Kentucky. METHODS: Regression models were calculated to predict methamphetamine-related hospitalizations from 2010 county level Kentucky data. Explanatory factors included the number of methamphetamine-related arrests, number of controlled substance (CS) prescriptions dispensed, and population. Data sources include the Kentucky All Schedule Prescription Electronic Reporting Program, the Kentucky Drug Price Data Set, the Kentucky State Policy Compliance Electronic Data Report, and the Laboratory Surveillance System. RESULTS: PSE sales were not associated with methamphetamine-related hospitalizations in this model. The number of clandestine lab incidents reported, however, has a strong positive impact on methamphetamine-related hospitalization (p<0.001). Methamphetamine-related arrests also have a strong positive relationship to hospitalization (p<0.05). CONCLUSIONS: PSE sales alone cannot be used to predict methamphetamine use, but methamphetamine-related hospitalizations. The number of clandestine lab incidents, however, reported is strongly associated with methamphetamine-related hospitalizations. These findings suggest that policies aimed at reducing clandestine labs may have a significant impact on indicators of methamphetamine use.

MENTAL HEALTH – Research on Methods

PMH83 COMPARISON OF TOTAL HEALTH CARE COSTS BETWEEN REMITTERS AND NON-REMITTERS FOR SCHIZOPHRENIA PATIENTS FROM A PROSPECTIVE LONGITUDINAL, OBSERVATIONAL STUDY IN THE PRESENCE OF MISSING DATA Zhu D, Wei Y, Song S, Shek J, Haynes V
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OBJECTIVES: Missing data has presented challenges to health economic analyses, especially for a long-term observational study with repeated measures of clinical and economic outcomes. The aim of this analysis was to compare the total health care costs between symptom remission and non-remission from a long-term, observational study using mixed-effects models with and without multiple imputations (MI) of missing data. METHODS: Data (N=2282) used for this analysis were from a 3-year observational study of patients treated for schizophrenia in the United States between July 1997 and September 2003. Costs of mental health services were obtained at enrollment and at 6-month intervals during the 3-year follow up. Cohorts of remitters versus non-remitters at enrollment were created using clinical and health status. Total costs for remitters and non-remitters were compared using mixed-effects models with and without MI based on Markov chain Monte Carlo with multivariate normality assumption (MI-MCMC) or fully conditional specification with predictive mean match method (MI-FCS). All analyses on costs used patient’s demographic and comorbidities. RESULTS: The majority of the patients were male (61.6%) and non-remitters (73.8%) with a mean age of 42 years. Out of 2282 patients, 41.2% had at least 1 visit (out of 7 visits) with missing costs data. Without MI, the total healthcare costs were estimated to be $3929.6 for the non-remitters and $8909.6 for the remitters with a difference of $790.0 over a 6-month period (p<0.001). The estimated differences in total costs between remitters and non-remitters were $1763.0 over the 6-month period with the MI-MCMC method (p=0.004) and $1483.9 with the MI-FCS method (p=0.009). CONCLUSIONS: Significant differences in total costs between remitters and non-remitters were obtained from this study using mixed-effects models with and without MIs. Further analysis will be conducted to explore MI for estimation of other costs and examine missingness mechanisms.

PMH84 VALIDITY OF ADMINISTRATIVE CLAIMS DATA FOR CALCULATING ADHERENCE MEASURES FOR LONG-ACTING INJECTABLE (LAI) ANTIPSYCHOTIC THERAPIES Komia CM1, Durham M2, Durkin M3, Dickson M4, Howe A5
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OBJECTIVES: To examine sources of error in claims-based adherence calculations for LAI antipsychotics with potentially invalid days’ supply (DS) values and evaluate the assumption that quantity-dispensed (QD) values are in product units. METHODS: Pharmacy claims for single-dose LAI antipsychotics dispensed between January 1, 2009 and December 31, 2010 were selected from a large US database. Frequency distributions were generated for observed DS and QD values for each product and dose. Observed QD values on premixed LAI antipsychotic claims were divided by the product’s volume to test the assumption that QD was entered in milliliters rather than units. After adjustment to QD for premixed LAI antipsychotic claims, duration of therapy per injection was calculated for all LAI antipsychotics as DS/QD. Calculated therapy duration was compared with the dosing interval in the product’s package insert (PI). Percentage of claims with duration of therapy per injection within the dosing range was calculated as a measure of validity of the observed DS value. RESULTS: For the 611,325 LAI antipsychotic claims analyzed, observed QD values ranged from 0.01 to 117, suggesting values that did not always represent product units. Adjustment to QD for premixed LAI antipsychotics would lead the PI range from 10.6% to 39.1% for paliperidone palmitate, 7.6% to 13.1% for risperidone long-acting injection, and 3.1% to 10.8% for olanzapine pamoate. CONCLUSIONS: Results raise concerns regarding potentially invalid values in DS and QD fields. Algorithms for appropriate use of LAI antipsychotic pharmacy claims in adherence calculations, quality measurement, and economic outcomes. Further analyses are recommended.

