**Introduction.** Within Dutch health care, Zorginstituut Nederland regularly selects topics for reassessment of diagnostic and therapeutic interventions. Until now, about 15 topics have been investigated, such as hip/knee arthrosis, stable angina, low back pain, urinary incontinence, palliative care, retinopathy and asthma.
**Methods.** For each topic, stakeholders were asked to report what could be improved. Also a working group was created to analyze: what do guidelines recommend, what does actual care look like seen from administrative data, is there a gap between guidelines and delivered care, what can be improved? A report with recommendations was written with a calculation of the impact. Agreements were made on implementation. This report focused on findings relating to asthma.
**Results.** We identified the multiple issues in the management of asthma: (i) Only 11 percent of patients had their diagnosis confirmed (with spirometry and reversibility or visit to pulmonologist). (ii) 60,000 patients had intensive short acting broncho-adrenegic agents (SABA) without inhaled corticosteroids (ICS) representing overuse of SABA. (iii) 200,000 patients use inhalers that can be empty, without the patient knowing this, as there is no indicator showing the number of actuation/puffs left, which leads to under treatment. (iv) 60.000 patients have aerosol and powder inhalers together, each requiring a different technique, leading to mistakes. (v) 67 percent of asthma adults get a chest x-ray on referral to hospital, which is a high proportion. (vi) 49 percent of patients use inhalers with propellant, which is needlessly high, given their undesirable impact on climate change. This causes 36 million kg co2 equivalent, the same as 36000 extra gasoline cars. (vii) Only 37 percent of patients receive yearly monitoring. We calculated that EUR 14 million annually can be saved as a result of better diagnosis leading to less overdiagnosis and overtreatment and less spacers.
**Conclusions.** Despite that 'HTA (Health Technology Assessment) at the doorstep' has been applied for asthma interventions, we noticed considerable room for improvement. We consider this method important for real HTA life cycle approach.

## PP140 Economic Evaluation Of Several Vaccination Strategies Against Rotavirus In Spain

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**Introduction.** The Spanish Ministry of Health asked us about the efficiency of extending the current rotavirus vaccination strategy to all newborns. The current strategy is to vaccinate only to high-risk newborns (premature and those qualified as high-risk by a pediatrician). The objective of this research was to compare three strategies: no-vaccination, vaccination of high-risk newborns and universal vaccination, considering the two vaccines available in Spain: RotaTeq® and Rotarix®.
**Methods.** A cost-utility analysis, based on a de novo Markov model, was carried out both from a societal and a healthcare system perspective. The model follows a cohort of newborns during their life-course. The cycle length is annual and a half-cycle correction was applied. A discount rate of 3 percent was applied in the base case both to costs and utilities. Most of the incidence, probabilities and costs data were Spanish. The Quality Adjusted Life Year (QALY) data were taken from international literature. We assumed a willingness to pay threshold of EUR 25,000 per QALY gained. We performed deterministic one-way sensitivity analysis.
**Results.** Compared to no-vaccination, the high-risk vaccination strategy is cost-effective assuming the above- mentioned threshold only with Rotarix® from a societal perspective (RotaTeq® EUR 32,008 per QALY; Rotarix® EUR 23,368 per QALY). Universal vaccination is not cost-effective either compared to no-vaccination or compared to the high-risk vaccination strategy and with both perspectives. Vaccine prices and efficacy data are highly sensitive variables. We find that universal vaccination would be cost-effective with a discount of 44.6 and 36.9 percent of the current price of RotaTeq® and Rotarix®, respectively.
**Conclusions.** Universal vaccination would not be a cost-effective strategy for Spain with either of the two vaccines at current prices. Vaccination of high-risk newborns would be cost-effective at current prices and from a societal perspective only with Rotarix®. Substantial vaccines price reductions could make the universal vaccination a cost-effective option in Spain.

## PP142 Time-Driven Activity-Based Costing (TDABC) Of Brazilian Public Healthcare System (SUS): Preliminary Results For Osteogenesis Imperfecta (OI)

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**Introduction.** Improving the value of healthcare delivered requires accurate cost information, which can be challenging for rare diseases. We report direct costs of patients with OI using the TDABC methodology.
**Methods.** This research is part of a nationwide observational study to assess the "Value of Healthcare Journey for Patients With Rare Diseases" in SUS. Patient journey and economic data was collected for the actual clinical practice in each medical center enrolled in the project. We set the starting point of disease and map a patient's path in the healthcare journey, including treatment, exams, procedures and appointments needed. Unit cost, time and amount of resources to perform each activity, such as human resources, materials and medicines, was assessed, disregarding indirect costs. Here we present

