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# PIN<sub>39</sub> WHEN A PROBIOTIC-BASED SANITIZING METHOD MAY HALVE HEALTHCARE-ASSOCIATED INFECTIONS AND REDUCE ASSOCIATED COSTS

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**Objectives:** The study assesses the global annual cost of people living with HIV (PLWHIV) in France in 2013 and affiliated to the general insurance scheme during 2008-2015. **Methods:** We performed a retrospective cohort study in the SNIIRAM database containing individualized data on all reimbursed health expenses for the French population. PLWHIV were identified by specific chronic diseases status and/or reimbursement of HIV laboratory tests and/or HIV-related hospitalizations and/or reimbursements of antiretroviral drugs in 2013. Each patient was followed two years after his inclusion. Hospital and outpatient costs were estimated and categorized in 13 subgroups: antiretroviral drugs, daily sick leave benefits, other drugs, paramedical visits, general practitioner visits, specialist visits, medical devices, transports, laboratory tests, other outpatient costs, hospital stays, hospital outpatient consultations and hospital at home. Costing was performed considering French official tariffs for 2013 and 2014 and expressed in 2019 euros. **Results:** A cohort of 96,423 PLWHIV was identified. Mean age was 47.5 years old ( $\pm 12$ ), 65% were men, and most frequent treatments outside HIV drugs were treatments for cardiovascular disease (20%), psychotropic treatments (16%) and liver disease (15%). The total annual cost of PLWHIV was calculated to €1.4 billion, split into antiretroviral drugs for 63% (870M€), hospital stays for 11% (154M€), daily sick leave benefits for 8% (116M€), other drugs for 5% (73M€). The median annual cost per patient was estimated to be €12,094 [ $\pm 10,801$ , Q1: 9,001, Q3: 16,795], varying from €618 for 0-10 years old PLWHIV to €13,725 for 51-60 years old PLWHIV, €11,969 for incident patients (N=3,373), and €13,560 for patients with at least one comorbidity. **Conclusions:** This study shows that the global annual cost of PLWHIV is mainly charged to antiretroviral drugs cost. Only thin disparities in total cost were observed in each group (age, incident, comorbidity), advanced analyses such as Machine Learning could identify significantly overexpressing cost profiles.

### PIN37 HEALTH AND ECONOMIC BURDEN ASSOCIATED WITH 15-VALENT PNEUMOCOCCAL CONJUGATE VACCINE SEROTYPES IN CHILDREN IN THREE EUROPEAN COUNTRIES

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**Objectives:** V114, an investigational 15-valent pneumococcal conjugate vaccine (PCV) is under development that contains all serotypes in PCV10 and PCV13 and 2 additional serotypes (22F/33F). This study quantifies the health and economic burden of invasive pneumococcal disease (IPD) associated with V114 serotypes in Finland, the Netherlands and Austria. **Methods:** A Markov model was developed to simulate V114-type IPD cases, deaths and costs in hypothetical unvaccinated birth cohorts over 20 years. All inputs were obtained from the published literature. In the pre-PCV analysis, epidemiological inputs from the pre-PCV7 era were applied to all serotypes. In the post-PCV analysis, pre-PCV7 and pre-PCV10 inputs were applied to PCV7 serotypes and PCV10 not PCV7 (PCV10-PCV7) serotypes. Disease attributable to V114 not PCV10 (V114-PCV10) serotypes were estimated using the most recent data. Costs were estimated from a societal perspective (2017 Euros) and discounted at 3%. **Results:** In the pre-PCV analysis, 355 V114-type IPD cases would occur: 244 (69%) attributable to PCV7 serotypes, 53 (15%) to PCV10-PCV7 serotypes, and 58 (16%) to V114-PCV10 serotypes. V114 serotypes caused 74 IPD deaths. Costs of V114-type IPD was €9.4 million. In the post-PCV analysis, V114-type IPD increased to 406 cases: 244 (60%) attributable to PCV7 serotypes, 66 (16%) to PCV10-PCV7 serotypes, and 96 cases (24%) to V114-PCV10 serotypes. Compared to the pre-PCV analysis, the additional 13 cases attributable to PCV10-PCV7 serotypes were mainly caused by serotype 1. The additional 38 cases attributable to V114-PCV10 serotypes were from serotypes 3 (33 cases, 91%) and 19A (11 cases, 31%). Costs of V114-type IPD increased to €10.4 million. Deterministic sensitivity analysis will be performed. **Conclusions:** PCV7 serotypes cause most IPD-related morbidity and costs and should be retained in investigational PCVs. Serotypes contained in PCV10 and PCV13 also contribute to IPD morbidity and cost. Expanding coverage to non-vaccine serotypes can prevent additional disease.

