

Bridging the Gap: Asynchronous Teleophthalmology Clinic's Impact on Rural Eyecare

Yonghun Lee - Department of Ophthalmology, St. Martha's Regional Hospital, Antigonish, Nova Scotia, Dr. Dilys Oladiwura - Department of Ophthalmology, St. Martha's Regional Hospital, Antigonish, Nova Scotia

Objectives: This study aims to evaluate the effectiveness of proactive teleophthalmology clinic led by ophthalmic technicians in detecting ocular diseases, including diabetic retinopathy and optic disc anomaly, and to highlight the potential of this healthcare model in reducing health care disparity experienced by rural residents of Nova Scotia.

Methods/Methodology: A list of patients meeting the following criteria: residents of the Guysborough County, and recorded history of diabetes mellitus, were obtained with the support of primary care clinics in the Guysborough County. Those with a gap over two years since their last visit to optometry or ophthalmology clinic were invited to attend the new teleophthalmology clinic in the Guysborough Memorial Hospital. Information gathered during a clinic visit were assessed by the physician asynchronously; one week after the visit, the ophthalmologist reviewed health history along with retinal pictures obtained beforehand by an ophthalmic technician. Retinal pictures with potential pathological features were flagged and the corresponding patients were referred to an ophthalmologist at St. Martha's Regional Hospital through their family physician for an in-person ocular examination.

Outcomes: 54 patients were assessed within a 14-week period. Ocular diseases, including diabetic retinopathy and optic disc anomaly, were identified in 55% (30 patients) of the patients. All of the 54 patients reported no prior intention of visiting eye-care services before attending the teleophthalmology clinic. This outcome underscores the importance of proactive eye-screening in identifying ocular diseases which might have progressed and caused serious visual impairment. Furthermore, the clinic's proximity to patient's homes eliminated the need for significant travel, saving 110 hours and 7700km of travel in total.

Conclusion: The nearest optometry or ophthalmology clinic from the Guysborough County is at least a one-hour drive away on average. This makes it particularly challenging for elderly patients to drive long distance to seek eye-care, especially in harsh winter conditions. Satellite clinics providing in-person examinations by ophthalmologists currently exist in certain parts of Nova Scotia, including Arichat, Chéticamp and Baddeck, but a large area of the province remains underserved. This is compounded by existing physician burnout and logistical challenges of implementing an outreach clinic. Asynchronous teleophthalmology clinic led by ophthalmic technicians, under the guidance of ophthalmologists, could serve as effective alternative to bridge the health care disparity experienced by rural residents. We plan to amplify this effort by initiating glaucoma screening for patients over 65 once the anticipated visual field analyzer arrives at the Guysborough Memorial Hospital.