Identifying differences in grading outcomes

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Aim

To tell you about:

- the statistical method used to compare grading outcomes between programmes

- the new annual atypicality grading outcome report

- why 'atypical' providers might need to improve grading before implementing extended 2-year intervals

- the published guidance and support for programmes

- the timescales for reporting

Fixed effects funnel plots

- Comparisons between programmes are often made using funnel plots.

- Fixed effects funnel plots assess variation between programmes assuming that the populations identical.

- They don't take into account population differences between programmes.

Fixed effects funnel plots

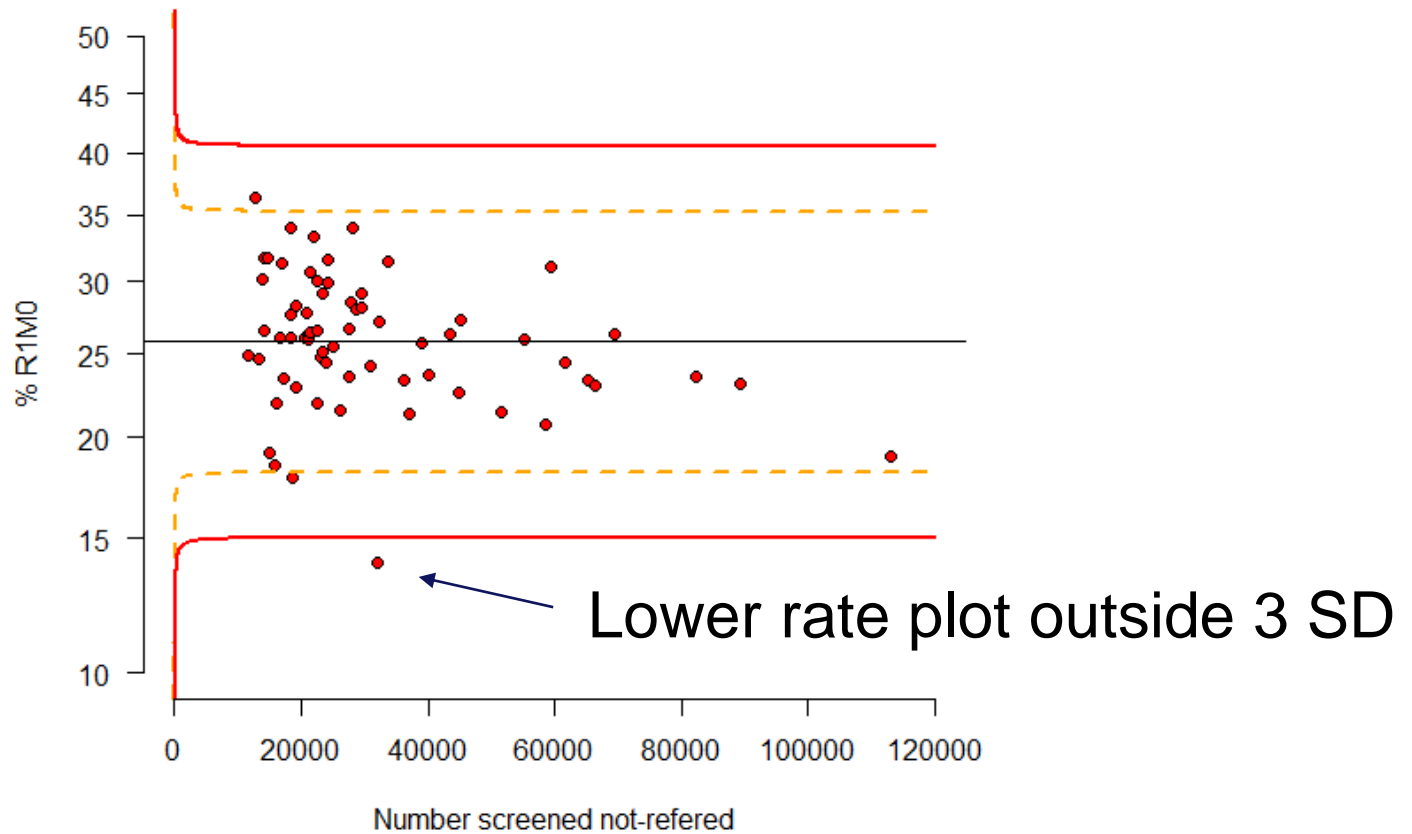Percentage of those not referred graded as R1M0
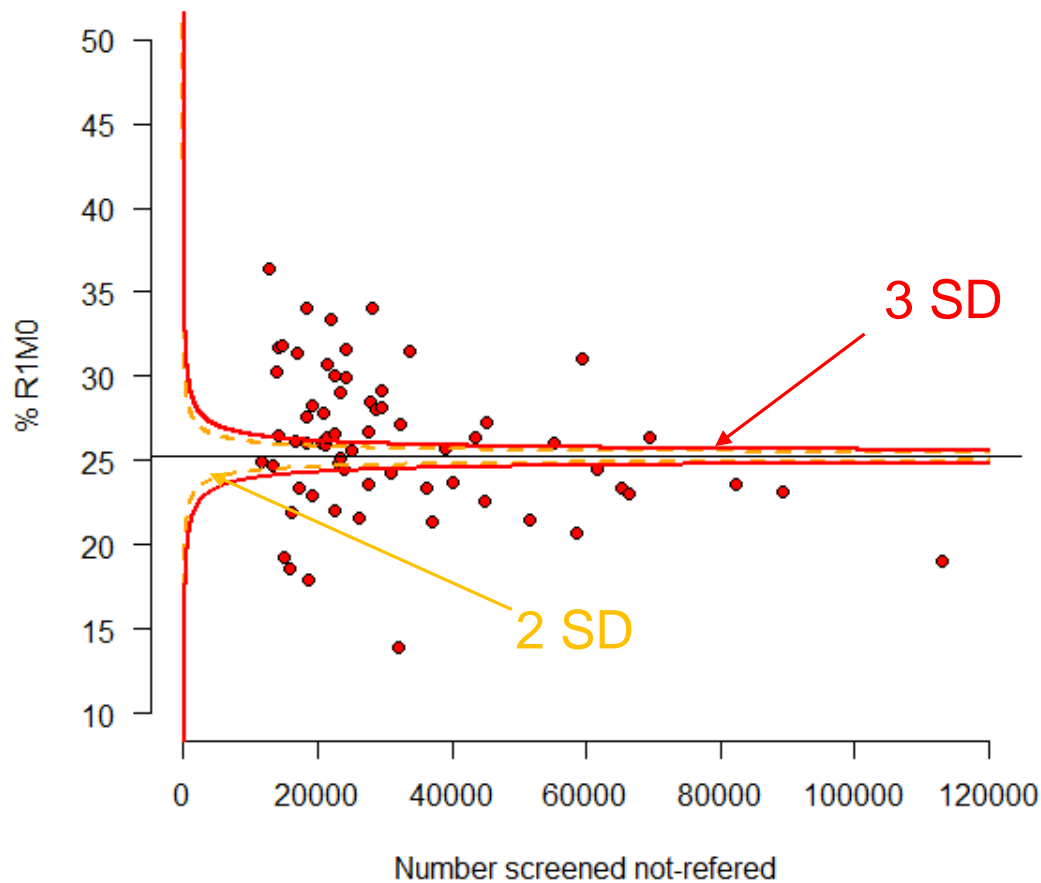
Random effects model

