OBJECTIVES: To document the proportion of national healthcare expenditures (that is, healthcare across Western Europe and its evolution over the past years).

METHODS: Seven countries were selected: the 5 biggest countries in terms of population accounting for ≈317 million inhabitants in 2015 (Germany, England, France, Italy, and Spain) and 2 smaller countries from northern and southern Europe, Poland, and Spain. Increases ranged from 3%/year in France to 14%/year in Spain. Actual expenditures and population size were taken from the financial year 2010/2011 and for 2013. Results: Healthcare expenditures have increased in all countries but Spain. Increases ranged from +3%/year in France to +6%/year in England. In the meantime, despite heterogeneous available, vaccine spending was significantly lowered in Germany (9%/year from 2008 to 2013), Spain (-7%/year from 2008 to 2012) and France (-4%/year from 2008 to 2013). Only Sweden (SEK 1.72 Bn in 2013) had a decrease in spending of 3% from 2011 to 2013 and England (-1%/year from 2006/07 to 2010/11) have increased their spending on vaccines. The proportion of healthcare expenditures allocated to vaccines ranged from 0.45% in Germany (€ 0.82/182.7 Bn in 2013) down to 0.25% in Spain (€ 0.17/ 86.6 Bn in 2012) and Poland (€ 0.11/45.9 Bn in 2012). When available, OECD data showed similar proportions and evolution patterns in most cases.

CONCLUSIONS: Vaccination involves low levels of healthcare investments in Europe (<0.5%) compared to the far-reaching public health benefits it procures. We evidenced a net trend towards a decrease over the past years, except for Sweden and England. In the ever-constant budgetary context, vaccination budgets shall be preserved or even increased to sustain life-course approach of immunization at sufficient coverage rates.

PIN109
RELIABILITY OF MANUFACTURERS’ BUDGET IMPACT ESTIMATES FOR CHRONIC HCV GT1 DRUGS IN POLAND

Wnuczak T1, Jezierski S1, Tataro T2, Sliwczynski M1, Brzozowska M1

1Agency for Health Technology Assessment and Tariff System in Poland (AOTMiT), Warsaw, Poland, 2Medical University of Lodz, Lodz, Poland

OBJECTIVES: To compare the total value of payer’s expenses on Victrelis (boceprevir) and Incivo (telaprevir) in patients with chronic HCV GT1 estimated in the manufacturer’s Budget Impact Analysis (BIA) submitted with the reimbursement applications to AOTMiT and actual expenditures of the National Health Fund (NHF). METHODS: Annual public payer’s expenses estimated in manufacturers’ BIA for Incivo and actual expenditures reported by the NHF were compared.RSSs were not taken into account. Analysed drugs were chosen on the basis of the same indication and financing through the same therapeutic programme in Poland. Actual expenditures and population size were taken from the financial year 2010/11. From the first and second accrual data on 9 months for expenditures and 11 months for population size were extrapolated to one year) of reimbursement for each drug. RESULTS: For drugs Victrelis and Incivo in patients with chronic HCV genotypes 1 infections, the sum of total expenditures estimated in BIA’s submitted with the reimbursement applications were 145,38 million PLN in the first year and 164,49 million PLN in the second year, and they were higher than the actual expenditures reported by the NHF: 77,48 million PLN and 120,71 million PLN, respectively. Actual expenditures estimated in Manitoba by 14% in the first year of reimbursement and 36% in the second year of reimbursement. Population size estimated in BIA’s in comparison to its actual size from the NHF report was overestimated by 53% in the first year and 38% in the second year of reimbursement. CONCLUSIONS: In the case of drugs chosen for this analysis, total payer’s expenses estimated in BIA’s submitted with the reimbursement applications were overestimated in comparison to the real life expenditures of the NHF in Poland.

