ber 2009 using SDI's VONA and VOPA databases. Statistical analyses were performed using one-way ANOVA; significant results had $p < 0.05$. **RESULTS:** Although individuals ages 55–64 did not dominate the NPRx—ranging from 15% to 26%—this group was the second-largest contributor to all prescriptions (TRx) for all the drug markets, ranging from 20% to 30%. The average size of prescriptions for this age range was statistically equivalent to the average size for the ≥65 population, indicating that prescriptions were refilled equally frequently in both populations. Medicare beneficiaries paid significantly less, on average, for drugs in the five classes compared to others by a margin of 20% to 93%. **CONCLUSIONS:** Individuals approaching Medicare eligibility are a demographic with significant demand for coverage. They show consistently high drug demand; prescription sizes are equal to patients over 65 and costs significantly higher Medicare patients, resulting in a great expenditure for covering this population. From the consumer perspective, it is important to recognize that the combination of higher OPC and high prescription demand creates a significant cost burden.

PHP25

ASSESSING TRENDS IN UTILIZATION AND COST OF THE SIX PROTECTED MEDICATION CLASSES IN THE PART D PROGRAM

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OBJECTIVES: To assess trends in the utilization and cost of the six protected medication classes in the Part D program between calendar years 2006 and 2007. **METHODS:** The primary data sources were the prescription drug event data in the Chronic Condition Warehouse (CCW) matched to the Beneficiary Annual Summary for 2006 and 2007. Data were inflation-adjusted for 2007 costs. Results are based on analysis of 100% data for Medicare beneficiaries in the CCW. The six protected medication classes under study were anticonvulsants, antidepressants, antineoplastics, antipsychotics, antiretrovirals, and immunosuppressants. **RESULTS:** Immunosuppressants were utilized by the fewest number of beneficiaries for 2006 and 2007 (81,974 and 80,187, respectively); antidepressants were utilized the most (6,040,698 and 6,645,639, respectively). Immunosuppressants had the lowest aggregate ingredient costs for both years ($204 million and $199 million, respectively). Antipsychotics had the highest ($4,161 million and 4,807 million, respectively). Ingredient costs to total Medicare expenditures ranged from 4.2% for antidepressants to 25.2% for antiretrovirals in 2006. Results were similar for 2007 (4.5% for antidepressants to 29.4% for antiretrovirals). From 2006 to 2007, antidepressants had the lowest increase and antiretrovirals the highest. Regarding ingredient cost payment per beneficiary, antiretrovirals had the highest increase from 2006 to 2007 at 17.6% while immunosuppressants decreased by –0.2%. **CONCLUSIONS:** Between 2006 and 2007, beneficiary utilization based on number of users per protected class increased for all classes except for immunosuppressants. Aggregate ingredient cost payments increased for all six protected classes. Based on ingredient cost payments per beneficiary, the immunosuppressant class was the only protected class showing a slight decrease; all other classes showed an increase.

PHP26

THE IMPACT OF MISUSE OF ANTIBIOTIC THERAPIES ON INPATIENT COSTS

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OBJECTIVES: In the 1980s, China launched market-oriented reforms. Public hospitals were encouraged to make their own incomes with the aim of mobilizing medical workers and improving hospital efficiency. Less government funding resulted in deficits for public health institutions, which forced hospitals to generate their own revenue by aggressively selling drugs, especially antibiotics. To stem the tide of rising public complaints about high medical costs, the NDRC has capped the cost of hundreds of drugs over the years. However, critics argue the price cuts have not been the cure since drug manufacturers often change the name and packaging of their drugs to escape price controls. Some hospitals and clinics have also turned a blind eye to government price caps and refuse to prescribe lower priced alternative drugs. This study was designed to evaluate the impact of inappropriate antibiotic use on inpatients' cost during the hospital stay. **METHODS:** One thousand cases with antibiotic treatment from 10 hospitals of 5 provinces in China in 2005. We created multivariate linear regression model for hospital cost and logistic regression model for rationality evaluation of antibiotic use. **RESULTS:** We collected 964 valid cases. Rate of inappropriate antibiotic use was 58.4%. Costs of inpatients with inappropriate antibiotic use was as 2.75 times as the ones with appropriate use ($P < 0.001$). Risk factors included antibiotic prophylaxis (OR = 2.929), operations (OR = 2.44), long hospital stay (OR = 1.021 for every prolonged day) and regional factors. Protection factor was in tertiary hospital (OR = 0.510). **CONCLUSIONS:** Inappropriate antibiotic use contributes to inpatients' high cost. Efforts to control misuse of antibiotic should be pursued.

