

cal therapies (e.g., motivational interviewing). The effectiveness of BH screening in PC settings is related to the availability of adequate treatment and follow-up systems of care. **CONCLUSIONS:** Increasing evidence is available concerning the effectiveness of BH-PH integration/collaboration strategies in treating depressive and anxiety symptoms and medical/clinical outcomes. Improved stratification of BH-PH integration models will determine the relative success of different integration approaches. Additional studies are needed in adolescents and people with schizophrenia and bipolar disorder.

PMH56

THE RELATIONSHIP BETWEEN PSEUDOEPHEDRINE SALES AND CLANDESTINE METHAMPHETAMINE LABS

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OBJECTIVES: The illicit production of methamphetamine from the precursor chemical pseudoephedrine (PSE) in clandestine laboratories poses a public health risk for our communities and a financial burden on law enforcement. Previous work has shown a strong relationship between PSE sales and clandestine labs in Kentucky. The purpose of this project is to extend the study to Illinois and Louisiana and refine the model by adding additional explanatory variables and control variables. **METHODS:** Regression models predicting clandestine methamphetamine lab incidents using 2011 to 2012 county-level data for Kentucky, Illinois and Louisiana were calculated. Explanatory factors include PSE sales (in grams), population density, percent of adults with a high school diploma and percent population unemployed. Data sources include the National Precursor Log Exchange (NPLEx), the National Clandestine Laboratory Seizure report data received from the Drug Enforcement Agency, Federal Bureau of Investigation Crime in the United States statistics and the Census Bureau American Community Survey. **RESULTS:** Results indicate a strong positive relationship between PSE sales and clandestine labs ($p < 0.01$). Counties with a more highly educated population ($p < 0.05$) on average have fewer lab while a more rural population on average is associated with greater number of labs ($p < 0.05$). Individually, sales of PSE are strongly correlated to labs in both Kentucky and Illinois, but not Louisiana. **CONCLUSIONS:** PSE sales have a strong relationship to clandestine labs. Counties with greater sales of PSE have a greater number of clandestine labs, controlling for counties with no labs reported. These findings are an important addition to our previous work providing evidence for a strong association between PSE sales and clandestine labs in multiple states over multiple years and have important policy implications as states struggle with policy options to reduce methamphetamine production in their communities.

PMH57

BENZODIAZEPINE USAGE PATTERNS IN RESPONDENTS WITH DEPRESSION FROM THE CO-MORBIDITIES AND SYMPTOMS OF DEPRESSION (CODE) STUDY

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OBJECTIVES: To assess treatment patterns, patient characteristics, and outcomes for respondents with depression who were prescribed benzodiazepines (BZDs). **METHODS:** Survey-eligible adults with ≥ 2 medical claims for depression from 6/1/2009-5/31/2010 in the HealthCore Integrated Research Database were invited to participate in this retrospective/prospective study. Consenting respondents completed index and 6-month post-index surveys assessing depression, anxiety, and other health measures. Respondents' survey data were linked to 24 months of claims data. Respondents with and without BZD prescriptions ± 6 months from index survey date were identified. Healthcare utilization and costs were assessed pre- and post-index survey date and compared across users and non-users using descriptive statistics. **RESULTS:** Of 970 respondents who completed both surveys, 638 (66%) were prescribed BZDs and 332 (34%) were not. Respondents with and without BZD prescriptions were similar. Mean age was 47.9 and 45.7 years, respectively. The majority of respondents were female, overweight/obese, married/cohabiting, and college educated. Respondents prescribed BZDs were more likely to have pre-index diagnoses of double depression (10.8% vs. 6.6%, $p = .0338$), anxiety (90.4% vs. 65.7%, $p < .0001$), and a higher mean Quan-Charlson Comorbidity Index score (0.7 vs. 0.5, $p = .0393$) as well as higher depression, fatigue, pain, insomnia, and anxiety index survey scores. Tricyclic antidepressants, serotonin-norepinephrine reuptake inhibitors, and second-generation antipsychotic use were higher for respondents prescribed BZDs (all $p < .05$). Mental health-related resource utilization involving psychiatrist visits was significantly higher for respondents prescribed BZDs at baseline and follow-up (all $p < .05$). Although total annual medical mental health-related costs were similar (\$3,492 vs. \$3,054, $p = .5229$), pharmacy and psychiatrist visit costs were significantly greater for respondents prescribed BZDs. **CONCLUSIONS:** A majority of respondents with depression also had anxiety and were prescribed BZDs. Results suggest that BZD use was associated with more pronounced comorbid conditions and symptoms of depression, as well as higher health care resource utilization and costs.

PMH58

PATTERNS OF PSYCHOTROPIC PRESCRIPTION UTILIZATION AMONG DISABLED MEDICARE BENEFICIARIES UNDER 65

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OBJECTIVES: One-third of Medicare beneficiaries <65, who are deemed eligible for Social Security Disability Insurance, are disabled due to a mental disorder. But psychiatric services research targeting this population is limited. This study estimated annual trends in and identified factors associated with psychotropic prescription utilization among disabled Medicare beneficiaries <65. **METHODS:** This serial cross-sectional study used 2002-2009 Medicare Current Beneficiary Survey data. Nationally

