An audit assessing the progression of patients from R2 to R3a within the diabetic screening pathway in North Central London from 2018 to 2024

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Introduction

Diabetic retinopathy has an increasing national disease burden and is a common cause of vision loss amongst people of working age in the UK. The NHS England Diabetic Eye Screening Programme (DESP) recently underwent changes to the grading criteria, including re-defining the R2 pre-proliferative level which was implemented from October 2024.

With these new criteria patients can be defined as being R2L (pre-proliferative retinopathy of lower risk) and be referred into DS (digital surveillance) pathway, which is part of DESP for screening within 13 weeks then reviewed on a 3,6-,9- or 12-month basis. Patients can also be categorised as R2H (pre-proliferative retinopathy of higher risk) and referred to HES (Hospital Eye Service) Medical Retina Clinic to be seen within 13 weeks.

Figure 1: Patients in DS pathway pre-October 2024[1]

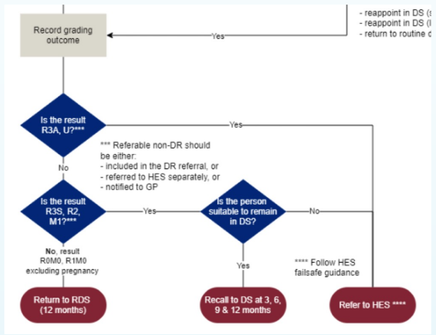


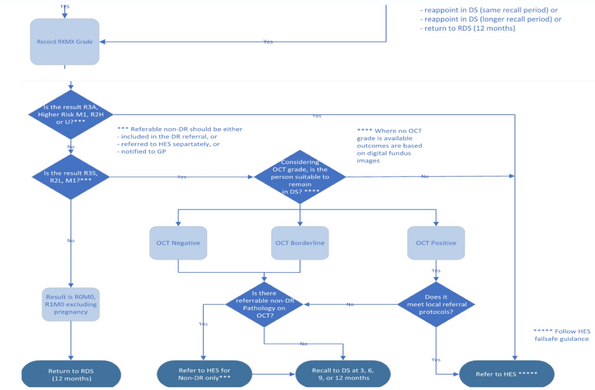
Figure 2: R2 classification

R2 Low	Pre-proliferative Retinopathy of Lower risk	• Venous beading in 1 quadrant • 8+ Multiple Blot Haemorrhage (MBH) • 20+ Haemorrhage (HMA)/ Microaneurysm (MA) of any size in 1-3 quadrants • Intraretinal microvascular abnormality (IRMA) < severe than **image 8a** visible in colour	Refer to DS for screening within 13 weeks, then reviewed on 3/6/9 or 12 monthly bases When identified within SLB, refer routinely to HES
R2 High	Pre-proliferative Retinopathy of Higher risk	• Venous beading in 2-4 quadrants • 20 + Haemorrhages (HMA)/ Microaneurysm (MA) of any size in 4 quadrants • Moderate intraretinal microvascular abnormality (IRMA) >= severe than **image 8a**, visible in colour	Refer to HES Medical Retina Clinic To be seen within 13 weeks



Reference image 8a

Figure 3: Patients in DS pathway post-October 2024[1]



Aims

This audit retrospectively explored patients within the DESP in North Central London with 3 main aims:

1. **How many patients within the DESP progressed from R2 to R3a from 2018 to 2024?**
2. **Of these patients what was the frequency of follow up between progression?**
3. **Given the new changes to the guidance how many of these patients would have been classified as R2L or R2H prior to progression to R3a?**

Methodology

Patient data was collected using a code written to identify patients who progressed from R2 to R3a from 2018 to 2024. The code was run on the patients' database of the North Central London DESP.

The following data was collected:

- NHS number
- Age
- Gender
- Last referral from DS pathway or ophthalmology? (DS vs ophthalmology)
- Time taken to progress from R2 to R3a (months)

The clinical notes of patients identified to have progressed, were then analysed for the following:

- Frequency of follow up in the time period from progression of R2 to R3a (e.g. 3,6,9,12 monthly)
- Any DNAs from follow up? (number of DNAs)
- Referral to HES? (Y/N)
- Appropriateness of referrals *(evaluated later having reviewed patient notes)*
- Evaluation of imaging between R2 to R3a progression *(identify R2L vs R2H – evaluated after reviewing imaging)*

Results

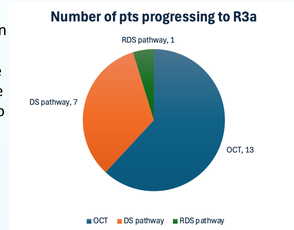
The data from 24976 patient encounters within the digital surveillance, OCT surveillance, ophthalmology and routine digital surveillance from 2018- 2024 were reviewed to identify the number of patients who progressed from R2 to R3a.

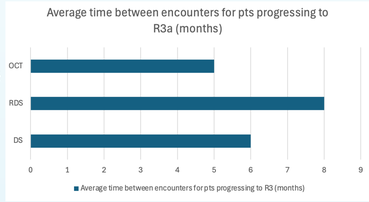
The following numbers of patients were identified following exclusion criteria:

DS pathway patients – 7 patients
R3AM0 pts – 4
R3AM1 pts – 3

OCT pathway patients – 13 patients
R3AM0 pts – 2
R3AM1 pts – 11

RDS pathway patients – 1 patient
- R3AM1 pts -1





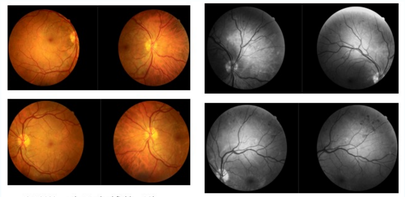
Key findings

Key reasons patients should have been seen sooner:

1. DS: Patient re-referred from ophthalmology
Patient example 1 -
- Patient referred from ophthalmology to OCT DS
- September 2023- R2M1 – no peripheral views available (reviewing the images retrospectively would have been classified as R2L) → for OCT surveillance in 6 months
- Then progressed to R3a in May 2024

Key lessons from this case:
- R2M1 pts – consider HES referral due to high risk of progression- reflected in new pathway where these patients are also referred for OCT
- Importance of 6 fields as no peripheral shots from September 2023

2. OCT: lack of 6 field views – may have impacted initial grading
Patient example 2-
6 field view unavailable in Oct 22 – with the new guidance patient should have been recalled for imaging in 1 month or referred to HES



Oct 2022 – only standard fields – R2I

May 2023 – 6 fields picked up R3aM1

3.DNAs / discharges from ophthalmology back to OCT/ DS due to DNAs

Conclusion

This audit demonstrates that whilst the diabetic retinopathy pathway prior to October 2024 had low numbers of patients progressing to R3a from R2, further implementation of R2 categorisation into R2L and R2H can ensure more timely follow up of higher risk patients and referral into HES if necessary.

An important limitation of this audit is that some patients were discharged from HES to DESP (into DS or RDS) due to DNAs. The impact of DNAs played a large factor in patient progression and emphasises the importance of public health strategies to increase uptake of HES and screening appointments.

Future lines of research include looking into factors that may act as barriers to attendance to screening. It may also be of interest to explore whether deprivation indices correlate with progression of R2 to R3a and compliance with screening and whether these strategies to increase screening uptake may need to be targeted towards specific communities.

Another audit cycle will be completed later this year given the recent implementation of this new grading criteria into the DS pathway from October 2024. This will be used to evaluate whether this change has had a positive impact in preventing the number of patients who have progressed from R2 to R3a.

References

1. Diabetic NHS, Screening E. NHS England Diabetic eye screening : Patient grading referral surveillance. 2024.