**Supplementary Appendices**

**eResults 1**

eResults 1.1 Sub-analysis

eResults 1.2 Deterministic analysis

**eFigures**

eFigure 1: Cost-effectiveness acceptability curves of each CVD risk algorithm, compared to no algorithm, when a CVD risk threshold of 20% was employed.

eFigure 2: Cost-effectiveness planes of the head-to-head comparisons of each CVD risk algorithm sub-type when a CVD risk threshold of 10% was employed where a) compares the SMI-specific lipid algorithm versus the general lipid algorithm and b) compares the SMI-specific BMI algorithm versus the general BMI algorithm.

eFigure 3: Cost-effectiveness planes of the head-to-head comparisons of each CVD risk algorithm sub-type when a CVD risk threshold of 20% was employed where a) compares the SMI-specific lipid algorithm versus the general lipid algorithm and b) compares the SMI-specific BMI algorithm versus the general BMI algorithm.

**eTables**

eTable 1: Co-efficients for the a) SMI-specific and b) general algorithms.

eTable 2: Co-efficients of the covariates included in the Weibull models for primary CVD events (CHD and CVA) and death from other causes.

eTable 3: Percentage of patients who had a non-fatal or fatal primary and secondary CVD event, stratified by type of CVD event.

eTable 4: Data inputs used in our Markov model.

eTable 5: Number of people (out of 1000) classified as high and low risk by the various CVD risk algorithms at a CVD risk threshold of 20%; further stratified by use of statin therapy at baseline.

eTable 6: Costs, QALYs, NMBs and number of events prevented per 1000 individuals for each CVD algorithm (including no algorithm) when a CVD risk threshold of 20% was employed.

eTable 7: Number of events per 1000 individuals, stratified by risk and statin therapy at baseline, for each CVD algorithm (including no algorithm) when a CVD risk threshold of a) 10% and b) 20% was employed.

eTable 8: Deterministic analyses when a) the mean values for all variables are held (the base case deterministic analysis), b) all costs are doubled, c) CVD risk management with statin therapy costs are doubled, d) CVD risk algorithm costs are doubled, e) cardiovascular event costs are doubled, f) the utility for severe mental illness (SMI) is altered to the utility associated with relapse, g) the utility for SMI is altered to the utility associated with extra pyramidal symptoms (EPS), h) the effect of statin therapy is reduced to the upper odds ratio of the 95% confidence interval and i) compliance with statin therapy is reduced to 50%.

**eResults 1**

**eResults 1.1 Sub-analysis**

Head-to-head comparisons of the general and SMI-specific sub-type algorithms demonstrated the general lipid algorithm was more favourable than the SMI-specific lipid algorithm as the difference in costs between the SMI-specific algorithm and the general algorithm was greater. That is, the SMI-specific lipid algorithm had greater total costs than the general lipid algorithm. This, however, was not the case for the BMI versions, where the SMI-specific BMI algorithm performed better as the difference in costs between the SMI-specific algorithm and the general algorithm was less. The results were similar for both the 10% and 20% CVD risk thresholds, depicted in eFigure 2 and eFigure 3 respectively.

**eResults 1.2 Deterministic analysis**

The base case deterministic analysis (eTable 8a) represents the results when all input parameters are held at their mean value. In line with our PSA analysis, the base case deterministic analysis demonstrated greater cost-effectiveness with the SMI-specific BMI algorithm than other algorithms, with a NMB of £138,325,600 at a WTP per QALY gained of £20,000. Variation of individual input parameters produced different results for the most cost-effective algorithm. When compliance with statin therapy was reduced to 50%, the general lipid algorithm had the highest NMB. Altering the effectiveness of statin therapy by reducing its treatment effect resulted in the SMI-specific BMI algorithm performing better. Analyses where all costs were doubled resulted in the SMI-specific BMI algorithm with the highest NMB. This was also the case when only CVD risk algorithm costs were doubled. When only the costs of CVD risk management were doubled or only the costs of cardiovascular events were doubled, the SMI-specific BMI algorithm and general lipid algorithm were comparable. Reducing the utility associated with SMI to the utility associated with SMI and extra pyramidal symptoms (EPS) or to the utility associated with relapse, the general lipid algorithm was most cost-effective. In all analyses, the SMI-specific BMI algorithm or general lipid algorithm were superior to other CVD risk algorithms assessed. Differences in NMB between the SMI-specific BMI algorithm and general lipid algorithm were minimal. Results of the one-way deterministic analyses are reported in eTable 8.

