pneumococcal vaccination coverage and factors associated with receiving pneumococcal vaccination in U.S. adults with high-risk conditions encompassed by the ACIP recommendation. **METHODS:** This retrospective observational cohort study included commercially-insured adults aged 19-64 years with newly-diagnosed chronic medical conditions from 2007-2010. Outcomes of interest include pneumococcal vaccination coverage and time from initial diagnosis to pneumococcal vaccination. **RESULTS:** Among 300,556 U.S. adults with high-risk conditions, 30% had their condition diagnosed by primary care physicians. On average, these adults visited pharmacy, doctor's office, outpatient hospital, inpatient hospital and emergency department 38.3, 27.3, 6.6, 0.4, and 1.4 times, respectively, during an average 2.6 years of follow-up. Nevertheless, overall pneumococcal vaccination coverage was only 6.9%. Coverage was highest in patients with HIV (32.1%), followed by diabetes (11.2%), chronic lung disease (8.5%), asplenia (6.8%), chronic renal disease (5.9%), chronic heart disease (5.7%), cochlear implant (4.4%), cancer (4.2%), chronic liver disease (3.7%), alcoholism (2.5%), and transplant (2.0%). Among those who received pneumococcal vaccination, the majority was vaccinated in the physician's office (99%); average time from initial diagnosis to vaccination was 469 days, ranging from 198 days for HIV to 576 days for chronic liver disease. Multivariable logistic regression showed that adults who were older, initially diagnosed by primary care physicians, received influenza vaccination, had more conditions or more healthcare encounters were more likely to receive pneumococcal vaccination. **CONCLUSIONS:** Pneumococcal vaccination coverage in adults with high-risk conditions was far below the Healthy People 2020 objective. Findings suggest missed opportunities continue and better interventions needed to improve pneumococcal vaccination during healthcare encounters for this vulnerable population.

PIN106

DRIVERS AND BEHAVIORS OF ADULTS WHO RECEIVED VACCINATION AT DIFFERENT SETTINGS

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OBJECTIVES: Adults are increasingly receiving vaccinations outside of traditional doctor's office setting. This study aimed to examine, from the patient's perspective, drivers and behaviors of adult vaccinations across various settings. **METHODS:** A cross-sectional, self-administered, online survey was conducted in U.S. nationally representative adults aged at least 19 years who received either influenza, pneumococcal, or zoster vaccine within the past 6 months. The survey explored attitudes, preferences, and behaviors of adults vaccinated at various settings. Descriptive and bivariate analyses were applied to analyze patients' responses by each vaccine and setting. **RESULTS:** Among 1,178 qualified respondents, 46.0% were vaccinated at doctor's office, 37.1% at pharmacy, and the remaining at other clinical or community settings. Other than doctor's office or pharmacy, the most common alternative setting to receive vaccination was workplace for influenza vaccine (15.5%), and hospital/emergency room for pneumococcal (9.3%) and zoster (5.5%) vaccines. Adults were more likely to know about the vaccines offered at the doctor's office directly from physicians (68.6%), while the majority of adults knew about vaccines offered at the pharmacy from seeing signs in the pharmacy (37.8%). Consistent across all three vaccines, the main drivers for selecting vaccination settings were "This location accepts my insurance", followed by "This is a location I already visit for other reason" and "I was able to vaccinate without an appointment". The primary reason for choosing to vaccinate at the doctor's office was "This is a location I already visit for other reasons", for pharmacy was "The location accepts my insurance", and for other settings was "Lower out-of-pocket cost". Among all respondents, 17.7% received two or more vaccines concurrently, with convenience and healthcare provider recommendation reported as the main drivers. **CONCLUSIONS:** Findings suggest opportunities to improve adult vaccination at traditional and non-traditional settings, and highlight importance of healthcare provider recommendation in adult vaccination.

PIN107

PAST TRENDS AND CURRENT CHALLENGES IN THE HEPATITIS C REIMBURSEMENT LANDSCAPE: IS HISTORY REPEATING ITSELF?

