COMMUNITY-BASED CARE FOR DIABETIC RETINOPATHY CAN REDUCE 75% OF HOSPITAL EYE SERVICE VISITS

INTRODUCTION

Lower-risk diabetic retinopathy (DR) patients were sent to a community diabetic retinopathy review scheme (CDRRS), which was established to allow trained optometrists, with a higher medical retina qualification and additional training in the hospital DR clinic, to review patients and grade their retinopathy and determine a suitable follow-up interval and location (hospital or community). Inclusion criteria for the CDRRS included R1M1, R2M0, R2M1, and ungradable (UG). UG patients required a VA of 6/24 or better.

AIM

To determine:

- Retinopathy referral grades,
- Retinopathy review severity and outcomes,
- Patient satisfaction,
- Grading comparison between optometrists and ophthalmologists
- Are suspected PDR referrals seen within a safe timely manner.

METHODS

Prospective data from the CDRRS were collected from August 2022 to May 2023. Data from the patient CDRRS visit were entered onto a Word document proforma that was returned to the hospital. Data from these Word documents were extracted onto Microsoft Excel for analysis, including kappa statistical analysis. At the end of their CDRRS appointment, patients were asked to complete a satisfaction survey using MS Forms.

RESULTS

Figure 1: The low-risk DR referral grades from HES to the CDRRS

Max referral grade	%
R0M0	5
R1M0	3
R1M1	31
R2M0	12
R2M1	13
R3AM0	0
R3AM1	0
R3SM0	2
R3SM1	1
UG	26
NA	0
Other	7
Total	100

529 attended the CDRRS clinic between August 2022 and May 2023.
The majority of referrals from HES to the CDRRS were:

- R1M1 (31%)
- Another 25% were either R2M0 (12) or R2M1 (13).
- 26% were ungradable.

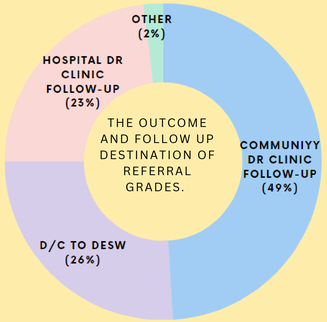
Figure 2: The retinopathy review grade after being reviewed in the CDRRS

Max review grade	%
NA	0
No apparent retinopathy (R0)	28
UG	5
Mild NPDR (R1)	23
Mod NPDR (R2)	25
Severe NPDR (R2)	7
Very severe NPDR (R2)	4
Stable Rx PDR (R3S)	3
R3AP	1
PDR (R3A)	4
Total	100

From the review grades

- 5% had definite/suspected active proliferative DR (PDR).
- 5% had diabetic macular oedema (DMO) potentially requiring treatment.
- 11% required close monitoring for severe/very severe non-proliferative DR (NPDR)

Figure 3: The outcome and follow-up destination of referral grades.



75% of patients were either: discharged (26%) or kept under follow-up in the CDRRS clinic (49%).

The grading severity of patients who had been seen in the HES within the interval of 3 months from the CDRRS appointment was compared between optometrists and ophthalmologists
The 3 month interval was chosen as there would be minimal change with such a short interval between gradings.

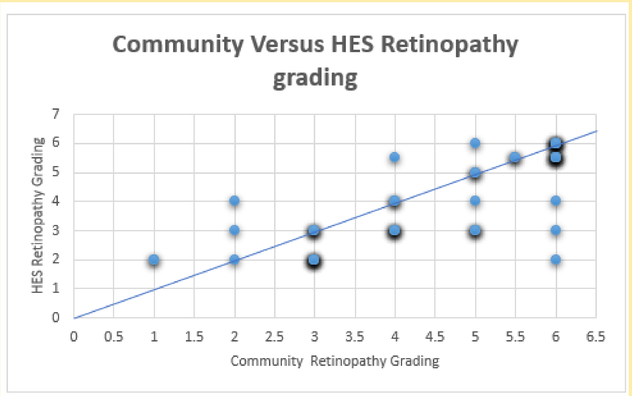


Figure 4 showing a scatter graph of community retinopathy grading versus HES grading.

FIG 4 LEGEND:
1= NO RETINOPATHY (R0)
2= MILD NPDR (R1)
3= MOD NPDR (R2)
4= SEVERE NPDR (R2)
5= VERY SEVERE NPDR (R2),
5.5= STABLE RX PDR,
6=PDR OR R3AP,
7= UG/UNGRADABLE.

The larger bubbles represent higher constituent values.

Where there was a discrepancy between the severity gradings, the majority (84%) were graded as more severe by the optometrist.

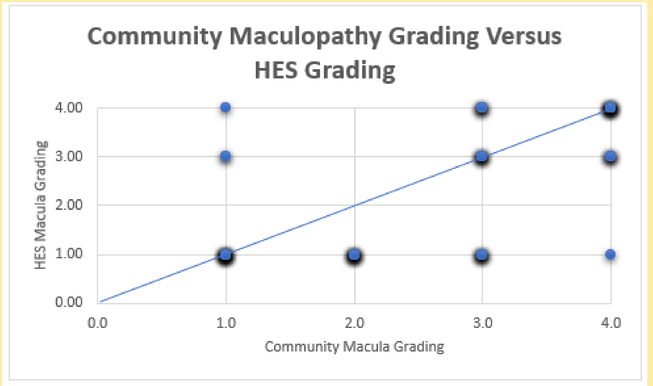


Figure 5 showing a scatter graph of community retinopathy grading versus HES grading

FIG 5 LEGEND:
1= M1 NEGATIVE (NIL ON PHOTO/OCT)
2= M1 PHOTO BUT NO IRF
3= M1 BORDERLINE (IRF BUT ILM CONTOUR OK)
4= M1 SIGNIFICANT (ILM CONTOUR ABNORMAL/FOVEA INVOLVED).

The inter-rater agreement between the community graders and the HES graders was assessed using the weighted Kappa statistic.
This showed moderate agreement of:

- **0.603 for retinopathy grading**
- **0.602 for maculopathy grading.**

There were 22 suspected or definite PDR optometrist gradings.
These were referred into the HES for urgent review. Most patients were seen in a timely manner with an appt given within 2-4 weeks.

CONCLUSION

The CDRRS is an effective way of expanding the capacity in the diabetic retinopathy service.

Reviewing lower-risk patients in a community setting frees up hospital appointments for higher-risk patients who may require treatment or close monitoring.

Patient satisfaction with the service was high with an overall satisfaction score of 5.91 out of 6 (n=291)

The grading comparison between community optometrists and HES ophthalmologists showed moderate agreement.

Community optometrists tended to grade DR as more severe than the HES. This direction of error is safer for patients than if the community optometrists tended to under-estimate DR severity. With ongoing audit and feedback, we expect the agreement in grading to increase over time.

Patients referred to the HES with definite or suspected PDR were seen in a timely manner.

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