PIN110
THE COST OF VACCINATION THROUGHOUT LIFE: A PAN-EUROPEAN PERSPECTIVE

Cornier M1, Etschen O2, Baron-Papillon F1

1Hosp Purpan UMR CNRS 5538, Lyon, France, 2University of Liege, Liege, Belgium

OBJECTIVES: To assess the costs of vaccination throughout life for a fully immunized Western European citizen. METHODS: Vaccines recommended in the most recent National Vaccination Calendar (NVC) for Germany, England, France, Italy, Spain, Sweden and Portugal were used. The total vaccine cost was calculated by multiplying each vaccine price by the number of doses required. The number of visits was adjusted for possible co-administrations to better reflect local vaccination practices. All costs were calculated from the national healthcare perspective. In sensitivity analyses, vaccine costs were varied within a ±50% range to account for possible price variations due to competition, market type, size and vaccines lifecycle. Administration fees were increased by 30% hypothesizing that medical fees are unlikely to decline over time. RESULTS: Vaccinating an individual against up to 19 diseases throughout his entire life and in comparison to pediatric (0-24m) and children/adolescents (2-17y). In comparison, other mass vaccination interventions may be at least 3 times more costly. CONCLUSIONS: Vaccination requires a relatively low amount of money per individual knowing that some missed opportunities remain in senior vaccinations. A life-course approach of vaccination should be considered as a smart investment providing substantial benefit falling actually well beyond individual benefits and protecting whole population and economy against potentially troublesome and resource intensive outbreaks of infectious diseases.

PIN111
WILLINGNESS TO PAY FOR INNOVATIVE DRUGS: ANTI-HCV TREATMENT FROM THE ITALIAN NATIONAL PERSPECTIVE

Mennini FS1, Marcellini A2, Vitì R1, Andreoni M2

1Faculty of Economics, Centre for Economic and International Studies (CIEI): Economic Evaluation and HTA (CIEI-EHTA), University of Rome, Rome, Italy, 2University of Rome, Rome, Italy

OBJECTIVES: A new scenario of therapy for HCV infection is being established with the approval. The aim of this study is to evaluate the long-term health outcomes and the willingness to pay of new anti-HCV treatment from the Italian societal perspective. METHODS: A multistate model was developed to estimate the HCV-infection process in a theoretical cohort. The Markov process considered 12 health states (F0, F1, F2, F3, Compensated cirrhosis (F4), SVR, decompen- sated cirrhosis, LT, HCC, Transplantation (1 year), Transplantation (after 1 year), HCV-related death and death from other causes) and 42 transition probabilities. The model was informed with available data published in national and international literature. Effectiveness of new treatment strategies was estimated from the healthcare perspective using the key principles for the conduct of HTA (Drummond et al, 2008).

CONCLUSIONS: In conclusion, an important share of the cost per treated patient can be compensated by the reduction of direct and indirect costs guaranteed by the effectiveness of new treatments.

PIN112
ARE VACCINES GETTING A FAIR DEAL? HEALTH TECHNOLOGY ASSESSMENT OF VACCINES ACROSS EUROPE

Wei C1, Jarrett J2, Ovcinnikova O2, Bending MW, Magi, London

OBJECTIVES: While the practice of Health Technology Assessment (HTA) has been well established there is wide variation in the processes by which public reimburse- ment decisions for vaccines are made in comparison to medicines and devices. The study aims to compare the scores awarded to vaccines across Europe (UK, France, Germany, Italy, Spain), and to critically appraise the systems using the key principles for the conduct of HTA (Drummond et al, 2008). METHODS: A systematic review of economic modeling of vaccines, supplemented by a tar- geted review of key stakeholder websites across Europe for previous assessments of vaccines was conducted. A search of Medline, Embase, Econlit and NIHSSEN was conducted and abstracts were reviewed by two independent reviewers against pre- specified criteria for inclusion. Data from relevant articles was extracted and quality assessed. Country HTA websites were hand-searched. The evidence was synthesised to provide an overview of the strengths and weaknesses of the appraisal processes in each of the European countries and the extent to which the inherent difficulties in health economic modeling using standard HTA processes as the long-term impact of vaccines is unknown, leading to wide variation in assumptions and methods of extrapolation. The literature identified highlighted the inherent uncertainty surrounding the impact of vaccines on the cost-effectiveness. The review also highlighted the importance of budget impact of vaccines when making a decision. When compared to the key princi- ples of HTA, all countries failed to meet all of the criteria. CONCLUSIONS: The economic evaluations identified indicated that the cost-effectiveness of a vaccine was heavily dependent on the assumptions surrounding uptake and carriage. The review indicated that HTA decisions on vaccines are driven by cost-effectiveness and budget impact, which may lead to underestimating the potential clinical and public health benefits.

