POS14

HOME AUTOMATED TELEMANAGEMENT IN POSTHIP FRACTURE REHABILITATION
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OBJECTIVES: The objective of the study is to assess the feasibility and acceptance of computer-mediated home-based rehabilitation of hip fracture patients. METHODS: A structured exercise program was developed by a physical therapist (PT) and incorporated into a website where the PT could prescribe, monitor, and modify an individualized exercise plan. The patients were given a laptop computer that was operated by a limited number of keys. The computer guided the patients through their exercise programs and sent daily exercise logs to a central server which analyzed patient performance and alerted the PT if certain clinical condition were met. Overall, ten patients were enrolled in the study who were monitored for 30 days. RESULTS: The average age of the subjects was 76 ± 9 years in whom number of days since hip fracture was 159 ± 143. There was a significant improvement from the beginning to the end of the study in exercise self-efficacy (6 ± 3 vs. 9 ± 1; p = 0.01), Lower Extremity Functional Scale (55 ± 16 vs. 63 ± 13; p = 0.03), and quality of life scale (SF-36) including physical functioning (38 ± 27 vs. 71 ± 31; p = 0.009), physical problems limitations (6 ± 10 vs. 17 ± 12; p = 0.05), social functioning (54 ± 31 vs. 85 ± 28; p = 0.01) and health transition (47 ± 40 vs. 22 ± 18; p = 0.05). Using Yale Physical Activity Survey we found improvement in physical intensity measured as total hours/week (24 ± 14 vs. 31 ± 14; p = 0.04). Based on the Client Satisfaction Questionnaire (CSQ-8), patient satisfaction with their medical care also improved (27 ± 4 vs. 31 ± 0.46; p = 0.04). Adherence to the exercises was above 89%. CONCLUSION: Computer-mediated home-based rehabilitation program could be beneficial for post-acute hip fracture recovery.

OTHER—Cost Studies

POS1

INCIDENCE AND ECONOMIC IMPACT ANALYSIS OF HYponatREMIA IN HOSPITALIZED PATIENTS
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OBJECTIVES: To examine the incidence and potential financial impact of diseases with associated hyponatremia among hospitalized patients in the United States. METHODS: A retrospective analysis of Medicare inpatient coding procedures, length of stay (LOS) and Medicare hospital reimbursement data (2004) to estimate direct costs of 176 private, for-profit hospitals with coding accuracy validated by Medicare review of patient discharge charts. Data from one hospital were used to perform detailed cost/reimbursement analyses. Relevant cases were identified by searching with the ICD-9-CM code for hyponatremia (276.1) drilling down within all DRGs to quantify the incidence of hyponatremia, associated financial impact and costs hyponatremia may have. RESULTS: In the 176 hospitals, hyponatremia was found as a secondary diagnosis or coexisting condition in 16,791 cases. Most common DRGs that included a diagnosis of hyponatremia were congestive heart failure (CHF, n = 13,778), syndrome of inappropriate secretion of antidiuretic hormone (SIADH, n = 1355), and transurethral resection of the prostate (TURP syndrome, n = 193). Hyponatremia was identified in 73% (7398/10,073) of complicated CHF cases and in 25% (6380/25,038) of uncomplicated CHF cases. In a typical hospital with 190 uncomplicated CHF cases annually, the mean cost of an uncomplicated CHF case was $6247, whereas the mean reimbursement was $3667, suggesting a loss of $2580 per case (annual loss of $490,200). If complicated CHF cases were considered, the typical hospital’s annual loss was estimated at $2,883,096. Endocrine disorders including SIADH cost between $12,305 and $24,745 and are reimbursed at $3,861. New therapies providing predictable correction of serum sodium levels may mitigate the economic impact of hyponatremia associated with underlying conditions by reducing the length of stay (LOS), physician attending time, or frequent laboratory studies. CONCLUSIONS: The incidence and economic impact of hyponatremia is high among patients with complicated CHF, TURP syndrome, and SIADH. Improved treatment of hyponatremia may help relieve this burden.