- Plots variation between programmes allowing for random variation in populations

- Identifies extreme differences in outcomes between programmes.

Random effects model

Percentage of those not referred graded as R1M0
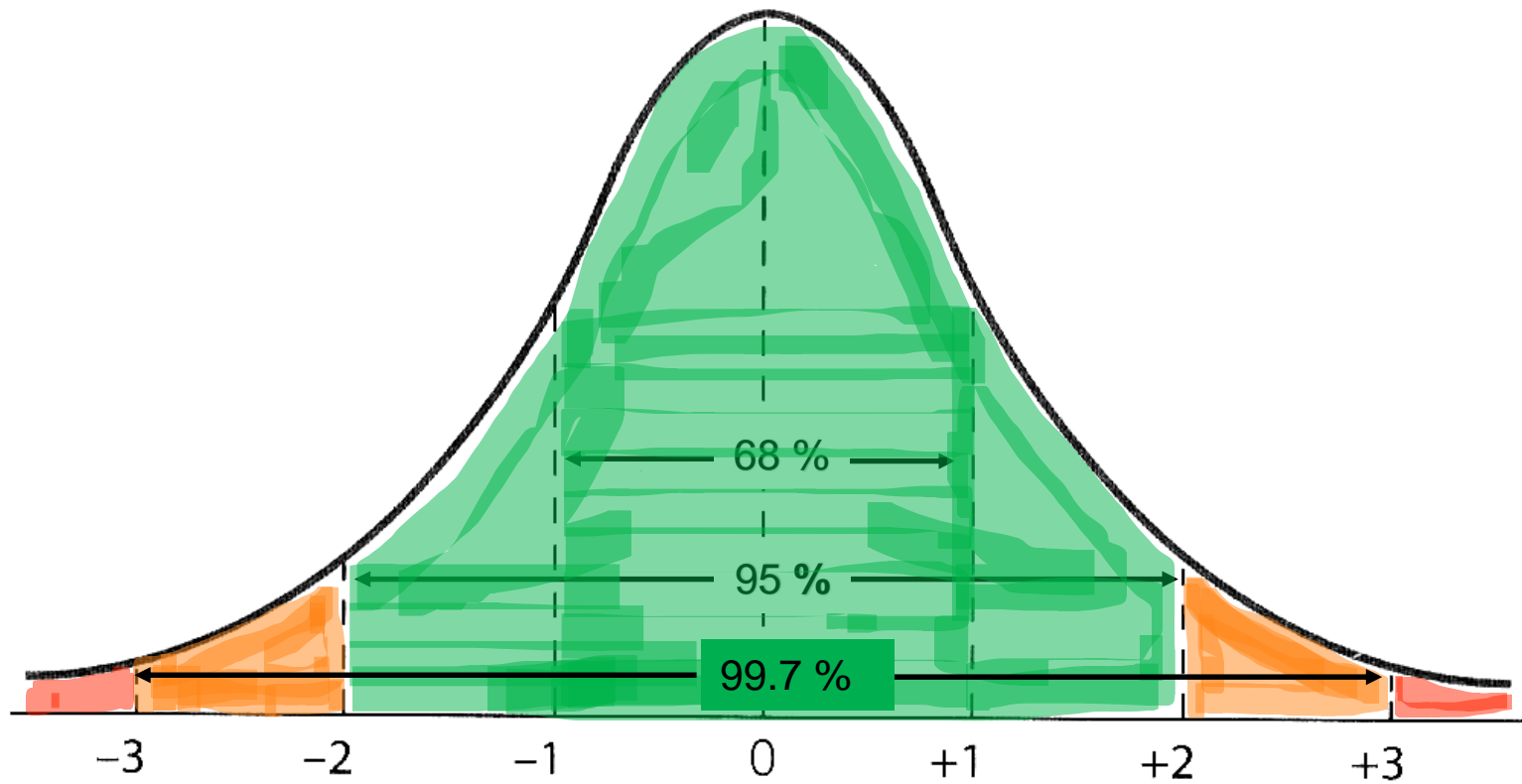