PIN113
NATIONAL SURVEY OF BEHAVIOR, ATTITUDES AND PRACTICE OF GENERAL PRACTITIONERS AND VARIOUS SPECIALISTS CONCERNING ANTIMICROBIAL USE AND RESISTANCE IN RESPIRATORY TRACT INFECTIONS

Rabeš1, Slezáková Z2, Sedláčková I3

1St. Elizabeth University of Health and Social Work, BRATISLAVA, Slovak Republic, 2Educational Institute for Health and Social Care, BRATISLAVA, Slovak Republic, 3University of Science and Technology, PRAGUE, Czech Republic

OBJECTIVES: We performed national survey of behavior, attitudes and practice of general practitioners (GP) and specialists (pediatricians, ENT, pulmonologists) at the 13.1.2015 in Slovakia concerning antimicrobial use and resistance in respiratory tract infections. METHODS: A 34-item iPad iOS survey was performed personally with each GP and specialist during 7 months period. RESULTS: The survey was completed by 575 GPs and spe- cialists and 908 patient charts. The highest rates of resistance in a patient with the area population higher than 5000 people (49,3% and 48,5%), but GPs served significantly more often in area with population less than 5000 people compared to specialists (P<0,001, CI 0,13 – 0,60). There was significantly higher number of GPs with a shorter than 1 year experience compared to specialists (P<0,001, CI 0,64). GPs used their own clinical experience in prescribing ATB more often to specialists (61,1% vs 43,4%, P<0,05, CI 0,51-0,77) and specialist used more often ATB susceptibility reports compared to GPs (18,4% vs 8,1%, P<0,01, CI 1,37-5,10) which corresponds with frequency of checking susceptibility reports on iPad basis.
in specialists compared to GPs (23.5% vs 14.0%, respectively, P < 0.04, CI 0.53-3.8). On contrary, more specialists chose to never discuss antibiotic treatment with patients compared to specialists (18.4% vs 5.9%, P < 0.01, CI 1.04-7.8). Patients' co-payment seems to be more sensitive in GPs compared to specialists. We obtained co-payment in all the time or most of the time when choosing ATB compared to specialists (18.4% vs 5.9%).

CONCLUSIONS: This survey revealed that both GPs and specialists are aware of the impact of antibiotic overuse and noncompliance differences between specialties with respect to antibiotic use and knowledge. Antimicrobial education is needed but may be more effective if it is tailored to specific specialties.

**PIN114 IDENTIFYING RESEARCH GAPS IN ANTIMICROBIAL RESISTANCE (AMR): LITERATURE REVIEW, POTENTIAL RESEARCH QUESTIONS AND STUDY DESIGNS**

Silviuras DR, Ledo AA, Kompinskas A1, 2Department of Health Policy, National Health Information Centre, Lithuania

OBJECTIVES: Generate research questions through studies published and financed by government or public research institutions as an important tool in management of the incidence of AMR. There are differences in the costs of AMR treatment and the treatment of patients with AMR, with some countries having more financial resources and no systematic communication from the laboratory. An audit was employed to explore different funding schemes, which include universal or partial vaccination coverage subsidized by the government. Results were presented as model cost-effectiveness ratios (ICERs) in Philippine pesos (PhP) per QALY gained (1 USD = 44.20 PhP).

