European Medical Specialist Review
Official Publication of UEMS | Vol.01, Issue 01, 2026

Assessment of Diabetic Retinopathy Screening: Problems and Possible Solutions

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Received: 28 March 2026
Accepted: 01 April 2026
Published: 01 May 2026

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DOI: 10.67452/EMSR.2026.003

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Abstract

Background: Diabetic retinopathy (DR) is a leading cause of preventable blindness among adults with diabetes. Since the establishment of the Irish National Diabetic Retinopathy Screening Programme in 2013, screening uptake has improved substantially. However, the extent of patient understanding and satisfaction with the current system remains underexplored at Outpatient Clinical Level.

Aims: To evaluate patient awareness of DR Screening, engagement, and perceived problems in participating in Diabetic Retinopathy Screening among individuals attending an outpatient endocrinology clinic.

Methods: A prospective audit was conducted between August and October 2025 at the Endocrinology Outpatient Department, St. John's Hospital, Limerick. 30 Adult patients (>40 years) with type 1 or type 2 diabetes were invited to complete a five-question anonymized survey assessing **(1)** understanding of DR, **(2)** engagement with the screening leaflet, **(3)** willingness to attend screenings despite work commitments, **(4)** adherence to post-screen driving recommendations, and **(5)** satisfaction with screening results. Data were analyzed descriptively and compared with recent Irish and international reports.

Results: One hundred percent of patients reported attending DR screening. Despite this, only 10% accurately described what diabetic retinopathy is, while 90% had limited or incorrect understanding. Eighty-five percent of participants did not read the accompanying DR information leaflet, commonly describing it as "too text heavy" and lacking simple visual explanations. Twenty percent expressed difficulty attending appointments due to work commitments or loss of income. Forty-five percent admitted to driving within 20 minutes of receiving dilating drops, contrary to guidance advising avoidance of driving for up to six hours. Twenty-five percent reported dissatisfaction with "vague" follow-up letters describing "mild retinopathy" without clear explanation or visual reference.

Conclusions: Although screening attendance was high, patient understanding of DR and satisfaction with the process were poor. Simplified educational materials, legislative support for paid leave, improved transport access, and clearer result reporting are recommended to enhance engagement and compliance with the National Diabetic Retinopathy Screening Programme.

Keywords: diabetic retinopathy, DR screening, patient awareness, patient education, Ireland, HSE, dilating drops, driving safety, health literacy, retinal screening

1.INTRODUCTION

Diabetic retinopathy (DR) remains one of the most common microvascular complications of diabetes and is a leading cause of preventable blindness among working-age adults. Early detection and treatment are critical for preventing visual loss. The UK established a nationwide DR screening programme between 2002 and 2007, achieving sustained reductions in blindness rates among people with diabetes.

Following this model, the Irish National Diabetic Retinopathy Screening Programme was launched in 2013 under the Health Service Executive (HSE). The programme offers free annual or biennial retinal imaging to all eligible patients with diabetes. Despite strong attendance nationally, limited research has examined patients' understanding of DR, satisfaction with communication, or adherence to post-screening recommendations.

This audit aimed to assess awareness and perceptions of DR screening among patients attending an endocrinology outpatient clinic, identifying barriers and opportunities for improvement twelve years after the programme's roll-out.

2.METHODS

Setting and Participants. The audit was conducted in the Endocrinology Outpatient Department of St. John's Hospital, Limerick, over a three-month period (August–October 2025). Ethical Approval was not required for this Audit, but Patient Consent was gained and full compliance to both the Hospital's Strategy on Audit and Declaration of Helsinki was observed at all stages of the Audit.

Thirty Consecutive adult patients (M&F, >40 years) with type 1 or type 2 diabetes attending for routine follow-up were invited to participate on the Endocrine Appointments at SJH. Patients normally answer a double sided A4 Page Clinic Proforma, about their Diabetes, on entering the clinic. This questions aspects like their frequency of Hypos, Time in Target, diet, other issues known to effect diabetics, like ulcerative feet, decreased kidney function and Diabetic Retinopathy.

The one-line question – "Do you attend the National Diabetic Retinopathy Screening", demanded an Audit, on addressing: exactly how well patients understand the retinopathy screen, how well

they are likely to attend, if they were dissatisfied by any parts of the screen and if there after possible solutions could be introduced to improve any problems noted.

Audit Tool. Participants were asked whether they had attended their most recent DR screening. Those who had attended (100% of respondents) were invited to complete a brief, five-question anonymous questionnaire exploring: (1) understanding of DR, (2) engagement with the information leaflet, (3) willingness to attend despite work commitments, (4) driving behaviour after receiving dilating drops, and (5) satisfaction with screening results. Verbal clarification of questions was permitted. Quantitative data were summarised as percentages and qualitative comments were analysed for recurring themes.

