per 1 patient. 1. Flu patients at PCP, average number of visits/patient in 2009-2010 were 77.13; 95% CI. Differences were compared using the Fisher exact test. Total cost was 80,39 UAH per 1 patient (1 Euro = 10 UAH on 01.06.2011). 2. Flu patients in outpatient clinic during 2009/10 were registered 1682893 request for medical assistance about influenza and ARN. In the season 2010/11 – registered 1785102 who needed medical care (flu and influenza) total cost was 202,17 UAH. 3. Flu patients in hospital during 2009-2010 were hospitalized 41708 persons. Total cost of the disease was 728,85 UAH. 4. Flu patients in intensive care unit – the total cost of the disease was 2543,08 UAH. Thus, the list price of the product with the highest 2013 market share was 2984,00 UAH per 1 patient with 80,39 UAH at PCP Governmental program to prevent influenza by vaccination can reduce the cost of flu treating.

PIN47的成本与 Cirrhosis 由于 Hepatitis C virus (HCV) Infection

Baser O., Karibuoyo M F, Baser E, Altitnas A, Baser E T

**OBJECTIVES:** 3-11% of patients diagnosed with chronic hepatitis C virus (HCV) infection will develop liver cirrhosis within 20-30 years, with an associated risk of liver failure and hepatocellular carcinoma (HCC). Mortality, HCC rates and costs of HCV patients were compared among cirrhosis and non-cirrhosis patients in Turkey. METHODS: Using the Turkish National Health Insurance Database (2009-2011), HCV patients were identified using International Classification of Disease, 10th Revision, Clinical Modification codes. Propensity score matching (PSM) was applied to compare cirrhosis and non-cirrhosis cohorts. Baseline demographic and clinical factors were controlled in the models. RESULTS: A total of 12,990 patients, including 2,467 diagnosed with cirrhosis, were included in the study. 12.2% of the overall population was treated. Cirrhosis patients were older (61.56 vs. 51.10 years, p < 0.001), more likely to reside in the Black Sea region (26.96% vs. 23.77%, p<0.001) and had a higher liver function test index score (p < 0.001). In verticulat, these patients were more likely to be diagnosed with comorbidities such as biliary disease, hepatitis B, congestive heart disease, respiratory disease, hypertension and diabetes. After all baseline differences were controlled, patients diagnosed with cirrhosis had a higher mortality (23.87% vs. 5.14%, p<0.001) and HCC rates (8.10% vs. 1.05%, p<0.001). Disease-related costs were significantly higher ($2,354 vs. $1,996, p<0.001). CONCLUSIONS: Cirrhosis mortality, HCC rates and costs of cirrhosis among HCV patients are significantly higher in Turkey.

PIN48 WHAT ARE THE LIFECYCLE COSTS OF VACCINATING ONE INDIVIDUAL? THE FRATEGAIL CASE

Baron Papillon F, Cornier M, Remy V, Chrv E

**OBJECTIVES:** Although prevention accounts for a minor part of the health care spending (-3%) in Europe, preventative programs and particularly vaccinations are most vulnerable to budget cuts and restrictions as their benefits may not be immediately identifiable. Thus pan-European project aims at evaluating the lifecycle costs of vaccination as a tool that can be used in full compliance with the national recommendations. French results are presented below. METHODS: A calculation Excel model was developed and led with the most recent French specific data: 2014 vaccination calendar, cost of inpatient and outpatient health care, vaccine estimated price from the French Ministry of Health, and latest National vaccine prices. Sensitivity analysis and regression analysis are performed. RESULTS: Baseline analysis (12,000 vaccinations) shows that the price of the vaccine does not significantly affect the results. However, other inputs such as the vaccine efficacy and the rate of adverse events have a great impact on the analysis. Moreover, vaccinations that target a high volume could be cost-effective. CONCLUSIONS: These results highlight the value of vaccination in terms of health and economic benefits. Further research is needed to further validate the model and to consider other vaccinations.