Lower rate plot outside 3 SD

Z scores

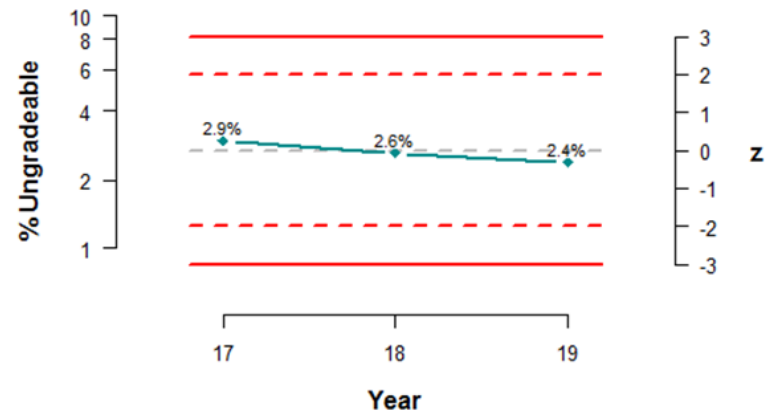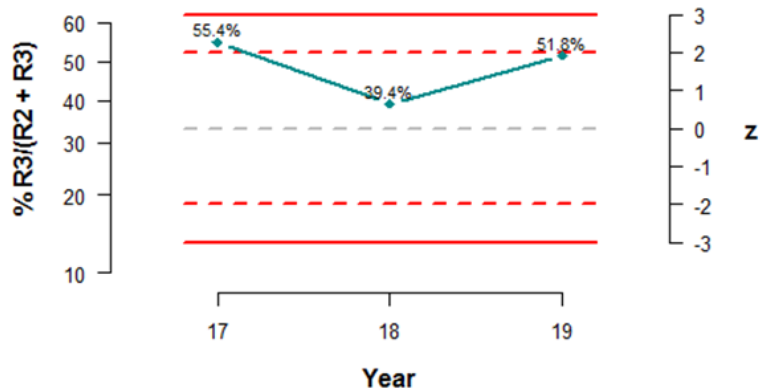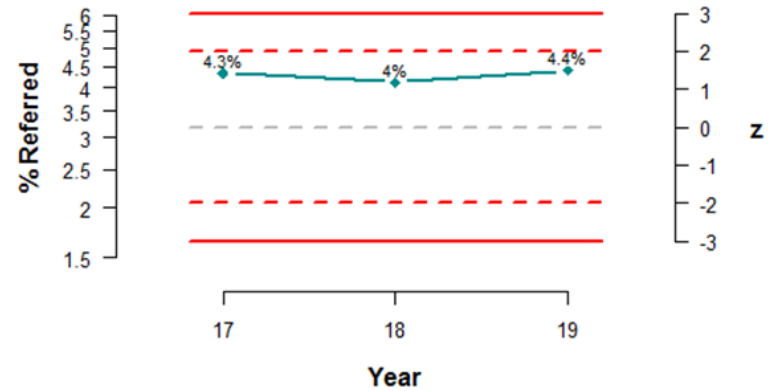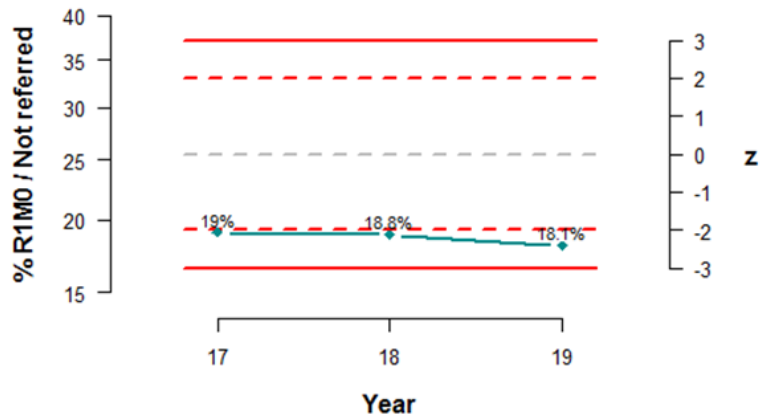A measure of how many standard deviations (SD) a value is away from the average (mean).

