# Slit Lamp Biomicroscopy (SLB) to Hospital Eye Service (HES) Audit

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## Introduction:

A total of 5975 screenings took place across SLB clinics in the North West London programme covered by Enhanced Optometry Services (EOS) in 2018.

733 SLB patients were referred to HES (12%) out of which 106 SLB referrals chose to be sent to Central Middlesex Hospital (CMH). Retrospective analysis of the SLB referral pathway to Central Middlesex Hospital data was covered during the 1 year period of referrals from 2018 (01/01/18 – 31/12/18).

## Aim:

**To analyse the Slit Lamp referrals to Hospital Eye Service**

1) **Reasons for SLB referral to HES by analysing HES outcomes including management of the patient**

2) **Analyse all SLB referrals with visual acuity (VA) of LogMar ≥ 0.30 (Snellen 6/12)**

Looking at:
i) minimising unwanted/ avoidable referrals
ii) Identify weak areas for training for Optometrists
iii) Did the referrals with VA ≥ 0.30 warrant referral

## Method:

**1)** Data from SLB referrals (screening to treatment report) and HES outcomes from Central Middlesex Hospital were analysed retrospectively to see why patients were being referred and to analyse the management of the patients

**2)**
i) Analysis of HES digital fundus images from referrals of VA ≥ LogMar 0.30 to decide if adequate or inadequate according to Public Health of England (PHE) Diabetic Eye Screening Definitions

ii) All the HES outcomes with VA ≥ 0.30 were reviewed to establish any unwanted referrals

## Results

### Analysis of all NWL SLB referrals

733 SLB patients were referred to HES. Out of the available referring hospitals, 14% of these SLB patients chose to be referred to Central Middlesex Hospital, shown in figure 1.

**Fig.1**

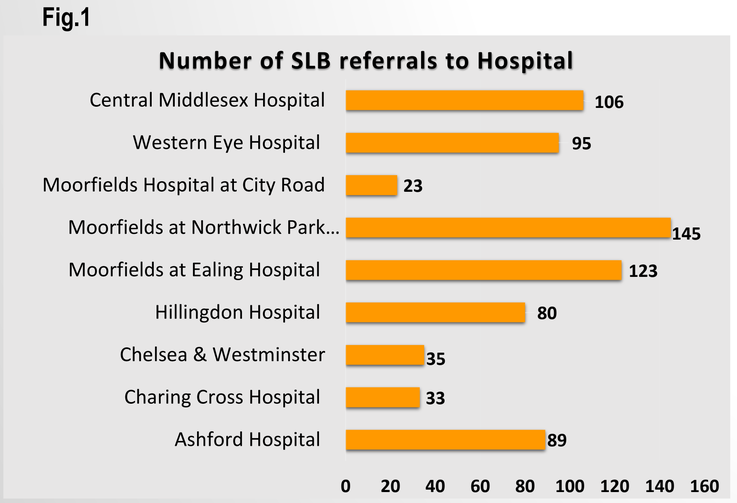
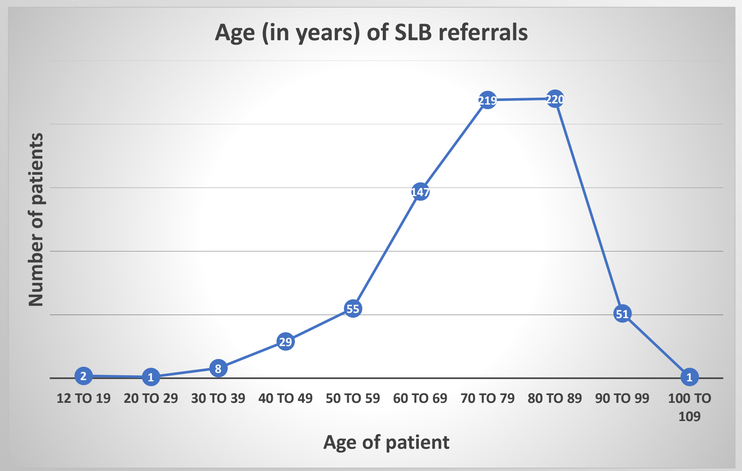



Figure 2 shows the age distribution of all SLB patients who were referred to HES. The average age for patients in SLB was 73 years old (Range: 18-102 years old)

**Fig.2**




### Analysis of all CMH HES SLB referrals

**Table 1**

| HES Appointments | No of patients |
|---|---|
| Cancelled by Hospital | 6 |
| Cancelled by Patient | 5 |
| Patient DNA first appointment | 16 |
| Attended within timeframe | 73 |
| Patients breached | 2 |
| DNA x 2 and discharged | 4 |

Table 1 shows the breakdown of first appointment status at Central Middlesex Hospital for 106 patients.