PIN49 ECONOMIC BURDEN AND COMPLICATIONS OF HEPATITIS C VIRUS PATIENTS WITH CIRRHOSIS: A POPULATION-BASED RIBAVIRIN TREATMENT IN TURKEY

Baser O, Karibuoyo M F, Altitnas A, Baser E T

**OBJECTIVES:** To compare health care outcomes between hepatitis c virus (HCV) patients and non-HCV patients. Methods: A population-based observational study was conducted in 2009-2011, HCV patients were identified using International Classification of Disease, 10th Revision, Clinical Modification codes. The first prescription date was designated as the index date. Mortality and hepato-tumoral carcinoma (HCC) rates and health care costs of treated and untreated patients were compared using propensity score matching. Baseline demographic and clinical factors were controlled in the models. Subgroup analysis was conducted for patient groups with and without a cirrhosis diagnosis. RESULTS: A total of 12,990 patients, of whom 2,467 were diagnosed with cirrhosis, were included in the study. HCC rates were significantly lower (0.01% vs. 0.001%, p<0.001) and HCC care costs were not significantly lower for treated HCV patients. The differences were more significant among cirrhosis patients. Total risk-adjusted annual costs were significantly higher for treated patients ($16,172 vs. $1,680, p<0.001), mainly due to higher pharmaceutical costs ($9,418 vs. $5,833, p<0.001). CONCLUSIONS: HCC treatment, although costly, significantly reduces mortality and HCC rates in Turkey.

PIN50 RETURN ON INVESTMENT OF PREVENTIVELY VACCINATING HEALTH CARE WORKERS AGAINST PERTUSSIS: A DUTCH CASE STUDY

Taran L, Mengen MJF, Hovela A, Frijsten G, De Boer H

**METHODS:** For Pharmacists to prevent nosocomial pertussis outbreaks resulted in a cost-saving. In the hospital ward perspective, presuming an outbreak occurs once in 10 years. METHODS: Data on the pertussis outbreak on the neonatology ward in 2004 in the Academic Medical Center (the Netherlands) was used to calculate total costs of the outbreak. Mortality, HCC rates and other related outbreak costs. The study population was: neonatology ward staff members (n=133), parents (n=40), neonates (n=20), and newborns transferred to other hospitals as a part of the outbreak. Estimated savings due to reduced working force due to ward closure and presuming more than one outbreak to occur in 10 years’ time. CONCLUSIONS: From a hospital ward perspective, preventive vaccination of HCV against pertussis may be cost-effective with a return of 1.9 year. To evaluate the feasibility of implementing a program of pertussis vaccination in a hospital setting, a cost-benefit analysis was conducted.

PIN51 COST-BENEFIT ANALYSIS OF A TARGETED HOSPITAL WIDE PCR-BASED ADMISSION SCREENING FOR MRSA IN A GERMAN UNIVERSITY HOSPITAL – CONSIDERATION OF A SIX-YEAR TIME PERIOD

Witteveld A, Mumme J, Krom W, Krom W, Krom W, Krom W

**OBJECTIVES:** Meticillin-resistant Staphylococcus aureus (MRSA) infections cause heavy financial burden on health care systems worldwide. Hospital admission screening has been proven as an effective method to prevent nosocomial MRSA transmission. However, previous cost studies mostly refer to screening regimes for a limited area of hospitals (e. g. ICU) a limited period of intervention (~1 year) or rely on culture tests only. The aim of this study was to determine the long-term costs and benefits of a targeted hospital wide PCR-based admission screening for MRSA. METHODS: We performed a six-year (2008-2013) retrospective analysis of the step-wise implementation of a hospital-wide PCR-based admission screening of defined risk patients for MRSA in a 926-bed tertiary hospital. Screening costs include PCR-screening (screening rate 10.7-14.7%) and cultural test confirmation in case of a positive result as well as hygienic measures for pre-emptive isolation of all screened patients. The benefit is calculated based on prevented nosocomial MRSA infections (reference year 2007), assuming that 8,673 euros will be saved per case. RESULTS: During the study period, prevented nosocomial MRSA-infections resulted in total cost savings of at least 1,329,714 Euros. This is opposed by costs for targeted PCR-screening of 670,234 Euros and 441,448 Euros for pre-emptive isolation measures. The save/cost-ratios. Calculated with 1.196, the save/cost-ratio was calculated with 36,339 Euros per year. CONCLUSION: Our study shows the advantage of a PCR-based admission screening by a positive cost-saving-difference. Nevertheless, this advantage depends on cost drivers included in the analysis and the definition of risk that determines the usefulness of PCr-based screening. In a true image, the opportunity costs for reimbursement losses due to blocked beds during isolation as well as additional savings for prevented nosocomial MRSA-colonizations have to be taken into consideration.

