

Improving the Clinical Pathway for Diabetic Retinal Screening in Paediatric Diabetes

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Background

Diabetic retinopathy is a frequent cause of vision loss in young adults. NICE guidelines require services to offer annual retinal screening to all diabetic children aged ≥ 12 years.

A local 2009-2010 audit identified 77% of eligible patients were referred for retinal screening, 57% underwent screening but only 16% had results documented with the paediatric diabetes service, all areas requiring improvement.

In 2011, the paediatric diabetes service formulated a Standard Operating Procedure (SOP) with the eye-screening programme to improve referrals, screening and data collection.

Aims

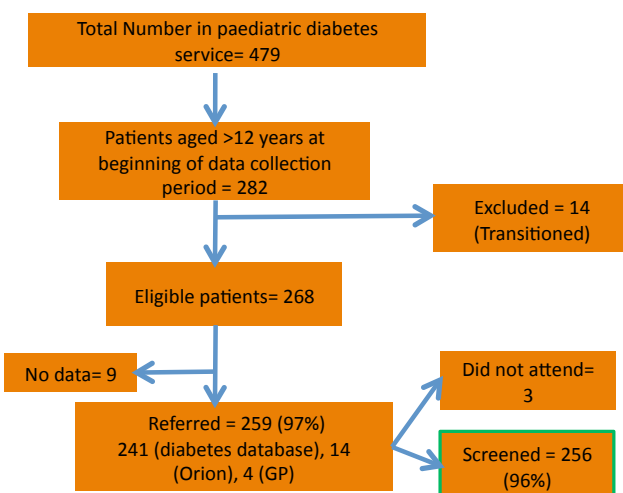
1. To assess if all eligible paediatric diabetic patients aged 12 years or more are referred for diabetes eye screening.
2. To assess the uptake of eye screening in referred patients.
3. To assess if SOP improved referral pathway.
4. To analyse eye screening data for the clinic population:
 - proportion with evidence of diabetic retinopathy
 - correlation between presence of diabetic retinopathy and gender, age, duration of diabetes and glycaemic control

Methods

- Retrospective analysis of paediatric diabetes patients aged ≥ 12 years, attending a large paediatric diabetes service between April 2012-2013
- Data obtained from Paediatric diabetes database, Eye screening database (Orion) and GP notes
- Data collected: evidence of referral, screening attendance, and screening results.
- Statistical analysis: independent 2 tailed t-tests and Fisher's exact test

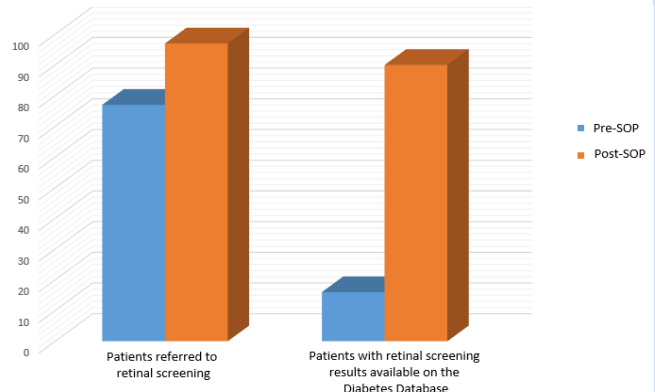
Results

Figure 1: Algorithm of patient numbers



Results continued

Figure 2. Before and after introduction of the Standard Operating Procedure: Referral Rates and Results Recording



90% of those attending screening had results recorded for submission to National Paediatric Diabetes Audit (NPDA)

Eye Screening Results

- Of 251 gradable images: 18 patients (7.2%) had retinopathy
- Those with retinopathy had a higher HbA1c (85 mmol/mol) than those without (73 mmol/mol) $p=0.011$
- No significant correlation with age of diagnosis or duration of diabetes.

Table 1. Eye screening results: comparing patients with and without retinopathy

Eye screening results	Without retinopathy (n = 238)	Retinopathy (n = 18)	P values
Age at diabetes diagnosis (years)	9.5	8.5	$p = 0.251$
Duration of diabetes (years)	6.5	8.2	$p=0.069$
Latest HbA1c (mmol/mol)	73	85	$p=0.0111$ ($p<0.05^*$)

Summary of Results

1. Structured clinical pathway improved:
 - Referral rate from 77% to 97%
 - Screening rate from 57% to 96%
 - Recording rate from 16% to 90%
2. Recording rate 90% higher than contemporaneous national average recorded screening rate 36.9%, NPDA 11-12. (49.5%, NPDA 12-13)
3. Results confirm increased prevalence of retinopathy with worse glycaemic control

Conclusion

Clarification of the eye screening pathway, using a standard operating procedure, greatly increases both screening rates and results recording. The process demonstrates effectiveness of good collaboration between eye screening and paediatric diabetes services.

