suggest a multi-pronged approach including focus groups and surveys of physicians, implementation of clinical guidelines, and ongoing feedback in an Israeli MCO.

**OUTCOMES ASSOCIATED WITH ANTIFUNGAL DRUG SWITCHING IN PATIENTS WITH SERIOUS CANDIDA INFECTIONS**


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**OBJECTIVES:** Serious candida infections have been treated with a variety of patterns of antifungal drugs. This study focused on the outcomes of hospitalized patients treated with antifungal drugs and examined drug switching approaches in actual practice. **METHODS:** A retrospective study was conducted among a population of 9746 serious candida infection patients treated with antifungal drugs during the time period of February 2003 to June 2005. Data was collected from 441 hospitals out of the Solucient® ACTracker database. Patients were categorized into an adherence group with patients staying in aggressive drugs (IV forms of amphotericin B, amphotericin B lipids, canidascas and vfend) and a switching group with patients who switched from aggressive drugs to non-aggressive and less expensive drugs (oral forms only of amphotericin B, sporanox, diflucan & vfend). Mortality and length of stay (LOS) of the two groups were compared by Chi square and T test. Further analysis was followed by using Logistics regression and ANCOVA analysis with controlled influencing factors such as co-morbidities. **RESULTS:** The drug switching patients group was found to have significantly higher mortality rate (0.246 vs 0.160, Chi = 29.68, p < 0.001) and longer LOS (36.45 vs 27.73, t = 7.67, p < 0.001) as compared to adherence group. The higher mortality in switching group was supported by Logistic regression results with the following confounding factors controlled: age (OR 1.013, CI:1.009–1.017), septicemia (OR 1.231, CI:1.055–1.431), kidney disease (OR 1.288, CI:1.091–1.52), ER (OR 1.362, CI:1.083–1.712) and other candida (OR 1.440, CI:1.039–1.996). The extended LOS also was found by using ANCOVA with confounding factors adjusted including mycoses, ER admission, Medicare payment. **CONCLUSIONS:** The study demonstrated that switching aggressively treated patients to cheaper and less aggressive drugs caused higher mortality and extended hospital stay. More extensive clinical and economic outcome studies are needed to understand antifungal drug treatment in candida infection patients.

**TRENDS IN HIV TREATMENT EXPERIENCE AND OUTCOMES AS OBSERVED IN A SAMPLE OF PATIENTS FROM A US CLINICAL DATABASE**

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**OBJECTIVES:** Describe US treatment experience trends, shifts in employment status, insurance, and CD4 counts of HIV/AIDS patients since the introduction of highly active antiretroviral therapy (HAART) in 1996. **METHODS:** HIV-infected patients (n = 3203) treated at US clinics from 1996–2004 as part of the HIV Insight database* were studied. Longitudinal patient records were analyzed to track the changing distribution of antiretroviral treatment experience by year. Patients having at least six months of follow-up and enrollment in the reporting year were classified into four treatment experience groups: Nucleoside Reverse Transcriptase Inhibitors (NRTI), Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI), Protease Inhibitor (PI), and 3-class experience. Demographic shifts were observed for: employment and disability status, and primary insurance type. CD4 counts were examined by treatment experience level. **RESULTS:** Of the 3203 patients with active enrollment, 2552 were treated. Average follow-up was 3.84 and 4.33 years, respectively. The percentage of patients with treatment experience increased substantially in all 4 groups (1996–2004): NRTI (48%, 98%), NNRTI (4%, 67%), PI (25%, 63%), 3-class (<1%, 36%). The percentage of patients working (part/full-time) increased from 49% to 62% from 1996 to 2004. The percentage of disabled patients decreased from 22% to 15%. Primary insurance coverage for treated patients was distributed as follows (1996–2004): Private insurance (50%, 60%), Medicare (10%, 7.4%), Medicaid (30%, 20%), AIDS Drug Assistance Programs (ADAP) (2.7%, 5.0%), and Other (7.5%, 8.4%). Lower CD4 counts correspond with more treatment experienced patients. **CONCLUSIONS:** While increased use of HAART therapy corresponds with better employment status and increased private insurance, patients who have more treatment experience have lower CD4 counts, signaling a need for more effective treatment options. *Includes data from the CDC's HIV Outpatient Study, and other US HIV care-sites funded by Cerner Corporation. The findings and conclusions are the authors' and don’t represent the views of the CDC/US DHHS.

