

## PD25 Innovation In Facial Palsy Treatment: The Costs And Benefits Of Telerehabilitation Introduced Into Physical Therapy Pathways

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**Introduction:** The incidence of facial palsy has been rising worldwide, with recent evidence emerging of links to COVID-19 infection. To date, guidance on cost-effective treatments is limited to medication (prednisolone). In terms of physical therapy, neuromuscular retraining (NMR) to restore balanced facial function has been most widely evaluated, but not in terms of cost effectiveness. The added value of telerehabilitation is unknown.

**Methods:** A multistage technology assessment was conducted, which included the following:

- a national survey of current therapy pathways in the UK and patients' and clinicians' views on the benefits and challenges of telerehabilitation;
- a systematic review of clinical effectiveness trials evaluating facial NMR therapy;
- calculation of long-term morbidity costs (national economic burden) based on incidence, patient recovery profiles, health-related quality of life, and national facial palsy treatment costs (valuation of clinical improvements in monetary terms was provided by a national Delphi panel); and
- evaluation of the cost effectiveness of telerehabilitation (remote monitoring wearables) added to current face-to-face NMR delivery.

**Results:** Nationally, approximately five percent of patients with facial palsy (17% of unresolved cases) are referred for facial NMR. The long-term economic burden associated with unresolved cases is estimated to range from GBP351 (EUR417) to GBP584 (EUR692) million, indicating substantial savings if long-term recovery can be improved. Medical treatment costs are GBP86.34 (EUR102) million per annual cohort, and physical and psychological therapy costs are GBP643,292 (EUR762,561). Economic modeling showed that telerehabilitation was cost effective, producing a health gain and a cost-saving of GBP468 (EUR555) per patient. If scaled to the national level for all patients who do not recover fully, an annual saving of GBP3.075 (EUR3.65) million is possible.

**Conclusions:** Economic modeling indicates that NMR could improve patient outcomes and reduce costs. The national survey demonstrated that access to NMR therapy services is limited, so introduction of telerehabilitation could improve access for currently underserved populations. Future clinical trials need to incorporate economic evaluations to help inform decision-making.

## PD26 Seeking Sustainability For The Brazilian Public Healthcare System: Cost-Utility Analysis Of Pembrolizumab For Advanced Non-Small Cell Lung Cancer

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**Introduction:** Pembrolizumab is used as a monotherapy or in addition to chemotherapy for patients with non-small cell lung cancer (NSCLC) as an alternative to platinum-based chemotherapy. The objective was to conduct a cost-utility analysis for subgroups of patients with NSCLC using the Brazilian Unified Health System (SUS) threshold of BRL120,000 (USD24,458) per quality-adjusted life-year (QALY).

**Methods:** We built a partitioned survival model with three health states based on overall survival (OS) and progression-free survival (PFS) curves for three scenarios according to programmed death ligand-1 (PD-L1) expression as follows: (i) pembrolizumab monotherapy for at least 50 percent PD-L1; (ii) pembrolizumab monotherapy for at least one percent PD-L1; and (iii) pembrolizumab plus chemotherapy for one to 49 percent PD-L1. The outcome of interest was QALYs, so utility values were derived from pre- and post-progression states according to the treatment received. Survival curves were extrapolated for 20 years using different distributions. The best fitted distribution was selected by visual inspection, clinical plausibility, and Akaike and Bayesian information criterion tests. Direct costs were also considered.

**Results:** Pembrolizumab provided incremental gains of 1.23, 0.35, and 1.10 QALYs when compared with platinum-based chemotherapy for scenarios one, two, and three, respectively. The subgroup with the best incremental cost-utility ratio (ICUR) was pembrolizumab monotherapy for at least 50 percent PD-L1 (BRL201.366 [USD41,041] per QALY gained), followed by pembrolizumab with chemotherapy for one to 49 percent PD-L1 (BRL267.216 [USD54,463] per QALY gained). When assessed for all PD-L1 positive patients, the ICUR reached BRL571.425 (USD116,465), which was 4.5 times the cost-effectiveness threshold. Sensitivity analysis showed that pembrolizumab must cost a maximum of BRL4.761 (USD970) per vial to be cost effective for the SUS, which is a 40.7 percent reduction in the base case price.

**Conclusions:** Evidence shows that pembrolizumab alone or in combination with chemotherapy is more effective than platinum-based chemotherapy for treating patients with NSCLC, especially those with a high expression of PD-L1. However, price reduction is essential for pembrolizumab to be cost effective for treating these patients in the SUS.