**eFigure 1: Cost-effectiveness acceptability curves of each CVD risk algorithm, compared to no algorithm, when a CVD risk threshold of 20% was employed.**

**eFigure 2: Cost-effectiveness planes of the head-to-head comparisons of each CVD risk algorithm sub-type when a CVD risk threshold of 10% was employed where a) compares the SMI-specific lipid algorithm versus the general lipid algorithm and b) Compares the SMI-specific BMI algorithm versus the general BMI algorithm.**

1. **SMI-specific lipid algorithm versus general lipid algorithm**
2. **SMI-specific BMI algorithm versus general BMI algorithm**

**eFigure 3: Cost-effectiveness planes of the head-to-head comparisons of each CVD risk algorithm sub-type when a CVD risk threshold of 20% was employed where a) compares the SMI-specific lipid algorithm versus the general lipid algorithm and b) compares the SMI-specific BMI algorithm versus the general BMI algorithm.**

1. **SMI-specific lipid algorithm versus general lipid algorithm**
2. **SMI-specific BMI algorithm versus the general BMI algorithm**

**eTable 1: Co-efficients for the a) SMI-specific and b) general algorithms.**

1. **Co-efficients for the SMI-specific algorithms**

Key to symbols in formulae:

|  |  |
| --- | --- |
| **Symbol** | **Evaluate for patient as follows:** |
| fem | Takes value 1 if female; takes value 0 if male |
| age | Years |
| sbp | Systolic blood pressure (mmHg) |
| hyp | Takes value 1 if use of anti-hypertensives = yes; takes value 0 if use of anti-hypertensives = no  |
| chol | Total cholesterol (mmol/L) |
| HDL | HDL cholesterol (mmol/L) |
| wt | Weight (kg) |
| ht | Height (cm) |
| dm | Takes value 1 if diabetes = yes; takes value 0 if diabetes = no |
| ex | Takes value 1 if ex-smoker; takes value 0 otherwise |
| curr | Takes value 1 if current smoker; takes value 0 otherwise |
| dep | Takes value 1 if use of antidepressants = yes; takes value 0 if use of antidepressants = no |
| alc | Takes value 1 if history of heavy drinking = yes; takes value 0 if history of heavy drinking = no |
| t2 | Takes value 1 if patient belongs to Townsend quintile 2; takes value 0 otherwise |
| t3 | Takes value 1 if patient belongs to Townsend quintile 3; takes value 0 otherwise |
| t4 | Takes value 1 if patient belongs to Townsend quintile 4; takes value 0 otherwise |
| t5 | Takes value 1 if patient belongs to Townsend quintile 5; takes value 0 otherwise |
| bip | Takes value 1 if patient has bipolar disorder; takes value 0 otherwise |
| oth | Takes value 1 if patient has psychosis other than schizophrenia or bipolar disorder; takes value 0 otherwise |
| reg | Takes value 1 if has unspecified SMI but has been added to an SMI register; takes value 0 otherwise |
| atyp | Takes value 1 if use of atypical (second generation) antipsychotics = yes; takes value 0 if use of atypical antipsychotics = no |
| typ | Takes value 1 if use of typical (first generation) antipsychotics = yes; takes value 0 if use of typical antipsychotics = no |
| cal | Calendar year e.g. 2013 |

