

QDiabetes Risk Thresholds

In order to inform thresholds for the NHS Health checks programme, we undertook an analysis of the sensitivity, specificity and observed risk for incident type 2 diabetes for two age bands

1. 25-84 years which is the full range over which the QDiabetes algorithm operates
2. 40-74 years which is the age bands used for the NHS Health Check

We used the latest annual update of the QDiabetes score (2015) derived from a 75% sample of practices contributing to version 39 of the QResearch database (uploaded 01 Aug 2014). We applied the QDiabetes score to the 25% of practices which constituted the separate validation sample (i.e. not used to derive the score).

For example, for patients age 40-74 years, the top 10% of patients would be identified using a 10 year risk threshold of > 16.4% (Table 2). At this threshold, the sensitivity would be 38%, the specificity would be 91% and the observed risk would be 26%.

Table 1 shows the results for patients aged 25-84 years

group	Total population	Case of diabetes	QDiabetes risk threshold %	Sensitivity %	Specificity %	10 year observed_risk %
top 10%	1966831	55829	11.9	49.2	91.1	21.3
top 20%	1966831	55829	7.0	71.2	81.5	15.6
top 30%	1966831	55829	4.5	83.7	71.6	12.4
top 40%	1966831	55829	3.0	91.0	61.5	10.2
top 50%	1966831	55829	1.9	95.4	51.3	8.6

Table 2 shows the results for patients aged 40-74 years

group	Total population	Case of diabetes	QDiabetes risk threshold %	Sensitivity %	Specificity %	10 year observed_risk %
top 10%	954,025	44348	16.4	37.6	91.3	25.9
top 20%	954,025	44348	10.5	58.7	81.9	20.3
top 30%	954,025	44348	7.5	72.5	72.1	16.8
top 40%	954,025	44348	5.6	81.9	62.0	14.2
top 50%	954,025	44348	4.2	88.5	51.9	12.3

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