Analysing the output of Ophthalmic Clinical Officers in a Rwandan Tertiary Eye Hospital to estimate the potential output of Ophthalmic Physician Associates in the UK

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Background

Ophthalmology departments in the UK are currently struggling with a backlog of outpatient appointments [1]. One proposed method to tackle this is the introduction of new multidisciplinary team (MDT) roles such as ophthalmology physician associates (OPAs) [2], however little research has been done to estimate how successful this strategy may be in reducing outpatient backlogs.

The Ophthalmic Clinical Officer (OCO) is an MDT role present in the Rwandan healthcare system. They assist ophthalmologists in clinics and are the first port-of-call for patients referred to secondary and tertiary ophthalmology centres [3]. OCOs have a similar role to the proposed OPAs [2] and are already integrated into the Rwandan healthcare system. However there has been little published material into how effective Rwandan OCOs are at managing referrals within secondary and tertiary eye hospitals.

Here we investigated the proportion of new ophthalmology referrals into a tertiary eye hospital in Rwanda which can be managed by OCOs on first consultation without intervention from a consultant ophthalmologist and estimate what proportion of patients in the UK might be seen as an outpatient through the implementation of a similar pathway.

Methods

A retrospective cohort study of 1025 new patients seen by OCOs over a 3-week period at a tertiary private eye hospital outside Kigali, Rwanda was identified. Patient's diagnosis was extracted along with whether the patient was managed independently by the OCO or referred on for medical opinion. Diagnoses were then grouped according to condition classifications published in a previous paper [4]. The proportion of each condition classification seen independently by an OCO was then extrapolated using NHS Digital Hospital Outpatient Activity data from 2023-2024 [5] to estimate how many ophthalmology outpatients could be seen by a role similar to Rwandan OCOs if they were to be implemented in the UK. In addition, each patient's records were reviewed on Medisoft by 3 ophthalmology consultants qualified in the UK and Germany to determine whether patients were managed appropriately and safely, using similar safety check techniques seen in previously published papers [6].

Category of Condition	Total number of patients presenting to RCEH with this condition, n	Number of cases entirely managed by OCOs, n	Proportion of patients managed by OCOs, % (95% CI)	Total number of cases seen by NHS Outpatient clinics coded with an Ophthalmology diagnosis 2023-2024, n	Estimated number of patients which could be managed by OCOs, n (95% CI)
Adnexal/Oculoplastic	34	18	52.94 (36.16-69.72)	27,366	14,477 (9,896 – 19,079)
External/Cornea/Conjunctiva	617	532	86.22 (83.50-88.94)	64,755	55,819 (54,073 – 57,595)
Glaucoma	35	4	11.43 (0.89-21.97)	141,571	16,139 (1,257 – 31,101)
Uveitis	30	14	46.67 (28.81-64.52)	7,417	3,464 (2,137 – 4,785)
Medical Retina	31	2	6.45 (-2.20-15.10)	221,395	14,391 (-4,863 – 33,430)
Vitreoretinal	15	0	0	15,185	0
Neuro-ophthalmology	57	5	8.77 (1.43-16.12)	53,547	4,712 (765 – 8,630)
Post-op/post intervention complication/issue	0	0	N/A	534	0
Other (including cataracts)	155	98	63.22 (55.63-70.83)	420,994	266,068 (234,218 – 298,135)
Trauma	45	7	15.56 (4.97-26.15)	1,405	219 (70 – 367)
No Ocular abnormality	6	2	33.33 (-4.39-71.05)	0	0
TOTAL	**1025**	**682**	**66.54 (63.65-69.43)**	**954,169**	**375,289 (297,553 – 453,124)**

Table 1: Analysis of patients seen at Rwanda Charity Eye Hospital (RCEH) entirely by Ophthalmic Clinical Officers (OCOs) and estimation of how many patients in the UK could be seen by OCOs, stratified by condition type

Conclusion

1. Implementation in the UK of a role equivalent to Ophthalmic Clinical Officers could allow **375,289 ophthalmology patients to be seen entirely by OCOs each year** (4% of current Ophthalmology outpatient attendances)
2. Estimates are **significantly limited due to poor coding** of ophthalmology primary diagnoses in only 11% of Ophthalmology outpatient appointments in NHS Digital data
3. Differences between OCOs and Ophthalmology Physician Associates in training pathways and proposed roles in the healthcare system along with differences in ophthalmic disease prevalence, pathology and severity between the UK and Rwanda make it **difficult to directly equivocate clinical effectiveness.**

Results

This study found 66.5% of new referrals into a tertiary eye hospital in Rwanda were managed entirely by OCOs. The main categories managed by OCOs were external/corneal/conjunctival conditions (86.2% of cases) with refractive error (95.4% of cases), cataracts (73% of cases), allergic eye disease (98.1% of cases) and dry eyes (95.8% of cases) being the most common specific conditions managed by OCOs. The safety check deemed 96.78% of patients were managed in an 'appropriate' manner. In the UK, 8,898,379 patients were seen by ophthalmology outpatients across the UK in 2023-2024 of which 2,242,793 were first attendances and 954,169 were coded with an ophthalmology primary diagnosis. Of these patients, we estimate at least 375,289 patients could be seen entirely by OCO equivalent roles in the UK.

Discussion

We estimate implementation of an OCO equivalent role in the UK could allow at least 4% of ophthalmology outpatient appointments to be seen entirely by OCOs. This number is likely an underestimate as only 11% of ophthalmology outpatient clinics had a primary ophthalmology diagnosis code. It is difficult to directly equivocate OCO and OPA clinical output as shorter ophthalmology specific training times for OPAs (1 year) compared to OCOs (3 years) will likely reduce OPAs ability to adequately assess ophthalmology patients [2,7]. Furthermore, additional roles present in the NHS such as optometrists and orthoptists who already carry out roles completed by OCOs such as evaluating refractive error and strabismus respectively will likely reduce OCO clinical effectiveness. Finally, differences in patient demographics between the UK and Rwanda, with Rwanda having a much younger population [5,8], leading to differences in ophthalmic disease prevalence, pathology and severity will likely alter the proportion of patients who could be seen entirely by OCO equivalent roles. To further investigate the effectiveness of implementing an OCO equivalent role in the UK healthcare system, it would be useful to carry out an economic cost-based analysis to determine the relative 'value for money' of this role in comparison to alternative strategies to tackle the outpatient backlog.

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