



LETTER TO THE EDITOR

Cataract surgical rate, not surgical volume: what the 2015-2025 series adds to the strategies debate

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To the Editor:

A recent ABO editorial on “Strategies and Challenges for Cataract Surgery in Brazil”⁽¹⁾ argues that financing, rather than surgeons or infrastructure, has been the limiting factor. It identifies 2012, when 461,473 procedures were performed, as the year the minimum number of procedures required to prevent the accumulation of cataract-related blindness was first achieved, and reports 862,713 procedures in 2022, when parliamentary amendments were one of the primary funding sources alongside actions by the Ministry of Health. Four measurements from the same public system, covering January 2015 to December 2025, provide additional context.

Rate rather than volume. Absolute counts, as reported for the Brazilian decade-long series⁽²⁾, do not account for population and cannot be compared directly across countries, whereas the Cataract Surgical Rate (CSR), defined as procedures per million population per year, is the indicator used internationally⁽³⁾. In the outpatient database of the Unified Health System, by state of residence⁽⁴⁾, the CSR rose from 2,080.7 in 2015 to 2,868.8 in 2019, fell to 1,735.9 in 2020, and reached 5,176.3 in 2024, the first year with more than one million procedures (1,100,396). The benchmark of 3,000 procedures per million, which has long been used to assess adequacy, was crossed in 2022, the final and highest-volume year of the editorial’s series. Expressing the data as CSR provides a metric that is comparable internationally and accounts for population growth.

The pandemic drop, measured against an explicit counterfactual. Using a negative binomial interrupted time-series analysis with a population offset, harmonic seasonality, and heteroskedasticity- and autocorrelation-consistent errors⁽⁵⁾, March 2020 produced a 36% level drop (incidence rate ratio, 0.644; 95% CI, 0.448–0.926; $p=0.018$), followed by an increase in slope (incidence rate ratio, 1.129 per year; 95% CI, 1.002–1.272; $p=0.047$). The system did not merely return to its previous path; it accelerated.

Whether the backlog has been repaid depends on the benchmark—and the benchmark is rarely stated. Against the extrapolated prepandemic trend, the cumulative deficit peaked at approximately 445,000 procedures in June 2022 and remained near 291,000 in December 2025. Against a counterfactual of a constant 2019 volume, the same series cleared the deficit by March 2023. One dataset therefore produces two defensible and opposite conclusions, separated only by an assumption that is usually left implicit. Claims of pandemic recovery in elective surgery should state the counterfactual explicitly because the policy implications differ: a debt that remains open argues for sustained financing, whereas a debt that has been settled argues for consolidation.

Regional inequality is measurable and not only descriptive. The editorial notes that the municipalities receiving investment through parliamentary amendments

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The datasets generated and/or analyzed during the current study are already available.

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were determined by parliamentarians, frequently without considering national public health priorities. This effect can be quantified. In 2025, the ratio between the highest and lowest state CSR was 13.7. Across macroregions, the highest-to-lowest ratio widened from 1.47 in 2015 to 2.26 in 2019 and then narrowed to 1.94 in 2025. This yields a testable hypothesis consistent with the editorial's argument: stable, programmatic financing should compress this dispersion, whereas episodic campaigns should widen it. The same open data can be used to evaluate this hypothesis.

Two limitations bound this interpretation. Outpatient records by state of residence measure delivered procedures, not unmet need, and cannot distinguish first from second eyes. Administrative data also carry coding and reporting variation; therefore, year-to-year totals may differ from series based on other extraction rules, including those of the editorial. Neither limitation affects the internal comparison across years and states, which is the basis of these four points.

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