PIN52 AN OBSERVATIONAL PROPENSITY SCORE-MATCHED STUDY TO EVALUATE COST-EFFECTIVENESS OF A REAL-TIME PCR-BASED ASSAY IN PATIENTS WITH SUSPECTED SEPSIS

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**DATA SOURCES:** Haematology, Turin, Italy. *Rtco Diagnostics, Monza, Italy. *Universita Vita e Salute, Milano, Italy.
OBJECTIVES: Although the real-time PCR-based assay SeptiFast® has proven its utility in clinical settings, limitations are still available in terms of economic performance. An Italian two-center observational study was conducted on hematological patients with signs of SIRS-SS (Systemic Inflammatory Response Syndrome with Suspected Sepsis) in order to partially fill this information gap. Differences between treated cases and untreated cases managed with the diagnostic procedure are compared to prospectively collected data of 137 episodes managed with the addition of PCR assay. Events were paired through propensity-score matching (PSM), based on a set of covariates identified by a backward selection algorithm, under two levels of tolerance for score difference: standard caliper (1) and a more restrictive threshold (0.05). SIRS-SS related mortality represents the primary clinical outcome, as secondary outcome, average LOS (Length Of SIRS-SS Episode) is considered. Costs, including diagnosis assays and pharmacological charges, were recorded and compared between cohorts. RESULTS: A total of 101 pairs of highly matched SIRS-SS episodes have been formed. Prospective cohort analysis reveals a more severe disease treated on a cost basis due to a more stringent matching condition (77 pairs), episodes experienced by prospective patients are associated to a significantly lower mortality (3.13% vs 14.71%). No significant differences in the average LOS are recorded. Traditional diagnostic costs are completely offset by the cost of the PCR assay. The greatest saving related to the use of PCR assay is linked to the hard reduction in the empirical therapy (488.44 per episode), main driver of the overall saving ($430.73 per episode), which results statistically significant. CONCLUSIONS: These findings suggest that the routine use of combined traditional and PCR diagnostic assays may conduct to an early saving of broad-spectrum antibiotics, money, and health.

PIN53
ESTIMATING OVERALL IMPACT OF HUMAN PAPILLOMAVIRUS VACCINATION ON CERVICAL CANCER BURDEN IN SPAIN AND PORTUGAL
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OBJECTIVES: HPV vaccination (HPV) prophylaxis provides primary prevention of HPV-related pre-cancers and cancers. AS04-adjuvanted HPV-16/18 vaccine (AS04v) has shown high efficacy (efficacy irrespective of the HPV type) in cervical high grade lesions (CIN2+, CIN3+). The objective of this study is to estimate overall cervical cancer (CC) burden in Spain and Portugal. METHODS: Potential decline in CC cases resulting from women vaccination with AS04v was estimated using a previously published model. Model output outcomes considered were estimated based on number of CC cases avoided with HPV specific incidence (HPV-16/18 cases and irrespective of HPV type). Vaccine effectiveness (VE, end-of-study analysis HPV-008 trial) against HPV-16/18 was set at 100% weighted with HPV-16/18 incidence reported in CC cases in Spain and Portugal. VE irrespective of HPV type was set at 93%. Vaccination coverage was varied from 0% to 100%. Incremental number of cases avoided HPV-16/18 related and irrespective of HPV type were calculated. Potential costs avoided were also estimated based on published lifetime CC costs. RESULTS: Through vaccination considering VE irrespective of type and 70% vaccination coverage, AS04v could avoid an additional 206 CC cases in Portugal and 626 CC cases in Spain compared with 412 and 1,009 cases, respectively, due to 16/18 HPV types. VE against non-vaccinated healthy employees, a 75% vaccination coverage and an average daily productivity was estimated. Estimated absolute costs are associated to a significantly lower mortality (3.13% vs 14.71%). No significant differences in the average LOS are recorded. Vaccination coverage could considerably contribute to reducing the burden of cervical cancer in Spain and Portugal. AS04v offers potential broad protection and could maximize disease burden reduction due to non-vaccine type VE.