|  |  |  |
| --- | --- | --- |
| **Covariates** | **Lipid model** | **BMI model** |
| fem | - 0.1795 | - 0.49376 |
| age | 3.78124×(log(age) – 3.853361) | 3.50943×(log(age) – 3.853361) |
| sbp | 0.007651× (SBP – 129.8673) | 0.00893×(sbp – 129.8673) |
| hyp | 0.625719  | 0.65817264 |
| ln(hyp) x lnsbp | - 0.00796×hyp×(sbp – 129.8673) | - 0.00888×hyp×(SBP – 129.8673) |
| chol | 0.11763×(chol –5.562413) |  |
| HDL | - 0.8183×(HDL – 1.389071) |  |
| wt |  | 0.000680×(wt – 76.20105) |
| ht |  | - 0.0124×(ht – 167.9494) |
| dm | 0.37734 | 0.44971 |
| ex | 0.01639 | 0.0738 |
| curr | 0.29659 | 0.38081 |
| dep | 0.2104 | 0.21846 |
| alc | 0.41392 | 0.30721 |
| t2 | 0.10963 | 0.10919 |
| t3 | 0.16388 | 0.18412 |
| t4 | 0.1828 | 0.20238 |
| t5 | 0.22126 | 0.24762 |
| bip | 0.11177 | 0.0978 |
| oth | 0.21004 | 0.19063 |
| reg | 0.01526 | - 0.01138 |
| atyp | 0.12121 | 0.17662 |
| typ |  | 0.1205 |
| cal | - 0.07043×(cal -2001.83) | - 0.07524×(cal -2001.83) |
| S | 0.968011 | 0.951285 |

Then predicted risk (as a percentage) = 100×[1-Sexp(P)] where P=sum(fem + age + sbp...)

**b) Co-efficients for the general algorithms.**

Key to symbols in formulae:

|  |  |
| --- | --- |
| **Symbol** | **Evaluate for patient as follows:** |
| lnage | ln age (years) |
| lnsbp | ln Systolic blood pressure (mmHg)  |
| In(hyp) | Takes value 1 if use of antihypertensives = yes; takes value 0 if use of antihypertensives = no |
| lnchol | ln Total cholesterol (mmol/L) |
| lnhdl | ln HDL cholesterol (mmol/L) |
| lnbmi | ln BMI (kg/m2) |
| dm | Takes value 1 if diabetes = yes; takes value 0 if diabetes = no |
| curr | Takes value 1 if current smoker; takes value 0 otherwise |

Where ln = natural log,

|  |  |  |
| --- | --- | --- |
| **Covariates** | **Lipid model** | **BMI model** |
| **Male** | **Female** | **Male** | **Female** |
| lnage | 4.14474 x (lnage - 3.7901) | 4.41759 x (lnage – 3.8289) | 4.07664 x (lnage – 3.7901) | 4.28501 x (lnage – 3.8289) |
| lnsbp | 0.9025974 x (lnsbp-4.8792) | 1.37844 x (lnsbp – 4.8474) | 1.00391 x (lnsbp – 4.8792) | 1.69393 x (lnsbp – 4.8474) |
| ln(hyp) | 0.458338 x ln(hyp) | 0.552473 x ln(hyp) | 0.489864 x ln(hyp) | 0.627038 x ln(hyp) |
| ln(hyp) x lnsbp | -0.840329 x ln(hyp) x (lnsbp-4.8792) | -0.786195 x ln(hyp) x (lnsbp – 4.8474) | -0.882539 x ln(hyp) x (lnsbp – 4.8792) | -0.929636 x ln(hyp) x (lnsbp – 4.8474) |
| lnchol | 0.78074 x (lnchol – 5.3156) | 0.675028 x ln(chol – 5.3388) |  |  |
| lnhdl | -1.2378 x (lnhdl – 3.8676) | -1.05329 x (lnhdl – 4.0760) |  |  |
| lnbmi |  |  | 0.324059 x (lnbmi – 3.2744) | -0.198854 x (lnbmi – 3.2503) |
| dm | 0.391873 | 0.66555 | 0.428547 | 0.796977 |
| curr | 0.204347 | 0.34367 | 0.291835 | 0.403768 |
| S | 0.966189 | 0.9833206 | 0.9650041 | 0.9824454 |

Then predicted risk (as a percentage) = 100×[1-Sexp(P)] where P=sum(lnage + lnsbp + hyp…)

