Budget Impact Analysis of a Population Based Expanded Reproductive Carrier Screening in Australia

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Abstract

Reproductive genetic carrier screening (RGCS) through whole genome sequencing helps identify couples at risk of having children with AR or XL conditions. This study aims to assess the economic impact of RGCS in identifying joint carrier status for genes linked to these conditions in Australia.

Methods: A model was developed for a hypothetical cohort of couples planning for or in early pregnancy. Costs were determined using Medicare, and hospital costs. The total cost of care was calculated for two scenarios:

- Current clinical practice.
- The Test Scenario, RGCS where reproductive decisions were informed by their risk of having a child with a genetic condition. The budget impact was calculated by comparing costs between these scenarios.

Results: The estimated number of couples eligible for enhanced reproductive carrier screening (ERCS) was 85,789 in 2026, projected to rise to 161,585 by 2031. The introduction of ERCS in Australia is expected to result in government health budget savings of $84 million in the first year, growing to $296 million by the sixth year, with cumulative savings of approximately $1.189 billion over the first six.

Conclusion: The adoption of RGCS as a screening tool offers a promising opportunity to achieve cost savings for government health budgets.