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the importance of prevention and early detection of BC to maximize health gains and mitigate economic impact in BC patients.

POS9C9
A MODEL TO EVALUATE THE COST-EFFECTIVENESS OF A HIGH-SENSITIVE RAPID DIAGNOSTIC TEST AND MALARIA IN A COMMUNITY SETTING IN UGANDA
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Background: Malaria remains a major cause of morbidity in Uganda, despite the presence of effective and low-cost interventions such as artemisinin-based combination therapy (ACT) and sulfadoxine/pyrimethamine (SP). This is largely attributed to the prevalence of asymptomatic low-density infections that often go undetected and hence untreated. A new generation of highly-sensitive rapid diagnostic tests (HS-RDTs) has been shown to detect asymptomatic low-density infections, offering a potential tool to help move Uganda towards Malaria elimination. Methods: A pragmatic literature review informed the conceptualisation and structuring of a cost-effectiveness model to evaluate the use of the HS-RDT compared with conventional diagnostic tests (c-RDT) in three patient cohorts – febrile patients presenting at community health facilities, pregnant women attending antenatal clinics, and asymptomatic household members of febrile children aged <5. A decision tree model will be used for the analysis to compare clinical (DALY) and cost outcomes, with patients entering the model at diagnosis stage. Clinical inputs, direct and indirect costs (including testing, treatment, disease management and mortality) are sourced from local publications. Prevalence, rapid diagnostic test (RDT) sensitivity and false positive rates will be based on data from a community based observational study in Mpigi District, Uganda. Conclusions: Results from the observational study and model outputs, will be used to test the hypothesis that the higher detection rate using HS-RDT translates into a larger number of asymptomatic malaria cases detected and thus increases patient catch, leading to clinical and cost benefits. Targeting and treating asymptomatic infections is also anticipated to help reduce the asymptomatically infected Malaria reservoir, thereby contributing towards the goal of Malaria elimination. One way sensitivity analysis will be conducted to test model sensitivity to key inputs. A limitation of this approach is that the model is not a dynamic transmission model and does not therefore model long-term consequences and seasonal effects.

POS9C10
HEALTHCARE RESOURCE UTILIZATION AND COSTS IN PATIENTS WITH CERVICAL DYSTONIA
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Objectives: Cervical dystonia (CD) is a rare neurological disorder of serious disability in adults. US prevalence estimates of CD range from 20 to 4,100 patients/million population. This cohort-based study aimed to evaluate incremental healthcare resource utilization (HCRU) and costs in patients with CD (cases) versus a matched control group without CD (controls) over a 1-year period. Methods: Analyses were conducted using administrative healthcare claims from the IQVIA PharMetrics10 Plus database of commercially or self-insured individuals. The study period was from 1-October-2015 to 31-December-2019. Cases were selected based on ICD-10 diagnosis codes for evidence of dystonia index date (pre-index) and CP (6 months before or up to 7 days post-index) with 6 months of continuous enrollment with medical and pharmacy benefits before the index date (pre-index) and 12 months starting on the index date (post-index). Cases were direct matched 1:1 to the control group. Cases had statistically higher mean ($65,591 vs $19,672) and median ($14,705 vs $5,476) total post-index healthcare costs (both p<0.005). Cases also had significantly higher mean physiotherapy visits (20.3 vs 9.3; p<0.001) and laboratory/radiology visits (54.8 vs 29.2), and significantly higher mean pharmacy ($11,329 vs $3,615) and inpatient costs ($30,788 vs $5,888) than controls. The adjusted cost ratio for the case cohort (3.198, p<0.0001) was highly significant versus the controls. Conclusions: In this retrospective real-world study, pediatric patients with CP and spasticity had higher mean and median HCRU and costs than controls, resulting in a higher economic burden. Effective treatment of dystonia represents a considerable potential for cost-savings within managed healthcare systems.

