 2.185/100, and the incidence per 1000 patients for 1993, 1994, and 1995 was 1.09, 1.10, and 1.03 respectively. CONCLUSION: The results of this research provide a foundation for understanding the ten-year trends associated with PAD-related inpatient procedural care utilization. These results suggest that PAD-related studies should consider the progression of the disease past the 5th year after the initial inpatient visit for PAD when measuring a change in inpatient procedural outcomes.

OBJECTIVE: The objective of this study was to explore the trends associated with inpatient procedural medical care costs the first ten years after initial inpatient confirmation of peripheral arterial disease (PAD). METHODS: A retrospective review of the computer records of all the beneficiaries of the Department of Defense health care system was conducted, and over 8000 subjects with an initial inpatient confirmation of PAD between 1/1/80 and 12/31/85 were reviewed for ten years following the initial visit. 1997 Medicare 50th percentile reimbursement costs for PAD related procedures were collected and used in the analysis. Opportunity costs associated with the inpatient procedures performed were also calculated by utilizing the Bureau of Labor and Statistic’s hospital services price index, and future value calculations. RESULTS: Costs for PAD-related invasive procedures rose gradually over the ten years after initial diagnosis, while the cost of examination procedures was highest in the 1st, 5th, and 10th years. Invasive procedures made up 85.5% of the total ten-year procedural costs, with 10 specific ICD-9-CM codes accounting for 90% of those costs. Four examination procedures represented 90% of all examination procedure costs. Procedures involving vascular bypass had the highest aggregate costs associated with invasive procedures, and procedures involving arteriography had the highest aggregate costs associated with examination procedures. The institution’s opportunity costs were over one quarter a million 1997 US dollars at a 10 percent investment rate. CONCLUSION: The results of this research provide a foundation for understanding the ten-year trends associated with PAD-related inpatient procedural costs. These results suggest that reducing procedures involving bypass and arteriography would have the greatest impact on PAD-related procedural costs.

PSG3
COSTS INCURRED DURING INPATIENT ADMISSION FOR COMMON SURGERIES: PRELIMINARY RESULTS
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Recent efforts to limit health care cost increases have focused on prescription drugs. Although millions of surgical procedures are performed in the US each year, limited information is available about perioperative costs incurred by persons undergoing surgery. The types of data are expected to be important to clinicians and decision-makers as financial pressure increases to define, understand, and rationalize medical costs. OBJECTIVES: This pilot study identified the costs associated with inpatient hospitalization after common abdominal or orthopedic surgeries. METHODS: Total costs from admission until discharge were identified using the hospital perspective for persons undergoing total abdominal hysterectomy (TAH), or total joint (hip or knee) replacement (TJR) between August and November 1999. RESULTS: Patient’s average age was 53.0 years for all patients, 43.7 years for TAH, and 59.1 years for TJR. More than 70% of participants had private insurance. Average length of stay was 3.6 days overall, 3.2 days for TAH, and 4.3 days for TJR. Mean total costs were $6596 for all persons (n = 8), $5495 for TAH (n = 5), and $8431 for TJR (n = 3). Routine room and operating room costs accounted for 72.5%, 76.3%, and 68.3% of the total, TAH, and TJR costs, respectively. Pharmacy costs accounted for 4.4% of total costs, 5.9% of TAH costs, and 2.8% of TJR costs. CONCLUSIONS: Most of the costs incurred during the perioperative period are related to the surgical procedure and per diem costs. Efforts to restrict pharmacy costs are unlikely to significantly affect total costs.

PSG4
TRAUMATIC COLON INJURIES: DIFFERENCE IN HOSPITAL COSTS BY TYPE OF SURGICAL REPAIR
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Clinical practice guidelines are advocating the use of primary repair (PR) for treating a penetrating intra-peritoneal colon injury when clinically appropriate. OBJECTIVE: To estimate the difference in hospital costs in treating penetrating colon injuries by PR versus diverting