3.RESULTS

Screening Uptake. All 30 participants reported attending the national DR screening, yielding a 100% attendance rate. This was notably higher than the 72% rate reported in the 2023 national Diabetic RetinaScreen Market Research survey, and substantially above New Zealand's reported two-year uptake of 62.1%.

Knowledge of Diabetic Retinopathy. Only 10% of respondents could accurately describe DR as a microvascular complication of diabetes involving leakage or blockage of retinal blood vessels. The remaining 90% either misunderstood the condition or had no knowledge of its pathophysiology, offering vague or incorrect descriptions such as "dots in the back of the eye" or "seeing floaters."

Engagement with Screening Information. Eighty-five percent of respondents admitted they did not read the information leaflet provided with their appointment. The majority cited excessive text, lack of visual explanation, and medical jargon as deterrents. Some stated they were too preoccupied with logistical preparations for the appointment to read lengthy materials. Only 15% reported reading the leaflet fully.

Work and Attendance Barriers. Twenty percent of patients indicated that taking time off work posed difficulties, particularly for those without paid leave or who were self-employed. Twenty-five percent of patients had rescheduled a previous appointment. While a freephone number facilitates rescheduling, financial and occupational constraints discouraged engagement or created stress surrounding appointments.

Post-Screening Driving Practices. Forty-five percent of participants reported driving within 10–20 minutes of receiving dilating drops, despite guidance advising against driving for up to six hours. Reasons included lack of transport alternatives, perceived recovery of vision, and reluctance to be dependent on others for a lift home. Patients were not aware that driving post-dilation is hazardous and that car insurance may be invalidated if vision is found to be impaired following a collision. Notably, the current patient information booklet uses the modal verb "should not drive" rather than a clear prohibition, which fails to convey the seriousness of the risk.

Satisfaction with Screening Results. A quarter of participants (25%) expressed dissatisfaction with the clarity of follow-up letters, particularly those receiving the result "mild retinopathy." Patients found this terminology ambiguous and anxiety-provoking, uncertain whether "mild" implied reversibility or progression risk. Many suggested the inclusion of images or labelled diagrams to illustrate retinal changes and clarify disease stage.

4.DISCUSSION

This audit identified significant gaps in patient understanding and communication within the Irish National DR Screening Programme, despite near-universal attendance.

Awareness of DR was strikingly low compared with published reports. The 2023 national survey found that approximately 68.25% of Irish adults with diabetes or affected family members had a reasonable understanding of DR across age groups, yet this audit found only 10% of screened patients could accurately define the condition. This discrepancy suggests that existing educational materials are not effectively engaging patients in real clinical settings.

The poor uptake of educational leaflets reflects a broader health literacy and accessibility issue. Patient feedback emphasised the need for concise, visually guided information written in plain language. Similar findings have been observed in ophthalmic health literacy studies, where illustrated materials significantly improve patient comprehension and retention.

Practical barriers such as work commitments and transportation further limit access. Legislative or employer-supported paid leave for essential medical screening — particularly for chronic conditions such as diabetes — could substantially improve equity of participation.

Driving after pharmacologic dilation poses both safety and medicolegal concerns. Although the 2023 national survey found that 33% of respondents were aware that eye drops cause prolonged blurred vision affecting driving, 45% of patients in this audit disregarded post-screening guidance, citing necessity or unwillingness to depend on others for transport. There is currently no statutory prohibition on driving after dilation in Ireland, representing an area for potential public health and legal review. Alternative approaches, such as non-mydriatic imaging technologies that eliminate the need for dilating drops, merit further consideration.

Dissatisfaction with vague result letters highlights a communication gap. Standardised feedback letters with pictorial representation of disease stage (R0–R3) could enhance patient understanding and encourage adherence to follow-up care.

5.RECOMMENDATIONS

To optimise the impact of the National DR Screening Programme, the following recommendations are proposed: (1) Simplify patient education materials by replacing text-heavy content with concise, illustrated explanations in plain language; (2) Enhance patient feedback with standardised, pictorially labelled result letters detailing DR stage (R0–R3) and recommended

follow-up; (3) Implement legislative or workplace policies supporting paid leave for diabetic screening attendance, ensuring equitable access; (4) Develop transport assistance options or partnerships to facilitate safe travel following pharmacologic dilation; and (5) Review and update national guidelines to consider non-mydriatic imaging technologies, reducing the need for dilating drops and associated risk.

6.CONCLUSION

Twelve years after the launch of Ireland's National Diabetic Retinopathy Screening Programme, this audit demonstrates excellent attendance but poor patient understanding and satisfaction. Just as the National Diabetic RetinaScreen Market Research 2023 highlighted barriers and challenges to the programme, this audit confirms that steps to provide simplified education, transparent result communication, and systemic support for attendance are essential to ensure the programme achieves its full potential in preventing avoidable blindness.

DECLARATIONS

The author has declared no conflicts of interest. No artificial intelligence tools were used in the preparation of this audit report.

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