PIN54
COST-EFFECTIVENESS ANALYSIS OF DOLUTEGRAVIR FOR HIV PATIENTS IN SLOVENIA
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OBJECTIVES: To analyze cost effectiveness of dolutegavir when compared to raltegravir in both treatment-naïve (TN) and treatment-experienced (TE) patients. In the model, individual patients were followed throughout their lifetime and transitioned through mutually exclusive health states with the probability of disease progression being continuously adjusted on individual patient characteristics and the occurrence of events such as virological failure, opportunistic infections and/or adverse events. We compared dolutegavir and raltegravir under a ‘price parity’ scenario. RESULTS: Our model has shown that more than 90% of lifetime treatment costs of HIV patients in Slovenia were due to time costs. Noteworthy, the effectiveness of dolutegavir compared to raltegravir in the treatment of patients with severe CDI, and patients with initial severe CDI recurrences, respectively. The patient enters the model in the CDI health state and is treated either with dolutegavir or raltegravir. Each treatment cycle was 1 year, total time horizon was one-year. Deterministic and probabilistic sensitivity analyses were performed. Health state utilities were derived from the literature. RESULTS: Dolutegavir was associated with an increased cost per patient in the severe CDI population ($56,489 to $97,045 for TVR and $61.9% and 55% for BOC. Total treatment costs ranged from $55,376 to $70,336 for SOF (non-cirrhotic and cirrhotic), $22,240 and $44,751 for PegIFN-α/3b, PegIFn-α/2b, telaprevir (TVR) +PegIFn-α/2b and boceprevir (BOC) +PegIFn-α/2b. Medical costs were set at 24% of total treatment costs. Sensitivity analysis showed robustness of findings in both groups of patients. CONCLUSIONS: Results of our study indicate that the introduction of new integrase inhibitor dolutegavir in Slovenia would not only reduce the costs but also improve health outcomes of HIV treatment in both TN and TE patients.

PIN55
A SUCCESSFUL TREATMENT OF PATIENT WITH SOFOSBUVIR IN GT1 HCV IN SLOVENIA
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OBJECTIVES: The GT1 HCV infection results in chronic liver disease. The prevalence in The Netherlands is estimated at 0.1-0.4% with 50% of patients having HCV genotype 1 (GT1). Sofosbuvir (SOF), a novel Direct Antiviral Agent (DAA), reached high rates of sustained virological response (SVR) when given with pegylated interferon-α and ribavirin (PegIFn-α/RBV) in chronic HCV (all genotypes). This study compares the costs successfully treated patient with sofosbuvir compared to current standard of care (SoC) in the Netherlands in treatment-naïve patients. METHODS: A Markov transition cost-utility model was performed, reflecting efficacy and safety data from published RCTs with SOF+PegIFn-α/RBV, PegIFn-α/2b, telaprevir (TVR)+PegIFn-α/2b and boceprevir (BOC)+PegIFn-α/2b. Medical costs were set at 24% of total treatment costs. Sensitivity analysis showed robustness of findings in both groups of patients. CONCLUSIONS: The costs per successfully treated patient with sofosbuvir are comparable to current standard of care in GT1 treatment-naïve patients without cirrhosis and are lower than SoC in cirrhotic patients in The Netherlands.