96% of SLB patients attended their referral appointment.

## Results for Aim 1:

### Analysis of all Central Middlesex SLB referrals

Figure 3 shows the highest reason for referral was cataracts followed by referable retinopathy. Figure 4 correlates with this as listing for cataract surgery was the highest outcome.

**Fig.3**

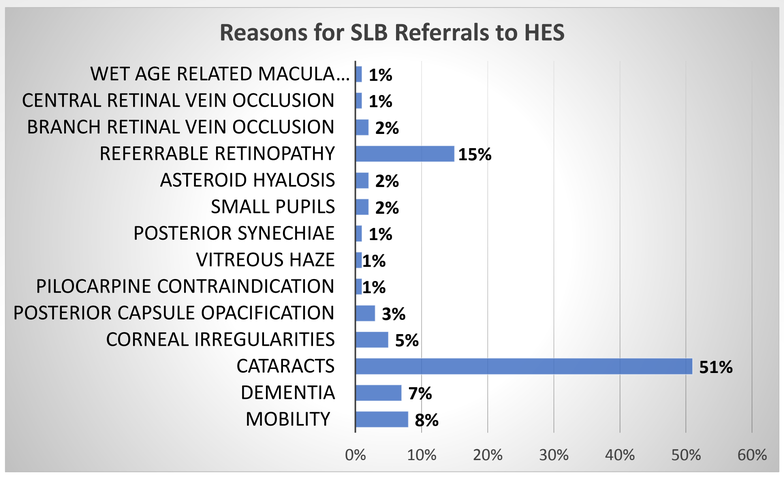
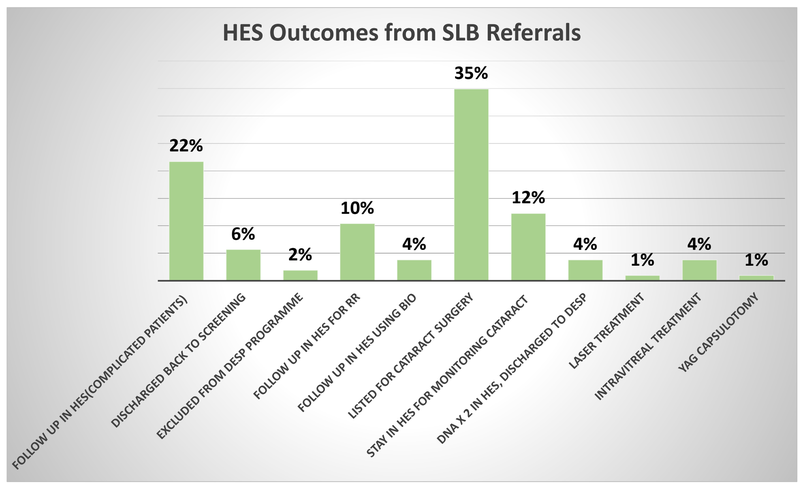



Figure 4 shows that a total of 7% patients were not followed up in HES after their first appointment, this includes patients discharged back to DESP and excluded from DESP. Patients with dense dementia were excluded from the programme. 22% of patients continue to be screened in HES as difficulty with photographic screening.

