I^2=18%]. Having an end-of-life, hospice, or palliative care facility in the nursing home increased the likelihood of dying in a nursing home vs. hospital (OR 7.79 [2.22–27.31], 4 studies, I^2=98%). **CONCLUSIONS:** Availability of services influences the site of death. For patients preferring death at home, the presence of a multidisciplinary home care team is one of the factors that can support home death.

PHS22

EVALUATION OF THE RATIONAL USE OF MEDICINES IN RENAL IMPAIRED PATIENTS IN THE PUBLIC SECTOR HOSPITALS OF PUNJAB, PAKISTAN

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OBJECTIVES: This study was conducted to evaluate the appropriate use of medicines among the hospitalized patients with renal impairment. **METHODS:** *Study Design:*The study was a retrospective study in which medication charts (prescription and laboratory reports) of patients were used to evaluate appropriate use of medicines. *Setting:* Data was collected from nephrology departments of selected hospitals of Gujarat, Bahawalpur and Lahore. *Main outcome measure:* Percentage of prescriptions containing contraindicated drugs, percentage of prescriptions containing drugs prescribed without adjusting their doses, percentage of prescriptions containing drug-drug interactions and percentage of drugs prescribed without specifying any dose. **RESULTS:** About 500 prescriptions of patients (male and female) with moderate and severe renal impairment were collected and evaluated. According to this study, contraindicated drugs were observed in 30.8% prescriptions, drugs prescribed without dose adjustment were found in 51% prescriptions, drug-drug interactions were observed in 63.6% prescriptions and drugs prescribed without any specific dosage regimen in 4.8% prescriptions. At least one drug interaction was found in each prescription (median = 1, inter quartile range = 1-6). **CONCLUSIONS:** This study showed the negligence of health care providers especially physicians and nephrologists. The study provided evidence that either physicians do not take notice of patient's renal function while prescribing or are incompetent enough to take such measures. Interventions are required to improve the prescribing quality and prescribers' behaviors that will ultimately improve the quality of care.

PHS23

DATA SOURCES AND STRUCTURE FOR POST-LICENSURE RAPID IMMUNIZATION SAFETY MONITORING (PRISM)

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OBJECTIVES: The Post-Licensure Rapid Immunization Safety Monitoring (PRISM) program was created in response to the need of the U.S. Food and Drug Administration (FDA) to monitor the safety of H1N1influenza vaccine. Later PRISM was incorporated into the FDA's Mini-Sentinel Initiative to evaluate the safety of other vaccines. We describe the distributed data structure used in this system. **METHODS:** PRISM uses a distributed data method whereby claims data processed through 3 health insurance companies, "Data Partners," are organized into a standardized common data model (CDM). Data in this standard format are refreshed on a quarterly basis and stored by the Data Partners. Mini-Sentinel programs are run on these data to extract aggregate data for analysis. The data in the CDM are augmented by linking to eight state and city Immunization Information Systems (IIS) to obtain additional vaccine exposure data. **RESULTS:** The CDM includes 110 million lives, 2.6 billion dispensing, and 3.1 billion health care encounters from 2004-2012 from the three Data Partners, representing three major health insurance companies. The vaccine data from the state IIS improve the completeness of vaccine information for individuals. In 2012, unrestricted (including states even if they did not contribute data) analysis showed that IIS contributed an additional 5-9% of vaccine administration data. In the chart validation assessing the risk of intussusception following rotavirus vaccination, it was identified that 46% (124/267) of cases identified by the electronic algorithm were true intussusception cases. Reports on one vaccine safety assessment has been completed. **CONCLUSIONS:** Vaccines are an essential component to maintain public health. The benefits of the PRISM system include the large pooled population, enhanced ability to capture data from alternative sources, and ability to evaluate the potential risks of rare adverse events; the distributed data model ensures patient confidentiality. Validation by chart review adds precision to the evaluations.

HEALTH SERVICES – Cost Studies

PHS24

COMPARATIVE EFFECTIVENESS AND COSTS OF STRATEGIES TO IMPROVE FOLLOW-UP FOR DIABETIC EYE CARE VISITS

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OBJECTIVES: To compare effectiveness and costs of personal reminder approaches (mailed vs. phone) to improve dilated fundus examination (DFE) follow-up adherence in patients with diabetes. **METHODS:** In a prospective trial, 356 diabetics due for DFE were randomly assigned to usual care (UC; reference case), mailed intervention (MI), or telephone intervention (TI). UC (n=119) received a standard form letter. MI (n=117) received a personalized letter encouraging scheduling of eye examination with an educational brochure about diabetic eye disease. TI (n=120) received personal calls (up to 3 attempts) to schedule a follow-up with standard form letter. The primary outcome was DFE within 90 days of suggested return. Costs ($US 2013) included time costs (staff time in preparing letters, conducting calls, and documentation converted to dollars using wages + benefit costs), phone charges, supplies, and postage. Since TI dominated MI, univariate sensitivity analysis examined the impact of reducing phone costs. **RESULTS:** Participants were mostly female (66%) and African-American (70%) with a mean age of 61 years. TI were more likely to schedule DFE (65% vs. 42%; RR1.54; CI1.20-1.96; p<0.001) vs. UC. DFE within 90 days of suggested return in TI was also significantly higher than UC (51% vs. 36%, RR1.41; CI1.05-1.89; p=0.024). MI were slightly less likely to schedule DFE vs. UC (38% vs. 42%, RR0.90; CI0.66-1.22; p=NSS) and attend DFE (32% vs. 36%; RR0.90; CI 0.63-1.28; p=NSS). The total cost of TI was $603.98 or $5.03/participant and the cost/follow-up DFE was $26.05. Sensitivity analyses revealed that the cost/follow-up can be greatly reduced but remains additional vs. UC ($2.76 if $0.25/call, $11.13 if $1/call; $22.29 if $2/call). **CONCLUSIONS:** Personal phone assistance in scheduling DFE follow-up assistance is more effective but also more costly. Follow-up research has been initiated to determine whether automated phone reminders can achieve similar effectiveness at a lower cost.

