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Perspective

The true cost of hidden waiting times for cataract surgery in Australia

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Key points

- Waiting times for public cataract surgery vary across Australian jurisdictions, ranging from 4 to 30 months
- Cataract causes vision impairment, negatively affecting a person's ability to work, care for others, drive and perform activities of daily living
- Investment in cataract services to reduce waiting times would likely result in health system cost savings for governments by preventing fall-related injuries

Abstract

Cataract surgery is a safe, effective and common elective procedure in Australia but access is inequitable. True waiting times for cataract care are undisclosed or inconsistently reported by governments. Estimates of true waiting times range from 4 to 30 months and have been extended during the coronavirus disease 2019 (COVID-19) pandemic. Comparative analysis revealed that reducing waiting periods from 12 to 3 months would result in estimated public health system cost savings of $6.6 million by preventing 50 679 falls. Investment in public cataract services to address current unmet needs would prevent avoidable vision impairment and associated negative consequences.

Introduction

Cataract is a leading cause of visual impairment in Australia, affecting 20% of Aboriginal and Torres Strait Islander (Indigenous) people (40 years and older) and 14% of non-Indigenous Australians (50 years and older).[1] People with cataracts experience blurred vision, reduced contrast sensitivity and increased glare sensitivity, affecting their ability to work, care for others, drive and perform activities of daily living. Vision loss from cataracts disproportionately affects Indigenous Australians (adjusted odds ratio: 2.95) and people with lower educational attainment and socioeconomic status.[2]

Treatment with cataract surgery is safe, effective[3] and cost-effective[4], yet access to surgery in Australia is currently inequitable.[5] Privately funded patients may have surgery within weeks of diagnosis but publicly funded patients typically face longer waiting periods.[6] Because a higher proportion of Indigenous people undergoing cataract surgery access surgery as public patients (80%[5] compared with 29% of non-Indigenous Australians[7]), the impact of longer waiting times in public hospitals falls most heavily on them.

Further disparities exist within public hospitals, with 36% longer median waiting times for Indigenous patients compared with other Australians.[6] Lower cataract surgery coverage rates (proportion of people with cataract who have undergone surgery) in Indigenous people (61.5% versus 88% for non-Indigenous Australians) also indicate an unmet need for cataract services.[8]

The 'wait for the wait'

Cataract surgery is one of the most common elective procedures performed in public hospitals. Waiting times for surgery are routinely reported by the Australian Institute of Health and Welfare.[6] In 2018–19, New South Wales (NSW) had the longest waits (50th percentile – time within which 50% of patients waitlisted for cataract surgery were admitted – 8 months; 90th percentile 11 months) and Victoria, the shortest (50th percentile 1 month; 90th percentile 4 months).[6] However, these data reflect only part of the picture; they only represent time elapsed from addition to a public hospital waiting list to surgical admission. They do not capture time elapsed from initial diagnosis and referral by an optometrist or general medical practitioner to an ophthalmologist for confirmation of diagnosis, presurgical assessment, or subsequent addition to a surgical wait list.

The waiting times for initial referrals to public hospital outpatient ophthalmology services are often characterised as the 'hidden waiting list' or the 'wait for the wait'. In NSW, Western Australia, the Australian Capital Territory and the Northern Territory these are not publicly reported.[9] However, a study examining 400 cataract referrals in two major metropolitan hospitals in NSW revealed that 61% of patients were still waiting for an initial outpatient appointment 12 months after being referred.[10]

Despite some inconsistency in collection and reporting methods, Victoria, South Australia (SA), Queensland and Tasmania do report some wait time statistics for hospital ophthalmology outpatient services. Before the coronavirus disease 2019 (COVID-19) pandemic, in 2019 the median wait time was 3 months in Victoria[11] and 15 months on average in SA for routine, non-urgent ocular conditions including cataract.[12] In Queensland, 90th percentile wait times could be 10 to 20 months depending on level of visual impairment at time of referral.[13] Similarly, in Tasmania 75th percentile wait times for initial ophthalmology assessments were 6 to 12 months.[14]

Based on the waiting periods discussed above, in the best-case scenario a public patient would have cataract surgery within 4 months of referral, and in the worst case they would wait more than 30 months (2.5 years). In response to the COVID-19 pandemic, the Australian Government mandated all elective surgery be paused on 26 March 2020. During the ensuing months, surgeries were gradually resumed at different rates across the states and territories. These pauses in surgical admissions have created an additional backlog of surgeries and contributed to increased waiting times for patients.[15]

Negative health consequences

Delays in cataract surgery are associated with negative consequences for patients, including increased risk of injury because of falls[16] and loss of driver licence or driving cessation (25%).[17] These can result in a loss of independence, social isolation and exacerbate depressive symptoms.[18] Cataract surgery is a cost-effective intervention[4] and can significantly improve quality of life.[3]

We conducted a comparative analysis from a public health system perspective, during a 3-year period, to estimate government costs and outcomes associated with different waiting times for cataract surgery. Publicly funded health service costs were modelled, considering direct hospital costs for bilateral cataract surgery, pre- and post-operative assessments and indirect hospital costs associated with treating fall- and motor vehicle crash–related injuries.

Based on the National Eye Health Survey 2016[2] and Australian population projections[19,20], it was estimated that 243 139 people were living with visually significant cataracts (visual acuity worse than 6/12) in 2020 (Supplementary Table S1, available from: doi.org/10.26190/8ESR-8H29). Of those, approximately 29% of non-Indigenous Australians[7] and 80% of Indigenous Australians[5] were likely to access bilateral cataract surgery as publicly funded patients, totalling 75 924 people and 151 848 surgeries.