POS9C11
HIGH-FLOW NASAL CANNULA IN PATIENTS WITH COVID-19: IS A COST-EFFECTIVE ALTERNATIVE?
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Objectives: To determine whether the high-flow nasal cannula (HFNC) is a more cost-effective alternative when compared to conventional oxygen therapy (COT) for decreasing invasive ventilation rates in the treatment of acute hypoxemic respiratory failure (HRF) in patients with Covid-19 from the perspective of private health. Methods: The cost-effectiveness analysis (ACE) was developed through the “decision-tree” model. The cost-effectiveness factor, due to the absence of real-life data, was obtained by conducting a systematic review with meta-analysis, limited to HRF. Results: After calculating the costs inherent to the procedures, we have: HFNC = US$564.75 and COT = US$465.71; corresponding to an increase of US$199.04 for HFNC. As for effectiveness, the systematic review and meta-analysis developed included 1859 patients (HFNC: 781 and COT: 1078). The event analysis, that is, of patients whose need for invasive ventilation was 35% (272) for the HFNC group and 39% (421) for the COT group - with a significant difference (Risk Difference [RD] -0.03, 95% CI -0.08 to 0.01; p = 0.62 - NNT = ns). In possession of the cost and effectiveness factors, ACE demonstrates that COT is more cost-effective: US$1,019.98 vs US$764.12; showing an increase of US$235.86 per daily ICU with HFNC. Conclusions: Considering that the medical literature does not
show a statistically significant difference in the rates of patients who progress to invasive ventilation, the development of ACE is fundamental to support decision making. Using an average of 10 days in ICU, the savings sustained by the adoption of COT alone is US$2,558.60 per patient.

POSC103
PNEUMOCOCCAL VACCINATION WITH 13-VALENT POLYSACCHARIDE CONJUGATE VACCINE FOR ADULTS WITH CHRONIC CONDITIONS: BUDGET IMPACT ANALYSIS IN COLOMBIA

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Objectives: To determine the budget impact analysis of pneumococcal vaccination with 13-valent polysaccharide conjugate vaccine (PCV13) in adults 60 years of age and older with chronic conditions in Colombia

Methods: A decision tree was developed comparing vaccinated adults 60 years of age and older with chronic risk conditions considering the model was based on the national report. The effectiveness of PCV13 were estimated from the clinical trial in adults 65 years of age or older. The health care resources of the events were obtained for published national studies and the cost of vaccine dose was estimated from the JL database. Time horizon in the analysis was 10 years. A subgroup analysis was conducted for relevant risk group. The cost and events were discounted with annual rate of 3%. The exchange rate used was 3.600 Colombian pesos/1 USD.

Results: Simulating a cohort of 25,000 patients, PCV13 prevent 185 cases of invasive pneumococcal disease and 41 deaths compared to no vaccination. The savings associated to medical care was $771,114 USD characterized mainly by invapucocn pneumococcal and bacteremia. The vaccination cost may vary $500,000 and $875,000 USD. The net savings would be $8,614 USD which can vary according to the price of the vaccine. The higher return on investment is observed in COPD patients due to the high risk of invasive pneumococcal disease and pneumococcal pneumonia. Conclusions: PCV13 immunization is most likely to lead substantial cost savings in the following 10 years after vaccination with high impact in the public health.

POSC104
DETERMINING COST DATA FOR FERTILITY TREATMENT IN A SPANISH SETTING

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Objectives: Sourcing country specific costing data relating to fertility treatment can be difficult. Costing data is essential to support health care decision makers with economic tools that are aligned to their perspective. This is of particular relevance in fertility, where both treatment pathway and treatment outcome costs can have a greater impact on economic approaches compared to drug acquisition costs. The aim of this study was to develop costing inputs for in vitro fertilization (IVF) treatment pathway in a Spanish setting.

Methods: A pragmatic literature review was performed to determine what costing data is presently available in Spain. A template was created to outline key costs that were not publicly available in the literature or had a high degree of variance. Contributions and consensus from Spanish fertility experts was sought to provide key costing inputs from their regular clinical practice.

Results: The literature review revealed a high variability for specific cost parameters between different Spanish regions. These discrepancies required clinical expert consensus. The sum costs at key clinical stages are: preparation for IVF treatment €189.50, subsequent ovarian stimulation, plus oocyte pick-up, in addition to insemination and embryo culture (which also includes drug acquisition costs) €2,755.51, severe ovarian hyperstimulation syndrome (OHSS) requiring hospitalization €1,874.86, embryo transfer €120.92, pregancy/live birth €5,050.77 and miscarriage costs of €1,508.03. The total cost per patient of a successful live birth is estimated as €8,116.71. Drug acquisition costs constitute 6.09% of this total cost.

Conclusions: Sourcing costs associated with the treatment of infertility can be difficult. Clinical consensus was required to address this high variability. The largest costs in the treatment pathway were related to pregnancy and live birth. Drug costs were only about 6% of the total costs of a successful birth.

POSC105
ECONOMIC EVALUATION OF THE PEDIATRIC IMMUNIZATION PROGRAM IN BELGIUM

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Objectives: To evaluate the economic impact of the pediatric immunization program (PIP) in Belgium from both healthcare payer and societal perspectives.