**PIN115 ANALYSIS OF HIV – INFECTION IN KAZAKHSTAN**

Mauyenova D1, Karp L1, Turgambayeva A1, Kulov D2, Zhakipbekova V2, Rakhimzhanova F3

OBJECTIVES: This article describes the epidemiological features of spread of HIV infection in the Republic of Kazakhstan. We have examined gender-specific of HIV-infection in the Republic of Kazakhstan. As of December 31, 2013, 19 905 cases of HIV-infection have been registered in the country, 1933 persons of which were tested positive for AIDS, 1431 persons died.

METHODS: All the cases of HIV transmission in Kazakhstan for 26 years (1987-2013) have been analyzed. Statistical data was processed by means of BIOSTAT program. Extensive, crude, age indexes were calculated based on the general methods of health statistics.

RESULTS: The prevalence of HIV infection in women is 86.5/100,000, while the age group is people from 15 years old and older- 0.140/0000. Unequal distribution of the cases of HIV-infection on the territory of Kazakhstan is being observed. There is a need to return to the clinic. In addition all critical laboratory results were reviewed for treatment of PCV10, which is part of the WHO global plan.

**PIN116 MONITORING OF CRITICAL LABORATORY RESULTS TO IMPROVE QUALITY OF PATIENT CARE IN A LARGE URBAN CLINIC IN UGANDA**

Musomba R1, Castelnuevo B2, Nsambwa M3, Kalule F1, Rosalind Parkers-Ratamasho P1

1Infectious Diseases Institute, College of Health Sciences Makerere University, Kampala, Uganda, 2Infectious Diseases Institute, College of Health Sciences Makerere University, Kampala, Uganda

OBJECTIVES: Follow-up of critical laboratory results can present a challenge in resource limited settings due to high patient turnover, limited human resources and no systematic communication from the laboratory. A study was conducted in 2013 in a large outpatient HIV-center revealed that <50% of critical results were acted upon within 24 hours. Our objective is to describe the impact of the implemented guidelines on reducing mortality of patients with critical results.

METHODS: Results must be immediately communicated by the laboratory to a physician via an “on-call phone”, patients should be contacted and asked to return to the clinic. In addition all critical laboratory results were reviewed and tagged by Quality Management staff. Design: retrospective survey of all files of patients who had in 2014 at least one of the following: Hb < 5.5g/dl, creatinine > 3.4mg/dl, positive serum Cryptococcus-Antigen (CrAg). Clinician’s actions were categorized and described. Time window was determined as the time interval of mortality between 2013 and 2014 compared.

RESULTS: During 2014, 5974 patients had any laboratory test done. Hb < 5.5g/dl: 36(0.8%) patients. Action taken: blood transfusion 17/36 (47%), hematocrit increase 14/36 (39%) and 2/36(6%) were diagnosed with anaemia. Creatinine > 3.4mg/dl: 64/3291(1.9%) patients. Action taken: antiretroviral treatment regimen switched 43/64 (67%), 2/64 (3%) stopped, 12/64 (19%) referral to the renal unit. Positive serum-CrAg 17/464(3.7%). Action taken: 12/17(71%) started on Flucanazole, 5/17(29%) were already on treatment. Time window for Hb and serum crag was <1 day, creatinine 13.3 days. From 2013 and 2014 the mortality decreased in patients with Hb<5.5gd/l from 27.9 to 2.8%, with creatinine>3.4mg/dl from 29.0 to 10.7% and with positive CrAg from 24.3% to 23.5%.

CONCLUSIONS: Critical results monitoring system greatly improves patient time turnaround, and reduces mortality through timely communication and patients follow up. We believe our system could serve as a role model for similar programs in Sub-Saharan Africa to improve quality of care.

