

# Health Technology Assessment of Domiciliary Invasive Ventilation for Adults with Spinal Cord Injuries



Health  
Information  
and Quality  
Authority

An tÚdarás Um Fhaisnéis  
agus Cáilíocht Sláinte

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## Background

Patients with high cervical spinal cord injuries (SCI) have substantial care needs and may require a ventilator and tracheostomy to breathe. While these injuries are rare (3.6 cases per million in Ireland in 2021), they are life-altering and are associated with substantial care costs.

This health technology assessment (HTA) aimed to inform decision-making regarding the national provision of domiciliary ventilation for adults with SCI in Ireland.

## Methods

A HTA was conducted in line with the EUnetHTA 'HTA Core Model®'.

Key components of this HTA included: a scoping review of international guidance, a budget impact analysis (BIA), and examination of organisational, patient, social and ethical considerations.

An expert advisory group was convened for this HTA, comprising representation from key stakeholders including the Health Service Executive (HSE), clinicians with specialist expertise in the management of patients with spinal cord injuries requiring mechanical ventilation, those involved in funding community services, and patient and family carer representation.

## Results

### Scoping review of international guidance

Seventeen guidance documents from 10 countries were included.

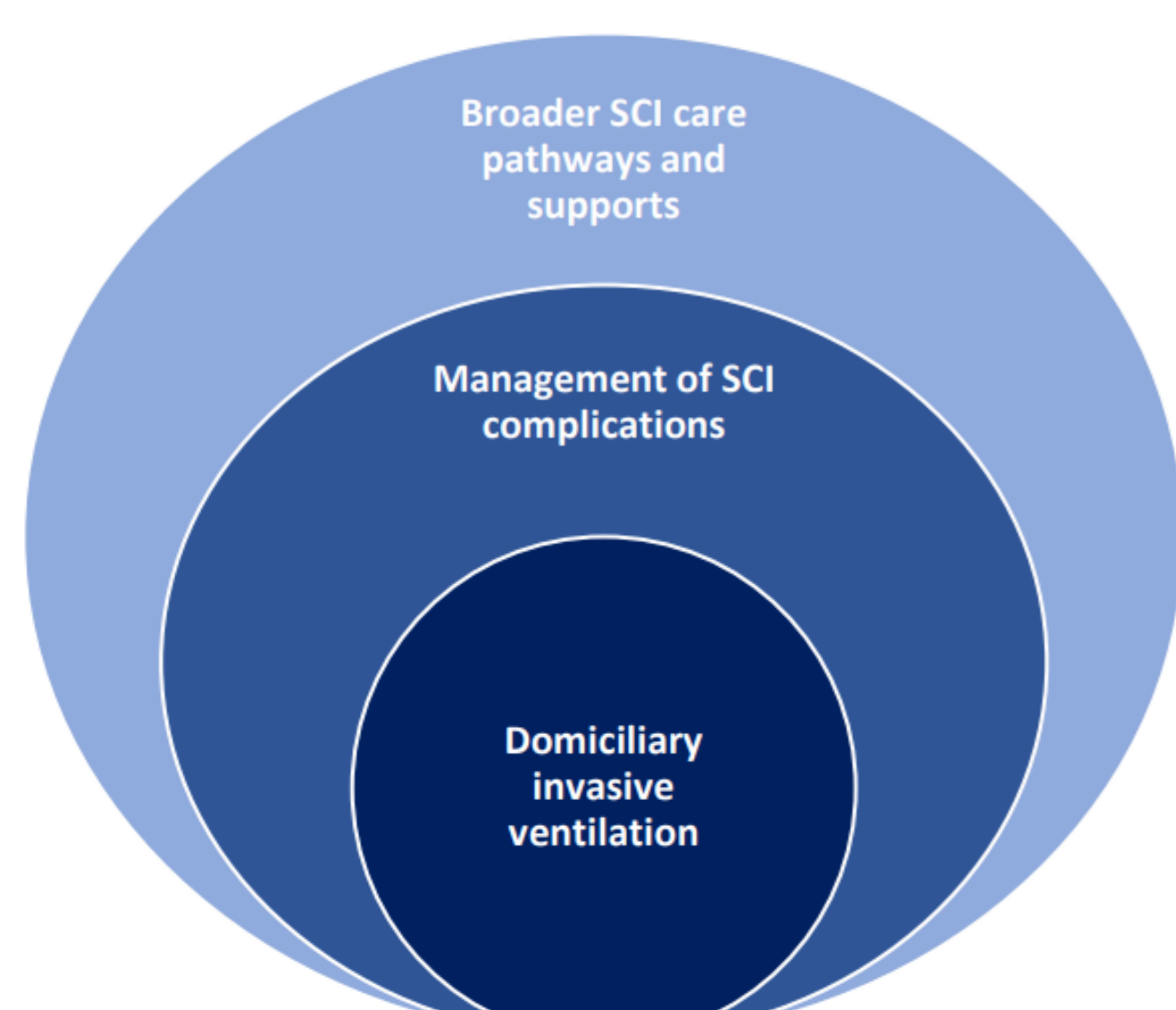
Recommendations are provided in relation to three broad areas of care delivery (**Figure 1**).

