

**OBJECTIVES:** Current U.S. Department of Health and Human Services (DHHS) HIV treatment guidelines recommend that HIV patients initiate first-line antiretroviral therapy (ART) with one of four "preferred" regimens: efavirenz/tenofovir/emtricitabine (EFV/TDF/FTC), ritonavir-boosted atazanavir + tenofovir/emtricitabine (ATV/r+TDF/FTC), ritonavir-boosted darunavir + tenofovir/emtricitabine (DRV/r+TDF/FTC), or raltegravir + tenofovir/emtricitabine (RAL+TDF/FTC). Adherence is critical to the success of ART in suppressing viral load and avoiding virological failure and development of drug resistance. This study compared ART adherence between preferred ART regimens in a real-world setting. **METHODS:** Retrospective study using U.S. Medicaid administrative health care claims from 15 states. Subjects were HIV patients aged 18-64 years who were enrolled in Medicaid and initiated, between January 1, 2007 and September 30, 2011, a first-line ART regimen "preferred" under U.S. DHHS HIV treatment guidelines published in March 2012. Patients were classified by ART regimen and were required to be continuously enrolled for 6 months before and  $\geq 3$  months following ART initiation. Follow up lasted from ART initiation until a  $\geq 30$  day gap in initiated ART, introduction of a new ART medication, or disenrollment. Adherence, defined as the proportion of days covered by ART medication during follow up (dichotomized at  $\geq 80\%$ ), was evaluated using multivariable logistic regressions that adjusted for demographic and clinical factors. **RESULTS:** Sample included 1,979 patients initiating EFV/TDF/FTC (n=1,259), ATV/r+TDF/FTC (n=498), DRV/r+TDF/FTC (n=143), or RAL+TDF/FTC (n=79); mean age by regimen ranged from 40.1 to 42.1 years and proportion male from 44.1% to 55.4%. Compared with patients initiating EFV/TDF/FTC, odds of adherence  $\geq 80\%$  were significantly lower in DRV/r+TDF/FTC patients (odds ratio [OR]=0.56, p=0.045) and trended lower in RAL+TDF/FTC patients (OR=0.666, p=0.273) and ATV/r+TDF/FTC patients (OR=0.904, p=0.610). **CONCLUSIONS:** Among patients initiating a DHHS guideline-preferred first-line ART regimen, the odds of adherence were not the same for all regimens. Further research should explore the reasons for differences in adherence levels between "preferred" ART regimens.

## PIN84

#### MEDICATION ADHERENCE AND CD4 RESPONSE IN PATIENTS RECEIVING ANTIRETROVIRAL THERAPY

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**OBJECTIVES:** The study evaluated medication adherence and its association with CD4 cells response following interventions among patients receiving antiretroviral therapy (ART) in Specialist Hospital Sokoto, North Western Nigeria **METHODS:** This was cross-sectional study following adherence interventions that included training of health workers on cognitive and behavioural strategies for improving medication adherence; and a pre- and post-ART adherence counseling to patients. Out of 1300 patients on ART who were provided pre- and post-ART adherence counseling, announced pill counts were conducted in 365 randomly selected patients. The CD4 cell count (cells/mm<sup>3</sup>) at months 0, 6, 12, 18 and 24 were extracted from the patient's records. One-way Anova was used to test the association between groups of variables and p<0.05 indicated statistical significance. **RESULTS:** Out of 365 participants sampled, data from 297 (81.4%) of them were valid for analysis. The mean age of participants was 34.7 (95%CI, 33.6–35.8) years; 60.9% were females and 76.4% received an AZT/3TC/NVP regimen. The mean percent adherence was 83.4% (95%CI, 80.8–86.0); and 52.2% reported 100% adherence level. With this mean adherence level, the mean CD4-cell count (cells/mm<sup>3</sup>) at ART initiation increased from 198.9 (95%CI, 180.7–217.1) to 396.5 (95%CI, 368.3–424.7) at 6 months, 428.0 (95%CI, 400.4–455.6) at 12 months, 427.2 (95%CI, 405.6–448.8) at 18 months, and 501.4 (95%CI, 469.5–533.3) at 24 months. This increase was statistically significant (p<0.05). The participants' employment and educational status, age, sex and type of ART regimens received had no significant association with medication adherence (p>0.05). **CONCLUSIONS:** The study reported mean adherence level that is below the required >95% necessary to achieve the goals of ART. The increase in CD4 cells count over the observation period was statistically significant at the reported adherence level. Better immunologic outcomes may be achieved with higher adherence level.