- Z scores within + / - 2SD are considered to be within the usual range

- Z scores outside + / - 2SD are unusual

- Z scores outside + / - 3SD are considered to be extremely unusual

Programme	R1M0 versus R0M0 + R1M0 (non ref group)	
	%	z
Programme A	14.0%	-3.6
Programme B	25.7%	-0.02
Programme C	23.1%	-0.69
Programme D	25.1%	-0.17

Bell plot

Trend data

Identifying differences in grading outcomes

Bell plot

Low background
DR detection

High R3A
detection

68 %

95 %

99.7 %

−3   −2   −1   0   +1   +2   +3

Trend data

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Bell plot

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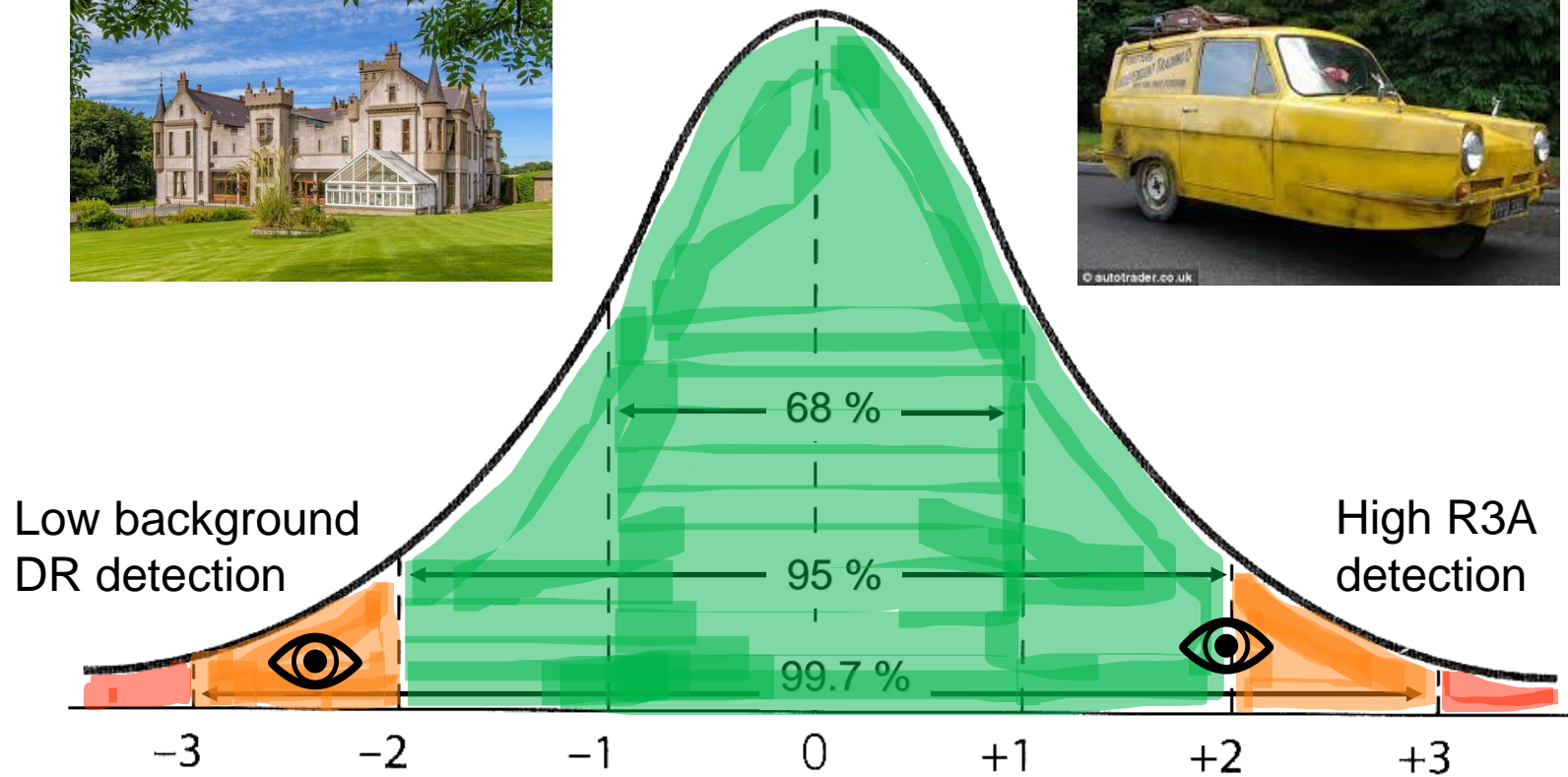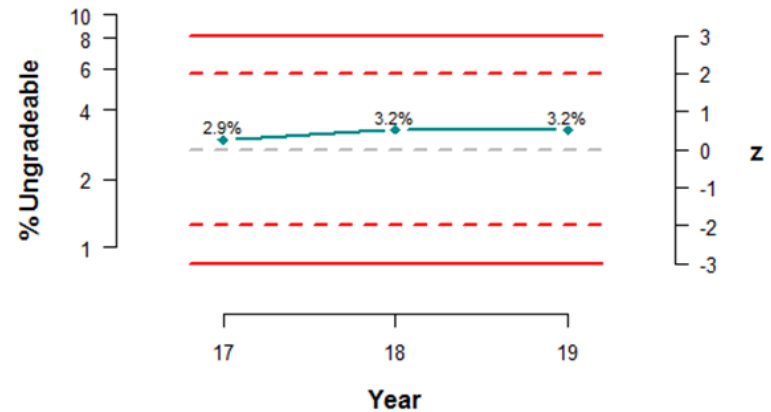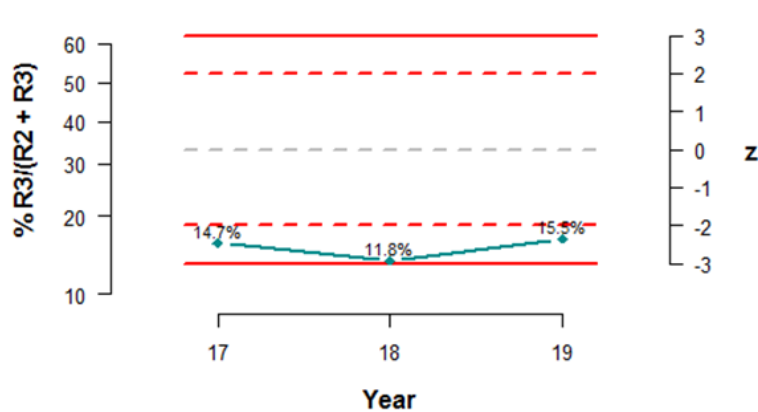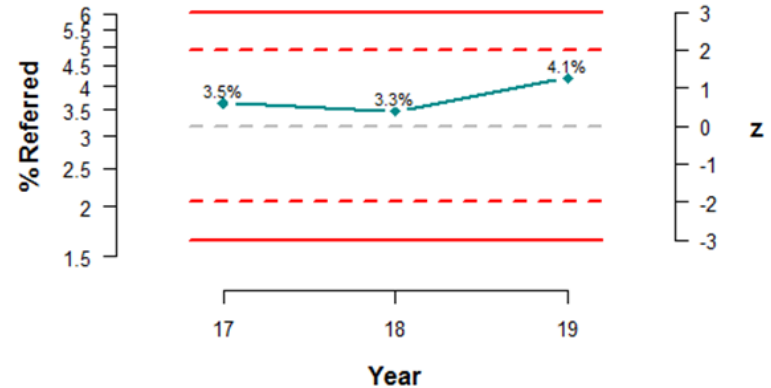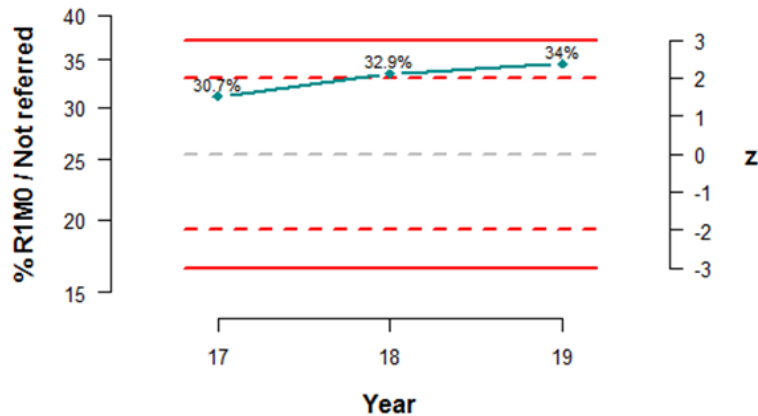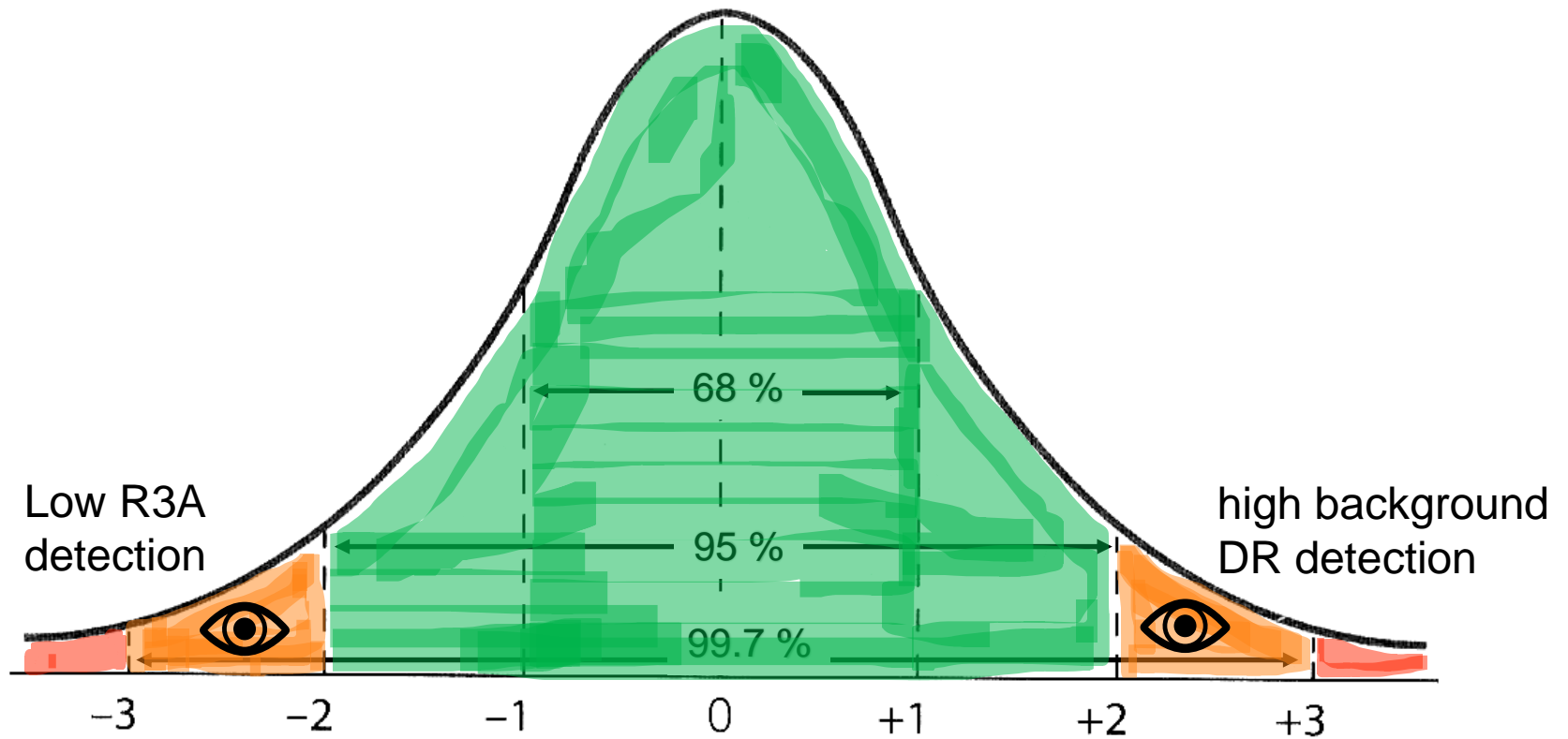
Trend data
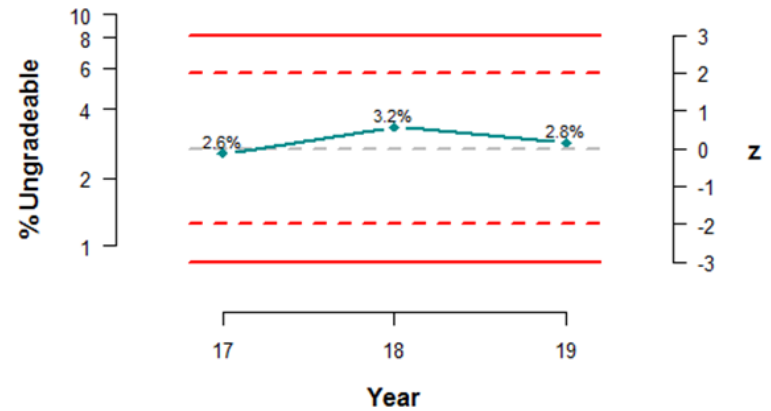
Atypicality