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preliminary results for OI. We considered medical centers from different regions of Brazil. The results are presented in terms of percentage and/or mean and its standard deviation (SD).
**Results.** Three medical centers completed the data collection. The average [SD] cost of a one year journey of a patient diagnosed with OI is BRL 16,308.07 [11,005.21] (USD 2,886.91 [1,948.36]) per center. Activities with greater cost are medicines, with an average cost of BRL 11,919.47 [12,629.45] (USD 2,109.76 [2,235.52]), followed by materials and human resources, with an average cost of BRL 2,881.91 [3,311.57] (USD 509.92 [585.84]) and BRL 1,506.70 [1,300.46] (USD 266.54 [230.24]), respectively. When assessing the moment of a patient's journey, the percentage of appointments, diagnosis, treatments and follow-up were 11.2, 25.8, 32.5 and 30.5, respectively. Only 3.3 percent of consumed resources were external to the center (out-of-pocket or private insurance).
**Conclusions.** The TDABC can efficiently draw the processes and costs associated with it. Medicines are the main driver of annual costs for OI patients in the SUS. This study was funded by the National Council for Scientific and Technological Development – CNPq and the Ministry of Health of Brazil – MoH.

## PP143 International Assessment of the Health Care System in Kazakhstan. A performance analysis.

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**Introduction.** Measuring the performance of the health systems is an important challenge at international level. The main objective of this work is to analyze the outcomes of the Kazakhstan Health Care System in order to establish the main causes of avoidable mortality in the country. Also, to identify benchmarking possibilities that may support public policy decisions to improve the results.
**Methods.** To calculate the avoidable mortality indicators due to preventable and treatable causes, the methodology agreed by the OECD and Eurostat based on the International Classification of Diseases, ICD-10 was applied. Starting from the mortality database of the World Health Organization, the standardized indicators of avoidable mortality was calculated for those countries that had available data based on this classification. Based on the outcomes obtained, a "Two-Step" Cluster Analysis was used to identify and characterize the different clusters of countries that present similar results to identify possible affinities and detect benchmarking possibilities.
**Results.** The main causes of mortality from treatable diseases in Kazakhstan are those related to the circulatory system, followed by different types of cancer and respiratory diseases.
Applying the cluster analysis in the international context, we find important differences between the different clusters, both in the standardized ratios of avoidable mortality and in its causes. Notable differences have also been identified between Kazakhstan and the countries that make up its cluster. Overall, Kazakhstan presents better avoidable mortality results, both from preventable and treatable causes, than the average of the cluster to which it belongs. However, in some causes of death, it presents worse results and high mortality rates, as in the case of those related to the circulatory and respiratory systems or different types of injuries.
**Conclusions.** The cluster analysis based on the avoidable mortality indicators reveals different conglomerates of countries that show important similarities between them and also some significant differences. Groups of avoidable diseases that characterize each cluster and subcluster, provide key information for the benchmarking and the design of future actions.

## PP145 Improving Patient Expert Involvement In The Lifecycle Of Health Technology Assessments To Build Public Confidence In Decision-Making

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**Introduction.** Involving patients in the health technology assessment (HTA) lifecycle is a core principle at the National Institute for Health and Care Excellence (NICE). We include both patient organizations and patient experts, which helps build public confidence in healthcare decision-making. We continually work with patient experts to improve their experience and ability to participate by seeking patient expert feedback after every committee meeting.
**Methods.** We sent patient experts an anonymous experience survey containing a five-point Likert scale and open text boxes to capture qualitative data. The survey covered their overall experience, interaction with the committee Chair, and the support they received from both NICE and the Public Involvement Programme (PIP).
In the 2019 to 2020 period we sent out 59 questionnaires and received 29 responses (47%), all of which were from medicines HTA committee participants. In the 2020 to 2021 period we sent out 120 questionnaires and received 65 responses (54%), of which 64 were from patient experts who attended medicines HTAs and one was from a medical devices HTA committee participant.
**Results.** Good or excellent experiences were reported by 90 percent of patient experts. The four main success factors noted were: good support before meetings; being welcomed and respected; well organized meetings; and patient expert input being valued. Areas for further improvement included: providing better briefing before meetings; allowing more time to review documents; providing more technical support; and giving more consideration to the opinions of patient experts.
**Conclusions.** As a result of the feedback received, the PIP now holds monthly group briefing meetings for patient experts. We also publish the anonymized feedback from the patient experts quarterly in a newsletter for committee members and share the data with internal

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