In terms of governance, guidance documents discuss the importance of having clear roles and responsibilities for the domiciliary ventilation service.

There is consistency across guidance documents that **24/7 care**, involving at least one trained member of homecare staff who has demonstrated competency for the tasks required, is essential. However, there is a lack of consensus on **the requirement for nursing qualifications** or whether trained healthcare assistants are sufficient.

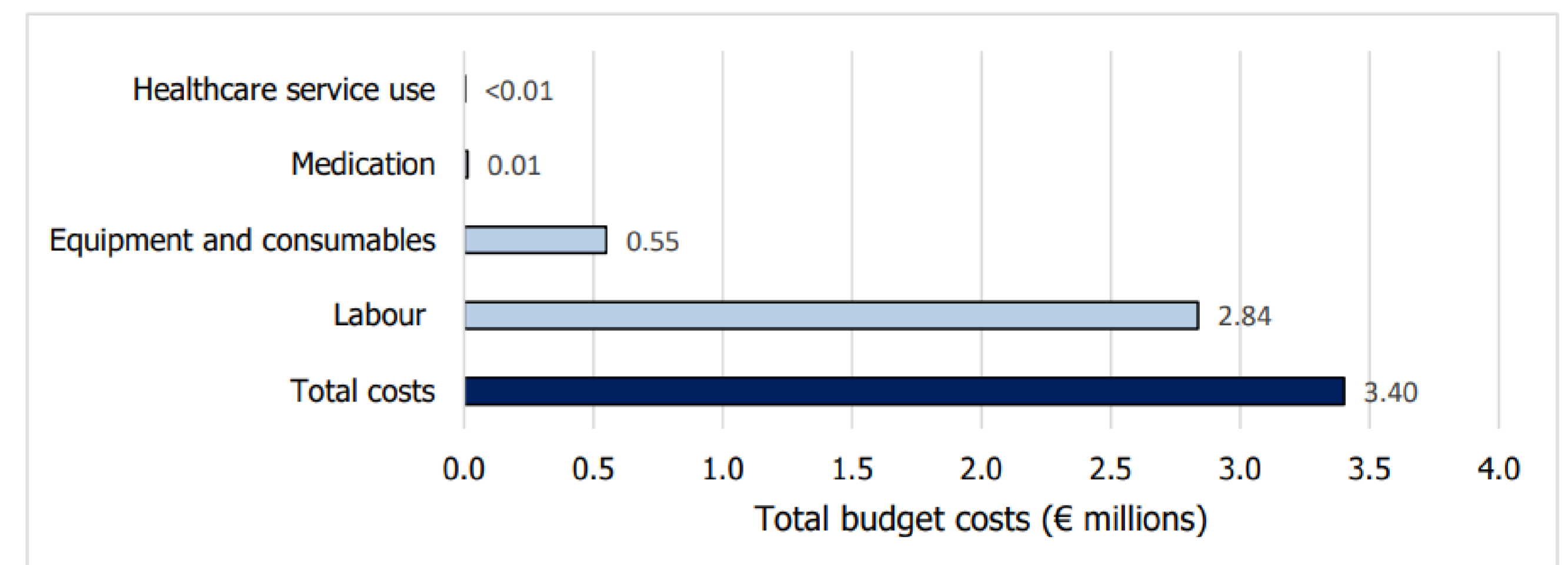
In general, the guidance documents all discuss the importance of **appropriate preparation and timing** of the transition to the home setting; anticipation of present and future requirements in terms of environment and training of those providing care; and anticipation of disease progression.

