

# EMPOWER: Early Mobility and Powered Wheelchair Evidence Review

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## Background

Mobility limitations are amongst the most common limitations experienced by disabled children and young people.

Provision of early powered mobility interventions has emerged as a health technology proposed to:

- support immediate and life-course development, activity, and participation of children with mobility limitations
- enhance the wellbeing of their families, and
- reduce societal impacts of mobility limitations.

To inform decision-making and further research related to early powered mobility interventions there is now a need for a synthesis of existing evidence.

## Aim

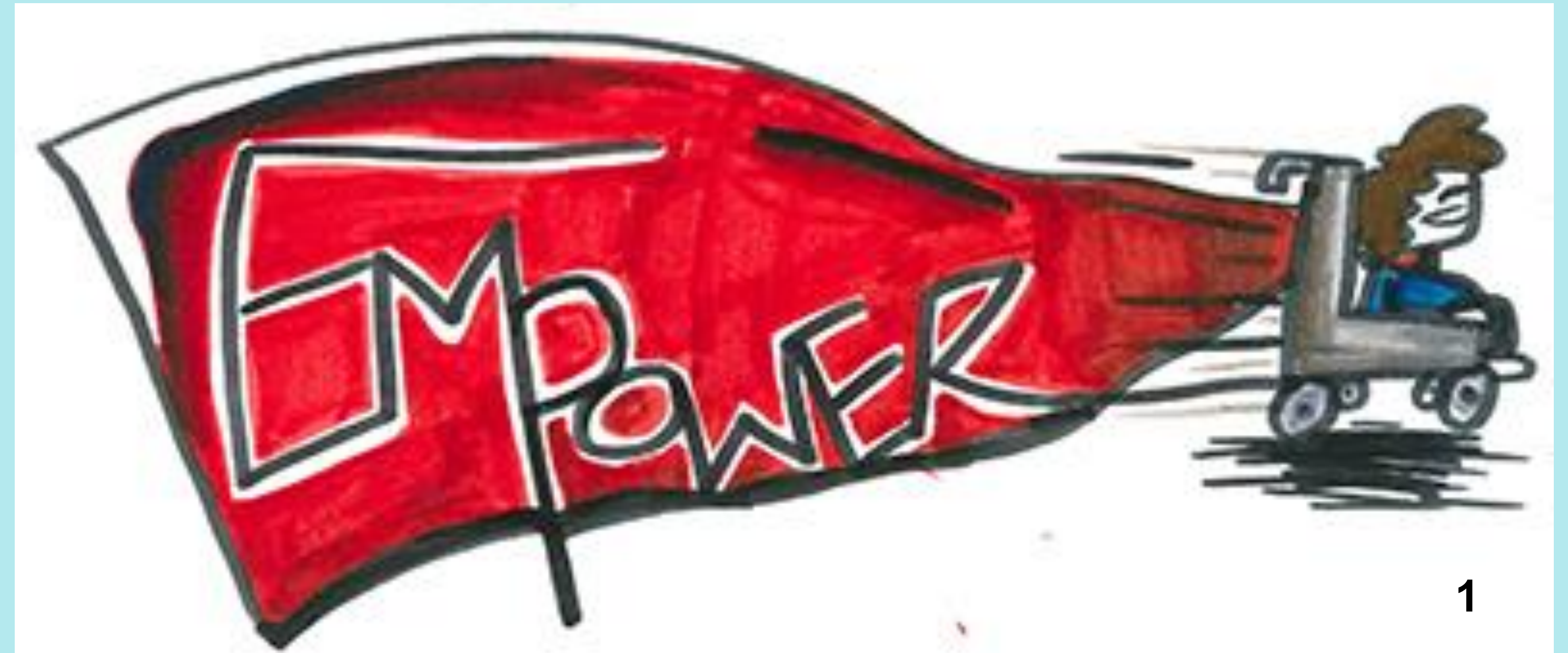
To examine and model the relative effectiveness and cost-effectiveness of early powered mobility interventions (i.e. for children <5 years with mobility limitations) compared to powered mobility for children aged ≥5.

## Methods

Design: a mixed-methods systematic evidence synthesis and economic modelling study, using established methods to identify relevant research from bibliographic databases, grey literature, and through consultation with topic experts. All relevant outcomes were considered, including: children's life skills, independence, autonomy, participation; parent health; and social care, education costs.

Data from included studies were synthesised into a logic model and evidence maps, incorporating: key intervention elements, relevant outcomes and measures, pathways to change, and factors related to implementation.

For the economic model, costs related to different components of powered mobility interventions were gathered from UK NHS wheelchair services, charitable organisations, and published reports. Wider economic costs and benefits to the NHS, families, and society were also considered.



## Preliminary Findings

- 7,128 papers were identified; of which 84 were included.
  - 2 randomised controlled trials, 64 observational studies, 3 mixed methods studies, and 15 qualitative studies.
- Sample sized ranged from one to 538 participants in individual studies, with median 5 participants.
- Fourteen studies (14/84, 17%) had a sample size of ≥30 participants, while 23/84 (27%) had only a single participant
- 32/84 (38%) studies reported data specifically for children aged <5 years, 24/84 (29%).
- Half of the studies (43/84, 51%) described multiple diagnoses among the characteristics of their participants. Quarter (21/84, 25%) included solely children with cerebral palsy; three (3/84, 4%) included solely children with Down Syndrome, and three (3/84, 4%) solely children with Spina Bifida.
- Included studies were published between 1971 and 2018. Twelve (14%) were published before 2000, and 53/84 (64%) from 2010 onwards

## Impact

- The evidence synthesis and logic model will inform planning and recommendations for powered mobility provision and future research.
- In light of the scarcity of robust effectiveness studies, the current evidence is informative for when: selecting outcomes for evaluations of early powered mobility provision; choosing pathways to target in intervention design; and considering feasibility and acceptability of implementation.

