PROJECTING THE INCIDENCE AND PREVALENCE OF POST-STROKE COGNITIVE IMPAIRMENT AND DEMENTIA IN THE IRISH POPULATION AGED 40+ YEARS FROM 2015–2025

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Background Post-stroke cognitive impairment (PSCI) is a common consequence of stroke, leading to reduced quality of life and increased care needs. However, rehabilitation services for this condition in Ireland are very limited. The aim was to apply estimates of PSCI incidence to the Irish population and project the number with PSCI in the population in 2025.

Methods We developed a deterministic Markov model to estimate future incidence of PSCI in the population aged 40–89 years living in Ireland up to 2025. Population data, estimates and projections to 2025 were obtained from the Irish Central Statistics Office. Data from the Irish Longitudinal Study on Ageing were used to estimate age and sex specific stroke prevalence in 2014. Age and sex specific stroke incidence was estimated using 2015 public hospital discharge data (n=6,155). Transition probabilities across six health states defined by cognitive impairment, physical disability, dementia and death were estimated using data from stroke survivors in the English Longitudinal Study on Ageing (n=4,900) (2002–2011). Published data from the South London Stroke Register were used to estimate annual stroke recurrence.

Results The Irish population aged 40–89 years in 2015–2025 (n=2.7m) is projected to have a cumulative incidence of stroke of approximately 2.3% by 2025 (n=63,100). Of these incident strokes, approximately 22.5% are estimated to have died due to stroke (n=14,200), and 23.8% to have died of another cause (n=15,000) by 2025. Of the survivors in 2025 (n=30,600), approximately 50.9% are predicted to have cognitive impairment without dementia (n=15,500), and 19.4% to have dementia (n=5900). The total number of stroke survivors is projected to increase from 26700 in 2015 to 41400 in 2025, equivalent to a 55% increase in numbers, and the number with post-stroke dementia is projected to more than double from 3900 in 2015 to 8700 in 2025.

Discussion In 2025, over two thirds of Irish people who have survived a stroke in the preceding 10 years will have cognitive impairment. The number of people with post-stroke dementia is set to double between 2015 and 2025. The model is limited by its deterministic nature, and the assumption that age-specific disease incidence will remain stable. The model will be further developed to include a probabilistic sensitivity analysis, to model alternative scenarios for trends in disease incidence, and to extend the projections to 2035. The model will also be used in an economic evaluation of alternative strategies for stroke management, including cognitive rehabilitation.