**Figure 1:** Conceptual framework for the Scoping Review findings



### Budget Impact Analysis

**Figure 2:** Five-year budget impact of a comprehensive homecare package for a patient with SCI requiring mechanical invasive ventilation



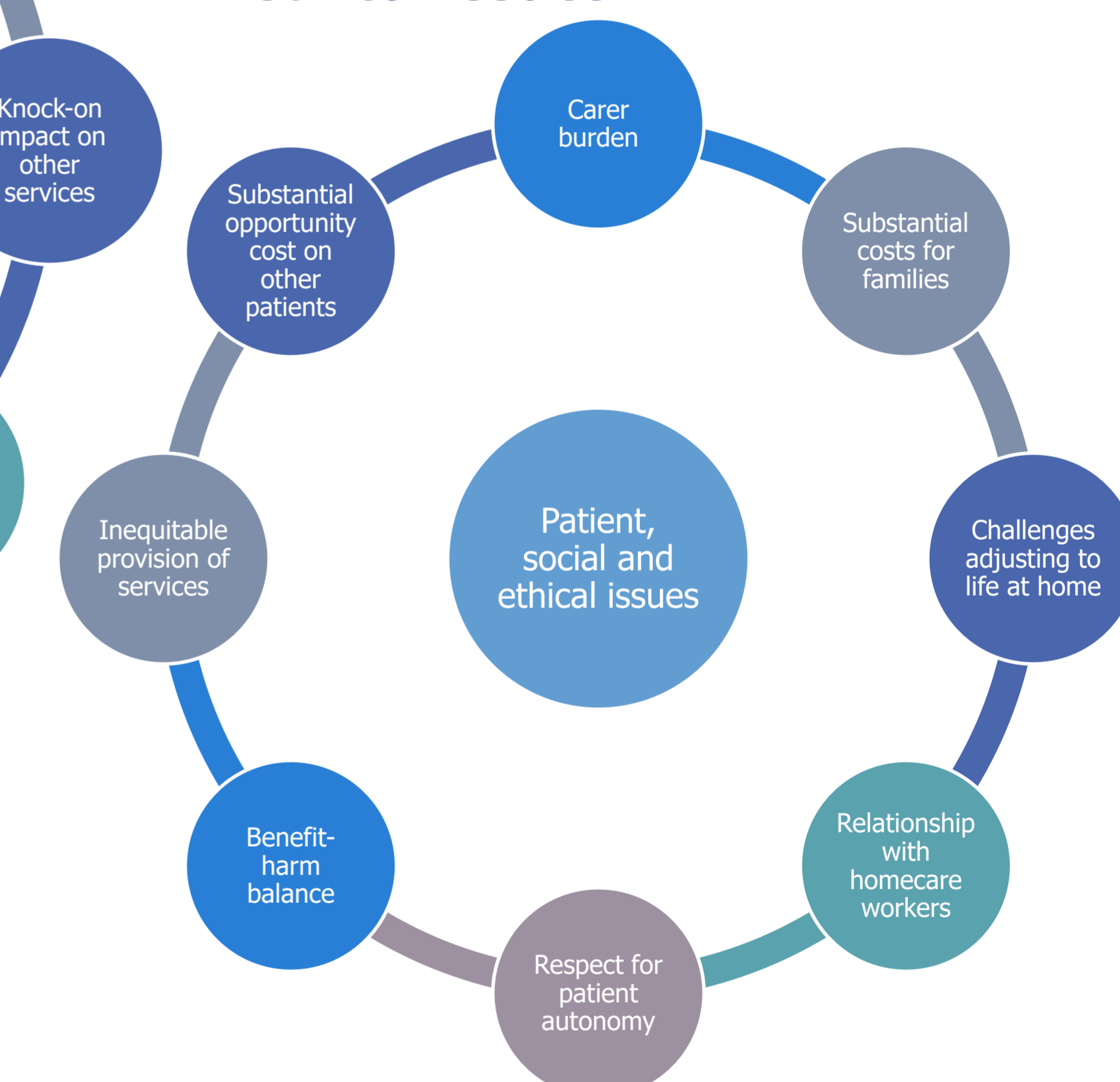
Over a five-year time horizon, the total budget impact of a comprehensive homecare package for a patient with SCI requiring mechanical invasive ventilation was estimated at **€3.4 million per patient (Figure 2)**. The majority of expenditure was associated with the cost of labour (€2.8 million, 83%). Of note, this condition is rare, with, on average, one new patient expected every one to two years.

### Organisational, patient, social and ethical considerations

**Figure 3:** Organisational issues



**Figure 4:** Patient, social and ethical issues



## Key findings

The results of this assessment support the development of a national clinical pathway that extends into the community for patients with SCI who require mechanical invasive ventilation.

This pathway should have an overarching clinical governance framework, and would benefit from the establishment of a national training and support role, and funding through a centralised budget.