Methods: An economic model was developed focusing on the vaccination in children aged 0-9-10. Separate decision trees were used to model each disease (i.e., diphtheria, tetanus, pertussis, poliomyelitis, Haemophilus influenzae B, hepatitis B, measles, mumps, rubella, pneumococcal, rotavirus, and meningococcal C). The 2018 birth cohort was followed over their lifetime, with the model monitoring and comparing direct medical costs with and without vaccination (based on current and pre-vaccine era disease incidence estimates, respectively). For the societal perspective, the model also included productivity loss costs associated with immunization and disease. The model estimated discounted incremental annual costs between 10 years lost and 10 years costs (2020 Euros), and an overall benefit-cost ratio (BCR). Scenarios considering hypothetical inclusion of varicella and meningococcal B immunizations were conducted.

Results: Across all 12 diseases, the PIP prevented more than 220,000 cases of infections, 200 deaths, 7,000 life-years lost, and 7,000 quality-adjusted life-years lost. The PIP was associated with vaccination costs of over €90 million from the healthcare payer perspective and over €120 million from the societal perspective. Vaccination costs were fully offset by disease-related costs averted. Pediatric immunization was associated with over €30 million in averted direct medical costs (BCR = 1.4) and over €240 million averted societal costs (BCR = 3.0). Estimates of the societal value of the PIP were similar when hypothetical introductions of varicella (BCR = 2.9) or meningococcal B (BCR = 2.5) immunizations were considered.

Conclusions: The PIP brings large-scale prevention of disease-related morbidity, premature mortality, and associated costs, which has not been systematically assessed before in Belgium. This highlights the value of continued investment in the PIP.

POSC106
BUDGET IMPACT ANALYSIS OF INCLUDING SACUBITRIL/ VALSARTAN IN THE NATIONAL FORMULARY FOR THE TREATMENT OF HEART FAILURE WITH REDUCED EJECTION FRACTION (HFrEF) IN THAILAND

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Objectives: A previously published study demonstrated that sacubitril/valsartan is considered cost-effective for patients with HFrEF compared with enalapril in Thai setting. In addition to the economic value, this study aimed to estimate the budget impact of adding sacubitril/valsartan to the national reimbursement from the payer’s perspective.

Methods: A budget impact model was developed to project the 5-year budget impact of including sacubitril/valsartan in the national drug list for sub-populations of patients with HFrEF, including 1) patients who remain symptomatic despite treatment with ACE inhibitor or angiotensin receptor blocker (ARB); and 2) patients with hospitalization. Clinical benefits were derived from the PARADIGM-HF study. Epidemiology data, hospitalization and mortality costs were obtained from published literature. Sacubitril/valsartan price expected for national formulary listing was used, and other drug prices were those published by Ministry of Public Health, Thailand. Sensitivity analysis was performed to assess the effect of data uncertainty.

Results: Comparing with ACE inhibitor/ARB, sacubitril/valsartan yielded 4.9% and 1.4% reductions in the annual probabilities of hospitalization and mortality, respectively, which translated into 1,709 hospitalizations avoided and 488 deaths avoided in patients with symptomatic HFrEF, and 843 hospitalizations avoided and 241 deaths avoided in patients with asymptomatic HFrEF, respectively. The annual net budget impact from the treatment with sacubitril/valsartan compared to ACE inhibitor/ARB was USD 2.63M to 7.71M and USD 1.30M to 3.80M for such patient subpopulations. Conclusions: The inclusion of sacubitril/valsartan in the national drug list has the potential to reduce hospitalization, increase lives saved, and save costs associated with hospitalization and mortality. The results can be used to support decision-making process to add sacubitril/valsartan to the national reimburse-
ment in Thailand.

POSC107
LONG TERM OUTCOMES FOR PATIENTS WITH AROMATIC L-AMINO ACID DECARBOXYLASE (AADC) DEFICIENCY: A MODELLING STUDY EXPLORING THE EFFECT OF THERAPY

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Objectives: AADC deficiency is a rare disease with a wide range of symptoms including movement disorders, developmental delays, and autonomic symptoms from birth. Information on the long-term life expectancy of patients of any age trajectory along with the associated benefits in terms of survival, quality of life and associated

[^1]: Carrillo J, Mellentin CE, Abreu A, Mercck B, Vandenhaute J, Benchabane D, Dauby N, Ethgen O, Lepage P, Luyten J, Raes M, Simoons S, Van Ranst M, Bencina G, Nyaku MK.
[^2]: Ratanasuwong K, Piyaotai D, Makarawadee P.
[^3]: Simons C, Sudhapaillii P, Paris JI, Buesch K, Bennison C.