**Fig.4**



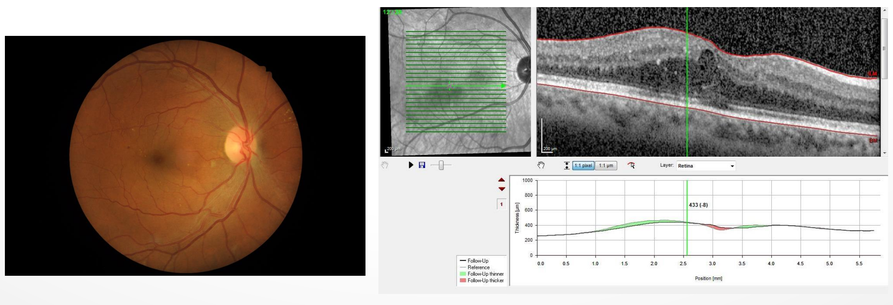

### Intravitreal Treatment

3 SLB referral patients had intravitreal Treatment.

**Table 2**

| Diabetic Retinopathy Related | Non Diabetic Retinopathy Related |
|---|---|
| R1M1 with clinically significant macula oedema (CSMO) Fig. 5 | Central retinal vein occlusion |
| | Branch retinal vein occlusion |

**Fig.5**



### Analysis of SLB referrals for unassessable patients due to cataracts

Figure 6 shows analysis of just the unassessable SLB cataract patients seen at CMH. 69% sent to HES were able to have a final diabetic retinopathy (DR) grade. 1% of patients needed to be examined with the indirect binocular ophthalmoscope to obtain the DR grade
13% of patients were unassessable during their first HES appointment.
Figure 7 shows the outcome for just the unassessable cataract patients.

**Fig.6**

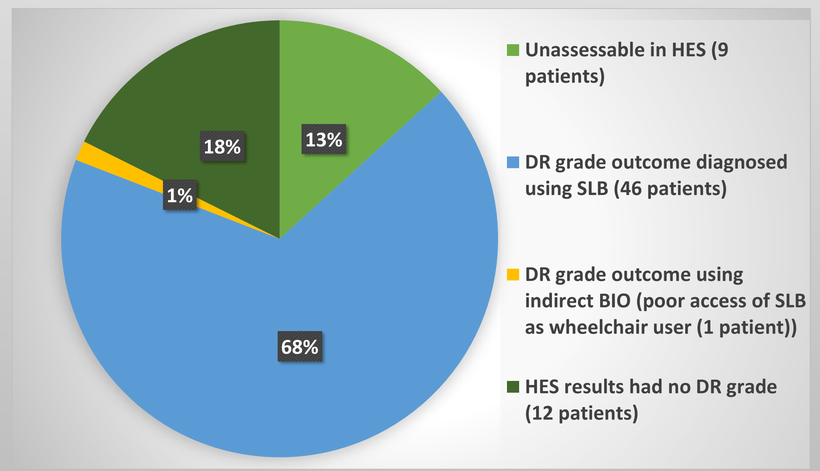
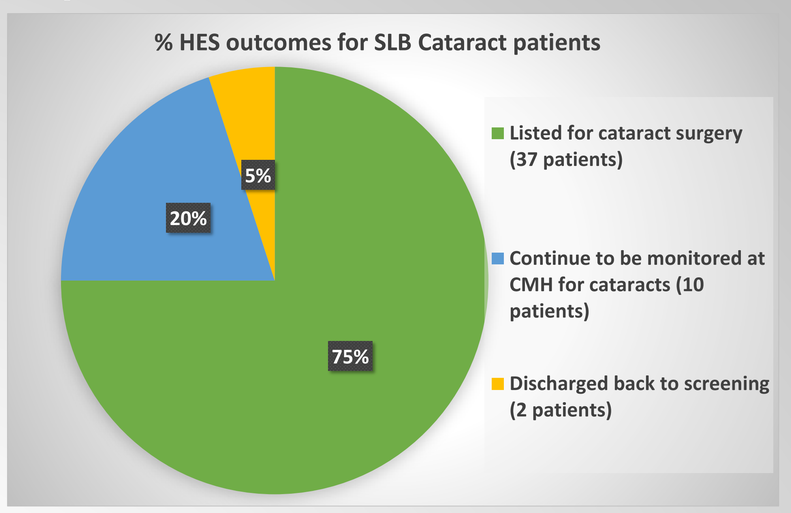



**Fig.7**




## Results for Aim 2:

13 patients of the 106 SLB referrals had VA ≥ 0.30 (12%). Figure 8 shows the results when assessing the HES digital images, 23% of the images were adequate, no digital HES images taken at CMH for a further 23%.