PHP27

TRENDS IN EMERGENCY DEPARTMENT VISITS DUE TO OPIOID ABUSE IN THE UNITED STATES, 1996–2007

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OBJECTIVES: To study the trends in emergency department (ED) visits due to opioid abuse from 1996 to 2007 in United States. **METHODS:** ED visits attributable to opioid abuse were identified using diagnosis codes (ICD-9-CM codes: 304.0, 304.7, 305.5 and 965.0) from the National Hospital Ambulatory Medical Care Survey. Annual rate of ED visits for opioid abuse per 1000 people was estimated. To increase estimation precision, data from two consecutive years were pooled. Bivariate analysis and logistic regression were performed to examine the associations of patient demographic characteristics to ED visits for opioid abuse. Data were analyzed using STATA 9.2 accounting for complex survey design. **RESULTS:** Of the total 1,289,529,680 estimated ED visits made during the 12-year period, 1,633,224 (0.13%) were attributable to opioid abuse. ED visits for opioid abuse increased from 70,748 visits per year (0.08%) in 1996–1997 to 208,378 (0.18%) in 2006–2007. The annual rate of ED visit for opioid abuse per 1000 people increased from 0.26 in 1996–1997 to 0.70 in 2006–2007, with an estimated 8% annual increase ($p < 0.001$). Children and elderly were less likely to have an ED visit for opioid abuse compared to nonelderly adults aged 34–64(AOR 0.075, 95% CI 0.042–0.134; AOR 0.067, 95% CI 0.026–0.173 respectively). Females were less likely to have an ED visit for opioid abuse than males (AOR 0.555, 95% CI 0.443–0.695).Compared to the West, people in the South and Midwest were less likely to have an ED visit for opioid abuse (AOR 0.447, 95% CI 0.313–0.638; AOR 0.517, 95% CI 0.334–0.799 respectively). Risks of ED visits for opioid abuse more than doubled in years 2002–2003 and 2006–2007 (AOR 2.286, 95% CI 1.420–3.679; AOR 2.329, 95% CI 1.473–3.682 respectively) compared to 1996–1997. **CONCLUSIONS:** The number and rate of ED visits for opioid abuse increased over time with the highest in 2006–2007.

PHP28

EPISODES OF CARE AND INPATIENT MORTALITY FOLLOWING POISONINGS FROM OVER-THE-COUNTER MEDICATIONS IN THE UNITED STATES

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OBJECTIVES: To assess and describe episodes of care and inpatient mortality following poisonings from over-the-counter (OTC) medications that resulted in hospital inpatient admissions in the United States from 2002–2006. **METHODS:** This retrospective study used the nationally-representative sample of hospital discharge records from the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost Utilization Project (HCUP) Nationwide Inpatient Sample. Cases with any ICD-9 diagnoses related to poisoning from OTC medications (e.g., codes 965.4, E850.3, E945.4) were included for analysis. Descriptive approaches and logistic regression were used to assess patient and hospital characteristics, costs, patterns of care and utilization, potential disparities of care, and inpatient mortality rates. **RESULTS:** A total of 360,636 inpatient admissions associated with poisonings from OTC medications occurred from 2002 through 2006. Cases averaged 43.4 ± 20.0 years of age, 3.5 ± 4.6 days length of stay, and $14,808 ± 24,868 in charges. Further, 1.3% of cases resulted in patient mortality, which averaged 55.3 ± 19.5 years of age, 5.7 ± 9.1 days length of stay, and $44,904 ± 64,738 in charges. The national bill associated with OTC poisonings totaled $5.25 billion across the 5 years. Increased odds of inpatient mortality were associated ($p \leq 0.05$) with patient age, total charges, number of comorbidities, patients who self-pay, the regional location of hospitals in the United States, and increased case-mix severities. Conversely, decreased odds of inpatient mortality were associated ($p \leq 0.05$) with shorter lengths of stay, bed-sizes of hospitals, hospitals in urban settings, and teaching hospitals. **CONCLUSIONS:** Inpatient hospitalizations associated with poisonings from OTC medications accounts for a substantial burden of illness often exceeding 50,000 cases per year and summing to $5.25 billion over five years. Despite a small percentage of inpatient mortality, further research is needed on the costs and outcomes following discharge, as well as those treated and released solely in emergency departments, and OTC poisonings among children.

PHP29

SPATIAL DEPENDENCE (OR CLUSTER) IN TOTAL NUMBER OF PRESCRIPTION DRUGS FILLED AT RETAIL PHARMACIES IN US

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OBJECTIVES: To examines the presence of spatial clusters across states in total number of prescription drugs filled at retail pharmacies in US **METHODS:** Using data on total number of prescription drugs filled at retail pharmacies by each state in US from Vector One and National by Verispan, L.L.C in 2008, Moran's I statistic for global spatial dependence (i.e. cluster) was used to identify if clusters existed. In Moran's I, weight matrix to define neighbors was utilized using Rook 1st order contiguity weight, Queen 1st order contiguity and 4-nearest neighbors. Permutations using 999 repetitions was used to calculate p-values in each weight matrix. **RESULTS:** Significant positive global spatial autocorrelation in total number of prescription drugs filled at retail pharmacies was found regardless of any weight matrix. Moran's I using Rook weight was 0.259 and p-value was 0.003. Moran's I using Queen weight and 4-nearest neighbors were 0.263 (p-value = 0.002) and 0.412 (p-value = 0.001), respectively. **CONCLUSIONS:** Findings showed that clusters or non-randomness in total number of prescription drugs filled at retail pharmacies existed. Non-randomness implies two things. In statistical analysis, this cluster effect should be considered. And, policy makers should consider clusters when they make a decision for health care distributions.