PMH85 AN APPLICATION OF GROUP-BASED MODELING FOR APPEARANCE TRAJECTORY RECOGNITION: THE DEVELOPMENTAL COURSES OF HYPERACTIVITY AND INATTENTIVE SYMPTOMS Cheung W3, Goodwin R4, Wu P5, Vitara F6, Trembly K7
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OBJECTIVES: Uncertainty remains regarding the developmental courses of inattentive (IN) and hyperactivity (HA) symptoms. Using group-based trajectory modeling, we sought to identify distinct independent and joint IN/HA symptom trajectories and their predictors. METHODS: A total of 1037 boys (mean age: 6.2±0.3) were identified for developmental study of Low Socioeconomic Status (SES) Boys in Montreal. Teacher and mother ratings of subjects’ IN and HA symptoms were collected annually at ages 6, 10 and 15 using the Social Behavior Questionnaire, where the higher of the two raters’ scores was taken as subject’s IN/HA score. Numbers and probabilities of independent IN and HA trajectories were identified using group-based semi-parametric mixture models. Joint IN/HA trajectories were then constructed as the joint probabilities of independent IN/HA trajectories. Multinomial logistic regressions were conducted to assess baseline parental and subject behavioral problems as predictors of joint trajectories. RESULTS: Six and five independent trajectories were generated for IN and HA symptoms, respectively, constructing 30 joint trajectories. The most common independent IN trajectory (29.5% of study sample) had a moderate number of IN symptoms at baseline that increased slightly with age and had a moderately smaller rise in HA symptoms. The most common independent HA trajectory (28.5%) was baseline moderate-sharply declining. The most common joint trajectories were based on the co-occurrence of a moderate-sharply rising IN trajectory, and a low/moderate-sharply rising HA trajectory (17% vs 14%). Subjects’ aggressiveness, conduct-, oppositional-, and anti-social problems (p<0.001), and paternal SES (p=0.01) were significant predictors of joint trajectories. CONCLUSIONS: Group-based trajectory modeling may be a useful time-dependent pattern recognition tool. It enabled the identification of distinct independent and joint IN/HA trajectories in age-related developmental courses. Assessing baseline behavioral problems and paternal SES may help identify and target interventions for young boys at risk of high-level IN/HA symptoms early on.

PMH86 TIME-ON-THERAPY FOR ATYPICAL ANTIPSYCHOTICS IN A MARKOV COHORT ANALYSIS Rajagopalan K1, O’Day K2, Meyer K2, Pikalov iiA3
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OBJECTIVES: To demonstrate a unique approach to modeling long-term time-on-therapy and cardiovascular disease (CVD) outcomes of patients with schizophrenia treated with atypical antipsychotics (AAPs). METHODS: A 5-year Markov cohort analysis among adult patients with schizophrenia was undertaken to compare time-on-therapy and CVD outcome differences lurasidone, generic-olanzapine, aripiprazole, quetiapine, and clozapine. Time-on-therapy was modeled using sub-states based on time of initial AAP, patients switched to a second composite-AAP, and patients on clozapine after failing a second composite-AAP. The composite-AAP health state simulates frequent treatment switching and was operationalized by averaging out switching rates and discontinuation rates (for transition probabilities) of the AAPs. Patients discontinuing composite-AAP due to lack of efficacy were switched to clozapine. Time-on-therapy was modeled using sub-states based on time of switching. Baseline characteristics of the modeled cohort, data for discontinuation rates, and average weight change were obtained from CATIE, a comparative clinical trial of lurasidone vs quetiapine XR, and an open-label study comparing aripiprazole and olanzapine. Relative risk of diabetes obtained from a retrospective analysis predicted CVD events using Framingham BMI risk equations. RESULTS: Over 5 years, patient time-on-therapy for the initial-AAP, composite-AAP, and clozapine, respectively, was 0.85, 3.13, 1.01 years (lurasidone); 1.00, 2.98, 1.02 (generic-olanzapine); 0.51, 3.41, 1.08 (aripiprazole); 0.47, 3.45, 1.08 (quetiapine); and 0.54, 3.37, 1.09 (ziprasidone). In a 10,000 patient cohort, there were 407, 434, 415, and 412 CVD events, respectively, in the lurasidone, generic-olanzapine, aripiprazole, quetiapine, and ziprasidone arms. CONCLUSIONS: This long-term Markov cohort model simulates multiple treatment switches by using a composite health state from sub-states and also enabled outcome assessment of time-dependent patient characteristics, such as CVD events. The results were consistent with published Markov simulation showing that lurasidone had favorable discontinuation rates and that lurasidone and ziprasidone had fewer CVD events. This analysis represents an effective alternative for modeling cohort-level outcomes.

PMH87 CONGLOMERATE ADAPTATION OF A RESEARCH VERSION OF THE KEY AUDITORY VERBAL LEARNING TEST (RAVLT) INTO [US] SPANISH Rendu E4, Caveyni A5, Miner A5, Nomikos A5, Acquaro C6
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OBJECTIVES: The Key Auditory Verbal Learning Test (RAVLT) was developed to evaluate verbal memory. The standard form comprises a 15-word list (List A) learn-