

**Conclusions.** This systematic review allows both to identify gaps and opportunities in psychosocial interventions research and be the base for the CDSS algorithm. In the future professionals, careers and people diagnosed with ASD will validate the mobile CDSS.

## PP170 Quantifying the Life-Cycle Value of Second Generation Antipsychotics

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**Introduction.** We estimate the life-cycle value of risperidone – Second-Generation Antipsychotics (SGA) – to balance the view that cost per Quality-Adjusted Life Year (QALY) estimates at launch are enough to guide access decisions. Study results will also drive discussion on access and price to recognize the dynamic nature of pharmaceutical pricing over the long-run.

**Methods.** We estimated number of patients treated for schizophrenia with risperidone in Sweden and the United Kingdom (UK) between 1994-2017 based on usage data from national statistics and volume sales data from IQVIA. We collected data from literature on the effectiveness (QALYs) and costs (EUR 2017) of risperidone (SGA) and haloperidol – First-Generation antipsychotic (FGA). We estimate the life-cycle value added by risperidone versus haloperidol, and the life-cycle distribution of the social surplus between the payer (consumer surplus) and the innovator (producer surplus).

**Results.** We estimated the consumer surplus, the producer surplus, the Net Monetary Benefit (NMB) and Incremental Cost-Effectiveness Ratio (ICER) at each year and in aggregate terms (1993-2017). For the UK the producer surplus was ~28 percent out of the total surplus before patent expiration and five percent after patent expiration. In Sweden, producer surplus was around 6 percent out of the total surplus before patent expiration and one percent thereafter. In both countries, during the life-cycle of risperidone, the NMB per patient increased and the ICER decreased as a response to: (i) the launch of Risperidone Long-Acting Injectable (RLAI); and (ii) the generic entry.

**Conclusions.** The value added by risperidone increased during the life-cycle due to the launch of RLAI and the generic competition. This suggests that, considering the entire life-cycle, the value added by SGAs to the system is higher than the expected value estimated using cost-effectiveness analysis at launch. Pricing and reimbursement decisions should take into account the dynamic nature of pharmaceutical markets and the value added by innovative medicines over the long-run.

## PP171 Cost And Effectiveness Of Chronic Hepatitis C Treatment In Brazil

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**Introduction.** With the discovery of new direct-acting antivirals, the cure for hepatitis C appears to be a reality, but its high price and the availability of new antivirals are a major obstacle. In Brazil, treatments for hepatitis C have been available in the public health system since the 1990s, and in 2015 were made available the antivirals sofosbuvir, daclatasvir and simeprevir. The calculation of the budgetary impact of this merger estimated expenditures between 467 and 666 million Reais (USD 121 and 172 million) per year. This study aims to present and discuss the cost and effectiveness of hepatitis C treatment with direct-acting antivirals with or without alfapeginterferon and ribavirin, based on real-life data, and compare it with the world scenario.

**Methods.** We analyzed the treatment data and outcomes of 253 patients from a retrospective cohort performed in a Specialized Care Service, in the city of Porto Alegre. In relation to costs, the direct costs of antiviral drugs, per unit (tablet), were considered according to financial receipts from public purchases. The total cost of the medications used by each individual in each treatment and the cost per cure obtained, expressed in Sustained Viral Response (SVR), were calculated.

**Results.** Most patients (66.8 percent) had genotype 1 of the hepatitis virus and 92.9 percent achieved SVR. The mean total cost of treatment of patients with genotype 1 was USD 5,862.31 and USD 6,310.34 per cure; while in patients with genotype 3 the cost was USD 5,144.27 and USD 5,974.76 per cure. The cost with the most commonly used treatment regimen, sofosbuvir, daclatasvir and ribavirin was USD 5,961.25 and USD 6,536.46 per cure. These values were 30 percent lower than the values estimated at the time of drug incorporation.

**Conclusions.** Cost and effectiveness data contextualize a real-life scenario in Brazil. The evaluated treatments presented good effectiveness, but high costs.

## PP173 Is Early Modelling Too Late? Preventing Pitfalls And Optimizing Value

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**Introduction.** Drug development is a risky business. Manufacturers are faced with the dilemma of whether or not to invest at any stage in the development process. Even once marketing authorization has been attained, payers are becoming increasingly demanding of evidence to justify price premiums in the face of increasing budgetary pressures. Cost-effectiveness is a critical decision-making criterion for many payers, and restrictions to sub-populations is common. Early economic modelling at very early phases of the development pathway can inform optimal investment decision-making, including go/no-go decisions and clinical trial design, particularly in population selection. To test the hypothesis of changing payer requirements, we carried out a study on the trends in reimbursement submissions where payers approved but ultimately restricted the population compared to the marketing license or the company's target population.