POT2

FATIGUE IN THE U.S. WORKFORCE: PREVALENCE AND COST OF LOST PRODUCTIVE WORK TIME
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OBJECTIVE: To estimate the prevalence of fatigue and accompanying lost labor costs (work absence and reduced performance while at work) among US workers. METHODS: Cross-sectional study using data from the Caremark American Productivity Audit, a national random-digit-dial telephone survey of the US population designed to measure the relation between health and work productivity. The sample comprised 28,902 employed adults participating in the audit between August 1, 2001, and July 30, 2002. A total of 11,719 workers with fatigue were identified. A comparison group consisted of a gender- and age-matched random sample (1:1) of workers without fatigue. Outcome measures included fatigue prevalence, lost productive time (LPT) due to fatigue and LPT for any health-related reason expressed in hours and converted to dollars. RESULTS: The estimated two-week period prevalence of fatigue in the U.S. workforce was 37.9%. Overall, 9.2% of workers with fatigue reported LPT due to fatigue in the previous two weeks. This group lost 4.1 productive hours per week, on average, and cost employers an estimated $330 million per year; 83.9% of the LPT cost was due to reduced performance while at work. Comparing LPT for any health-related reason between workers with and without fatigue, workers with fatigue cost US employers an estimated $136.4 billion per year in health-related LPT, an annual excess of $101.0 billion. Excess health-related LPT is primarily explained by the mean threefold increase in the percent of workers reporting LPT due to other health conditions when fatigue is present. CONCLUSIONS: Fatigue is prevalent in the US workforce and can impair work ability. When present as a secondary symptom to other health conditions, fatigue is associated with significantly more LPT due to those conditions.

POT1

COST OF HOSPITALIZATIONS FOR ACUTE INJURIES RESULTING FROM MOTORCYCLE ACCIDENTS PRE-AND POST-REPEAL OF THE UNIVERSAL HELMET LAW IN FLORIDA
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OBJECTIVE: To estimate the prevalence of fatigue and accompanying lost labor costs (work absence and reduced performance while at work) among US workers. METHODS: Cross-sectional study using data from the Caremark American Productivity Audit, a national random-digit-dial telephone survey of the US population designed to measure the relation between health and work productivity. The sample comprised 28,902 employed adults participating in the audit between August 1, 2001, and July 30, 2002. A total of 11,719 workers with fatigue were identified. A comparison group consisted of a gender- and age-matched random sample (1:1) of workers without fatigue. Outcome measures included fatigue prevalence, lost productive time (LPT) due to fatigue and LPT for any health-related reason expressed in hours and converted to dollars. RESULTS: The estimated two-week period prevalence of fatigue in the U.S. workforce was 37.9%. Overall, 9.2% of workers with fatigue reported LPT due to fatigue in the previous two weeks. This group lost 4.1 productive hours per week, on average, and cost employers an estimated $330 million per year; 83.9% of the LPT cost was due to reduced performance while at work. Comparing LPT for any health-related reason between workers with and without fatigue, workers with fatigue cost US employers an estimated $136.4 billion per year in health-related LPT, an annual excess of $101.0 billion. Excess health-related LPT is primarily explained by the mean threefold increase in the percent of workers reporting LPT due to other health conditions when fatigue is present. CONCLUSIONS: Fatigue is prevalent in the US workforce and can impair work ability. When present as a secondary symptom to other health conditions, fatigue is associated with significantly more LPT due to those conditions.
OBJECTIVES: In July 2000, Florida replaced a Federal law mandating all motorcycle riders to wear helmets with a state law requiring helmets only for those <21 years, or with under $10,000 health insurance. Hospitalizations for motorcycle accident-related injuries prior to and after the law changed were examined to understand potential consequences. METHODS: Florida hospital databases for 13 quarters prior to January 4, 1997–June 30, 2000) and after the change July 1, 2000–September 30, 2003), and published Florida motorcycle crash statistics were examined. Hospitalized cases with crash-related injuries were identified by via Emergency Department, ICD-9 diagnosis and E codes (E810.2–E825.2, E810.3–E825.3). Injury type, demographics, costs, length of stay (LOS) and disposition were analyzed. Charges (accommodations and ancillary services) adjusted by a 0.46 cost-to-charge ratio and appropriate inflation indices are reported as costs (2005 US$). RESULTS: In the pre-repeal period, 3914 inpatient motorcycle-related injury cases were identified (males: 86%; mean age: 35.6, mean LOS: 6 days); 6424 cases in post-repeal period (males: 87%, mean age: 36.4, mean LOS: 6 days); due to a rise in reported motorcycle crashes (33%), all related-injuries (44%) and deaths (66%) during 1997–2003; however, broader E-code use may also be a factor. Among hospitalized cases, there were significantly (p < 0.01) more head, neck and cervical spinal cord injuries (45% vs 35%), and deaths (2.9% vs. 2.2%) post-repeal. Although average LOS did not increase, average cost per day ($4093 vs. $3359), and per stay ($20,502 vs. $17,243) increased significantly (p < 0.01) post-repeal. Cumulative cost of inpatient care for motorcycle-related injuries rose from $68 million to $132 million during this period. CONCLUSIONS: Since universal helmet requirements were relaxed, there has been a substantial increase in motorcycle accident-related injuries overall, head injury hospitalizations, and injury-related deaths. Beyond clinical and societal consequences, these increases reflect an increased economic burden as well.