The atypicality score is calculated using the Z scores from 4 grading outcomes. This score measures how unusual a programme is relative to all the other programmes.

Atypicality scoring

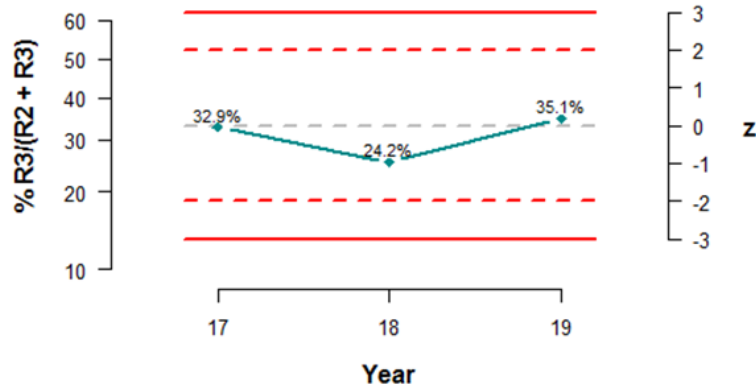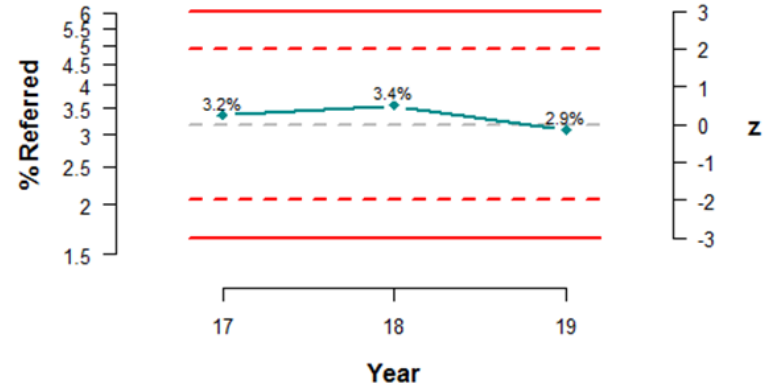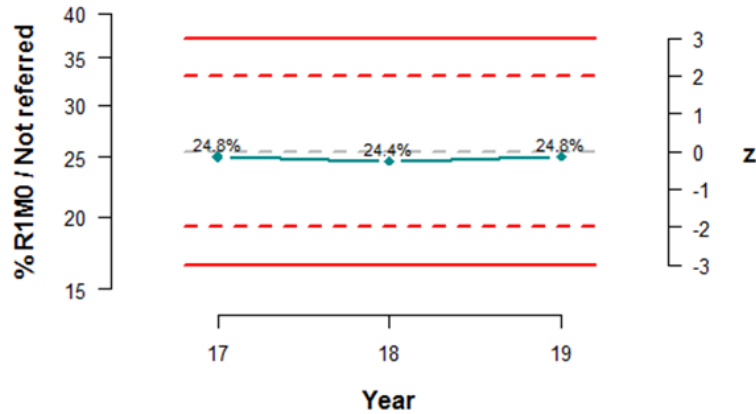| Outcomes	R1M0 versus R0M0 + R1M0 (non ref group)		Referrals		R3A versus all R2 + R3A		Ungradable		Atypicality
	%	**Z**	**%**	**Z**	**%**	**Z**	**%**	**Z**	**%**
Programme A	14.0	-3.6	2.4	-1.14	42.3	1.55	1.9	-0.93	99.3
Programme B	25.7	-0.02	8.5	3.54	26.3	-0.19	6.3	2.01	97.7
Programme C	26.1	0.09	2.7	-0.5	23.9	-0.5	2.5	0.0	2.7

