EVALUATING THE OCT PATHWAY IN THE IRISH DIABETIC EYE SCREENING PROGRAMME

NEC
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AUTHORS

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INTRODUCTION

The Ireland Diabetic RetinaScreen Programme introduced the digital surveillance (DS) pathway in 2019 to ease the strain on hospital eye services and improve patient satisfaction by minimising hospital visits. It provided screening, using optical coherence tomography (OCT), to patients who have been diagnosed with background retinopathy (R1M1) and stable proliferative retinopathy (R3S). By providing the service within the patient's community it relieves the burden on the country's treatment centres and makes access easier for the patients. The aim of this report is to show that using OCT to monitor these patients with stable, low risk retinopathy is safe, effective and sustainable.

METHODOLOGY

Patient data from 2021 to 2024 was drawn from the NEC OptoMize software used by the program to process patients. It included patients with initial screening/discharge from treatment centre with R1M1 grading with visual acuities (VA) of 6/18 or better (unless associated with documented amblyopia). And patients with R3S who have been over 1 year without treatment and have been discharged from their treatment centre.

The patients were broken down into three categories

A. R1M1 with VA<618 from initial screening

B. R1M1 with VA <6/18 from treatment clinics

C. R3S initially referred, then discharged to DS

The following patients were excluded from this study. Patients with clinically significant macular oedema (CSMO). Those with retinopathy grades of R2 or R3A and patients who had retinopathy treatment within the last 12 months.

Data included in this study included the initial screening results, the patients VA measurements and subsequent clinical pathways for eligible patients screened using OCT to date. Statistical analysis was conducted using excel and R.

RESULTS

The study looked at 14448 patients with 36035 screening visits with an average of 2.5 screens per patient. The average age of the patient going for OCT screening was 62.4 years and 63.4% were male. 76.4% of these patients were Type 2 diabetics and have had diabetes for an average 16.5 years (see table 1).

Individuals	**14448**	
Number of visits	36035	
Visits per patient	2.5	
Age (mean (SD))	62.4 years	±15.3
Gender (number (%))		
Female (%)	5282	36.6%
Male (%)	9164	63.4%
Diabetes Type (Number (%))		
Type 1	3329	23.0%
Type 2	11037	76.4%
Not specified	53	0.4%
MODY	15	0.1%
Other	14	0.1%
Duration (median [IQR])	16.5 years	[10.5 - 24.0]

Table 1: Showing patient data

Examining the progression in retinopathy from when a patient entered the DS pathway, we saw that the vast majority of them (98.7%) maintained their existing grade. 0.7% progressed to R2 and 0.3% to R3A. See figure 1 and table 2.