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OBJECTIVES: In 2011, the introduction of boceprevir and telaprevir was hailed as a breakthrough in the hepatitis C (HCV) treatment paradigm, but these treatments were not widely adopted due to cost and safety concerns. 4 years on, the introduction of newer, more effective therapies (e.g. simeprevir and sofosbuvir) has re-revolutionized the HCV space. However, cost concerns continue to limit the number of patients being treated with new medicines. To inform future submissions, HCV reimbursement decisions across 5 HTA agencies were assessed and the underlying rationale examined. **METHODS:** NICE, SMC, PBAC, CADTH, and TLV were searched for guidance on HCV medicines between December 2010 and December 2014. Recommendations for and rationale behind each decision were extracted. **RESULTS:** Boceprevir and telaprevir had each been assessed 6 times across the different agencies including resubmissions: PBAC initially rejected both, then restricted both dependent on reduced price at resubmission; CADTH also restricted both dependent on reduced price. Submissions were accepted in-line with the label by the other agencies. Reasons for rejection/restriction of boceprevir and telaprevir included cost-effectiveness concerns, uncertain efficacy in some patient populations, and safety concerns. Simeprevir had been assessed 4 times with 1 in development: CADTH and TLV restricted simeprevir due to uncertainty over cost-effectiveness and efficacy in some genotypes; PBAC and SMC accepted simeprevir. Sofosbuvir had been assessed 4 times with 1 in development: PBAC rejected sofosbuvir due to unacceptable cost-effectiveness and high budget impact; CADTH and TLV restricted sofosbuvir dependent on reduced price; SMC accepted sofosbuvir. **CONCLUSIONS:** Despite higher cure rates achieved with newer treatment options, cost-effectiveness concerns remain the primary reason for rejection or restriction of HCV therapies by HTA agencies. Manufacturers should not assume that high clinical efficacy will equate to reimbursement and treatment uptake, as therapies must also convincingly demonstrate cost-effectiveness as well as justifying budget impact.

PIN108

ASSESSING KNOWLEDGE AND ATTITUDE ABOUT EBOLA IN THE US: A CROSS SECTIONAL SURVEY

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OBJECTIVES: The world's worst outbreak of Ebola occurred in 2014 with 21,296 cases and 8,429 deaths reported in total. The first case of Ebola was recorded on 30th September by Centers for Disease Control and Prevention (CDC) in the US. Pharmacists can play an important role in treating Ebola patients. The aim of this study is to assess knowledge and attitude about Ebola among U.S. pharmacy students. **METHODS:** This was a cross sectional survey study. An Ebola questionnaire was distributed among third year pharmacy students in a private university in the U.S. before and after delivering an educational Ebola seminar based on the CDC and World Health Organization Ebola fact sheet N103. The questionnaire comprised of 33 questions was divided into three components: demographics (3), Ebola knowledge (25) and attitude about Ebola (5). Paired t test and McNemar test were employed using SPSS version 21. **RESULTS:** A total of 103 pharmacy students participated in the survey. The study population had a highly significant increase in Ebola related knowledge about species ($p<0.001$), incubation period ($p<0.001$), diagnosis ($p<0.001$), vaccination ($p<0.05$), treatment ($p<0.001$), complications ($p<0.001$) and immunity ($p<0.01$). Also, a significant number of study participants had a positive attitude about treating Ebola patients and believed that Ebola patients should be kept isolated ($p<0.05$) and communities should actively participate in preventing the spread of Ebola ($p<0.05$). **CONCLUSIONS:** Students, upon becoming PharmD professionals can apply the knowledge acquired through this study for effectively treating patients. Focused seminars are a valuable tool to improve student awareness of infectious disease.

PIN109

PROJECT SKANT - STUDY OF ANTIBIOTIC PRESCRIPTION IN COMMUNITY IN SLOVAKIA

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OBJECTIVES: Antibiotics in clinical practice in Slovakia are often indicated unnecessarily and without proper differential diagnosis that differentiate viral form bacterial etiologic agents. Due to the frequent indications of antibiotics in praxis are consumption trends increasing, there is greater financial burden an the health care as well as we can observe unjustified consumption. In consequence the resistance of microorganisms to antibiotics is increasing. **METHODS:** Our work aims to give an image of the current prescribing behaviour of physicians involved in the project SKANT – The School of Antibiotic Therapy. It evaluates trends in antibiotic prescription in the treatment of respiratory diseases, the etiology of infections, antibiotic administration merits focused on Slovakia during first quarter of 2013. Implementation by validate questionnaire study of prescribing in general practitioners for adults and general practitioners for children and adolescents in Slovakia. **RESULTS:** According to the evaluated data there is high consumption in the group of penicillins and macrolides. The unjustified prescription of macrolides 24.58% due to allergy of patients to penicillins 4.67%. In these respiratory diseases, antibiotics were most frequently indicated: Sinusitis acuta (79.47%), Tonsilopharyngitis acuta (69.78%), Bronchitis acuta and Tracheobronchitis acuta (68.80%) The use of microbiological and biochemical tests were observed in 26.5% of patients. In 73.5% not used any of these tests. **CONCLUSIONS:** Analysis of treatment with antimicrobial drugs for acute respiratory diseases confirmed the current trend of increasing prescription in Slovakia. Excessive consumption of antibiotics often leads to unwanted spread of antimicrobial resistance and the ineffectiveness of existing drugs to fight infections. The solution unfavorable situation is repeated audits of prescribing antimicrobial drugs. Based on the results of our study we suggest prepare educational training for laic and professional public.

