Health Information and Quality Authority
An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Health technology assessment of a national deep brain stimulation service in Ireland

Advice to the Health Service Executive

11 October 2012

Safer Better Care

Foreword

Deep brain stimulation (DBS) is a surgical procedure for the management of motor function symptoms in patients with movement disorders – including Parkinson's disease, essential tremor and dystonia – that are no longer adequately controlled by drug therapy. In the absence of a DBS service in Ireland, patients are currently referred to DBS centres abroad for assessment, surgery and follow-up care. Funding for eligible patients is provided through the Treatment Abroad Scheme.

In September 2011, the Health Information and Quality Authority (the Authority) agreed to undertake a health technology assessment (HTA) on the provision of DBS services in response to a request from the National Director of Quality and Patient Safety in the Health Service Executive (HSE). The purpose of this HTA was to examine the implications of a national DBS service in Ireland for current and future patients and the resource requirements and costs of such a service compared to the current service provided through the Treatment Abroad Scheme.

Work on the HTA was undertaken by an Evaluation Team from the HTA Directorate of the Authority. A multidisciplinary Expert Advisory Group (EAG) was convened to advise the Authority during the conduct of this assessment.

The Authority would like to thank its Evaluation Team, the members of the EAG and all who contributed to the preparation of this report.

Dr Máirín Ryan

Director of Health Technology Assessment

Health Information and Quality Authority

Advice to the HSE

This health technology assessment (HTA) examined the provision of deep brain stimulation (DBS) services for adult patients with selected movement disorders in Ireland. The likely demand for a national DBS service was examined as well as the implications it would have for current and future patients. This HTA also compared the resource requirements and costs of the current method of providing these services in the UK, through the E112 Treatment Abroad Scheme (TAS) to a prospective national DBS service provided by the HSE.

The key findings of this HTA which precede and inform the Authority's advice are:

- The TAS provides timely access for eligible Irish patients to DBS surgery overseas. However, the requirement to travel is a significant financial and logistical burden for many patients. Those eligible for treatment invariably have considerable functional impairment associated with their underlying condition making lengthy journeys on public and commercial carriers challenging. The requirement to travel overseas also limits access for otherwise eligible patients who are unable to travel, raising ethical issues regarding equity of access to care.

- The provision of DBS services through the TAS poses challenges to continuity of care and to ensuring that DBS treatment is integrated with healthcare accessed in Ireland. Access to urgent DBS care is complicated by the need to obtain a new E112 form through the TAS prior to travelling and to organise this overseas travel at short notice.

- Through the existing TAS, on average, 13 new eligible patients undergo DBS surgery for movement disorders in other EU/EEA countries each year. Currently there is no reliable method of determining the number of people with movement disorders in Ireland that are eligible for DBS. Based on data from comparable services in the UK and assuming similar prevalence rates and access to treatment, it is estimated that demand for DBS for movement disorders would increase to 19 new patients per annum if a national DBS service were established.

- Previously published international standards and service specifications are available that describe a high quality DBS service. A national DBS service thus formed should comprise a multi-disciplinary team of appropriately trained professionals with access to the requisite resources to ensure they achieve the required minimum caseload and to ensure that patients receive optimal care according to their individual needs.

- A cost-minimisation analysis was undertaken using the perspective of the publicly funded health and social care system. Costs were restricted to the direct costs to the HSE and excluded costs to the patient and wider societal costs. It is estimated that the current median cost per patient for the existing TAS-funded service is €44,700 over 10 years; providing DBS services in Ireland would cost the HSE an additional €20,900 per patient over 10 years. Over five years, the incremental budget impact of a national DBS service is €1.84 million more than the estimated €4.29 million to treat the same number of patients through the TAS. For the budget impact analysis (BIA), costs include those for patients repatriated from services abroad in addition to costs for new patients. As the economic model incorporates a number of assumptions, these results are subject to a degree of uncertainty.

- In a scenario analogous to a single payer system, where the total cost of DBS care for an individual patient is entirely borne by one provider, the cost difference between the service delivery models is reduced to €4,100 per patient over 10 years. In sensitivity analyses, changes to the relative contribution by private health insurance companies to the cost of DBS care for patients with private health insurance substantially influenced the estimated five-year budget impact of the different service delivery models and could potentially render a national programme more affordable than in the base case analysis.

- A national DBS service would potentially reduce the financial and logistical burden on patients and improve access to beneficial care. Provision of a national service would however have resource implications for staff, imaging services, neurosurgical theatre time and surgical bed days.

- Appropriate service planning and investment is required prior to the introduction of a national service to ensure that any new service could meet service specifications for a high quality service and to ensure that existing levels of access to neurosurgery are maintained for DBS patients. Such planning should take into consideration the significant capacity constraints in current public neurological and neurosurgical services (as evidenced by lengthy waiting lists for outpatient appointments and elective neurosurgery) and the impact on access to neurosurgical care for non-DBS patients.

- While a national DBS service may address the existing equity issues that exist in relation to the sub-group of otherwise eligible patients unable to travel for DBS care, it may give rise to new ethical issues due to the diversion of resources from other effective treatments or from the overall healthcare fund.

- Ongoing research into the use of DBS for other indications (e.g. epilepsy, depression) may result in increased demand for DBS services in the future.

Arising from the findings above, the Authority's advice to the Health Service Executive is as follows:

Under existing financing arrangements, a national DBS service would cost the HSE more per patient than the current service funded through the TAS. The cost difference will be significantly impacted by any changes to the relative contribution by private health insurance companies to the cost of DBS care for patients with private health insurance and could potentially render a national programme more affordable than in the base case analysis.

Although under current arrangements a national DBS service would cost more, it may improve access to beneficial care for otherwise eligible DBS patients unable to travel overseas for care and would reduce the logistical and financial burden on patients. However, challenges would exist to ensure that any new service could provide timely access to care in accordance with appropriate quality standards, particularly in light of the existing capacity constraints within the publicly-funded neurological and neurosurgical services.

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For further information please contact:

Health Information and Quality Authority
Dublin Regional Office
George's Court
George's Lane
Smithfield
Dublin 7
Phone: +353 (0) 1 814 7400

URL: www.hiqa.ie