**COMPLIANCE WITH ANTIBIOTIC TREATMENT GUIDELINES IN MEDICARE MANAGED CARE PATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA (CAP) IN AMBULATORY SETTINGS**

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**OBJECTIVES:** There is a paucity of published research addressing how the Infectious Disease Society of America guidelines for empiric treatment of CAP are implemented in clinical practice. The current study was designed to describe antibiotic treatment patterns among Medicare managed care patients with CAP treated in ambulatory settings in light of these guidelines. **METHODS:** This study used claims data from a Medicare managed care organization located throughout geographically diverse regions of the US. Patients with pneumonia treated with any antibiotic in ambulatory settings during 2004 were retrospectively identified via ICD-9CM codes (481–486). Recent antibiotic use was identified through NDC and J codes, and defined as receipt of any antibiotics within 90 days prior to the date of diagnosis. Individuals were divided into four groups as per guidelines: G1 previously healthy without recent antibiotics; G2 previously healthy with recent antibiotics; G3 with comorbidities (including COPD, diabetes, renal or congestive heart failure, or malignancy) and without recent antibiotics; AND G4 with comorbidities and recent antibiotics. **RESULTS:** Of 2186 patients identified, 59% had comorbidities. The mean age was 76.6 years and 61% were female. Among G1 patients (n = 661), guideline compliance was 41% (recommended treatment: a macrolide or doxycycline). For G2 patients (n = 230), guideline compliance was 40% (recommended treatment: a respiratory quinolone alone, or an advanced macrolide plus amoxicillin or augmentin). A high compliance rate was observed among G3 patients with comorbidities and without recent antibiotics (n = 861) (72%; recommended treatment: an advanced macrolide or respiratory quinolone). For G4 patients with comorbidities and recent antibiotics (n = 434), guideline compliance was 39% (recommended treatment: a respiratory quinolone alone or advanced macrolide plus beta-lactam). **CONCLUSION:** These data, reflecting a period shortly after the CAP guidelines were pub-
NEUROLOGICAL DISORDERS

THE INDIRECT COST BURDEN OF MIGRAINE AMONG SEVERAL LARGE U.S. EMPLOYERS

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OBJECTIVES: To estimate the indirect cost burden of migraine on U.S. employers, in terms of workplace absence, short-term disability (STD) and workers compensation (WC) payments.

METHODS: The data source for this study was the MEDSTAT Health and Productivity Management database, composed of medical, pharmaceutical, enrollment, workplace absence, STD, and WC information on employees for 10 large employers in the U.S. for the calendar years 2002 and 2003. Subjects with a diagnosis for migraine or use of a migraine-specific abortive drug were identified as the migraine cohort. A random sample of patients without migraine was propensity score matched, based on demographic characteristics and comorbidity index, to the migraine cohort to yield a matched control group. Indirect costs between migraine and matched control cohorts were compared to derive the indirect burden of illness attributable to migraine.

RESULTS: The analyses included 5037 subjects in the migraine cohort, and equal number of subjects in the control group. The mean age was 39 (SD = 9.3), and 71% were female. After matching, the cohorts were similar with respect to age, gender, geographic region, urban residence, insurance type, the number of psychiatric diagnostic groups and Charlson comorbidity index. The migraine cohort incurred significantly higher indirect costs than the control cohort in all categories (absence, STD, and WC). Total indirect costs were $2834 per patient per year (PPPY) higher in the migraine group ($4453 versus $1619 PPPY in the control group; p < 0.001). Absence costs made up the largest component of this difference at 75%, with STD and WC making up 21% and 4%, respectively. CONCLUSIONS: The migraine cohort was associated with significantly higher indirect costs compared to a matched control based on recent data from a sample of commercially insured individuals. This data suggest that US employers are bearing a considerable indirect cost burden as a consequence of migraine.