Providers will be identified as atypical if they:

- have an absolute z score greater than 3 (red) for any of the 4 outcomes

- have an atypicality score above 95%

Atypicality scoring

Outcomes	R1M0 versus R0M0 + R1M0 (non ref group)		Referrals		R3A versus all R2 + R3A		Ungradable		Atypicality
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- Atypical providers will receive an explanation as to why they have been identified as atypical.

- This does not necessarily mean they have a grading issue, but they will be asked to do additional audit.
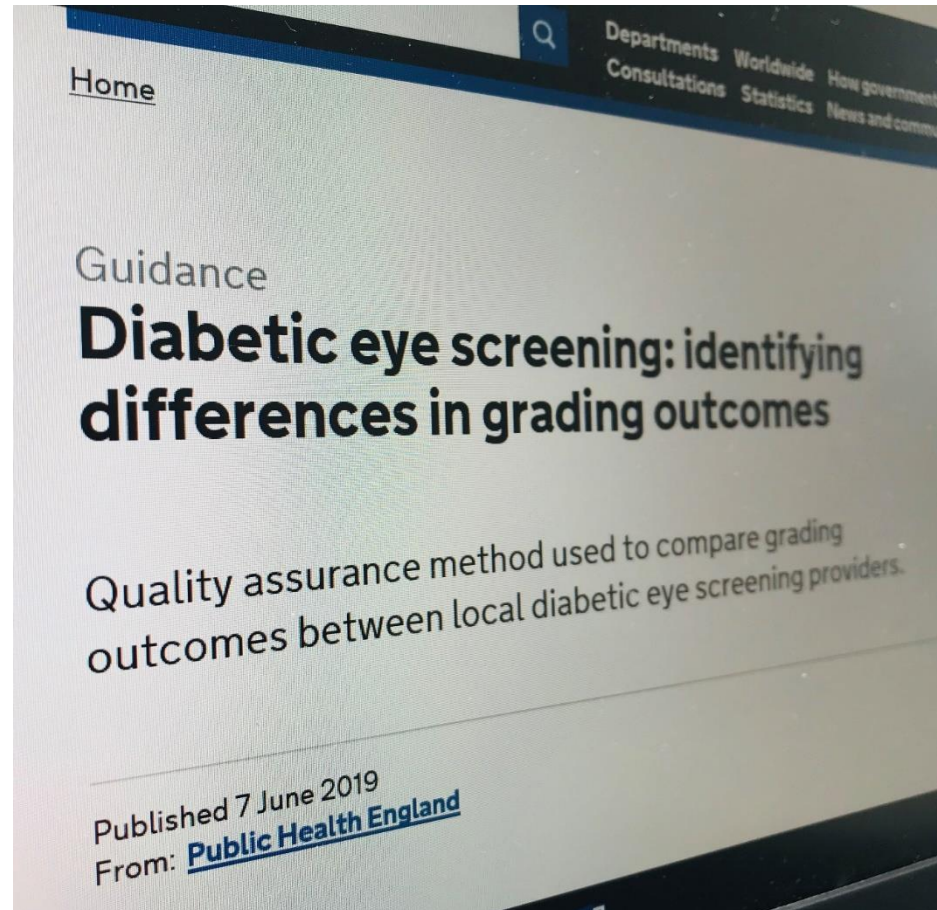
Guidance

www.gov.uk/government/publications/diabetic-eye-screening-identifying-differences-in-grading-outcomes

Mid June

PPR Q4 data collected

End September

Atypicality scores calculated and sent to screening providers.

Thank you