Evaluation of the Outback Eye Service

Brindhan Tharmarajah1,2, Ashish Agar1, Michael Hennessy1, Marlene Kong3

(1) Department of Ophthalmology, Prince of Wales Hospital, Sydney, Australia (2) University of New South Wales, Sydney, Australia (3) Kirby Institute, UNSW, Sydney, Australia

Introduction

❖ The Outback Eye Service (OES) is the only provider of ophthalmic care to the Indigenous & Non-Indigenous (I&NI) residents of North Western NSW (Figure 1).

❖ Past OES evaluations have been favourable but are all based on qualitative rather than clinical data. This raises questions:
  > What are the OES’ standards of ophthalmic care?
  > Is the OES meeting the entire ophthalmic care needs of NWNSW?
  > Where can the OES be improved based on clinical data?

❖ This study answers these questions.

❖ Eye services are currently evaluated by comparing their crude OR age-adjusted and age-restricted I&NI Cataract Surgery Rates (CSR) with the national CSR.

❖ This study evaluates these tools to determine the best method to use in future.

*CSR is the number of cataract operations performed per million persons per year.

OES

Method

CSR

1. A cross-sectional audit of the OES: 2015 clinical records was performed.

1. To determine how using crude vs. age-adjusted CSRs affects service evaluation, these rates were calculated in the I&NI and total NWNSW population and compared with the national CSR.

2. The number of eye conditions treated by the OES was compared with the expected prevalence of major eye diseases in NWNSW.

2. To determine how restricting age groups affects service evaluation, the relationships between the I&NI CSRs in the entire population and the 30+ age group, the age group most affected by cataract, were compared.

3. The care delivered by the OES was compared with published ophthalmic management standards for each disease.

3. Based on these findings, the best CSR evaluation tool to use when evaluating eye care services was determined.

4. If any standards were not met, reasons were identified. Hence, this study determined if the OES is meeting the entire ophthalmic care needs of NWNSW, and where it can be improved based on clinical data.

Results

OES

Table 1: Crude Vs. Age-Adjusted CSR

<table>
<thead>
<tr>
<th>Population</th>
<th>Crude CSR</th>
<th>Age-Adjusted CSR</th>
<th>Extra Surgery Needed (% Improvement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous</td>
<td>4627</td>
<td>8662</td>
<td>4 (16%)</td>
</tr>
<tr>
<td>Non-Indigenous</td>
<td>7144</td>
<td>5626</td>
<td>43 (52%)</td>
</tr>
<tr>
<td>Total NWNSW</td>
<td>6338</td>
<td>6232</td>
<td>52 (49%)</td>
</tr>
</tbody>
</table>

❖ Age-adjustment altered the CSR in all populations and increased the Indigenous CSR by 87% (Table 1). As age-adjustment accurately controls for the different age distributions of individual populations, it should be used in future.

❖ Comparison with the national CSR benchmark enabled the useful determination of the amount of additional surgeries, and hence degree of service enhancement required in each population to meet national standards (Table 1).

❖ Age-restriction had no effect on the I&NI CSR relationship and is therefore unnecessary.

Table 2: Changes Required of the OES to Meet Management Standards

<table>
<thead>
<tr>
<th>Management Standard</th>
<th>Changes Needed</th>
</tr>
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<tbody>
<tr>
<td>National CSR = 9000 surgeries per million persons per year6</td>
<td>Increased funding</td>
</tr>
<tr>
<td>1. Annual HVF testing for glaucoma patients13</td>
<td>Increased staff, equipment and maintenance</td>
</tr>
<tr>
<td>2. If nil HVF, cup disc ratio is recorded (including suspects)13</td>
<td></td>
</tr>
<tr>
<td>3. Advanced glaucoma patients reviewed 3x/year11</td>
<td></td>
</tr>
<tr>
<td>Annual review of diabetic patients (by an optometrist or ophthalmologist)14</td>
<td>Increased staff and collaboration with other health services</td>
</tr>
<tr>
<td>1. Average waiting list time for public cataract surgery = 84 days4</td>
<td>Investigation of missed appointments, service expansion &amp; transport assistance</td>
</tr>
<tr>
<td>2. Maximum waiting list time for surgery = 90 or 365 days15</td>
<td></td>
</tr>
<tr>
<td>3. Review of early glaucoma patients every 2 years11</td>
<td></td>
</tr>
<tr>
<td>4. Wet MD treated with Anti-VEGF injections every 8 weeks16</td>
<td></td>
</tr>
<tr>
<td>5. Macular edema treated with Anti-VEGF injections and/or laser13</td>
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</table>

Conclusion

❖ As the only ophthalmic care provider in NWNSW, the OES is a vital service

❖ Despite its best efforts, the OES is currently unable to meet the entire ophthalmic care needs of NWNSW

❖ To give NWNSW residents access to the same quality of eye care as the rest of Australia, the OES requires:
  > Service expansion with minor redistribution
  > Additional equipment and maintenance
  > Transport assistance
  > EMR Implementation
  > Further auditing
  > Investigation of strategies to reduce patients missing appointments
  > Increased collaboration with other health services

❖ CSR evaluation tools are limited by their assumption that cataract surgery access rates reflect total eye care service delivery and hence should not be used alone

❖ An eye care provider’s service can be audited, and their age-adjusted I&NI and total CSRs compared with the national CSR to evaluate and improve its service

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References:


9: 4378 km
