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OBJECTIVES: Uganda has a high population growth rate (3.2%) and a high fertility rate (6.2 children per woman), primarily due to the low prevalence of modern contraceptive use. We examined factors associated with contraceptive use and the choice of contraceptive methods by Ugandan women of reproductive age. **METHODS:** We obtained demographic, socioeconomic and contraceptive use data on women aged 15-49 years from the Uganda Demographic Health Survey (UDHS) 2011. We performed descriptive analyses to examine the frequency of use and contraceptive choice. We fit exploratory binary and multinomial logit models to examine demographic and socioeconomic factors associated with contraceptive use and choice of contraceptive. **RESULTS:** Our analysis included 8647 women with data on contraceptive use. 22.87% reported current use of contraceptives. The most commonly used methods were injections (44.25%) and condoms (14.72%). In the logit model, higher odds of contraceptive use was associated with higher age (OR 1.38 95% CI: 1.29, 1.49), being in a higher wealth quintile (OR 1.27, 95% CI: 1.21, 1.34), higher level of education (OR 1.28, 95% CI: 1.20, 1.37) and employment (OR 1.46, 95% CI: 1.28, 1.65). Women who desired more than 8 children had lower odds (OR 0.58, 95% CI: 0.46, 0.73) of using contraceptives. The reference outcome group in the multinomial logit model was "*not using any contraception*". Age, employment status, level of education, wealth quintile, region of country, number of children and desire for more children as important determinants of choice of contraceptive. However the effects differed according to the choice of contraceptive. **CONCLUSIONS:** Our study shows that the prevalence of contraceptive use is very low in Uganda and identifies some determinants of contraceptive use and method choice. There is need to focus reproductive health research towards identifying contraceptive characteristics that may influence choice in order to design more holistic contraceptive policy.

PHS17

LONGITUDINAL ANALYSIS OF DENGUE FEVER INFECTIONS REPORTED IN THE UK BETWEN 2002 – 2013 USING THE HEALTH IMPROVEMENT NETWORK (THIN) PRIMARY CARE DATABASE

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OBJECTIVES: In the UK, dengue fever is a travel associated viral infection which is endemic in over 110 countries and is transmitted through a mosquito vector. Infection may develop into severe dengue which can lead to death. There is currently no licensed immunisation to protect against infection, although vaccines are in development. In 2009 the Health Protection Agency in England commenced monitoring the prevalence, so there is no longitudinal data on UK rates. This study describes the rates of infections by year and the population characteristics of those acquiring dengue fever recorded in a primary care database. **METHODS:** The THIN primary care database contains 12 million patients with 3.8 million active patients in 2012. An observational, retrospective study was conducted from 1/1/2002 – 31/12/2012. All patients with a coded diagnosis of dengue fever in this period were included. The variables were: age, gender, ethnicity, social deprivation score and month of diagnosis. **RESULTS:** The annual rates of dengue fever pmp in THIN from 2002 – 2013 were 4.0, 3.7, 7.9, 5.3, 3.3, 6.5, 5.0, 1.9, 7.4, 5.8, 5.8 respectively. The 4 years of HPA data from 2009 to 2012 were very similar to THIN rates (2.9, 7.1, 3.9, 5.9). 58% of patients were males. The percentage by age bands 0 – 19, 20-39, 40 – 59, 60+ were 8%, 48%, 30%, 14% respectively. **CONCLUSIONS:** Between 2002 – 2013 there was year to year variability in dengue infection rates, although the UK travellers have seen no rise in rates of dengue fever during this period. The 4 years of HPA reported rates are very similar to THIN rates. Infection was reported more frequently in males, and almost half of infections occurred in the 20–39 year age group. This may just reflect their greater propensity to travel to affected destinations.

PHS18

ESTIMATING PUBLIC HEALTH AND MEDICAL DIRECT COST OF PNEUMOCOCCAL RELEVANT DISEASES FROM REAL WORLD DATABASE IN SHANGHAI, CHINA

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OBJECTIVES: To identify incidence and direct medical cost of patients diagnosed with all-cause pneumonia and acute otitis media through EMR database and health information database (HID) in Minhang district, Shanghai. **METHODS:** Cases were definite by ICD-10 code and identified for a two-year period, from Jan 1st of 2011 to Dec 31th of 2012 from EMR database. Relevant medical cost was collected from HID, ancillary cost data – such as costs of medical procedures, medications, and facility utilization was estimated through survey. These data were combined used unique patients identification number. Patients were classified into age groups and incidence and medical costs data were reported based on the age groups. **RESULTS:** The highest incidence of inpatient all-cause pneumonia was 795 episodes per 100,000 person-year in children under 2 years, it decreases as population ages but reverse the trend with patients age 50 and above. The second high incidence appeared in senior people aged 65 and above (249 per 100,000 person year). There was similar trend for outpatient all- cause pneumonia and Acute Otitis Media. The cost analysis indicated that the medical direct cost per case increases and population ages. The highest median cost (95% range) for hospitalization all-cause pneumonia was RMB 7,851.6 (1,903.7-47,607.4) Yuan for age 65 and older, and the lowest cost per case appeared in children under 2 years. Similar trend was also observed for the outpatient all-cause pneumonia costs and AOM costs. **CONCLUSIONS:** Outpatient all-cause pneumonia is a major public burden in current Chinese treatment pattern of pneumococcal relevant diseases, especially in children under 5 and senior people age 65 and above. In adults and senior people, the medical direct cost of all-cause pneumonia reaches 7,851 RMB per episode which accounts for 9.51% of 2011 Shanghai per person GDP and 22.32% of 2011China per person GDP.