## PIN85

#### DISCRIMINATIVE ABILITY OF THE SF-12 IN KISWAHILI BY HIV STAGE IN PATIENTS IN KENYA

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**OBJECTIVES:** To determine if the SF-12 survey (using the PCS and MCS) can discriminate between predefined HIV severity states (as defined by CD4 and viral load) in a Kenyan population. The discriminative ability of the SF-12 quality of life instrument has been tested in patients with HIV/AIDS. In a US study, patients were stratified by CD4 count and viral load as a threshold for severity of disease. Associations between severity and mental component score (MCS)/physical component score (PCS) were investigated. The study found an association between CD4 threshold and PCS score. Using similar methods, we tested the same hypotheses using a Swahili translation of the SF-12 in a Kenyan population of HIV positive patients. **METHODS:** This cross-sectional study was based on data from a randomized controlled trial conducted in Nairobi, Kenya involving HIV patients. CD4 count, viral load, and SF-12 survey results were collected on patients initiating anti-retroviral therapy at 3 clinics. Clinical variables were stratified as follows: CD4 $\geq 200$  cells/mm<sup>3</sup> compared to CD4<200 and viral load>55000 copies/mL compared to viral load  $\leq 55000$ . The PCS and MCS scores means were compared across these strata using a t test. **RESULTS:** CD4

counts were measured in 280 patients and viral load in 497 patients. All patients completed the SF-12 instrument. PCS scores showed significant discriminative ability in the CD4 comparison (p<0.01) with a mean(SD) of 41.3(11.42) for CD4<200 cells/mm<sup>3</sup> compared to 45.1(11.2) for CD4 $\geq 200$ . Comparison in viral load strata and MCS scores were not significant. Mean and standard deviation for both MCS and PCS in each severity state were similar in value to those reported in the earlier American trial. **CONCLUSIONS:** These findings suggest that a Swahili translation of the SF-12 is a useful instrument in discriminating across limited clinical variables of HIV disease progression and severity.

## PIN86

#### PARENTS' EXPECTATION TO RECEIVE ANTIBIOTIC PRESCRIPTION FOR CHILDREN

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**OBJECTIVES:** Physician's perception regarding parents' expectation to receive antibiotic prescription for their children is a significant predictor of overprescribing antibiotics for young children in the United States. The objective was to evaluate whether parents' level of expectation would change after manipulating their 'perceived benefits of using antibiotics' and their 'perceived barriers to visit doctors without any expectation of antibiotic prescription'. **METHODS:** A prospective experimental study was conducted using a structured data-collection instrument to manipulate perceived barriers and perceived benefits using four scenarios and keep other factors of Health Belief Model constant. Each subject viewed four scenarios; expectation associated with each scenario was measured using visual-analog-scale. Data were collected at public places (Houston, TX) from subjects who had at least one child (age $\leq 5$  years) during the study and who could speak, read and write English. Psychometric properties of the instrument were tested; descriptive and repeated measures mixed method covariance adjusted analyses were performed using SAS<sup>9.3</sup> with 0.05 significance level. **RESULTS:** A total of 300 completed surveys were analyzed. Mean age of the sample was 30.3 $\pm$ 7 years. The mean general expectation score (before reading any scenario) to receive antibiotic prescription for children was 53.6 $\pm$ 25.7. The repeated measure mixed methods analyses indicated that there was 12-point reduction (p<0.0001) in expectation score after removing perceived barriers from the situational scenarios; 16-point decrease (p<0.0001) in expectation score was observed after removing perceived benefits and 18-point decrease (p<0.0001) in expectation score after removing both perceived barriers and perceived benefits. **CONCLUSIONS:** There was significant effect of perceived barriers and perceived benefits on expectation scores. When both perceived barriers and perceived benefits were removed from the scenarios there was the highest decrease in the expectation score indicating the successful manipulation of both variables. Policy makers and intervention programs should consider these factors to enhance successful reduction of antibiotic expectations.