**Methods.** A systematic literature review of all single technology appraisals (STAs) by the National Institute for Health and Clinical Excellence (NICE) was carried (01/01/2006- to 16/11/

2018). We used a linear regression model to examine the relationship between frequency of optimizations and time.

**Results.** In total, 357 STAs outcomes were identified, 55 percent were recommended and 26 percent were optimized. The proportion of optimized recommendations increased over time vs all other outcomes ( $p = 0.01$ ), with more technologies being optimized over time ( $p < 0.01$ ).

**Conclusions.** The results indicate an increasing trend by NICE towards maximization of value through approval of drugs in select groups of patients. From a manufacturer's perspective, prediction of such outcomes at an early stage is fundamental for investment purposes and to maximize financial returns. An early stage model provides a framework to examine these issues as well as identifying data gaps, where real world evidence can be planned to support the value argument for products, and to inform clinical trial design through value of information analysis.

## PP177 Health Preference Research In Europe: A Review Of Its Use

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**Introduction.** Health Technology Assessment (HTA) and regulatory decisions involve value judgements. As patient groups, industry, and regulatory agencies conduct more preference studies to quantify these judgements, a better understanding of the methods and practices is needed. Currently, there is no systematic mapping of the use of preference data in Europe. This study aimed to identify (i) the use of quantitative preference data by all relevant HTA bodies and regulatory authorities of the European Union (EU) member states, and (ii) key standards and guidelines.

**Methods.** This study used a mixed method approach based on a systematic literature review, survey and subsequent interviews with decision makers and experts.

**Results.** A total of 62 survey responses were received. Many respondents reported that their agencies were responsible for supporting more than one type of decision, with 69.0 percent supporting approval decisions, 64.3 percent supporting reimbursement decisions, 61.9 percent supporting pricing decisions, and 64.2 percent supporting guideline development. Respondents reported that their agencies supported these decisions in multiple ways: 78.6 percent by assessing health technologies; 54.8 percent by appraising health technologies; 45.2 percent by compiling an HTA report; 7.1 percent by conducting primary research; 9.5 percent by conducting secondary research. More than 40 percent (42.9 percent) of agencies had the final say on one of the decisions of interest – approval, reimbursement, or pricing. Of the 31 countries studied, 71 percent ( $n = 22$ ) used quantitative preference data in their reimbursement and pricing decisions. Of those, 86 percent ( $n = 19$ ) used general population

preferences to inform the estimation of quality-adjusted life years (QALY) as part of cost utility analysis.

**Conclusions.** Much of this use of preference data can be understood within the standard framework of economic analysis adopted by many HTA agencies; either in the form of: standard ways to estimate QALYs; ways to broaden the impacts of technologies captured in the QALY; or ways to weigh health gain with other decision-making criteria, such as disease severity or innovativeness.

## PP178 Health Technology Assessment Of Laboratory Medicine

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**Introduction.** Recent studies have investigated the re-organization and automation of laboratory medicine as a challenge for the hospital in terms of reduction of costs, turnaround time, workload, optimization of human and technological resources and improvement of safety. The purpose of this study was to conduct a health technology assessment (HTA) evaluation process about the possibility to re-organize and automate laboratory medicine at Bambino Gesù Children's Hospital.

**Methods.** The decision-oriented HTA (Do-HTA) method, involving the integration of the European Network for HTA (EUnetHTA) CoreModel and the Analytic Hierarchy Process, was applied to assess the best technology solution. Twenty-one professionals were involved to define tender specifications related to the adaptation works of the new dedicated rooms, and the automatic technologies and organizational solutions for the new laboratory department. Finally, two manufacturer companies were consulted.

**Results.** Using Do-HTA, the study was focused on laboratory technologies while the infrastructure evaluation was conducted by the Engineering and Logistic Units of the hospital. Results showed that the total performance score of the first proposal was slightly higher (2.5 percent) than the second one, proving the comparable high qualitative level of both manufactures technologies. After an accurate analysis, evaluating all aspects (safety, clinical efficacy, cost, organization & technical criteria) and integrating the infrastructure evaluation, the decision has fallen upon the first company offer.

**Conclusions.** This HTA project provided an in-depth examination of two proposed technological and organizational solutions. Thanks to the Do-HTA method, which produced and developed data and all needed information, it was possible to guide and assist the decision makers on the choice between the two technical solutions.

## PP179 Health Technology Assessment Of Pediatric Intensive Care Ventilators

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