PHS25

ECONOMIC BURDEN OF CUSHING DISEASE IN A LARGE UNITED STATES MANAGED CARE HEALTH PLAN

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OBJECTIVES: Compare health care resource utilization and costs of Cushing disease (CD) cases to CD-free controls. **METHODS:** A retrospective matched-cohort study design was used to analyze the administrative claims of commercial health plan enrollees with evidence of CD from 2007-2011. CD cases were matched 1:3 to CD-free controls by age, sex, region, and index year. CD cases were identified using a Cushing syndrome diagnosis code (ICD-9: 255.0) and codes for a CD-related diagnosis or procedure (e.g., pituitary neoplasm or hypophysectomy). CD cases were observed for ≥6 months after their first CD-related claim. Controls were observed starting in the same index year. Per-patient-per-month (PPPM) counts and costs of all-cause health care resource utilization were compared descriptively. Costs were CPI-adjusted to 2011 dollars and included health plan- and patient-paid amounts. **RESULTS:** Among the 885 selected CD cases and 2,655 matched controls, the mean (SD) age was 42 (14) years and 75% were female. Median follow-up was 2.4 years for cases and 1.5 years for controls. Compared to controls, cases had a higher proportion of inpatient admissions (50% vs. 11%; p<0.001), emergency department visits (61% vs. 20%; p<0.001), and outpatient visits (95% vs. 63%; p<0.001). Average monthly counts of utilization for cases were 2-4 times higher than controls: ambulatory visits (2.5 vs. 0.9; p<0.001), ED visits (0.1 vs. 0.04; p<0.001), and inpatient admissions (0.03 vs. 0.01; p<0.001). Average PPPM total all-cause costs were also higher for cases than controls ($3,224 vs. $486; p<0.001), and were largely driven by medical costs ($2,790 vs. $382; p<0.001). Average PPPM pharmacy costs were 4 times higher for cases than controls ($434 vs. $104; p<0.001). **CONCLUSIONS:** In this study, high health care resource utilization and costs were identified for CD cases compared to CD-free controls. In addition to CD treatment costs, differences included the costs of diagnosing and treating the multiple comorbidities often observed in CD patients.

PHS26

DIRECT INPATIENT AND OUTPATIENT COSTS RELATED WITH COPD EXACERBATIONS IN UKRAINE

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OBJECTIVES: In Ukraine COPD is significant medical and socio-economic problem. The aim of this study was to assess and compare the 2013 annual exacerbation-related direct costs in COPD stages subpopulations. **METHODS:** Costs were assessed with State Budget perspective. Inpatient costs included service costs and costs for diagnostic procedures. Outpatient costs included physician visits and spirometry costs. Epidemiological and cost data were obtained from the appropriate 2012-2020 model. Data about the proportions of I-IV COPD were obtained from Ukrainian study: I, II, III and IV was 20%, 44%, 29% and 7%, respectively. Data about annual exacerbations and hospitalizations rates were obtained from GOLD 2013: I: no data; II:0.7-0.9 and 0.11-0.2; III:1.1-1.3 and 0.25-0.3; VI:1.2-2.0 and 0.4-0.54, respectively. We made an assumption that the annual number of exacerbation led to outpatient visits was the difference between total exacerbations rate and hospitalization rate (2 outpatient visits per exacerbation). Costs were considered in minimal and maximal exacerbation rates scenarios and were calculated per subpopulation and per patient. 11% inflation rate, 17.6% social-tax and 17% VAT were applied. Exchange rate 1USD=7.99UAH on 30.12.2013. **RESULTS:** In 2013 number of COPD patients in Ukraine was 581,598. Number of patients with I, II, III and IV stages could amount 116,320; 255,903; 168,663 and 40,712, respectively. Minimal-maximal annual inpatient costs in II, III and IV COPD subpopulations could amount $6,310,192.66-$11,473,077.56 ($25.00-$45.00 per patient), $9,452,232.30-$11,342,678.76 ($56.04-$67.25 per patient) and $3,650,538.95-$4,928,227.58 ($90.00-$121.00 per patient), respectively. Minimal-maximal annual outpatient costs in II, III and IV subpopulations could amount $859,721.71-$1,355,712.42 ($3.36-$5.30 per patient), $1,253,374.56-$1,645,054.12 ($7.43-$9.75 per patient) and $889,441.63-$2,156,222.13 ($21.85-$52.96 per patient), respectively. **CONCLUSIONS:** Total direct costs were largest in COPD III patients, but per-patient direct costs were largest in COPD IV. So, in case of COPD-related costs assessment the stratification of patients by airflow limitation and exacerbations rates should be taken in account.

PHS27

ESTIMATING THE COST OF TREATING HYPOGLYCEMC EVENTS IN THE MEXICAN PUBLIC HEALTH CARE SYSTEM

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OBJECTIVES: Estimate the cost of treating hypoglycemic events in patients with type 2 diabetes mellitus (DM2), in the Mexican public health care system using data from two databases and to compare these costs according to hypoglycemic event severity. **METHODS:** A Cost Analysis was developed to estimate the economic impact of treating hypoglycemic events. Definition of hypoglycemia was according with the published by Jonsson and colleagues[1]: Mild, Moderate and Severe. The use of resources was validated with an expert panel of specialists from the public health system. Only direct costs were used in this analysis. Estimates were obtained from