## PIN87

#### AWARENESS AND BELIEFS ABOUT PNEUMOCOCCAL AND INFLUENZA VACCINATION AMONG OLDER AFRICAN AMERICANS: RESULTS FROM A SURVEY OF COMMUNITY-DWELLING PARTICIPANTS AT AN URBAN SENIOR CENTER

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**OBJECTIVES:** Vaccination rates for influenza and pneumococcal disease do not meet established goals in older minority populations. This project assessed potential reasons for this through a survey of community-dwelling African American seniors. **METHODS:** A 23-question survey was developed and fielded to a group of participants at a Philadelphia community senior center. Survey content was informed by previously-tested instruments in the literature and consisted of 18 Likert-scale items assessing potential barriers to pneumonia vaccine (PV) and influenza vaccine (IV); yes/no questions assessing awareness of PV and IV; and open-ended questions gathering opinions supporting and opposing these vaccines. **RESULTS:** A total of participants completed the survey. Awareness of PV was slightly lower than IV (36/39 vs. 39/39; p=.077) but there were no differences in perceived importance of PV versus IV. Most (91.9%) agreed that both vaccines are important to their health, but more than half (52.6%) felt that these vaccines can cause illness. Only a third (34.3%) believed that vaccines protect against pneumonia and influenza. Many participants (65.6%) indicated fear as a barrier to vaccination, with most of these (35.1%) specifying fear of illness or adverse reaction, 16.2% fear of needles, and 16.2% reporting other fears. While most trusted pharmacists as an information source for vaccination (75.7%), less than half (44.4%) are comfortable getting vaccines from pharmacists. **CONCLUSIONS:** This is the first survey to identify PV and IV barriers among African Americans through a community senior center. Though awareness of both vaccines is high, fear of vaccination is common and represents a significant barrier, as does the notion that these vaccines cause illness. Pharmacists are a trusted information source regarding vaccines but are not yet established as trusted vaccine providers in this population. Results serve to inform outcomes researchers' efforts to design and evaluate vaccination programs targeted towards African American seniors.

## PIN88

#### IMPACT OF PHARMACISTS LED INTERVENTION PROGRAMME TOWARDS KNOWLEDGE, ATTITUDE AND PRACTICE AMONG HEPATITIS-B PATIENTS IN PAKISTAN: A NON CLINICAL RANDOMIZED CONTROLLED TRIAL

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**OBJECTIVES:** To evaluate the impact of pharmacists led intervention programme in order to evaluate knowledge, attitude and practice among Hepatitis B patients in Pakistan. **METHODS:** A non clinical randomized control trial was conducted whereby Hepatitis-B patients received an educational intervention through trained hospital pharmacists who provided them with information about Hepatitis-B. Knowledge, attitude and practice were measured by means of self-administered questionnaire. Descriptive statistics were used to describe the demographic characteristics of the patients. Inferential statistics (Chi square test, and Mann-Whitney U test) were used for comparison between the groups. SPSS 17 was used for data analysis. **RESULTS:** Three hundred and ninety Hepatitis-B patients were randomly assigned to the study (195 patients in the control group and in the intervention group). No significant differences were observed in either group for mean age, gender, education, occupation, income and locality. A significant improvement ( $p < 0.001$ ) in the knowledge, attitude and practice ( $8.48 \pm 2.7$ ,  $3.87 \pm 1.2$ ,  $2.37 \pm 1.0$  to  $15.46 \pm 2.2$ ,  $5.05 \pm 1.0$ ,  $5.98 \pm 1.2$ ) was observed in the interventional group. Significant difference ( $p < 0.001$ ) was observed after the completion of the intervention programme between the control group and in the intervention group. **CONCLUSIONS:** The pharmacist-led intervention caused a significant improvement in knowledge, attitude and practice scores of Hepatitis-B patients which will be helpful in the better disease management and control. It is recommended that the role of pharmacists in patient education must be acknowledged as an integral part of the health care system.

