Methods: Data were extracted from National Committee for Health Technology Incorporation (CONITEC) reports (2012 to 2022) on technologies for the treatment of URD in Brazil. Diseases were classified using an epidemiological criterion or Orphanet consultation (prevalence ≤1 per 50,000 inhabitants). Variables included eligible patient count, population estimation method, incremental impact values for one and five years, and diffusion rate in the first and fifth year. Univariate logistic regression was used to adjust the relationship between the budget impact analysis and the final recommendation, considering factors associated with incorporation in univariate regression and p-values less than 0.10 in a multivariate regression.
Results: Among 53 reports, 48 percent exclusively employed the epidemiological approach for incremental impact assessment population estimation, rising to 69.5 percent when combined with measured demand. Population data were nearly evenly sourced from national and international platforms, with the UK, the USA, and multicenter studies being the most cited internationally. Notable differences were found between favorable and unfavorable CONITEC recommendations, with lower values being associated with incorporation. Market share diffusion rates favored the option of 100 percent diffusion in both the first year and the cumulative five years. The analysis highlighted the influence of demand characteristics and technology type on the budget impact value over one and five years.
Conclusions: The study found that budget impact data significantly influenced the final recommendation for technology incorporation, indicating a criterion favoring technologies with a lower budget impact. However, requester characteristics and technology type also played a role in the decision-making process, suggesting that additional factors influence recommendations.

PD03 Exploring Expenditure On State Subsidized Medicines in Ireland Between 2018 And 2022: Special Focus On Cancer Drug Expenditure

Caroline Walsh (carwalsh@stjames.ie),
Lea Trela-Larsen and Roisin Adams

Introduction: The Department of Health in Ireland published a review of expenditure on state subsidized medicines in August 2021. Detailed analysis indicated exponential growth of expenditure on cancer drugs administered in the community. However, expenditure by drug group across all state subsidized schemes, including hospitals, was not explored.
Methods: Using national reimbursement claims data, total medicines expenditure on community drug schemes (CDS) was analyzed annually for the years 2018 to 2022. The total drug expenditure stratified by anatomical therapeutic class (ATC) code was calculated. Expenditure on cancer drugs (ATC code L) between 2018 and 2022, including hospital data, was further explored. Cancer drugs with the highest expenditure were identified, and trends in their expenditure were analyzed. Dates of European regulatory approval, completion of health-technology assessments by the National Centre for Pharmacoeconomics in Ireland, and reimbursement by the Health Service Executive for the identified cancer drugs were collected.
Results: The total expenditure on drugs on CDS rose from EUR1.74 billion (EUR1.61 billion excluding value-added tax [VAT]) in 2018 to EUR2.2 billion (EUR2.03 billion excluding VAT) in 2022. Expenditure on antineoplastic and immunomodulatory agents (ATC code L) rose from 34 percent in 2018 to 38 percent in 2022. The cancer drugs with the highest cumulative expenditure on hospital schemes were pembrolizumab (EUR98.41 million excluding VAT), nivolumab (EUR75.15 million), daratumumab (EUR54.05 million), and trastuzumab (EUR41.48 million). All the aforementioned drugs demonstrated year-on-year increases in annual expenditure apart from nivolumab. Expenditure on pembrolizumab increased by 48 percent in 2022, compared with 2021.
Conclusions: Expenditure on state subsidized medicines is increasing annually, although confidential discounts may reduce budget impact. Increasing expenditure may be attributed to the expansion of existing indications and increasing patient volume. Expenditure on monoclonal antibodies is substantially larger than expenditure on other drugs. Pembrolizumab was reimbursed for six additional indications in 2021, contributing to the sharp increase in expenditure between 2021 and 2022.

PD04 A Systematic Review Of Decision Analytical Modeling Studies Of Medicines In The Middle East

Zainab Abdali,
Tuba Saygin Avsar (tuba.sayginavsar@nice.org.uk),
Sue Jowett, Muslim Abbas Syed, Khalifa Elmusharaf and
Louise Jackson

Introduction: Economic evaluation using decision analytical models (DAMs) plays a limited role in shaping healthcare resource optimization and reimbursement decisions in the Middle East. This review aimed to systematically examine economic evaluation studies focusing on DAMs of medicines in the Middle East, defining methodological characteristics and appraising the quality of the identified models.
Methods: Six databases were searched (MEDLINE, Embase, EconLit, Web of Science, the Global Health Cost-Effectiveness Analysis Registry, and the Global Index Medicus) from 1998 to September 2023 to identify published DAMs of medicines in the Middle East. Studies meeting the inclusion criteria—full economic evaluations of medicines using a model-based method in the Middle East—were included. Data were extracted and tabulated to include study characteristics and methodological specifications. The results were analyzed narratively. The Philips checklist was used to assess the quality of the studies.
Results: Sixty-two DAM studies of medicines were identified from nine Middle Eastern countries, the majority of which (76%) were

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conducted in Iran, Turkey, and Saudi Arabia. The cost effectiveness of medications for non-communicable diseases was explored in 70 percent of the models. Cost-effectiveness thresholds based on gross domestic product were commonly used. International sources provided data on intervention effectiveness and health outcomes, while national sources were mainly used for the costs of resource use. Most models incorporated an assessment of parameter uncertainty, whereas other types of uncertainty were not explored. Studies from high-income countries were generally of higher quality than those from middle-income countries.
Conclusions: The number of published DAMs was low considering the available medicines and disease burden. Key aspects of high quality DAMs regarding model structure, input sources, and uncertainty assessment were not consistently fulfilled. Recommendations for future studies and policies included strengthening existing health economic capacities, establishing country-specific health technology assessment systems, and initiating collaborations to generate national cost and outcome data.