PAIN—Clinical Outcomes Studies

OPIOID ASSOCIATED ERECTILE DISFUNCTION IN CHRONIC PAIN PATIENTS
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OBJECTIVES: To study the prevalence of erectile disorder in males with chronic pain on opioids. Chronic pain can lead to reduced quality of life and strain on relationships. Opioids themselves can lead to significant side effects, including a reduction in serum testosterone and interference in the hypothalamic—pituitary-axis. METHODS: Male patients in an opioid clinic with chronic pain on opioids were screened for erectile disorder. RESULTS: Ninety five patients were screened and 27 patients (29%) were positive for the disorder. Only ten (37%) had received treatment. CONCLUSIONS: Erectile disorder is an under diagnosed and treated disorder in chronic pain patients on opioids. Male patients with chronic pain should be routinely screened for erectile disorders.

PAIN—Cost Studies

IMPACT OF BACK PAIN ON ABSENTEEISM, PRODUCTIVITY LOSS, AND DIRECT HEALTH CARE COSTS USING THE MEDICAL EXPENDITURE PANEL SURVEY (MEPS)
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OBJECTIVE: The objective of this study was to assess the impact of back pain on absenteeism, productivity loss, and direct health care costs using the Medical Expenditure Panel Survey (MEPS).

METHODS: Individuals between the ages of 18 and 65 years who participated in the MEPS during 2000 were included in the study. Back pain patients were identified using ICD-9 codes. The predictors of absenteeism in individuals who experienced back pain were identified using Zero-inflated negative binomial regression (ZINB). Absenteeism days due to back pain were estimated based on the ZINB regression model. Productivity loss was estimated using the human capital approach. RESULTS: In 2000, the one-year period prevalence of back pain in individuals between 18 and 65 years of age was 11.1%. About 16.3% of the individuals who were employed and who reported back pain experienced back pain due to work-related injuries. Ethnicity and union contract were identified as significant predictors of likelihood of absenteeism in individuals who experienced back pain. The significant predictors of absenteeism rate were perceived overall health status due to back pain, and ethnicity. The mean number of absenteeism days due to back pain was estimated to be six days and a total of nine million absenteeism days due to back pain. The total productivity loss due to back pain related absenteeism was estimated to be $3.6 billion and the total direct health care costs was estimated to be $14 billion. The average productivity loss due to back pain was estimated to be $305 per person and the annual per-capita direct health care cost due to back pain was $730. CONCLUSIONS: Back pain is one of the most common and challenging problems in primary care. The economic burden due to back pain is of concern to employers, insurance agencies, policy decision makers and treatment decision makers.