#### PIN89

##### DEVELOPMENT OF A MULTI-DIMENSIONAL HEALTH RELATED QUALITY OF LIFE MEASURE SPECIFIC FOR PULMONARY TUBERCULOSIS PATIENTS IN IRAQ

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**OBJECTIVES:** In recent years, increasing efforts have been dedicated to assess the health-related quality of life (HRQL) in people infected with tuberculosis (TB). A variety of generic instruments exist to assess quality of life (QoL) in TB patients, but a psychometrically sound TB-specific HRQL instrument is lacking. The current study aimed to develop a self-reported HRQL measure specific for pulmonary TB patients in Iraq. **METHODS:** The core, general HRQL questionnaire is comprised of the Functional Assessment of Cancer Therapy-General (FACT-G) items. The FACT-G was selected because of its established psychometrics and history in measuring HRQL symptoms in patients with a variety of chronic illnesses. A modular approach was followed for the development of Functional Assessment of Chronic Illness Therapy-Tuberculosis (FACIT-TB) questionnaire in which a set of items assessing QoL issues not sufficiently covered by the core FACT-G items, but considered to be relevant to the target population, were added. The development process of an additional concerns subscale of the FACIT-TB instrument consisted of several stages, including: 1) Concept clarification; 2) Item pool generation; 3) Item reduction; 4) Refinement. **RESULTS:** In addition to the 27 items of the core questionnaire, a set of 20 items referring to disease symptoms related to the site of infection (Pulmonary TB); side effects and other issues related to treatment; and additional QoL dimensions such as fatigue, fear of disease transmission, and economic burden of the illness were included in the additional subscale of FACIT-TB. **CONCLUSIONS:** A rigorous method was applied in the development of FACIT-TB to fully understand the impact of the illness on QoL of TB patients. However, further linguistic validation and psychometric testing should be conducted to ensure conceptual equivalence, validity and reliability of the instrument and its relevance among Arabic-speaking patients in Iraq.

#### PIN90

##### IMPACT OF PHARMACISTS LED HEALTH EDUCATION PROGRAMME ON HEALTH-RELATED QUALITY OF LIFE IN PAKISTANI HEPATITIS-B PATIENTS

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**OBJECTIVES:** The study evaluated the impact of a health educational intervention in improvement of health related quality of life (HRQoL) in Pakistani Hepatitis-B patients. **METHODS:** A non-clinical randomized control trial was conducted. Hepatitis B patients received an educational intervention through hospital pharmacists who provided them with information about Hepatitis-B treatment and management and improvement of HRQoL. Health Related Quality of Life was measured by Euroqol (EQ-5D). Descriptive statistics were used to describe the demographic characteristics of the patients. Inferential statistics (Chi square test, Mann-Whitney U test) were used for inter-group comparison. The intra-group comparison was performed by Wilcoxon Rank Sum test. SPSS 17.0 was used for data analysis. **RESULTS:** Three hundred and ninety Hepatitis-B patients were randomly assigned to the study [195 in each group i.e. control group (CG) and the intervention group (IG)]. No significant differences were observed in either group for mean age, gender, education, occupation, income and locality. There was significant ( $p < 0.001$ ) increase in EQ-5D score from  $0.3498 \pm 0.3178$  to  $0.4739 \pm 0.2624$  (in post interventional intervention group). The results revealed non-statistical significant ( $p = 0.563$ ) between the Interventional group ( $0.4726 \pm 0.2522$ ) and control group ( $0.4745 \pm 0.2791$ ) among overall HRQoL scores. **CONCLUSIONS:** The pharmacist-focused intervention led to a significant increase in the patient's health related quality of life. Therefore, the role of pharmacists in patient education must be formalized and acknowledged as an official part of the health care system.

## INFECTION – Health Care Use & Policy Studies

#### PIN91

##### LESSONS FROM VOLUNTARY REPORTING OF ILLINOIS HOSPITAL EMPLOYEE SEASONAL INFLUENZA VACCINATION RATES (2009-2013)

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**OBJECTIVES:** In 2009, voluntary public reporting of hospital health care personnel (HCP) vaccination rates began in Illinois. We describe our experience over 4 influenza seasons (2009-2013) and examine the impact universal policies have had on performance. **METHODS:** A secure website was used to report monthly HCP vaccination rates by each participating hospital. Overall and individual hospital performance was publicly reported each month. Statistical analysis was performed to compare the HCP vaccination rate before and after adoption of a universal policy to compare HCP vaccination rate by policy type for each month of the flu season. **RESULTS:** In the first two seasons, there were 11 hospitals reporting with an average end of season rate of 76% (2009-2010) and 81% (2010-2011). In the 2011-2012 season, there were 22 hospitals reporting, 9 of which had a new universal policy for HCP influenza vaccination. The average 2011-2012 end of season rate was 72% for hospitals with a voluntary program and 95% for hospitals with a universal policy. HCP were also vaccinated earlier in the influenza season when a universal policy was in place, providing greater benefit over time. We found that there was a statistically significant difference in vaccination rate by type of policy at both the beginning of the influenza season and at the end of the influenza season. In the 2012-2013 season, there are 34 hospitals voluntary participating which reflects a huge increase in terms of public reporting of HCP influenza vaccinations; updated results will be presented. **CONCLUSIONS:** A variety of factors may contribute to the rate of hospital HCP influenza vaccination. Public reporting of HCP influenza vaccination rates may contribute to implementation of universal employee vaccination policies. Hospitals with universal policies have higher vaccination rates than those with voluntary vaccination programs. Our study has demonstrated that implementation of a universal policy contributes to a dramatic increase in performance.

