The English Diabetic Eye Screening Programme

- training, accreditation and maintaining grading standards

Prof. Peter Scanlon MD FRCOphth FRCP DCH
Programme Director
English National Programme
English National DR Screening Programme

2002 – 8 reasonable quality services

2012
84 centres
2.6 million with diabetes
2.4 million offered
1.9 million actually screened
Increase 121,000 in 12 months

Annual cost approx 90 million US dollars
Outcome measure:
Presence of lesions that are 2-D photographic markers

Retinopathy progresses with increasing ischaemia

Leaks occur in the macular area

The treated patient is more difficult to grade
Presence of photocoagulation scars P grade
Current English Programme referrals
Screening 1.9 million

- Referred from the English DESP: 7.6%

- 5.6% M1 - Macular lesions (not the same as Maculopathy or CSMO.
  - 100,800 ref in England per annum.
  - Estimates 20 - 40% = CSMO

- 0.74% R3 proliferative (PDR) - 14,000 ref in England per annum

- 1.2% R2 pre-proliferative

- 3.6% ungradable – require slit lamp biomicroscopy
Quality Assurance

1. Reduce the probability of error and risk
2. Ensure that errors are dealt with competently and sensitively
3. Help professionals and organisations improve year on year
4. Set and keep under review national standards;
5. Manage these processes.
To ensure that whole screening programme is provided by a trained and competent workforce

1. Staff accreditation
2. Evidence of ongoing CPD and EQA test sets
Qualifications in diabetic retinopathy screening

Competence framework
National Occupational Standards
Qualifications in Diabetic Retinopathy Screening
Accreditation / awarded by City & Guilds

- Choice of 5 qualifications (2 Diplomas, 2 Certificates & 1 Award), dependant on candidate’s professional role
- 9 modules, mixed selection to create the various qualifications
Standardising the grading of retinopathy

In 2009/10, English DESP introduced:

Monthly QA test sets for all (1500+) graders in 84 local screening sites

Latest version provides 20 image sets per month.

The grading is lesion based it also provides feedback with more of a training element

We have approximately 1100 graders per month taking this in the English programme

Accessed via the internet
Accessed via the internet at their own place of work or from home

<table>
<thead>
<tr>
<th>Level of Agreement</th>
<th>Export to Excel</th>
</tr>
</thead>
</table>

### Not referred: 11/157 (7.0%)

### Exact: 235/300 (79%)
Login

Please enter your username and password below

Username [ ] Password [ ]

Please note: If you have forgotten your password, or your details are not recognised, please use the link at the bottom of this screen to reset your password.

Please read the blog!
Last updated: Wednesday July 24th 2013 09:15

Reset Your Password

Passwords are encrypted on this system

This means that the administrators are not able to retrieve them for you.
If you have forgotten your password, please click the link above, enter your email address and username, and a new password will be sent to your email address. You may use this to login then you are free to change it to anything you prefer once you have logged in.

If you cannot remember your username, or you need any other assistance, please contact helpdesk@netsima.co.uk
Select Login

Please select from below the access level under which you would like to be logged in.
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- Full disease grader
- Arbitration grader
- Gloucestershire ACL
- Oxfordshire ACL
Images are extracted from programme databases using a National extraction tool and ground truthed by the National Grading College.
Question 1

Images to be assessed using only the revised DESP grading definitions and the Feature Based Grading form.

Features

- Please select any DR features you can identify (N.B. not all features are activated but all are visible).
- No DR
- microaneurysm(s)
- retinal haemorrhage(s)
- venous loop
- any oedema in the presence of other features of DR
- any number of cotton wool spots (CWS) in the presence of other features of DR
- multiple blot haemorrhages > MBH disks 1 2 or 3
- intraretinal microvascular abnormality (IRMA)
- venous realisation
- venous beading
- Stable pre-retinal fibrosis + peripheral retinal scatter laser
- Stable fibrous proliferation (disc or elsewhere) + peripheral retinal scatter laser
- Stable F2 features (from feature based grading) + peripheral retinal scatter laser
- R1 features (from feature based grading) + peripheral retinal scatter laser

