

Appendix 2: Selection Procedure for Included Cataract Surgeries

OHIP data received by ICES contains claims paid for by the Ontario Health Insurance Plan.

OHIP data includes health care providers such as physicians, groups, laboratories and out-of-province providers.

Cataract surgery selection

OHIP fee codes were used to identify cataract surgeries for this study. The relevant databases used have been previously validated in diverse contexts.¹⁻⁴ Individuals were included if they had a valid sex, age and provincial health insurance identification number and lived in Ontario on their surgery date. All individuals who had a claim submitted by an ophthalmologist (spec=23) with the billing code 'E140' (i.e. cataract – all types, by any procedure, includes insertion of intraocular lens) were identified. Only the first claim within the study window was used to avoid potential overlap of claims for future cataract surgeries. The date this claim was made become the cataract surgery date.

To avoid complicated cataract surgeries, if another 'E-' billing code was present on the same day as the cataract surgery date, then these patients were removed from the cohort. Prior to September 1st, 2012, the 'E950' billing code was added with almost every 'E140' OHIP claim. As such, 'E950' was removed from the list of excluded 'E-' billing codes. In summary, all OHIP claims with only 'E140,' or 'E140' and 'E950' were considered for this study.

To identify the cataract surgeon, patients were removed from the study if they saw multiple ophthalmologists on the same day as their surgery.

Referral selection

The following OHIP claims were considered for a referral: a billing code ‘V402’, ‘V406’, ‘V408’-‘V409’ submitted by an optometrist (spec=56), a billing code ‘A233’-‘A236’ submitted by an ophthalmologist (spec=23) that was not their surgeon, or a billing code ‘A001’, ‘A003’-‘A006’, ‘A100’, ‘A112’, ‘A115’, ‘A888’, ‘A905’, ‘A911’, ‘A912’, ‘E077’, ‘K131’, ‘K132’ submitted by a family physician (spec=00). For these claims to be considered a valid referral, the patient needed to see their cataract surgeon at least once between the referral date and the surgery date. A referral date from each source (i.e. optometrist, external ophthalmologist or family physician) was then selected, which satisfied the above requirements and was the closest to surgery date.

Given that most cataract surgery referrals are made by optometrists,⁵⁻⁶ a ranking method was used for the primary analysis. This ranking method ranked the source of referral to determine the referral date. The referral date from an optometrist was selected first. If no optometrist referral existed, then the referral from an external ophthalmologist was used. If both referrals did not exist, the referral date from the family physician was used.

References

1. Williams JI, Young W. A summary of studies on the quality of health care administrative databases in Canada. In: Goel V, Williams JI, Anderson GM, Blackstien-Hirsch P, Fooks C, Naylor CD, eds. *Patterns of health care in Ontario. The ICES Practice Atlas*. 2nd ed. Ottawa, Canada: Canadian Medical Association, 1996:339-45.
2. Canadian Institute for Health Information. CIHI Data quality study of emergency department visits for 2004-2005.

Appendix 2, as supplied by the authors. Appendix to: Popovic MM, Hurst M, Diemert LM, et al. A retrospective population-based analysis of wait times for cataract surgery in Ontario, Canada. *CMAJ Open* 2023. doi:10.9778/cmajo.2022-0035. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca.

https://secure.cihi.ca/free_products/voll_nacrs_executive_summary_nov2_2007.pdf. Accessed August 7, 2020.

3. Levy AR, O'Brien BJ, Sellors C, Grootendorst P, Willison D. Coding accuracy of administrative drug claims in the Ontario Drug Benefit database. *Can J Clin Pharmacol*. 2003;10(2):67-71.

4. Juurlink D, Preyra C, Croxford R, Chong A, Austin P, Tu J, Laupacis A. Canadian Institute for Health Information Discharge Abstract Database: A Validation Study.

<https://www.ices.on.ca/Publications/Atlases-and-Reports/2006/Canadian-Institute-for-Health-Information>. Accessed June 23, 2021.

5. Do VQ, McCluskey P, Palagyi A et al. Are cataract surgery referrals to public hospitals in Australia poorly targeted? *Clin Exp Ophthalmol* 2018;46:364-70.

6. Desai P, Reidy A, Minassian DC. Profile of patients presenting for cataract surgery in the UK: national data collection. *Br J Ophthalmol* 1999;83:893-6.