**eTable 2: Coefficient’s of the covariates included in the Weibull models for primary CVD events (CHD and CVA) and death from other causes.**

|  |  |
| --- | --- |
| **Covariates** | **Outcome** |
| **CHD** | **CVA** | **Death from other causes** |
| Co-efficient | Standard Error | Co-efficient | Standard Error | Co-efficient | Standard Error |
| Age, years | 0.050\*\* | 0.003 | 0.072\*\* | 0.003 | 0.075\*\* | 0.001 |
| Female | -0.764\*\* | 0.103 | -0.004 | 0.130 | -0.399\*\* | 0.035 |
| SBP, mmHg | 0.006\* | 0.002 | 0.011\*\* | 0.002 |   |   |
| Anti-hypertensive therapy | 0.629\*\* | 0.077 | 0.296\*\* | 0.074 |   |   |
| Total cholesterol, mmol/L | 0.282\*\* | 0.061 | 0.043 | 0.062 |   |   |
| HDL-cholesterol, mmol/L | -0.771\* | 0.268 | -1.108\* | 0.417 |   |   |
| Lipid lowering therapy | 1.287\*\* | 0.185 | 1.241\*\* | 0.202 |   |   |
| Weight, kg | -0.002 | 0.003 | -0.015\* | 0.005 |   |   |
| Height, m | -1.590\*\* | 0.514 | -0.399 | 0.681 |   |   |
| Presence of diabetes  | 0.492\*\* | 0.118 | 0.171 | 0.132 |   |   |
| Smoking status |   |   |   |   |   |   |
|  Ex-smoker | 0.113 | 0.090 | -0.021 | 0.089 |   |   |
|  Current smoker | 0.416\*\* | 0.080 | 0.176\* | 0.087 |   |   |
| Depression or on anti-depressant therapy | 0.194\*\* | 0.069 | 0.123 | 0.064 |   |   |
| History of heavy drinking | 0.327\*\* | 0.117 | 0.380\*\* | 0.134 |   |   |
| Type of SMI |   |   |   |   |   |   |
|  Schizophrenia | 0.006 | 0.107 | -0.051 | 0.114 |   |   |
|  Bipolar disorder | -0.017 | 0.109 | 0.241\* | 0.109 |   |   |
|  Other non-organic psychosis | 0.212\* | 0.104 | 0.165 | 0.109 |   |   |
| First generation anti-psychotic therapy | 0.045 | 0.074 | 0.270\*\* | 0.071 |   |   |
| Second generation anti-psychotic therapy | -0.303\*\* | 0.102 | 0.129 | 0.093 |   |   |
| Constant | -6.984\*\* | 0.963 | -8.614\*\* | 1.196 | -8.719\*\* | 0.090 |
| Gamma | 1.058 | 0.027 | 1.151 | 0.029 | 1.213 | 0.017 |

Where \* represents p< 0.05 and \*\* represents p<0.01.

**eTable 3: Proportion (%) of patients who had a non-fatal or fatal primary and secondary CVD event, stratified by type of CVD event.**

|  |  |  |  |
| --- | --- | --- | --- |
| **CVD event** | **No. (%)** | **Sub-type of each CVD event** | **No. (%)** |
| **Primary** |  |  |  |
| CHD | Non-fatal | 1002/1130 (88.7) | *Unstable angina* | 65/1130 (5.8) |
|   |   |   | *Stable angina* | 325/1130 (28.8) |
|   |   |   | *MI* | 414/1130 (36.6) |
|   |   |   | *Surgery* | 22/1130 (1.9) |
|   |   |   | *Unclassified CHD* | 304/1130 (26.9) |
|   | Fatal | 128/1130 (11.3) |   |   |
| CVA | Non-fatal | 1111/1194 (93) | *TIA* | 349/1194 (29.2) |
|   |   |   | *Haemorrhagic stroke* | 46/1194 (3.9) |
|   |   |   | *Ischaemic stroke* | 778/1194 (65.2) |
|   |   |   | *Unspecified stroke* | 21/1194 (1.8) |
|   | Fatal | 83/1194 (7) |   |   |
| **Secondary** |  |  |  |
| CVD | Non-fatal | 3166/5481 (57.8) | *CHD* | 1228/3166 (38.8) |
|   |   |   | *CVA* | 1898/3166 (59.9) |
|   |   |   | *CHD and CVA* | 40/3166 (1.3) |
|   | Fatal | 2315/5481 (42.2) | *CHD* | 1157/2315 (50) |
|   |   |   | *CVA* | 1158/2315 (50) |