Your current selections of features indicate that this image represents:

R0 M0
Stable R2 features (from feature based grading) + peripheral retinal scar laser

R1 features (from feature based grading) + peripheral retinal scar laser

new vessels elsewhere (NVZ)
new vessels on disc (NVD)
pre-retinal or vitreous haemorrhage
pre-retinal fibrosis
subretinal retinal detachment
Reattachment in a previous stable R3 eye

- No referable Maculopathy
- any microaneurysm or haemorrhage within 1 disc diameter (DD) of the centre of the fovea if associated with a best VA of
  ≤ 6/12 where the cause of the reduced vision is known and not diabetic macular oedema
- subretinal 1 DD of the centre of the fovea
- group of exudates ≥ 1 disc area within the macula
- any microaneurysm or haemorrhage within 1 DD of the centre of the fovea only if associated with a best VA of ≥ 6/12 (0.3 logMAR) (1 No stereos)
- retinal thickening within 1 DD of the centre of the fovea (if stereo available)

- No evidence of previous photocoagulation
treatment to macula or peripheral scatter

Comments:

Record my responses » End my set for now »

Your current selections of features indicate that this image represents:

R0 M0
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various loop</td>
<td>Any exudate in the presence of other features of DR</td>
</tr>
<tr>
<td></td>
<td>Any number of cotton-wool spots (CWS) in the presence of other features of DR</td>
</tr>
<tr>
<td></td>
<td>Multiple blot haemorrhages &gt; M8H stds 1, 2 or 3</td>
</tr>
<tr>
<td></td>
<td>Intraretinal microvascular abnormality (IRMA)</td>
</tr>
<tr>
<td></td>
<td>Various reduplication</td>
</tr>
<tr>
<td></td>
<td>Venous beading</td>
</tr>
<tr>
<td>Stable pre-treatment fibrosis + peripheral retinal scatter laser</td>
<td></td>
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<tr>
<td>Stable fibrous proliferation (disc or elsewhere) + peripheral retinal scatter laser</td>
<td></td>
</tr>
<tr>
<td>Stable R2 features (from feature-based grading) + peripheral retinal scatter laser</td>
<td></td>
</tr>
<tr>
<td>R1 features (from feature-based grading) + peripheral retinal scatter laser</td>
<td></td>
</tr>
<tr>
<td>New vessels elsewhere (NVW)</td>
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</tr>
<tr>
<td>New vessels on disc (NVD)</td>
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<tr>
<td>Pre-retinal or vitreous haemorrhage</td>
<td></td>
</tr>
<tr>
<td>Pre-retinal fibrosis</td>
<td></td>
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<tr>
<td>Retinal detachment</td>
<td></td>
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<tr>
<td>Retinal reattachment</td>
<td></td>
</tr>
<tr>
<td>Retinal reattachment in a previous stable R3 eye</td>
<td></td>
</tr>
<tr>
<td>No referable Maculopathy</td>
<td></td>
</tr>
<tr>
<td>Any microaneurysm or haemorrhage within 1 disc diameter (DDC) of the centre of the fovea if associated with a best VA of &lt;= 6/12 where the cause of the reduced vision is known and not diabetic macular oedema</td>
<td></td>
</tr>
<tr>
<td>Exudate within 1DD of the centre of the fovea</td>
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</tr>
<tr>
<td>Group of exudates &gt;=1/2 DA within the macula</td>
<td></td>
</tr>
<tr>
<td>Any microaneurysm or haemorrhage within 1DD of the centre of the fovea only if associated with a best VA of &lt;= 6/12 (6.00 logMAR, if not stereo)</td>
<td></td>
</tr>
<tr>
<td>Retinal thickening within 1DD of the centre of the fovea (if stereo available)</td>
<td></td>
</tr>
</tbody>
</table>

Your current selections of features indicate that this image represents: R1 M1
Responses Recorded...

Your responses have been recorded.