PIN110

REAL-WORLD PRACTICE PATTERNS FOR THE TREATMENT OF COMPLICATED SKIN AND SKIN STRUCTURE INFECTIONS IN EUROPE: A RETROSPECTIVE DATABASE ANALYSIS

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OBJECTIVES: Skin and soft tissue infections (SSTI) are among the most common hospital infections, and represent a heterogeneous range of infection types with numerous treatment options. While recent research has begun to characterize treatment patterns and associated outcomes, little is known about country-specific practice patterns. The purpose of this analysis was to characterize current practice patterns in the treatment of SSTIs in select European countries. **METHODS:** A retrospective analysis was conducted using Arlington Medical Resources' (AMR's) Hospital Antibiotic Market audit January-June 2013. The audit is comprised of data elements including patient demographics, diagnosis, therapy sequence, switching, and concomitance, hospital and intensive care unit, length of stay, discharge drug, and drug costs. **RESULTS:** A sample of adult inpatients with SSTIs projected to national volume in Germany (n=427,516), United Kingdom (UK; n=292,265), Italy (n=199,588) and Spain (195,084) were included for analysis. Demographic characteristics were similar across countries; diabetes and heart disease were the most common comorbidities. Practice patterns varied considerably; the most common first-line treatment was ampicillin/sulbactam (22.1%) in Germany, flucloxacillin (31.9%) in UK, ceftriaxone (10.7%) in Italy, and amoxicillin/clavulanate (21.2%) in Spain. MRSA rates across all SSTIs were 3.5%, 4.9%, 3.3%, and 3.4% in Germany, UK,

Italy, and Spain, respectively. Empiric treatment with MRSA-active agents was less common, with teicoplanin (7.8% in Italy), clindamycin (5.9% in Spain) and vancomycin (5.8% in Spain) among the most commonly used agents. 38.5%, 71.0%, 48.0%, and 52.3% of patients were discharged onto continued treatment in Germany, UK, Italy, and Spain, respectively. Treatment switching was frequent across countries. **CONCLUSIONS:** Treatment of SSTIs is heterogeneous across European countries; further research is needed to understand the association between empiric treatment, treatment switching, and patient outcomes. This analysis, however, highlights the potential need for reassessment of treatment guidelines for SSTI and the potential need for new SSTI treatments.

PIN111

HIV TREATMENT STRATEGIES IN EUROPE (EU): ADOPTION OF SINGLE TABLET REGIMEN (STR)

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OBJECTIVES: Once-daily STRs have become an increasingly popular choice for both newly initiating and treatment experienced patients to improve patient adherence and achieve optimal outcomes. This study examines how STR prescribing trends have evolved in key EU countries (France, Germany, Italy, Spain and the UK) and provides insight into physician motivation to switch from conventional anti-retroviral (ARVs) regimen dosing to STRs. **METHODS:** Multi-wave retrospective medical chart reviews of HIV patients have been conducted in big-5-EU since 2005 to study patients initiating or switching ARVs during each quarter (Q) of the year. Physicians were recruited from a large panel to be geographically representative; they abstracted patient demographic, disease, and treatment data for next few consecutive HIV patients they encountered within a defined time period. This analysis focuses on STR prescribing trends between 1Q2009 and 4Q2014. **RESULTS:** Over 200 physicians abstracted 3132 and 3045 patient charts in 1Q2009 and 4Q2014 respectively. STR use increased in EU from 17% (France:0.5%, Germany:12%, Italy:16%, Spain:29%, UK:29%) in 1Q2009 to 51% in 4Q2014 (France:50%, Germany:67%, Italy:41%, Spain:51%, UK:46%). The top reason for switching from conventional ARV dosing to an STR across big-5 EU in 1Q2009 was simplification (72%), followed by tolerability (14%), and patient decision (12%). Importance of tolerability (19%) increased over the past 5 years in the decision to switch, while simplification (64%) decreased; patient decision increased slightly (18%). **CONCLUSIONS:** STR adoption in the big-5 EU countries studied increased rapidly, with Germany and France having the largest increases from 1Q2009 to 4Q2014. There was a marked change in impetus to switch to STRs from simplification alone to an increasing focus on tolerability. These observed trends may emphasize the importance HIV providers give towards maintaining HIV patients on a simple and yet tolerable regimen to achieve optimal adherence and clinical outcomes over the longer term.

