

# Research Snapshot

Summarising findings and their implications



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## The healthcare costs of childhood language difficulties

**Understanding the costs associated with language difficulties will enable researchers, practitioners and policy makers to anticipate the economic implications of service improvements.**

The successful development of language skills is a key developmental milestone, with implications for later outcomes including social relationships and academic achievement.

Language difficulties are common, affecting between 7 and 17 per cent of children (depending on definitions and age). Given the high frequency and impact of language difficulties, the associated treatment and costs are of major policy interest and significance. While children with language difficulties are often seen by a range of health professionals including speech pathologists, psychologists, paediatricians, and early intervention professionals, many children with language difficulties do not come to the attention of clinical services.

Although the cost-effectiveness of speech-language interventions delivered through specific language centres/clinics and the education sector has been examined, little is known about the costs incurred to the broader healthcare sector as a whole (e.g. services from speech-language pathologists, psychologists, paediatricians, and early intervention professionals) in Australia and internationally.

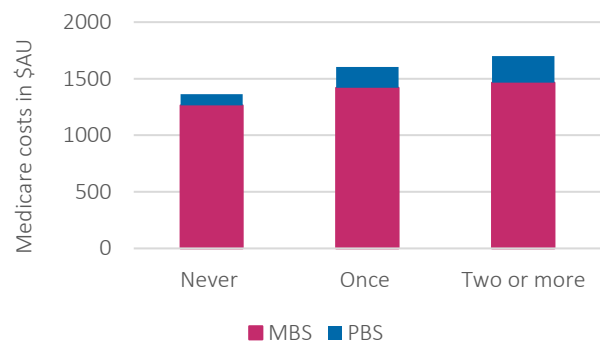
### Background

The 'Healthcare costs associated with language difficulties from infancy to 9 years of age' study used data from *Growing up in Australia: The Longitudinal Study of Australian Children* (LSAC) to identify the healthcare costs incurred as a result of treating language difficulties in Australia. LSAC follows two cohorts of approximately 5,000 children and has been linked to national Medicare data.

In Australia, the Medicare healthcare scheme consists of two national schemes:

- **Medicare Benefits Schedule (MBS)**, which subsidises the cost of visits to health professionals.
- **Pharmaceutical Benefits Scheme (PBS)**, which subsidises costs of prescription medications.

## Healthcare costs by persistence of language difficulties (assessed over three time points)



### Aims

This study was the first large-scale investigation of the healthcare costs associated with language difficulties in Australian children. We aimed to examine:

1. Healthcare costs for children with and without language difficulties from birth up to age 9
2. Costs associated with persistent language difficulties from 4 to 9 years of age.

### Key findings

Language difficulties pose a significant and enduring cost to the healthcare system. Findings indicate that:

- **Language difficulties incurred \$1.2 to \$12.1 million in additional healthcare spending.** Population numbers from the Australian Bureau of Statistics were used to estimate the costs associated with child language difficulties for the whole Australian child population. Costs range between \$1.2 million (children 6-7 years) to \$12.1 million (children 0-1 years).
- **Costs were higher for most age groups of children with language difficulties, compared to those without language difficulties.** When the characteristics of the child and family were taken into account, health costs were higher for children aged 0-1 years, 2-3 years and 4-5 years, but not for children aged 6-7 and 8-9 years.
- **Healthcare costs increased with the persistence of difficulties.** Medicare costs were 25 per cent higher for children with language difficulties at two or more time-points, and 18 per cent higher for those with language difficulties at one time-point, compared to those without any language difficulties (see Figure).

# “Language difficulties pose a significant and enduring cost to the healthcare system”



## Implications

### For policy and practice

#### Child language difficulties incur significant healthcare costs

At a national level, the healthcare costs of children with language difficulties poses a substantial cost to government depending on the age examined.

The costs reported in our study do not include costs incurred by the education sector, early intervention services and many speech or language services. The full costs to society would be substantially higher if the long-term effects of language difficulties were taken into account, such as lost income from reduced employment, welfare dependence due to poor educational attainment or poor mental health.

Potential savings may accrue from the early detection of language difficulties and the provision of effective interventions.

#### Language difficulties impose a cost burden similar to children who are under or overweight

Language difficulties incur a cost burden similar to all combined categories of childhood underweight, overweight or obesity. The total estimated Medicare costs for all Australian children aged 0 to 9 years associated with language difficulties is \$15 million compared to \$13 million for children under or overweight.

### For research

#### Healthcare costs increase with persistent difficulties

Healthcare costs increase with the persistence of language difficulties. The next steps for research are to identify children likely to have persistent language difficulties. However, there is a high level of instability in children's language skills over childhood. While earlier identification and treatment of language difficulties is important, it will also be important to continue monitoring children and reporting on the costs associated with language difficulties as children progress through late primary school and high school.

#### Language difficulties associated with other conditions

We were unable to examine whether healthcare costs were specifically due to the assessment or treatment of language difficulties, as opposed to co-morbid conditions. Future research accounting for reasons for health service use would assist in understanding the unique cost burden associated with language difficulties.

## Study details

*Growing up in Australia*: The Longitudinal Study of Australian Children: This study is Australia's nationally-representative and prospective cohort study of children's growth and development. Two cohorts of children were recruited in 2004 from the Australian Medicare database:

- 5,000 children aged 0-1 years (Baby cohort)
- 5,000 children aged 4-5 years (Kindergarten cohort)

Children and families are followed up every two years. A range of measures have been collected at each time-point via parent-interview, parent completed questionnaires, child direct assessment, and teacher completed questionnaire.

Data from *Growing up in Australia* is available on application to researchers internationally. *Growing up in Australia* is conducted in partnership between the Department of Social Services, the Australian Institute of Family Studies and the Australian Bureau of Statistics.

For the results presented, children were defined as having language difficulties if they were 1.25 standard deviations below the mean on any of the language measures at each age. Healthcare costs were obtained by linkage with Australian Medicare data. Costs were inflated to December 2012 Australian dollars.

More information about the LSAC study is available at: <http://www.growingupinaustralia.gov.au/>

### Suggested citation:

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### Published article details:

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## About us

The Centre of Research Excellence in Child Language is a collaboration of child language experts from the Murdoch Childrens Research Institute and Griffith, Newcastle (UK), Deakin and La Trobe Universities. It uses the latest approaches in molecular genetics, neuro-imaging, epidemiology, biostatistics and health economics to investigate factors that affect and improve child language and development.

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