representative community-dwelling Medicare beneficiaries <65 were included ($n = 10,384$ person-years, weighted $n = 30,086,849$ person-years). Psychotropic prescription utilization included self-reported antidepressants, antipsychotics, stimulants, mood stabilizers, anxiolytics, hypnotics, and antimanic prescription use. Weighted annual trends in psychotropic prescription utilization were estimated. Repeated person-year data using generalized estimating equations multivariable models were used to identify factors associated with psychotropic prescription utilization. **RESULTS:** Annual prevalence of any psychotropic prescription utilization among disabled Medicare beneficiaries <65 increased from 53.4% to 57.9% in 2002-2009, but the trend was not statistically significant ($P = 0.36$). Antidepressants (35.09%), hypnotics (20.16%), and anxiolytics (17.31%) were the top three therapeutic classes used in 2009. No significant trend in utilization was observed for any individual therapeutic classes. Multivariable results showed that beneficiaries <65 who were female, white, divorced, Medicare-Medicaid dual eligible, with higher education and poorer health status, smoking, and having chronic and psychiatric conditions were more likely to use any psychotropic prescriptions (all $P < 0.05$). Female and white beneficiaries were more likely to use all psychotropic therapeutic classes except for antipsychotics (females only) and stimulants/antimanics (whites only). Beneficiaries with poorer health status and chronic conditions were more likely to use antidepressants, anxiolytics, and hypnotics. Medicare-Medicaid dual enrollees were more likely to use antipsychotics (all $P < 0.05$). **CONCLUSIONS:** Psychotropic prescription utilization is prevalent among disabled Medicare beneficiaries <65. Patterns of use vary by psychotropic therapeutic class. Future research needs to evaluate psychotropic prescription access and quality of use among this vulnerable population.

PMH59

USE OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD) DRUGS IN CANADA, 2010-2014

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OBJECTIVES: The use of attention-deficit/hyperactivity disorder (ADHD) medications has been increasing among children, adolescents and adults but little is known about its usage pattern, and treatment adherence among distinct age groups in Canada. This study sought to characterize utilization patterns of ADHD drugs approved for use in Canada with a special focus on the non-stimulant drug, atomoxetine. **METHODS:** Prescription data and anonymized longitudinal patient level data from IMS Brogan were used. Descriptive statistics were used to characterize drug utilization patterns from 2010-2014. Utilization trends were analyzed with respect to age, gender, concomitant medications and physician specialty of the prescribing physician. Adherence patterns for atomoxetine were measured by the medication possession ratio (MPR). **RESULTS:** IMS data indicate that the average annual prescription volume of all ADHD drugs in Canada have been increasing each year (35% increase from 2,795,226 in 2009 to 3,772,266 in 2013). Methylphenidate stimulants accounted for approximately 70% of all prescriptions, and children 6-12 years accounted for most of these prescriptions. Prescriptions of atomoxetine showed the same increasing trends; however females aged 19-65 accounted for most of this increase. ADHD drug use declined during the summer months and in 2013, over 20% of children aged 13-18 years had at least one gap of more than 30 days between the end of one prescription of atomoxetine and the start of the next. In addition, 25-35% of this age group had an MPR of less than 80%. **CONCLUSIONS:** ADHD drug utilization has been increasing over the last 5 years in Canada. Children aged 6-12 years account for most of the prescriptions, and they are most likely to go on a "drug holiday". Given that serious adverse reactions can be associated with ADHD drugs in some children, their clinical benefits should be continuously and closely monitored, and weighed against their potential risks.

PMH60

AUDIT OF IRREVERSIBLE MONOAMINE OXIDASE INHIBITORS (MAOI) PRESCRIPTION FOR DEPRESSION IN CURRENT CLINICAL PRACTICE WITHIN THE HEALTH IMPROVEMENT NETWORK (THIN) UK PRIMARY CARE DATABASE

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OBJECTIVES: MAOIs were first discovered in the 1950s and used to manage depression when few alternatives existed. MAOIs block tyramine catabolism, meaning patients consuming tyramine rich foods (e.g. cheeses, cured meats) risk increased release of noradrenaline, potentially leading to hypertensive crisis. While MAOIs still have some role in depression management, little is known about current clinical practice. This study aims to audit the usage of MAOIs from 2004-2013. **METHODS:** The THIN database was used to identify all patients prescribed irreversible MAOIs between 01/01/2004-31/12/2013. Dates of first MAOI prescription and first depression diagnosis were identified, along with age, social deprivation score and repeat MAOI prescriptions. **RESULTS:** 886 patients were prescribed MAOIs during 2004-2013, 44% of which were new prescriptions. Median age at first use was 53 years (IQR 43-63), M:F ratio was 1:1.8 and 49% were in the 2 most affluent quintiles. The median time from first depression diagnosis to first MAOI prescription was 11.2 years (IQR 4.3-21.1). From 2004-2013, MAOI usage decreased from 555 to 248 patients, with treatment initiation falling from 72 to 28 patients. Median age of treated patients increased from 63 to 68 years and 4-8% had concurrent SSRI prescriptions. Median prescription use was 8.8 months (IQR 5.1-11.0) in each year, with per patient prescriptions ranging from 37 (IQR 20-69) to 54 (IQR 27-83). Median time on MAOI from 2004-2013 was 1.7 years (IQR 0.4-4.8). **CONCLUSIONS:** THIN is a representative sample of 6% of the UK population. This study projects an estimated 600 UK patients start MAOIs yearly, with numbers decreasing. Estimated UK MAOI usage has fallen from 9,000 to 4,000 patients during 2004-2013. Records indicate that patients are receiving shorter, more frequent prescriptions. NICE guidelines confirm that MAOIs still have some role in depression management, although not defined. This is the first large study to audit changes in MAOI usage.