PIN112

REAL-WORLD PRESCRIBING PATTERNS FOR THE TREATMENT OF ACUTE BACTERIAL SKIN AND SKIN STRUCTURE INFECTIONS IN THE UNITED STATES: A RETROSPECTIVE DATABASE ANALYSIS

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OBJECTIVES: Acute bacterial skin and skin structure infections (ABSSSI) are among the most common infections treated in the hospital setting, and analysis of hospital claims indicate that approximately 74% of ABSSSI hospitalizations involve empiric treatment with methicillin-resistant Staphylococcus aureus(MRSA)-active antibiotics. Many patients continue treatment post-hospital discharge; little is known, however, about real-world prescribing patterns. The purpose of this analysis was to characterize current prescribing patterns at hospital discharge in the United States (US). **METHODS:** A retrospective analysis was conducted using Arlington Medical Resources' (AMR's) Hospital Antibiotic Market audit, January-June 2011. The audit is comprised of data elements including patient demographics, diagnosis, therapy sequence, switching, and concomitance, hospital and intensive care unit (ICU) length of stay (LOS), discharge drug, and drug costs. **RESULTS:** A sample of 781,331 adult hospitalized patients with ABSSSI who received MRSA-active IV antibiotics, projected to national volume, were included for analysis. Vancomycin was the most commonly prescribed MRSA-active antibiotic, administered to 57.07% of patients at any time during hospitalization. Linezolid IV (3.84%), tigecycline (2.88%), and daptomycin (1.92%) were used less frequently. Approximately 31% of patients were discharged with an order for MRSA-active IV antibiotics. Vancomycin was the most commonly prescribed IV antibiotic at discharge, prescribed to 24.83% of patients. Daptomycin was the next most commonly prescribed IV drug at discharge (3.71%). All other IV antibiotics were prescribed in <1% of patients. Many patients were prescribed oral antibiotics at discharge, and may have been prescribed more than one drug. Cephalexin (33.99%), TMP-SMZ (17.22%), clindamycin (11.08%), and linezolid (9.45%) were the most commonly prescribed oral antibiotics at hospital discharge. **CONCLUSIONS:** Approximately 40% of ABSSSI patients are discharged on a MRSA-active antibiotic. MRSA-active antibiotics that do not require multiple days of ambulatory treatment following hospitalization have the potential to reduce resource utilization associated with continued outpatient treatment.

PIN113

CONCERNS ON WHO GUIDELINES OF TREATING AND PREVENTING HIV INFECTION

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OBJECTIVES: To conduct an assessment of the quality of "Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Recommendations for a public health approach June 2013" by World Health Organization (WHO). **METHODS:** Quality assessment of guideline using AGREE II instrument in relation to 6 domains proposed. Literature review of diagnosis criteria and when to start antiretroviral therapy according to recommended guidelines in people living with HIV, following search criteria in the WHO document. **RESULTS:** We established methodological deficiencies in domains 3, 5 and 6 of AGREE II in the guideline quality assessment. On Domain 3 "Rigour of Development" , despite the systematic literature review and quality assessment of the evidence reported, recommendations are based on low and very low quality information, according to GRADE. It means that the recommendations could have a high level of uncertainty in the estimation of long term toxicity of first line regimes as well as when to start therapy. In Domain 5 "Applicability" we found a limitation since the local context on availability of resources, the cost of products and other restrictions were practically ignored. States should be obliged to conduct this analysis before local adoption with implications of transferability and pertinence. Last, in Domain 6 "Editorial Independence" we found the most worrisome issue. The 41% of Guideline Development Group members and 25% peer reviewers disclaimed membership of pharmaceutical industry or other advisory panels, have receipt consulting fees or declared financial support through grants for research. Nevertheless, WHO considered this conflict of interest not relevant which decrease transparency and credibility of recommendations. **CONCLUSIONS:** Guidelines from WHO constituted an important global reference, however the way that HIV guidelines were developed showed worrisome deficiencies in quality, transparency and transferability. Since the independence of WHO is a matter of global controversy, countries must conduct a revision before the adoption of guidelines.