Figure 9 shows that only 1 patient out of 13 was discharged back to DESP.

**Fig.8**

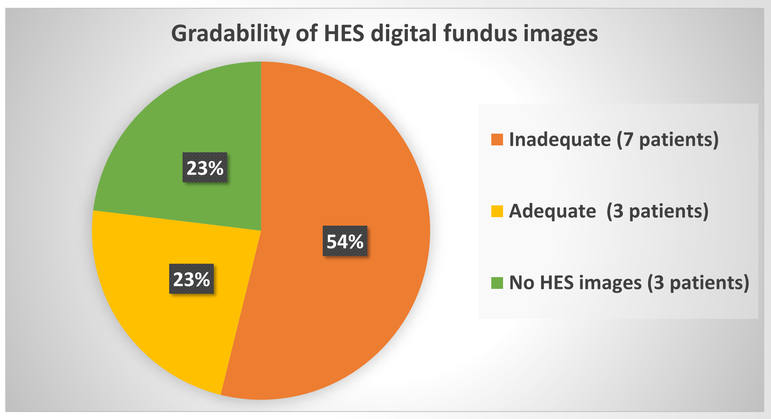
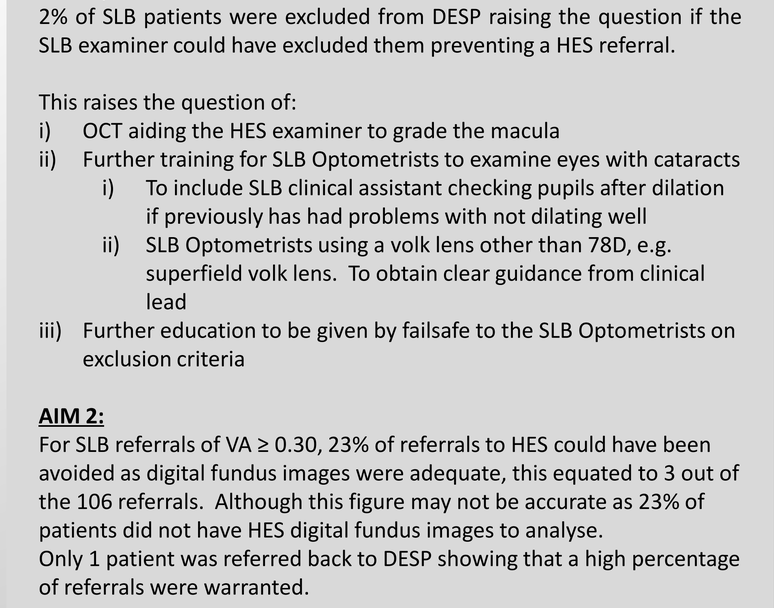



**Fig.9**




## Conclusion

**AIM 1:**
Cataracts causing the SLB patient to be unassessable was the highest reason for referral to HES, of which 75% were subsequently listed for cataract surgery. Interestingly 68% of these patients were able to be assessed for diabetic retinopathy in their HES appointment which needs to be questioned.
2% of SLB patients were excluded from DESP raising the question if the SLB examiner could have excluded them preventing a HES referral.

This raises the question of:
i) OCT aiding the HES examiner to grade the macula
ii) Further training for SLB Optometrists to examine eyes with cataracts
  i) To include SLB clinical assistant checking pupils after dilation if previously has had problems with not dilating well
  ii) SLB Optometrists using a volk lens other than 78D, e.g. superfield volk lens. To obtain clear guidance from clinical lead
iii) Further education to be given by failsafe to the SLB Optometrists on exclusion criteria

**AIM 2:**
For SLB referrals of VA ≥ 0.30, 23% of referrals to HES could have been avoided as digital fundus images were adequate, this equated to 3 out of the 106 referrals. Although this figure may not be accurate as 23% of patients did not have HES digital fundus images to analyse.
Only 1 patient was referred back to DESP showing that a high percentage of referrals were warranted.

Overall only a small percentage of referrals were sent back to DESP showing that the majority of referrals were justified. Further training to be given as above and a re-audit to be completed to analyse the effectiveness.

## Acknowledgements

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