#### PIN92

##### ANTIBIOTIC PRESCRIBING PATTERNS FOR COMMUNITY ACQUIRED PNEUMONIA IN HOSPITALIZED PATIENTS: A RETROSPECTIVE PILOT STUDY FROM DELHI, INDIA

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**OBJECTIVES:** Community-acquired pneumonia (CAP) is one of the leading causes of death due to infection and a primary indication for antibiotic therapy. Multiple guidelines exist for recommending initial antibiotic choice for treatment of CAP. This study was conducted to evaluate the trends in antibiotic choice for treatment of CAP in hospitalized patients (non-ICU) at a tertiary care center, Safdarjung Hospital, Delhi, India. **METHODS:** A retrospective medical record review of hospitalized adult patients discharged to home (mean hospital stay 5.38 days (SD=2.97)) with a diagnosis of CAP in 2007 (n=139) and 2011 (n=142) was performed. A standardized form was completed by a trained medical resident. **RESULTS:** The pattern of antibiotic use in 2007 and 2011, respectively, was – monotherapy 30.2% versus 21.1%; combination of two antibiotics 61.1% versus 65.5%; and combination of three antibiotics 8.6% versus 13.3%. Amoxicillin+clavulanic acid or ceftriaxone ( $\beta$ -lactam antibiotics) were most frequently used as monotherapy in both 2007 (80.9% and 9.5%) and 2011 (56.7% and 36.7%). In 2007, combinations of a  $\beta$ -lactam (amoxicillin+clavulanic acid or ceftriaxone) and fluoroquinolones (41.2%) or macrolides (31.8%) or aminoglycosides (10.6%) were prescribed. In 2011, combinations of fluoroquinolones (levofloxacin) and a  $\beta$ -lactam (43.0%) or combinations of  $\beta$ -lactam and a macrolide (40.9%) were commonly given. Combination of three antibiotics usually included a  $\beta$ -lactam combined with macrolides or aminoglycosides or fluoroquinolones or metronidazole. Piperacillin+tazobactam or ceftazidime+tazobactam were prescribed to 12 patients in 2011 and none in 2007. Third generation cephalosporins (ceftriaxone, ceftazidime, cefotaxime, cefixime) were given to 55 patients in 2011 versus 19 patients in 2007 (test of proportion  $p < 0.01$ ). **CONCLUSIONS:** The study indicates that third generation cephalosporins and piperacillin+tazobactam use at the study hospital is increasing, whereas amoxicillin+clavulanic acid use is decreasing in non-ICU hospitalized patients with CAP. This trend is not in accordance with published guidelines and especially concerning in light of emerging antimicrobial resistance.

#### PIN93

##### SURVEY OF ANTIMALARIAL DRUGS PRICES AND AVAILABILITY IN RETAIL OUTLETS IN ENUGU URBAN SOUTH EAST NIGERIA

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**OBJECTIVES:** The study investigated the local retail drug market to determine the prices, availability and affordability of antimalarial medicines to generate information for improving access to ACTs. **METHODS:** A cross-sectional survey was conducted in retail outlets in Enugu urban SE Nigeria in 2011, based on WHO/HAI recommendations. Nine medicines from seven categories of antimalarial drugs were surveyed in a sample of 38 retail outlets, selected randomly by type and location. Data was collected by structured interviews, in-depth interviews, and retail audits from both private retail pharmacies and patent medicine vendors. **RESULTS:** The market was highly characterized by a wide range of antimalarial medicines, averaging 10 brands per outlet. SPs and