RESEARCH POSTER PRESENTATIONS - SESSION V

HEALTH CARE TREATMENT STUDIES
HEALTH SERVICES – Clinical Outcomes Studies

PHS1

MEDICATION UTILIZATION IN INCIDENT ADVERSE DRUG REACTIONS OF CANCER CHEMOTHERAPY - A PHARMACIST PERSPECTIVE

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OBJECTIVES: To describe the occurrence rates and causality evidence of cancer medication–associated adverse drug reactions (ADRs) and to evaluate Medication Utilization in managing the occurred ADRs. **METHODS:** The patient's data was collected using patient data collection forms in inpatient Radiotherapy department. The ADR assessment is done by using WHO causality assessment scale and Naranjo's causality assessment scale. **RESULTS:** In a total of 536 patients, 78% (n=418) experienced adverse drug reactions. Patients with single adverse drug reaction are 43% (n=178) of 418, whereas 23% (n=96) experienced two adverse drug reactions and 9% (n=38) were found to be experiencing more than 2 adverse drug reactions. Alopecia 95% (n=397), Nausea and vomiting 82% (n=343), myelosuppression 42.1% (n=176), Skin pigmentation 15.3% (n=64), itching 11.4% (n=48), Diarrhea 11% (n=46), mucositis 10.2% (n=43), Constipation 6.22% (n=26), cardiotoxicity 2% (n=8) are most commonly observed ADRs. The drugs and their proportions for management of chemotherapy induced adverse drug reactions include Filgrastim (100%), metachlopromide (87.0%), different antibiotics like Piperacillin+Tazobactum (77.8%), Ceftriaxone (73.3%), Ondansetron (70%) and Dulcolax (66.6%). **CONCLUSIONS:** Approximately 78% of patients taking chemotherapy experienced adverse drug reactions that are mostly managed by utilizing proper medications, which further elucidate the opportunity for clinical pharmacists to monitor and manage adverse drug reactions cautiously, thereby minimizing the after effects of chemotherapy and improving the patient's outcomes.

PHS2

SENTINEL SITE ACTIVE SURVEILLANCE OF THE SAFETY OF FIRST-LINE ANTIRETROVIRAL MEDICINES IN NAMIBIA

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OBJECTIVES: Active Surveillance (AS) pharmacovigilance systems better estimate the burden of adverse events (AEs) and generate information to allow for more efficient use of medicines. The objective of this activity was to implement an AS pilot program for first-line antiretroviral therapy (ART) medicines at 2 sentinel sites in Namibia. **METHODS:** The sentinel sites were Windhoek Central Hospital and Katutura Intermediate Hospital. Adults naïve to ART were enrolled, an AS Data Collection Form was developed and placed into the patient chart, and the doctor recorded ART and health information including actively recorded the presence or absence of AEs during each follow-up visit. We evaluated data quality by comparing data collected through AS forms to medical charts. We assessed incidence of AEs using a Cox proportional hazard model. **RESULTS:** A total of 413 eligible patients were included from August 2012 to April 2013. Demographic variables were completed on average 30% of the time and follow-up visits recorded for 82% of patients. Average age was 37 years; WHO Clinical Stage I for 51%; mean baseline CD4 count 216. Most common ART regimen was TDF/3TC/NVP. The incidence of experiencing at least one AE was 0.3/100 person-years. Most common AE was rash followed by abdominal pain. After adjustment for age, gender, WHO stage, and CD4 count, those on TDF/3TC/EFV had 17.6 times higher risk of experiencing at least one AE (p=0.002, 95% CI 2.8-111.8) compared to those on TDF/3TC/NVP, and those with WHO Stage 2 had 8.8 times higher risk (p=0.01, 95% CI 1.9-41.2) compared to those with WHO Stage 1 disease. **CONCLUSIONS:** ART regimen and WHO stage influence the risk of AEs in Namibia. The quality of data collected through active surveillance in a resource-limited setting was high. An economic evaluation is being undertaken to evaluate overall feasibility of scale-up of the AS system.