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PDB75

THE IMPACT OF HOSPITAL DAYS ON CALCULATION OF PDC FOR DIABETES MEDICATIONS

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**OBJECTIVES:** Proportion of days covered (PDC) is a common method to measure medication acquisition behavior. Hospitalizations during an observation period may impact PDC calculation, because independent medication acquisition behavior during hospital stays is involuntary and cannot be accurately measured. The purpose of this study was to examine three methods of adjusting for hospital days when calculating PDC, and assess their impact on PDC. **METHODS:** Medical and pharmacy claims from a commercial Midwestern insurer were used. Population identification criteria included continuously enrolled subjects from January 2007 to December 2009, with diabetes (medical claim with primary or secondary ICD-9 code 250.xx during 2008 also used to establish index date), no long-term care or pregnancy, and age greater than 18 years. Observation period was defined as 365 days from index date. PDC (number of days supplied with diabetes drug / number of days from first diabetes drug acquisition to observation end) was calculated in three ways: 1) without hospital days adjustment; 2) adjusting the denominator for hospital days; 3) adjusting the numerator and denominator for hospital days. One way ANOVA and sensitivity analysis were used to examine the difference in PDC estimates. **RESULTS:** A total of 24,072 subjects met study criteria and had mean hospital days of 0.86 (SD=7.09). PDC results were as follows: No hospital days adjustment 66.16% (SD=0.39), adjusting denominator 66.24% (SD=0.39), and adjusting both numerator and denominator 66.33% (SD=0.39). No significant difference among the three calculation methods was found ($p=0.889$). Sensitivity analysis indicated that when average total hospital days reached approximately two days, estimated non-adjusted PDC was significantly lower ($p<0.05$). **CONCLUSIONS:** Among subjects with diabetes followed for 365 days, mean total hospital days was small, and impact on PDC calculations was non-significant. As total hospital days increase, PDC estimates can be affected and adjusting for hospital days should be considered.

PDB76

DESIGNING A SERVICE FRAMEWORK FOR ELECTRONIC PERSONAL HEALTH RECORDS: A PATIENT-CENTRED APPROACH

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**OBJECTIVES:** The objectives of this study were to gain a better understanding of patient preferences for the attributes of an electronic personal health record (ePHR) service that supports diabetes self-management, and to gain an understanding of any factors that might influence their preferences. **METHODS:** Adaptive choice-based conjoint analysis was used to examine patient preferences. A web-based survey was developed comprising six ePHR service attributes. Hierarchical Bayes estimations were used to quantify patient preferences while Latent Class Analysis was used to segment the sample. The Patient Activation Measure™ was used to determine patient level of activation for diabetes self-management. Simulations and sensitivity analyses were run to uncover the complex effects of ePHR attributes on the overall utility of the service. Patients' willingness to pay was calculated using simulations of preference shares for three commercially available ePHRs and increasing the price of the dominant and lowest priced product until it was equally preferred to its closest rival. **RESULTS:** A stratified sample of 150 patients with type 1 diabetes, type 2 diabetes, and Prediabetes were unwavering in their preferences for an Internet-based ePHR service supplied by a physician or specialist. They also preferred to exchange their health information with their physician or nurse, once a month, at no cost. Monthly service fees were considered the most important ePHR service attribute. Patient age and perceived health status are important considerations when designing and marketing an ePHR service. Patients' level of activation for diabetes self-management did not appear to play a major role in influencing their preferences. **CONCLUSIONS:** This study yielded a patient-informed, evidence-based ePHR service framework that supports diabetes self-management. Adaptive choice-based conjoint analysis appears to be a useful method for quantifying patient preferences and informing ePHR value propositions and system design specifications.

## Individual's Health – Clinical Outcomes Studies

PIH1

HEALTH-RELATED QUALITY OF LIFE (HRQOL) OF PATIENTS WITH CHRONIC CONDITIONS: EXCESS BURDEN OF COMORBID PHYSICAL AND MENTAL CHRONIC CONDITIONS

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**OBJECTIVES:** We used a new US population dataset to quantify the burden of chronic conditions (CCs), using the SF-36v2 Health Survey as a common metric to test the incremental physical and mental health burden of a comorbid mental CC among patients with physical CCs; and of a comorbid physical CC among patients with mental CCs. **METHODS:** We created four groups: 'Healthy' (no lifetime mental or physical CC); 'Physical' (told by MD they had 1+ physical but no mental CCs); 'Mental' (told they had 1+ mental but no physical CCs); 'Physical and Mental' (1+ mental and 1+ physical CCs). Each CC was further classified by diagnostic category. Multivariate regression models, overall and within gender and diagnosis, yielded group mean SF-36v2 PCS and MCS scores, controlling for age and group x age interaction. **RESULTS:** As expected, the Physical and Mental groups had depressed PCS and MCS scores (6–7 and 11-12 points, respectively) vs. Healthy subjects. In the Physical group, a comorbid mental CC further depressed PCS and MCS (3-5 and 13-14 points). In the Mental group, a comorbid physical CC further depressed MCS and PCS (3 and 10-11 points). Similarly, within the five Physical subgroups, a comorbid mental condition further depressed both PCS and MCS (3-5 and 13-15 points). For the Mental group, each diagnostic subgroup further depressed MCS and PCS (4-5 points and 11-16 points). All results persisted across gender. **CONCLUSIONS:** Results confirmed our hypotheses. The presence of either a comorbid physical or mental CC led to further decrements in both PCS and MCS. Findings underscore the complexity of managing patients with multiple CCs and importance of screening for and treating both physical and mental CCs to optimize patient outcomes. Longitudinal analysis is required to understand the implications of comorbid CC patterns on health outcomes over time.

