Paediatric Glaucoma Referrals to the Low Vision Service: Do we refer enough?

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Background

- A proportion of children seen in paediatric glaucoma service experience visual impairment and would qualify for referral to paediatric low vision assessment (LVA) clinic
- A **2017** audit at Moorfields Eye Hospital of **155 paediatric LVA outcomes** showed **4 (2.5%)** were referred by **paediatric glaucoma service** suggesting some children with glaucoma who **qualify** for LVA referral may **not** be referred
- Moorfields paediatric LVA clinic accepts referrals on the following basis in line with other national LVA services (Ryan, 2010):
    - **0.30 LogMAR (6/12) or worse** vision in better seeing eye
    - With or without **significant** visual field loss
    - Age **4 – 16**
- Audit Standard: 80%

Purpose

1. To **identify** the **proportion** of children under the glaucoma service who **qualify** for referral to LVA and:
    - **have** been referred *(i.e. an existing LVA patient or newly referred)*
    - **have not** been referred (missed opportunity to refer)

2. Identify any **demographic** or **clinical** factors associated with missed referrals to LVA

Methods

- Retrospective chart review to retrieve list of all patients seen in paediatric glaucoma service between 1/2/21 – 31/7/21
- OpenEyes electronic record was used to search clinical data to collect **patient diagnoses** (Glaucoma and associated conditions), **better eye LogMAR visual acuity** (Best corrected or Pinhole acuity) and **professional class** of all clinicians reviewing the patient during visit.
- Forum electronic records were used to assess whether a current or historical field plot was available on date of appointment. If available, the **presence of visual field loss** was recorded, defined as:
    - Field defects involving **2 overlapping quadrants** in each eye (or 2 quadrants in 1 eye if uniocular)
    - Or significant binocular field restriction **throughout 360o**
- Secondary data analyses assessed whether **demographic** (age, gender, ethnicity) or **clinical factors** (visual acuity, visual field loss, registration status, attending professionals, consultant, diagnosis) were associated with **likelihood** of **missed referrals** to the LVA service. This was conducted via Analysis of Variance (ANOVA) and Contingency Tables.

Results

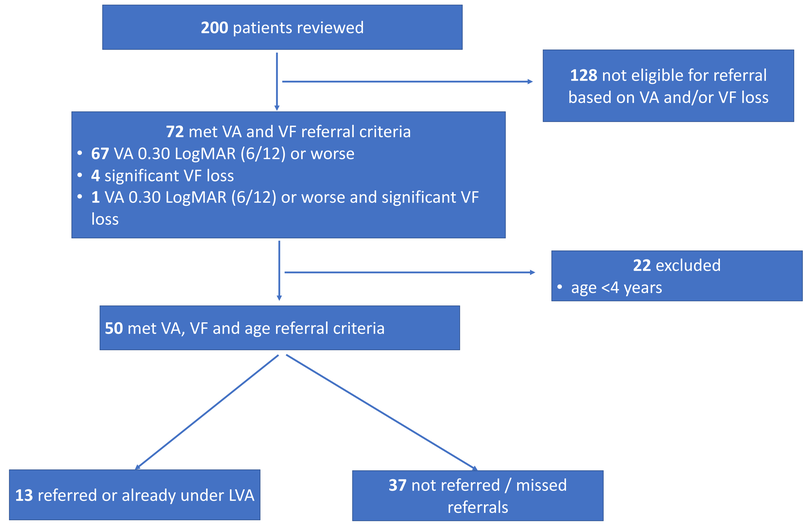


Figure 1 Data Breakdown for number of patients reviewed and qualified for referral to the LVA service

Table 1 Demographic and Clinical Data for Complete Cohort, n=200

Demographic data (n = 200)			Clinical data (n = 200)		
Age (years)		Mean: 7.6 Range: 2 – 15	**Visual Acuity**		Mean: 0.31 LogMAR SD: 0.47
Gender	Male	113	**Consultant**	Brookes	80
	Female	87		Brookes/ Martin	52
Ethnicity	British	53		Martin	41
	Other	22		Khaw	27
	Asian	15	**Glaucoma Diagnosis**	Congenital Glaucoma	63
	Black	14		Secondary glaucoma	60
	White	7		No evidence of glaucoma	50
	Mixed	5		Ocular Hypertension	20
	Not Stated	84		Juvenile open angle glaucoma	7

Table 2 Demographic and Clinical Data for Cohort that met the LVA service referral criteria, n=50

Demographic data (n = 50)			Clinical data (n = 50)		
Age (years)		Mean: 8.52 Range: 4 – 15	**Visual Acuity**		Mean: 0.72 LogMAR SD: 0.47
Gender	Male	28	**Consultant**	Brookes	19
	Female	22		Brookes/ Martin	13
Ethnicity	British	18		Martin	13
	Asian	7		Khaw	5
	Other	6	**Glaucoma Diagnosis**	Secondary glaucoma	23
	White	3		Congenital Glaucoma	18
	Black	2		No evidence of glaucoma	6
	Mixed	2		Ocular Hypertension	2
	Not Stated	12		Juvenile open angle glaucoma	1

Secondary Analysis :

- **No evidence** of systematic referral bias related to:
    - ✕ Age
    - ✕ Better eye VA
    - ✕ Gender
    - ✕ Consultant code
    - ✕ Professional class
- Some analyses limited by:
    - ✕ Glaucoma Diagnosis: large number of categories
    - ✕ Visual Field defect: small sample size
    - ✕ Ethnicity: poor data quality
- Probability of referral to PLVA **greater** for those **registered sight impaired or severely sight impaired** (p = 0.002)
    - 10/20 (**50**%) of those **registered** were referred
    - 3/30 (**10**%) of those **not registered** were referred
- ***Many children will not be eligible for registration but are eligible for a LVA referral***

Conclusions

25% (50/200) paediatric glaucoma clinic patients qualified for LVA referral at the time of review:

- **26% (13/50)** were referred or were existing patients of PLVA
- **74% (37/50)** were not referred

Secondary analysis demonstrated bias toward referral of children who were **registered**, though many children **not** eligible for registration will **still be eligible** for LVA referral

There is a **need** to build clinician awareness of LVA services to ensure that **eligible** patients are directed to these services in a **timely** manner.

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