Health system costs

The inflation-adjusted cost of cataract surgery and three ophthalmology consultations (one pre- and two post-operative) was estimated at $3713 per eye in 2020.[21] Assuming bilateral cataract surgery for 75 924 patients and a 12-month waiting period for each eye, total health system costs were estimated at $550.3 million over 3 years (Table 1). During this period, these cataract patients will likely suffer 199 680 falls (Supplementary Table S4, available from: doi.org/10.26190/8ESR-8H29) and 2697 injurious motor vehicle crashes (Supplementary Table S5, available from: doi.org/10.26190/8ESR-8H29).

Reducing the waiting time for cataract surgery from 12 months to 3 months, resulted in a $13.4 million increase in health system costs for surgery and peri-operative consultations in 2019–20 dollars. By reducing waiting times to 3 months, we estimated that 50 679 falls would be avoided (Table 1). Interestingly, there was a small increase in 141 motor vehicle crashes because of a higher crash rate after second eye surgery compared with the period after first eye surgery.[25] Possible reasons for this include increasing age, and increased exposure

Table 1. Comparison of number of falls, motor vehicle crashes and public health system costs associated with (A) 12 month and (B) 3 month waiting times for cataract surgery. Total costs in $A millions ($M) are shown over a 3-year period presented in 2019–20 dollars[a]

Item description	Public health system cost	(A) 12-month wait	(B) 3-month wait	Difference (B–A)
Routine cataract surgery: AR-DRG: C16Z – lens interventions, NHCDC[21]	$2967[b] per surgery	151 848 surgeries	151 848 surgeries	0 surgeries
Non-admitted ophthalmology consultations: 3 per eye: 1 pre-operative and 2 postoperative (Tier 2 class: 20.17 – ophthalmology, NHCDC20)	$248.5[b] per consult	455 544 consults	455 544 consults	0 consults
Total cost of surgery and consultations		**$550.3M[a]**	**$563.7M**	**$13.4M**
Falls while waiting for cataract surgery				
Falls incidence rate (per person-year)[c] Before first surgery: 1.17 (95% CI: 0.93, 1.46)[21] Between surgeries: 0.88 (95% CI: 0.66, 1.17)[21] After second surgery: 0.58 (95% CI: 0.53, 0.79)[22]	$409[b] (95% CI: $173–642) per fall[d]	199 680 falls Cost: $78.7M	149 001 falls Cost: $58.4M	–50 679 falls –$20.3M
Motor vehicle crashes before and after cataract surgery				
Crash rate (per person-year)[e] Before first surgery: 0.0164 Between surgeries: 0.0064 After second surgery: 0.0127	$2 076[b] per injurious crash[f]	2 697 crashes Cost: $5.4M	2 838 crashes Cost: $5.6M	141 crashes $0.2M
Total Cost		**$634.3M**	**$627.7M**	**–$6.6M**

AR-DRG = Australia Refined Diagnosis Related Groups; NHCDC = National Hospital Cost Data Collection

[a] A discount rate of 5% was applied in cost-effectiveness analysis to account for time preference, allowing adjustment of future costs to present value

[b] Costs in financial year 2019–20. Adjusted for inflation using the Reserve Bank of Australia Inflation Calculator, available from: www.rba.gov.au/calculator

[c] Falls incidence rates reported by Palagyi et al22 are crude rates; Keay et al.[23] reported an age and sex-adjusted rate. See Supplementary Table S4 for calculations of falls data, available from: doi.org/10.26190/8ESR-8H29

[d] Average cost of a fall was based on the 'usual care' group in Hewitt et al.[24]

[e] Crash rates were estimated from Meuleners et al.[26] (Supplementary Table S2, available from: doi.org/10.26190/8ESR-8H29)

[f] Cost per injurious crash were estimated from Australian Automobile Association Report[25] (Supplementary Table S3, available from: doi.org/10.26190/8ESR-8H29)

to more risky driving situations after both eye surgeries.[26] Nonetheless, our analysis revealed a significant reduction in falls and modest health system cost savings of an estimated $6.6 million (Table 1).

Conclusion

Eliminating unnecessary delays to cataract surgery would therefore not only lead to better outcomes for patients but also alleviate an economic burden on the health system. Furthermore, the cost savings from this analysis do not account for longer-term costs to society and individuals from falls and motor vehicle crashes, including loss of life, disability care, loss of income, legal system costs, property damage and reduced quality of life. Hence, they are likely to be an underestimate of the potential benefits to society overall.

Greater investment in public cataract services will prevent future avoidable vision impairment and associated negative health consequences. Other strategies that could potentially improve access and efficiency include high-volume cataract surgery services to increase capacity and standardise referral and triage processes to ensure that referrals are appropriately targeted. Furthermore, policy changes to support culturally appropriate services, fast tracking of referrals, and prioritisation of surgery for Indigenous patients can reduce current inequities in access. Finally, adoption of a national standard for data collection of waiting times, and greater transparency in reporting, would enable better insight into the true waiting times for patients referred to public hospitals and allow tracking of future progress.

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Competing interests

None declared.

Author contributions

JHL was responsible for data acquisition, analysis and drafting the manuscript. BA was responsible for data analysis and AP was responsible for data interpretation, and both critically revised the manuscript. HT, AW and PM were responsible for design of the work and criticially appraising the manuscript. LK was responsible for conception and critically revising the manuscript. All authors approved the final manuscript.

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