PIH2

LEAD DETOXIFYING EFFECT OF VITAMIN C IN TRAFFIC POLICE SUBJECTS

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**OBJECTIVES:** Lead toxicity has been labeled as a major health problem globally with limited therapeutic options. Literature reveals controversial reports on the lead detoxifying potential of vitamin C. The aim of this study was to see if vitamin C supplementation reduces lead levels of blood in adult subjects exposed to lead. **METHODS:** After ethical approval and informed consent the traffic police study subjects (all male) were randomly divided into two groups each containing 40 subjects. One group received 500 mg vitamin C, while the second group was given 1000 mg orally daily for a period of one month. Blood samples were collected at 0, 15, and 30 days of treatment and lead levels were analyzed from the PCSIR Lab, Karachi using atomic absorption spectrophotometer. **RESULTS:** The data showed raised levels of lead in study subjects of both groups (21.74 ± 1.62 and 22.51 ± 1.28 mcg/dl; mean ± SEM; $N=40$) compared to the safe limit (< 10 mcg/dl) recommended by WHO. The treatment with vitamin C (500 mg) reduced the lead levels to 16.91 ± 1.08 mcg/dl ($N=29$) after 15 days treatment ($P<0.01$), while the lead level after 30 days treatment was further reduced to12.61 ± 1.50 mcg/dl ($N=36$; $p<0.001$ compared to control, 21.74 ± 1.62). In the second group subjects, which received 1000 mg vitamin C, the lead level after 15 days treatment was 15.80 ±0.89 mcg/dl ($N=33$; $P<0.001$)), with no further drop ($P>0.05$) after 30 days treatment, as the resultant lead level was 14.64 ± 1.05 mcg/dl ($N=31$). **CONCLUSIONS:** These data indicate that vitamin C has a dose and time-dependent lead-detoxifying effect and that vitamin C supplementation may be an effective, safe and economical method in reducing blood lead levels in chronically exposed subjects such as traffic police.

PIH3

COMPARISON OF IN VITRO FERTILIZATION TRENDS AMONG INSURED PATIENTS IN MANAGED CARE IN THE UNITED STATES; COMPARISON OF STATES WITH AND WITHOUT MANDATED COMPREHENSIVE FERTILITY COVERAGE

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Currently 15 US states have laws that regulate insurance coverage for fertility treatments. Differences between states with a comprehensive mandate (>2 in vitro fertilization (IVF) cycles) and non-comprehensive mandate (≤2 cycles) has been studied using CDC Assisted Reproductive Technology data, but less is known about the managed care perspective. **OBJECTIVES:** To study the impact of state mandate on in vitro fertilization (IVF) outcomes using a claims database. **METHODS:** PharMetrics® data for patients with continuous eligibility for 12 months before and after first gonadotropin-releasing hormone agonist or antagonist prescription (index date) between January 1, 1999 and May 31, 2009. Patients without a prescription for follicle stimulating hormone, human chorionic gonadatropin, or evidence of an embryo transfer within 60 days of index were excluded. Patient descriptors were: state mandate type (comprehensive versus non-comprehensive), age (<38y, >38y) and year of IVF procedure (≤2005, >2005). ICD-9-CM code for live birth (V27.0, V27.2, V27.3, V27.5, or V27.6) was evaluated through 42 weeks post embryo transfer. Logistic regression evaluated effects across variables. **RESULTS:** A total of 880 patients met study criteria. 49.4% resided in a comprehensive mandate state. Fewer patients in comprehensive mandate states were identified prior to 2006 (52.0%) versus non-comprehensive mandate states (58.9%) ($P=0.0389$). The percentage of patients aged ≥38y was 23.0% in comprehensive versus 17.1% for non-comprehensive mandate states ($P=0.0284$). There was no difference in live births between comprehensive and non-comprehensive mandate patients (49.2 and 51.5% respectively; $P=0.5016$). Logistic regression results showed that patients ≤38y were more likely to have a live birth (OR 2.70; 95%CI=1.90-3.86); state mandate and year range showed no association. There were no significant interactions. **CONCLUSIONS:** The live birth rate from one IVF cycle in a managed care population was ~50% and was not affected by state mandate. Patients with completed IVF before age 38 experienced almost 3 times greater odds of live birth.

PIH4

COMPARATIVE EFFECTIVENESS OF BANKED DONOR MILK FOR PREMATURE INFANTS: EFFICIENCY OF A MILK BANK MODEL INTEGRATED IN A BLOOD BANK SETTING

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