**eTable 4: Data inputs used in our Markov model.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Input variables** | **Utilities** | **Costs (£)** | **Effect of statin therapy** |
| **First year** | **Subsequent year** |
| Mean | Standard Error | Distribution | Mean | Standard Error | Distribution | Mean | Standard Error | Distribution | Mean | Standard Error | Distribution |
| SMI | 0.865 | 0.021 | beta |  |  |  |   |  |   |   |  |   |
|   |   |  |   |  |  |  |   |  |   |   |  |   |
| CVD event |   |  |   |  |  |  |   |  |   |   |  |   |
| CHD |   |  |   |  |  |  |   |  |   | 0.73 | 0.033 | log |
|  Unstable angina | -0.216 | 0.014 | gamma | £566 | £566 | gamma | £220 | £220 | gamma |   |  |   |
|  Stable angina | -0.216 | 0.014 | gamma | £220 | £220 | gamma | £220 | £220 | gamma |   |  |   |
|  MI | -0.072 | 0.005 | gamma | £5,720 | £5,720 | gamma | £220 | £220 | gamma |   |  |   |
|  Surgery | -0.072 | 0.005 | gamma | £6,008 | £6,008 | gamma | n/a |  |  |   |  |   |
|  Unclassified CHD | -0.101 | 0.006 | gamma | £2,169 | £2,169 | gamma | £220 | £220 | gamma |   |  |   |
|  Fatal CHD | n/a |  |  | £1,500 | £1,500 | gamma | n/a |  |  |   |  |   |
| Stroke |   |  |   |  |  |  |   |  |   | 0.78 | 0.054 | log |
|  TIA | -0.088 | 0.006 | gamma | £1,368 | £1,368 | gamma | £340 | £340 | gamma |   |  |   |
|  Stroke | -0.185 | 0.012 | gamma | £10,347 | £10,347 | gamma | £2,782 | £2,782 | gamma |   |  |   |
|  Unspecified CVA | -0.153 | 0.01 | gamma | £5,858 | £5,858 | gamma | £1,561 | £1,561 | gamma |   |  |   |
|  Fatal stroke | n/a |  |  | £9,055 | £9,055 | gamma | n/a |  |  |   |   |   |

**eTable 5: Number of people (out of 1000) classified as high and low risk by the various CVD risk algorithms at a CVD risk threshold of 20%; further stratified by use of statin therapy at baseline.**

|  |  |
| --- | --- |
|  | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** |
|
|
| High risk (>20%) |   |   |   |   |
|  Total  | 82 | 78 | 65 | 117 |
|  Currently prescribed statins | 26 | 23 | 21 | 36 |
|  Not currently prescribed statins | 56 | 55 | 44 | 81 |
|   |  |  |  |  |
| Low risk (<20%) |  |  |  |  |
|  Total | 918 | 922 | 935 | 883 |
|  Currently prescribed statins | 71 | 74 | 76 | 61 |
|  Not currently prescribed statins | 847 | 848 | 859 | 822 |

**eTable 6: Costs, QALYs, NMBs and number of events prevented per 1000 individuals for each CVD algorithm (including no algorithm) when a CVD risk threshold of 20% was employed.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
|
| Costs and QALYs, mean (95% CI) |  |  |  |  |  |
|  Costs of administering algorithm | £19,925(19,831 - 20,019) | £19,925(19,831 - 20,019) | £18,960(18,886 - 19,033) | £18,960(18,886 - 19,033) | n/a |
|  Costs of new statin prescriptions  | £10,362(10,227 - 10,497) | £10,357(10,222 - 10,491) | £8,045(7,940 - 8,151) | £14,907(14,712 - 15,102) | n/a |
|  Costs of CVD events | £1,810,519(1,653,359 - 1,967,680) | £1,809,957(1,652,869 - 1,967,046) | £1,819,735(1,662,575 - 1,976,894) | £1,797,005(1,640,538 - 1,953,472) | £1,845,719(1,687,645 - 2,003,793) |
|  Total costs undiscounted | £1,840,807(1,683,666 - 1,997,947) | £1,840,239(1,683,171 - 1,997,306) | £1,846,740(1,689,595 - 2,003,885) | £1,830,872 (1,674,429 - 1,987,315) | £1,845,719(1,687,645 - 2,003,793) |
|  Total costs discounted | £1,587,688(1,451,812 - 1,723,564) | £1,587,306(1,451,485 - 1,723,127) | £1,592,802(1,456,909 -1,728,696) | £1,578,939(1,443,689 - 1,714,188) | £1,589,781 (1,453,019 - 1,726,543) |
|  QALY discounted | 6,823 (6,809 - 6,837) | 6,823 (6,809 - 6,837) | 6,822 (6,808 - 6,836) | 6,825 (6,811 - 6,838) | 6,819 (6,805 - 6,833) |
|  Cost compared to no algorithm | -£2,093 | -£2,476 | £3,021 | -£10,483 |  |
|  QALY compared to no algorithm | 4 | 3 | 4 | 6 |  |
| Net monetary benefit, mean (95% CI) |  |  |  |  |  |
|  £20,000 WTP threshold | 134,876,090(134,486,620 - 135,265,560) | 134,868,737(134,479,388 - 135,258,085) | 134,843,556(134,453,878 - 135,233,235) | 134,913,127(134,526,041 - 135,300,214) | 134,785,088(134,392,268 - 135,177,908) |
|  £30,000 WTP threshold | 203,107,979(202,583,230 - 203,632,729) | 203,096,758(202,572,212 - 203,621,303) | 203,061,735(202,536,664 - 203,586,807) | 203,159,160(202,637,681 - 203,680,639) | 202,972,522(202,443,200 - 203,501,845) |