**PIN119 COST ANALYSIS OF TWO METHODS FOR IMPROVING THE QUALITY OF CARE (QOC) SCORES IN PAEDIATRIC HOSPITAL WARD DURING WINTER PERIODS**

Standaert B1, Li X1, Snows D2, Schercroun N1, Raes M1

1GSK Vaccines, Werel, Belgium, 2Realidad, Grimbergen, Belgium, 3Keytur Biopharma c/o GSK Vaccines, Waire, Belgium, 4Censa hospital, Hasselt, Belgium

OBJECTIVES: The primary care physicians (PCPs) play a key role in France in the prescription and administration of recommended vaccines. Unvein vaccination coverage in vulnerable populations appeals for specific interventions to be designed to address existing barriers faced by targeted groups of PCPs. The Objectives of this survey were to develop the scoring rules and the measurement properties of the PCP’s Engagement (DIVA) questionnaire.

METHODS: A cross-sectional study was conducted in France with PCPs to define the scoring of DIVA and to assess its measurement properties. PCPs had to complete the DIVA questionnaire to any of the nine vaccine-preventable diseases (VPD) not controlled by PCPs, with a maximum of 10. The PCPs who did not answer to any of the six vaccine-preventable diseases (VPD) they were randomized to any of the six VPD.

RESULTS: The number of PCPs was composed of 55 items, grouped into six thematic domains covering disease, vaccine, information, organization, consultation, and PCP experiences, and one domain assessing PCP’s engagement. The Engagement score showed very good internal consistency reliability across the six VPD (0.80; Cronbach’s alpha = 0.90). The Rasch model validated the number, content and modalities of items of the Engagement domain.

CONCLUSIONS: DIVA is a valid and reliable measure to assess PCPs’ engagement toward vaccination, as well as the specific barriers they face in various VPD. DIVA might help to define specific interventions aimed at improving PCPs vaccination activity, and can serve as an outcome measure to assess the impact of such interventions.

**PIN120 PNEUMOCOCCAL CONJUGATE VACCINES REPRESENT GOOD VALUE FOR MONEY IN A LOWER-MIDDLE INCOME COUNTRY? A COST-UTILITY ANALYSIS IN THE PHILIPPINES**

Hasia MA1, Ceria JA1, Kulpgen W2, Tewarattanawannayon Y3,Alejandra MM4

1Department of Health Philippines, Manila, Philippines, 2Ministry of Public Health Thailand, Bangkok, Thailand. 3University of the Philippines Manila, Manila, Philippines

OBJECTIVES: This study is a cost-utility analysis of pneumococcal conjugate vaccines as part of the immunization program in a lower-middle income country, the Philippines, which is not eligible for GAVI support and lacks resources. This also includes a cost-effectiveness time horizon analysis to examine the efficacy of PCV10, which is lacking in previous studies.

METHODS: A cost-utility analysis was conducted. A Markov simulation model was constructed to examine the costs and consequences of PCV10 and PCV13 against the current scenario of no PCV vaccination for a lifetime horizon. A health system perspective was employed to explore different funding schemes, which include universal or partial vaccination coverage subsidized by the government. Results were presented as incremental cost-effectiveness ratios (ICERs) in Philippine pesos (PhP) per QALY gained (1 USD = 44.20 PhP). Probabilistic sensitivity analysis was performed to determine the parameter uncertainty.

RESULTS: With universal vaccination coverage for PCV10 and PCV13 against nine serotypes of pneumococcal disease, QALY gains for PCV10 compared to no vaccination given the ceiling threshold of PhP 120,000 per QALY gained, yielding ICERs of PhP 68,182 and PhP 54,510 for PCV10 and PCV13, respectively. Partial vaccination of 25% of the birth cohort resulted in significantly high ICERs for both PCV10 and PCV13 due to patient costs and herd protection. The budget impact analysis reveals that universal vaccination would cost PhP 3.87 billion to 4.34 billion per annum, or 1.6 to 1.8 times the budget of the current program. The inclusion of PCV10 in the national immunization program is recommended. PCV13 achieved better value for money compared to PCV10. However, the affordability and sustainability of PCV implementation over the long-term should be considered by decision makers.