PIN56
PRODUCING PRODUCTIVITY WITH QUADRUVALENT INACTIVATED INFLUENZA VACCINE IN THE UK
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OBJECTIVES: This study assesses the costs are not targeted for influenza vaccination, leading to out-of-pocket expenses if they choose to be vaccinated. This can be a deterrent to vaccination coupled with a low concern for consequences of infection. However, despite a lower attack and complication rate than other age/risk groups, infection in healthy employees can result in important loss of productivity to employers. We estimated the benefits of vaccinating healthy employees with a quadrivalent inactivated influenza vaccine (QIV). METHODS: A decision tree model was developed to evaluate the cost of influenza vaccine for working adults in the UK versus no vaccination. Probabilities and costs were based on systematic reviews/meta-analyses and a 10-year history match/mismatch. Sensitivity analysis of uncertainty was conducted. RESULTS: The model estimated the total cost of vaccinating 1,500 employees would aver 159 cases of influenza, and 1,066 days of absenteeism, resulting in a productivity loss of £134,007 annually. Considering the vaccine and administration costs (£57,675) the employer would save £33,333. Relative to the number of employees an employee is absent due to a simple infection (no hospitalisation), the attack rate, and average productivity. In scenario analysis if the average productivity is set simply to the average wage, the employer would still save £9,328. CONCLUSIONS: Vaccination can be justified for by an employer for a small cost and the benefit was shown in results in at least 1.7 days of absenteeism for each case. A higher mortality rate (due to a more virulent strain, and/or inclusion of at risk adults) would introduce reduced productivity costs, thereby raising the cost saving to the employer if they under- take a vaccination program.

PIN57
COST-EFFECTIVENESS OF FIDAXOMICIN FOR THE TREATMENT OF CLOSTRIDIUM DIFFICILE INFECTION (CDI) IN SWEDEN
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OBJECTIVES: Fidaxomicin is the first in a new class of macrocyclic antibiotics, branded with Dificid® for the treatment of adults with Clostridium difficile infection (CDI) also known as C. difficile-associated diarrheae (CDAD). Two phase III comparative clinical studies showed that fidaxomicin was non-inferior to vancomycin for clinical cure, and superior for recurrence and sustained clinical cure. The study objective was to perform a cost-effectiveness analysis of fidaxomicin for the treatment of severe CDI and the first severe recurrence compared to oral vancomycin from a Swedish health care perspective. METHODS: A Markov model was developed to analyse the cost effectiveness of fidaxomicin compared to vancomycin in the treatment of patients with severe CDI, and patients with initial severe CDI recurrences, respectively. The patient enters the model in the CDI health state and is treated either with fidaxomicin or vancomycin. Each treatment cycle was 1 week, total time horizon was one-year. Deterministic and probabilistic sensitivity analyses were performed. Health state utilities were derived from the literature. RESULTS: Fidaxomicin was associated with an increased cost per patient in the severe CDI population ($56,489 to $97,045 for TVR and $61.9% and 55% for BOC. Total treatment costs ranged from $55,376 to $70,336 for SOF (non-cirrhotic and cirrhotic), $22,240 and $44,751 for PegIFn-α/3b, PegIFn-α/2b, telaprevir (TVR) +PegIFn-α/2b and boceprevir (BOC) +PegIFn-α/2b. Medical costs were set at 24% of total treatment costs. Sensitivity analysis showed robustness of findings in both groups of patients. The ICER was SEK 83,159 per QALY for severe CDI and dominant for patients with a severe CDI recurrence (ICER = SEK -91,738 per QALY). Sensitivity analyses found the results to be robust (1% EURO = 9.07 SEK). CONCLUSIONS: Fidaxomicin was cost-effective in severe CDI