PD06 Automated Systems For Hospital Inpatient Safety: A Cost-Utility Analysis

Emily Holmes (e.holmes@bangor.ac.uk), Huw Lloyd Williams, Dyfrig Hughes, Elke Naujokat, Bernd Duller and Christian Subbe

Introduction: Deployment of an electronic automated advisory vital signs monitoring and notification system to signal clinical deterioration is associated with significant improvement in clinical outcomes. This study aimed to estimate the incremental cost per quality-adjusted life-year (QALY) gained with an electronic automated advisory notification system, compared with standard care.
Methods: A decision analytic model was developed to estimate the cost effectiveness of an electronic automated advisory notification system, compared with standard care, in adults admitted to a district general hospital. Analyses considered the following: (i) cost effectiveness (cost/event avoided) based on a before-and-after study (n=3,787) that recorded rates of acute myocardial infarction, pulmonary embolism, acute pulmonary edema, respiratory failure, stroke, severe sepsis, acute renal failure, cardiopulmonary arrest, admission to the intensive care unit, and death; and (ii) the cost utility (cost per QALY) over a lifetime horizon extrapolated using published data. The analysis was conducted from the perspective of the National Health Services (NHS) in the UK.
Results: The automated notification system was more effective (2.7 fewer events per 100 patients) and provided cost savings of −GBP12.17 [−EUR14.07] per patient admission (95% CI: −GBP182.07 [−EUR211.20], GBP154.80 [EUR179.57]). The automated notification system was dominant over a lifetime horizon, demonstrating a positive incremental QALY gain (0.0287 QALYs, equivalent to approximately 10 days of perfect health) and a cost saving of −GBP55.35 (−EUR64.02). At a threshold of GBP20,000 per QALY (EUR23,126), the probability of automated monitoring being cost effective in the NHS was 0.81. The increased use of cableless sensors may reduce cost-savings, but the intervention remained cost effective at 100 percent usage (incremental cost-effectiveness ratio GBP3,107 per QALY [EUR3,594 per QALY]).
Conclusions: An automated notification system for adult patients admitted to general wards appears to be a cost-effective strategy in the NHS. The analysis suggests that adopting this technology could be good use of scarce resources. The impact of automated monitoring solutions on staffing warrants further exploration and may show additional value in adopting such technology.

PD07 Can Commencing Colorectal Cancer Screening At Age 45 Years Be A Good Investment? An Individual-Level Simulation Analysis In Germany

Min Wai Lwin (minwai.lwin@dkfz.de), Chih-Yuan Cheng, Silvia Calderazzo, Christoph Schramm and Michael Schlander

Introduction: The effectiveness and cost saving advantages of colorectal cancer (CRC) screening have gained widespread scientific consensus. However, the rising incidence of early-onset CRC has challenged Germany's current screening program, which focuses on individuals aged 50 years or older. This study evaluated the potential cost effectiveness of initiating CRC screening in Germany at the age of 45 years.
Methods: The cost-effectiveness analysis utilized a validated discrete-event-simulation model, DECAS, which incorporates both adenomatous and serrated polyp pathways in CRC development. This model has been validated using German CRC epidemiological data and simulates the effects of screening interventions. It was used to compare four new CRC screening strategies starting at age 45 years (10-yearly colonoscopy, annual or biennial fecal immunochemical testing [FIT], or both) with the current screening strategy starting at age 50 years. The simulation, assuming perfect adherence, included a cohort of 100,000 individuals with an average CRC risk from age 20 to 90 years or death, applying a three percent discount with costs in 2023 Euros.
Results: The model outcomes included quality-adjusted life-years (QALYs) gained and total incremental costs, considering both CRC treatment and screening costs. Initiating 10-yearly colonoscopy only or FIT plus colonoscopy strategies at age 45 years yielded incremental gains of seven to 28 QALYs, with incremental costs of EUR28,360 to EUR71,759 per 1,000 individuals, compared with the current strategy. The incremental cost-effectiveness ratios varied between EUR1,029 and EUR9,763 per QALY gained. The FIT-only strategy was dominated by the current screening strategy. These findings remained consistent throughout the probabilistic sensitivity analyses.
Conclusions: The cost-effectiveness findings support initiating CRC screening at age 45 years with either colonoscopy alone or colonoscopy plus FIT, demonstrating substantial gains in QALYs and a

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