EVALUATIONS OF THE PRESCRIBED DAILY DOSES OF TRANSDERMAL FENTANYL AND TRANSDERMAL BUPRENORPHINE IN CANCER AND NON-CANCER PATIENTS IN GERMANY: RESULTS FROM A RETROSPECTIVE DATABASE ANALYSIS

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OBJECTIVES: In a previously published study dose increases have been shown to be significantly more pronounced with transdermal (TD) fentanyl compared to TD buprenorphine. The purpose of this study was not only to re-evaluate these results because of the high economic impact but also to qualitatively evaluate the dose development as a measure of ease of dosing and dose adjustment during therapy with TD fentanyl and TD buprenorphine in cancer and non-cancer patients.

METHODS: Retrospective analysis of the German "IMS Disease Analyzer—mediplus" database covering patient data from May, 2002 to April, 2005. Patients on long-term treatment (≥3 months) with TD fentanyl or TD buprenorphine had received similar analgesic pre-medication and were considered as identical cohorts with similar pain intensity, expecting comparable drug utilization patterns. Dose changes over the treatment duration were evaluated qualitatively and quantitatively.

RESULTS: From dose changes over the whole treatments mean daily dose increases per patient were calculated to be 0.47% (TD fentanyl) and 0.19% (TD buprenorphine) in cancer patients, and 0.25% and 0.10% in non-cancer patients, respectively. Despite the overall dose increases, qualitative evaluations revealed dose changes in both directions, i.e. dose increases and decreases during therapy in 30.6% of TD fentanyl and 11.8% of TD buprenorphine patients with cancer pain. In non-cancer pain 22.7% of TD fentanyl and 13.1% of TD buprenorphine patients had alternating dose changes. All differences between TD fentanyl and TD buprenorphine were statistically significant (p < 0.05). CONCLUSIONS: The more pronounced dose increases with TD fentanyl in comparable pain patients confirm previous findings, indicating a higher tolerance development with TD fentanyl. Regardless of the overall dose increases, alternating dose changes, i.e. changes in both directions are more frequent with TD fentanyl. This also suggests a less convenient and more complicated dose adjustment with TD fentanyl compared to TD buprenorphine.

A DESCRIPTION OF OFFICE VISIT RATES AND PRESCRIPTION USE FOR INSOMNIA AMONG RECIPIENTS OF A STATE MEDICAID PROGRAM

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OBJECTIVE: Insomnia is a common condition affecting millions of people across the United States. Most often it occurs in conjunction with other illnesses and is chronic in at least one-third of its cases. Studies have shown insomnia to be an underreported, underdiagnosed and undertreated problem. The purpose of this study is to report the recent patterns of health services and prescription use for insomnia among a state Medicaid population.

METHODS: The design was a cross-sectional, descriptive study using Medicaid administrative claims data from calendar year 2003. Recipients with either a claim paid for a medical service with a diagnosis of insomnia, or a prescription claim with an NDC number for zolpidem, temazepam, estazolam, triazolam, quazepam, flurazepam, or zolpidol were selected. Rates of medical services use were calculated based on state recipient population figures for fiscal year 2002–2003. Dollars paid were from the perspective of Medicaid.

RESULTS: There was a total sample of 13,161 recipients identified with insomnia, at a rate of 36.9 per 1000 recipients. A substantial majority of medical services utilization occurred in a physician office or outpatient clinic, with very few visits for this condition occurring in the emergency department or inpatient setting. The overall rate of office/clinic visits was 22.4 per 1000 recipients. The highest office/clinic visit rates by demographic groups occurred among recipients between 45 to 64 years of age (66.8 visits per 1000), females (22.5 visits per 1000), and whites (21.5 visits per 1000). The average cost per office/clinic visit was approximately $91. Among the prescription claims for drugs approved to treat insomnia, roughly 98 percent were for zolpidem. This particular drug cost Medicaid approximately $65 per claim. CONCLUSION: Office visit use for the treatment of insomnia varied by demographic groups. Zolpidem was used more extensively than other drugs approved for this condition.