Please click either of the buttons below to continue:

- Continue with the set
- End my set for now

![Graph showing the time to referable DR from screen with no referable DR following one screening episode](image-url)

**Graph:**
- Time to referable DR from screen with no referable DR following one screening episode
- Proportion (%) progressed to STDR
- Black line: Background DR in both eyes
- Red line: Background DR in one eye
- Green line: No DR

*Graph:*

time to referable DR from background or no DR

after two consecutive screening episodes
Peter Scanlon
Screen: 13

Macular image
Visual Acuity: 0.

TOOLS
- show/hide Fovea and disc
- Grayscale
- Red
- Free
- Green
The score is against an agreed grade allocated by 3 experienced graders in the National Grading College.
The notes below summarise your responses when compared to the Guide Grade:

- Of the 3 urgent referrals, you recorded 3 (100%) as urgent referral
- Of the 8 routine referral cases, you recorded 8 (100%) as routine referral
- Of the 9 annual rescreen cases, you recorded 9 (100%) as annual rescreen

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**Level of agreement Chart: Comparison with Guide Grade**

Peter Scanlon 08/09/2013: 17:39:43

**Guide Grade Level of Agreement**

<table>
<thead>
<tr>
<th>Guide Grade</th>
<th>R0</th>
<th>R1M0</th>
<th>R1M1</th>
<th>R2M0</th>
<th>R2M1</th>
<th>R3M0</th>
<th>R3M1</th>
<th>R3aM0</th>
<th>R3aM1</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0</td>
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<tr>
<td>R1M0</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>R1M1</td>
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<td>0</td>
<td>5</td>
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<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>R3aM1</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

The above chart includes only responses for Test sets you have completed. The chart displays how you responded when compared to the Guide Grade.
Select Login

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- Arbitration grader
- Gloucestershire ACL
- Oxfordshire ACL
Guide Grade Level of Agreement

Year 4 - 2013 - 2014

Guide Grade Level of Agreement

<table>
<thead>
<tr>
<th>Grader: All Graders</th>
<th>R0</th>
<th>R1M0</th>
<th>R1M1</th>
<th>R2M0</th>
<th>R2M1</th>
<th>R3M0</th>
<th>R3M1</th>
<th>R3aM0</th>
<th>R3aM1</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13</td>
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<td>3</td>
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</tr>
<tr>
<td>R2M0</td>
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<td>3</td>
<td>15</td>
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<td>0</td>
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<td>10</td>
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<tr>
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<td>R3M1</td>
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<td>R3aM0</td>
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<td>R3aM1</td>
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</tbody>
</table>
During this quarter you completed the test and training set 3 times and within the time period your average score was 94% This score is only a small part of the equation as a grader could potentially down grade an R3 image to R0 and still achieve a score of 98%.

Whilst no patients are placed at risk within the test and training system, this type occurrence could, within a real life screening scenario, place a patient’s eye sight at risk. Therefore it is important that the finer detail, included below is analysed as it will highlight any areas of weakness and with the assistance of the clinical lead, programme manager or other suitably trained individual, further training can be performed.

The scores for each retinopathy and maculopathy grade for the entire quarter is as follows:-

**R0**
You correctly identified 11 out of a total number of 12 this equates to a score of 89%

**R1**
You have correctly identified 25 out of a total 28 this equates to a score of 89%

**R2**
You have correctly identified 13 out of a total 13 this equates to a score of 85%

**R3**
You have correctly identified 5 out of a total 7 this equates to a score of 71%

**M0**
You have correctly identified 40 out of a total 40 this equates to a score of 100.00%

**M1**
You have correctly identified 20 out of a total 20 this equates to a score of 100.00%
International Undergraduate Certificate in Diabetic Retinopathy Screening

- University of Gloucestershire

- On line distance learning

- Have developed the learning outcomes.

- Currently going through the University approval process
International Version of Test and Training

- International domain site to support all international TAT access.

- Support and provide on-line / email access helpdesk

- Develop training packages that is targeted on the results.

- Ascertain whether there is a necessity to translate user manuals into languages other than English.