CLINICAL COMMUNICATION

On-call telehealth for visiting optometry in regional Western Australia improves patient access to eye care

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Telehealth has come a long way since our forebears used two-way radios powered by a bicycle pedal to communicate with the Royal Flying Doctor Service. Yet we still have recurring barriers to patient access to telehealth in rural and remote Australia.[1]

Lions Outback Vision (LOV) provides a state-wide teleophthalmology service to rural and remote communities in Western Australia, which is implemented via video consultations with patients and facilitated by optometrists to provide necessary examination and imaging.[2]

The telehealth service augments outreach ophthalmology visits where surgery is provided in seven regional hospitals and the 'Vision Van' with ophthalmology clinics in 20 communities.[3]

Prior to 2017, patient referrals for teleophthalmology were booked for a future date via an online booking system.[4] This system relied on the patient attending on a different day for the teleophthalmology consultation.

The introduction of on-call services in 2017 provided immediate access to the specialist ophthalmologist for telehealth at the time of the initial optometry visit, with no need for a scheduled future appointment.[5]

A retrospective comparison of a 2016 audit to 2018 data was conducted, since the on-call telehealth service has become increasingly embedded as the demand for this service rose.[6,7] This clinical communication explores observational trends related to the availability of on-call telehealth services.

The study received exemption from the ethics board of the University of Western Australia, given that it analysed retrospective records of de-identified data. The study was conducted according to the tenets of the Declaration of Helsinki.

The primary outcome measures included total number of patients and teleophthalmology consultations, remoteness area of the patient, and Aboriginal and Torres Strait Islander status. Secondary outcome measures included patient diagnosis, number of surgery bookings following telehealth consultation, number of patients requiring face-to-face review with an ophthalmologist, number of new patients and number of patients who did not attend.

The proportion of patients identifying as Aboriginal and Torres Strait Islander increased from 6.9 per cent in 2016 to 20.6 per cent in 2018 (p < 0.01). The proportion of Aboriginal and Torres Strait Islander patients in the on-call telehealth cohort was 51.4 per cent (n = 147), compared to the online-booking telehealth group at 8.7 per cent (n = 65) (p < 0.01). This represents an odds ratio for Aboriginal and Torres Strait Islanders accessing on-call services compared to online booking of 11.03 (7.82–15.56).

Similarly, remoteness of the patient increased with the availability of on-call telehealth. Remoteness measures were calculated using Accessibility/Remoteness Index of Australia (ARIA) scores.[8] The proportion of remote (RA4) and very remote (RA5) patients increased significantly, with 79.0 per cent (n = 226) in the on-call service compared to 26.1 per cent (n = 194) in the online-booking cohort (p < 0.01). This represents an odds ratio of 10.64 (7.66–14.78) for the more remote patients (RA4 and RA5)

utilising on-call teleophthalmology assessment compared to online booking. The overlap between Aboriginal and Torres Strait Islander people also in more remote locations (RA4 and RA5) was 201 out of 422 (47.6 per cent).

During 2018 there were 953 patients referred to the LOV Teleophthalmology Service. This resulted in a total of 1,028 teleophthalmology consultations, an increase of 50.5 per cent compared to the previous biannual audit (p < 0.01).[9] Of these referrals, 52.3 per cent (n = 583) were female and 47.7 per cent (n = 490) were male, the median age at time of teleophthalmology consultation was 66 years (range: four months to 94 years) and 20.6 per cent (n = 212) of patients identified as being Aboriginal and Torres Strait Islander. The non-attendance rate for booked telehealth was 2.9 per cent compared to 50 per cent from an internal audit of outreach ophthalmology visits.

Of all video consultations, 45.0 per cent (n = 463) were new patients to the optometrist and 55.0 per cent (n = 565) had been previously examined. Of all consultations, 27.8 per cent (n = 286) were on-call telehealth assessments and the remaining 72.2 per cent (n = 743) were booked online.

The most frequent diagnosis was cataract (40.9 per cent, n = 421), followed by glaucoma (8.9 per cent, n = 92), diabetic maculopathy/retinopathy (5.3 per cent, n = 54) and pterygium (5.2 per cent, n = 53).

Surgery was directly booked for 40.8 per cent (n = 419) of patients after teleophthalmology consultation. Of the patients who attended a video consultation, 21.6 per cent (n = 222) required face-to-face review with an ophthalmologist after a video consultation. Of the on-call telehealth, 10 out of 286 patients (3.5 per cent) required immediate transfer to Perth for management and another 70 consults (24.5 per cent) resulted in a booking for surgical management.

The provision of on-call telehealth services in addition to scheduled booking improves

telehealth availability for visiting optometrists by reducing the barriers for uptake. When an optometrist is only on location for a short duration, or there are patients who have travelled a significant distance for an assessment, the opportunity for a booked telehealth consultation on a future date is limited.[10,11] Therefore, enabling immediate specialist consultation via video conference has improved access for both Aboriginal and Torres Strait Islanders and those living in more remote communities.[12,13]

Future research should include economic analysis of an on-call system to provide thresholds for sustaining telehealth support for visiting optometry services to meet population-based needs.

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