PHS19

SOCIO-ECONOMIC FACTORS ASSOCIATED WITH CHOLERA OUTBREAK IN SOUTHERN GHANA, 2012: A CASE-CONTROL STUDY

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OBJECTIVES: Cholera, a key social development indicator remains an acute global public health threat (Dunkle ,2011 Penguele, 2011). Ghana has seen recurrent epidemics in recent years, posing health system challenge. This study aimed to describe, identify the cause and socio-economic factors associated with 2012 cholera outbreak in Osu-Klottey district for policy recommendations. **METHODS:** We conducted descriptive and unmatched case-control study. Cholera case-patient was person with acute diarrhea with/without vomiting in the district from 1st March to 30th November 2012. We interviewed participants on socio-economic, household hygiene, food, water exposures with structured questionnaires and mapped their residence geospatially. Data was managed and analyzed in Stata 11/SE. **RESULTS:** Index case, 23 year old male Nima resident reported at Ridge hospital on 9th March 2012 after eating street-vendors "Waakye". The outbreak caused by Vibrio cholerae O1 El-Tor biotype, serotype ogawa had two peaks with total of 494 cases with 3 mortalities (Attack rate; 383/100,000 populations, 0.61% fatality). Age ranged 2- 83; mean and median 31+/-14.4 and 27 years respectively. Majority of cases were from Ayawaso and Osu-Klottey. Prompt case management, infection prevention practices, contact tracing, sensitization campaigns and proper cadaver disposal were instituted. Monthly income, daily-food-expenditure ranged 10–500 USD and 0.50–25 USD respectively among participants. Logistic regression analysis (95% confidence interval) showed age below 18 years (AOR=7.69, CI 1.38-42.73), education below tertiary (AOR=2.96, CI 1.16-7.54), exclusive household toilet facility (AOR=0.289, CI 0.12-0.70), cold/warm food (AOR=3.11, CI 1.34-7.23), home food (AOR=0.083, CI 0.39-0.18) and community pipe-borne water (AOR=2.15, CI 1.04-4.44) were associated. Hand washing with soap-water, slum residence, and daily-food-expenditure below 5.0USD and alcohol ingestion showed significant association only with bivariate analysis. **CONCLUSIONS:** Sanitary reforms and infrastructural development is crucial to combat recurrence of cholera epidemic, however multi-sectorial approach including oral cholera vaccine for the under-18 year olds would make significant impact.

PHS20

ASSESSMENT OF DIABETES RISK FOR DETECTION OF TYPE 2 DIABETES MELLITUS IN YOUNG ADULTS

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OBJECTIVES: According to World Health Organisation , a disease of the middle-aged and elderly, type 2 diabetes has recently escalated in all age groups and is now being identified in younger and younger age groups, including adolescents and children, especially in high-risk population. This underscores the need for mass awareness and screening programmes to detect diabetes at an early stage and early age.So the purpose of the study is to find risk of type 2 diabetes mellitus mellitus in young adults at an early age. **METHODS:** 405 students of Bharati Vidyapeeth Deemed University Medical College were screened for family history of diabetes, exercise status and waist circumference. After scoring them they were categorised into mild, moderate and high risk group. **RESULTS:** We have assessed 405 students which includes 258 girls and 147 boys students till now. It was observed that 4% ,71% & 25 % students in high, Moderate & Low risk group respectively for developing type 2 D.M. Mean abdominal obesity in high risk students was 101.95± 5.76 as compared to 79.17 ± 11.08 in moderate and low risk students($p<0.0001$). Family history of diabetes in either or both parents was present in 21% students. 55% students were having sedentary lifestyle. **CONCLUSIONS:** This underscores the urgent need for further investigations to detect diabetes at an early stage and to overcome the disease burden of diabetes in future. This is the simplest way to screen large population. Also in students who are having score more than 50. To prevent and to postpone the risk of type 2 diabetes mellitus, health education programme, exercise and diet planning should be recommended for these students

PHS21

THE DETERMINANTS OF PLACE OF DEATH IN AN END-OF-LIFE OR PALLIATIVE CARE POPULATION

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OBJECTIVES: As part of a series of systematic reviews of end-of-life care interventions we sought to evaluate the determinants of place of death in an end-of-life population. **METHODS:** A systematic review of the literature was undertaken in order to identify randomized controlled trials, observational studies, or prior systematic reviews published between January 1, 2004, and September 24, 2013 evaluating the determinants of death in different locations (home, nursing home, and inpatient hospice). Determinants related to the illness, living arrangements, support to caregiver, hospital bed availability, home or palliative care, patient and family preference were evaluated. The adjusted odds ratios (ORs) and 95% confidence intervals (CIs) from multivariate analyses were extracted. Meta-analyses were performed when appropriate. **RESULTS:** Four systematic reviews and 32 observational studies were included, mostly retrospective cohort studies based on administrative databases. Three studies (9.4%) were from Canada, 6 (18.8%) from the United States, and 9 (28.1%) from Europe. Eight (25%) studies included patients receiving multidisciplinary home care, 11 (34.4%) were restricted to cancer patients. Factors increasing the likelihood of home vs. hospital death included multidisciplinary home care team (OR: 8.40 [95% CI: 4.67–15.09], 1 study), and home visits by family physicians in patients receiving home care (OR: 2.26 [1.35–3.78], 3 studies, I^2=22%). Admission to a hospital having a multidisciplinary palliative support team or hospice unit decreased the likelihood of home death (OR: 0.54 [0.33–0.89], 2 studies,

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 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