PROGRESSION OF RETINOPATHY GRADE UNDER DIGITAL SURVEILLANCE

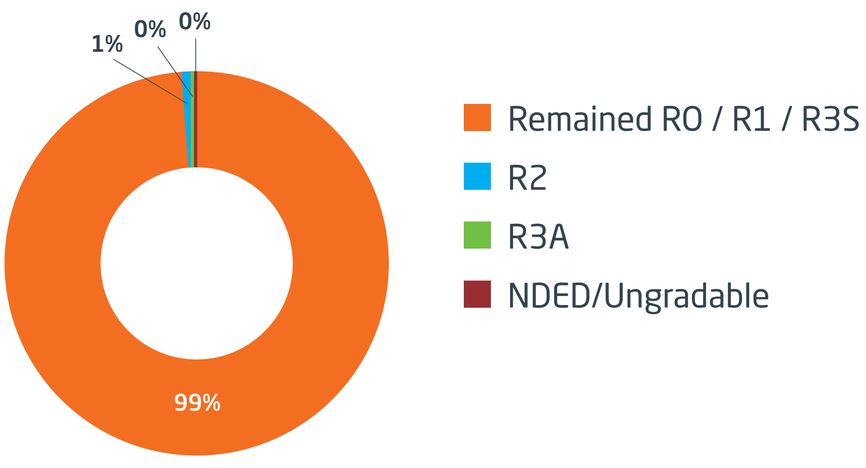


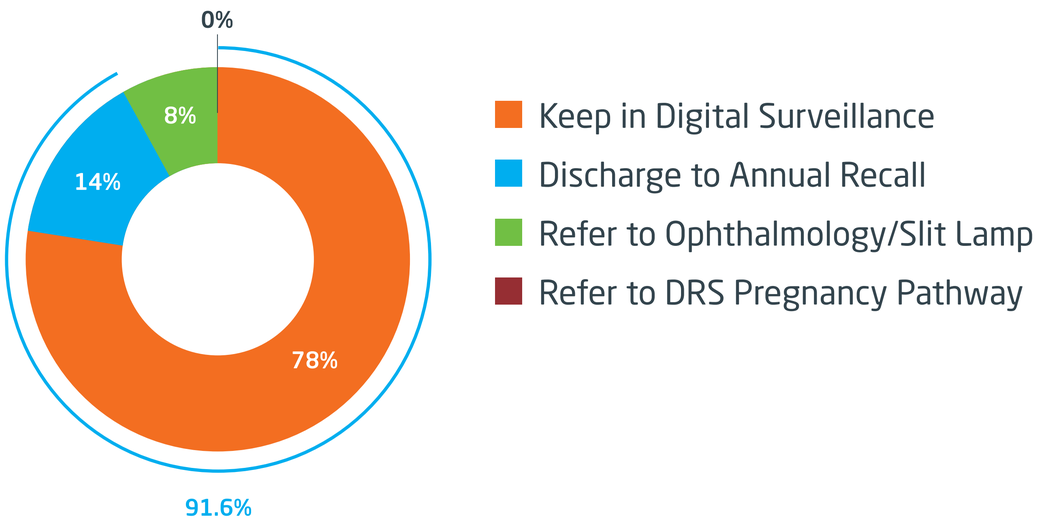
Figure 1: Progression in grade of patients in the DS pathway

Progression in worst retinopathy grade	Number (>1 DRS visit)	%
Remained R0 / R1 / R3S	9066	98.7
R2	64	0.7
R3A	31	0.3
NDED/Ungradable	28	0.3
Total	**9189**	

Table 2: progression in worst retinopathy grade of patients in the DS pathway

Examining the outcome of the patients from their DS appointments we found that the vast majority (77.4%) were kept in the DS pathway and another 14.2% showing enough of an improvement to return to annual recall in the routine digital surveillance pathway. 7.3% were referred to ophthalmology for DR, of these 1.1% were urgent referrals for proliferative retinopathy. Another 0.9% were referred for non-DR and 0.2% were sent to Slit Lamp.

CLINICAL OUTCOME OF DS VISIT



Outcome	Number (all visits)	%
Keep in Digital Surveillance	27888	77.4
Discharge to Annual Recall	5122	14.2
Refer to slit lamp	77	0.2
Refer to ophthalmology for DR	2230	6.2
Refer to ophthalmology for non-DR	134	0.4
Refer to ophthalmology urgent for non-DR	164	0.5
Refer to ophthalmology urgent for DR	414	1.1
Refer to DRS Pregnancy Pathway	6	0.0
Total	**36035**	

DISCUSSION

The DS pathway is safe and effective for R1M1 and R3SM0/M1 diabetic retinopathy management. The majority (98.7%) of patient remain stable or improve. The majority (91.6%) remain in surveillance or return to annual screening. The DS pathway optimises resource allocation thereby reducing the need for hospital follow ups. It also results in a low percentage of urgently referable cases (1.6%).

The limitations of this study include the short follow-up duration for most patients. Economic analysis was beyond the scope of this study, but prior research suggests cost-effectiveness.

Future research based on this should include a long-term follow-up analysis of the patients, economic analysis, an assessment of the technology and infrastructure capabilities and the reliability and efficiency of retinal imaging and data management systems