### PIN38 THE COST OF STIGMA ASSOCIATED WITH HIV: A COST-CONSEQUENCE ANALYSIS TO EVALUATE HIV TESTING AND PREVENTION INTERVENTIONS IN KSA

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**Objectives:** Stigmas associated with HIV in the Kingdom of Saudi Arabia (KSA) have resulted in decreased testing in those at high risk of acquiring HIV infection; ultimately, this increases the clinical, humanistic, and economic burden on KSA. To assess the cost incurred due to the impact of these stigmas, we hypothesized that addressing the consequences of these stigmas on diagnosis rates, through testing of pregnant women to prevent mother-to-child transmission (PMTCT) and HIV self-testing (HIVST), will lead to an increase in the number of diagnosed and linked-to-

care patients. The resulting cost savings would be indicative of the cost associated with stigma. Hence, a health-economic model was developed to estimate the cost-effectiveness of these interventions in KSA. **Methods:** A Markov model was built to estimate the costs associated with people living with HIV (PLWHIV) subject to prevention of mother-to-child transmission (PMTCT) and HIVST, over 20-years (control). Data sources included the KSA National AIDS Programme, Demographic Survey 2016 (KSA General Authority for Statistics) and UNAIDS. The model included seven health states: general population, undiagnosed, diagnosed, treated, and symptomatic HIV patients, deaths due to HIV, and background mortality. Stigmas related to having unprotected sex, testing for HIV infection as a member of a risk group, and seeking treatment if infected, were included. Base-case scenario was maintaining status quo and not implementing either interventions. **Results:** Over the 20-year horizon, implementing PMTCT and HIVST prevented 12,800 and 15,600 new infections respectively vs. the base-case. Additionally, Implementing PMTCT and HIVST are projected to have a net cost saving of 151.4 and 336.9 million SAR respectively from the country's estimated expenditures on HIV management over 20 years. **Conclusions:** PMTCT and HIVST are cost-saving stigma-addressing interventions for PLWHIV in KSA. Not addressing stigma in high-risk groups and general population could result in incurring a sizable "cost of stigma".

### PIN39 WHEN A PROBIOTIC-BASED SANITIZING METHOD MAY HALVE HEALTHCARE-ASSOCIATED INFECTIONS AND REDUCE ASSOCIATED COSTS

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**Objectives:** Healthcare-associated infections (HAIs) are among the major causes of morbidity and mortality in healthcare settings. In Italy, the incidence of HAIs is 5-10% and infections caused by antibiotic-resistant microorganisms report a mortality rate of 20-30%. Healthcare environments play an important role in the transmission of HAIs and conventional chemicals-based sanitation shows limitations in controlling surface contamination and related HAIs onset. Recently, a sanitizing procedure based on probiotic detergents (Probiotic Cleaning Hygiene System - PCHS) showed to decrease surface pathogens up to 90% more than conventional disinfectants. This study aimed at evaluating the economic impact of the management of HAIs with PCHS versus chemicals-based sanitation in Italy. **Methods:** A multicentre, prospective, pre-post interventional protocol has been implemented in 5 Italian Hospitals to perform a cost-minimization analysis by comparing the management of HAIs related to pre-intervention (conventional disinfectants) and post-intervention (PCHS) phases, from the hospital perspective. The healthcare resource consumption focused on antibiotic therapy considering that the two sanitizing systems have comparable costs. A propensity-score matching has been performed in order to select, for both periods, patients with overlapping clinical characteristics. **Results:** Data were collected from 01.01.2016 to 30.06.2016 for conventional disinfectants and from 01.01.2017 to 30.06.2017 for PCHS, for a total of 11,461 patients. The total number of patients in the two periods after matching resulted 8,320 (4,160 per group). During the pre-phase 191 patients developed at least one HAI and 100 patients developed at least one HAI during the post-phase, showing an incidence rate ratio of 0.47 (CI 95% 0.37-0.60). The total cost for antibiotic therapy resulted 52,004€ and 10,954€ for conventional disinfectants and PCHS, respectively, highlighting a cost reduction of 78.9%. **Conclusions:** Our analysis revealed that PCHS may be a cost-saving strategy compared to conventional disinfectants considering the cost of the management of HAIs related to antibiotic therapy.

### PIN40 COST-EFFECTIVENESS OF DIRECT-ACTING ANTIVIRALS FOR THE TREATMENT OF HEPATITIS C VIRUS IN RUSSIA

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**Objectives:** According to the recently approved rules in Russia, new treatment could enter the reimbursement list only if ICER for it is lower than for the previously included drugs for the same clinical situation. Our objective was to assess cost effectiveness of direct-acting antivirals (DAA) in comparison with historically used combination of pegylated interferon with ribavirin (PR) for HCV genotype 1 in treatment-naïve and treatment-experienced patients to set the willingness-to-pay threshold for this condition. **Methods:** We estimated lifetime costs and outcomes in previously developed model for the treatment-naïve and treatment-experienced patients with HCV genotype 1 with and without cirrhosis. The rates of sustained