**eTable 6: Costs, QALYs, NMBs and number of events prevented per 1000 individuals for each CVD algorithm (including no algorithm) when a CVD risk threshold of 20% was employed (continued).**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
|
| Events, mean (95% CI) |  |  |  |  |  |
|  Primary non-fatal CHD | 85.36 (78.78 - 91.95) | 85.47 (78.88- 92.07) | 85.93 (79.32 - 92.53) | 84.75 (78.20 - 91.31) | 87.29 (80.63 - 93.96) |
|  Primary fatal CHD | 9.69 (8.93 - 10.44) | 9.70 (8.95- 10.46) | 9.73 (8.97 - 10.48) | 9.61 (8.86 - 10.36) | 9.90 (9.13 - 10.66) |
|  Primary non-fatal stroke | 100.68 (91.61 - 109.76) | 100.69 (91.62 - 109.76) | 100.97 (91.90 - 110.05) | 100.11 (91.06 - 109.15) | 102.00 (92.89 - 111.10) |
|  Primary fatal stroke | 7.04 (6.39 - 7.68) | 7.04 (6.40 - 7.69) | 7.07 (6.42 - 7.71) | 7.00 (6.36 - 7.64) | 7.14 (6.49 - 7.79) |
|  Secondary non-fatal CVD | 15.46 (14.41 - 16.51) | 15.46 (14.41 - 16.51) | 15.70 (14.65 - 16.76) | 15.21 (14.18 - 16.25) | 16.34 (15.26 - 17.43) |
|  Secondary fatal CVD | 6.91 (6.47 - 7.35) | 6.92 (6.48 - 7.37) | 7.01 (6.56 - 7.46) | 6.78 (6.35 - 7.22) | 7.41 (6.94 - 7.87) |
|  Death from other causes | 119.58 (118.75 - 120.40) | 119.67 (118.84 - 120.50) | 119.61 (118.78 - 120.44) | 119.63 (118.80 - 120.46) | 119.42 (118.60 - 120.25) |

QALYs are the quality adjusted life years, NMB is the net monetary benefit, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**eTable 7: Number of events per 1000 individuals, stratified by risk and statin therapy at baseline, for each CVD algorithm when a CVD risk threshold of a) 10% and b) 20% was employed.**

1. **10% CVD risk threshold**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** |
|
| **High risk, mean (95% CI)** |  |  |  |  |
| Statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 311.38 (295.77 - 326.98) | 311.40 (295.79 - 327.01) | 301.08 (285.92 - 316.24) | 288.18 (273.13 - 303.04) |
|  Primary fatal CHD | 35.23 (33.44 - 37.02) | 35.26 (33.49 - 37.02) | 34.07 (32.34 - 35.79) | 32.67 (30.97 - 34.37) |
|  Primary non-fatal stroke | 324.93 (305.97 - 343.88) | 324.55 (305.55 - 343.55) | 325.12 (305.96 - 344.27) | 307.04 (288.51 - 325.57) |
|  Primary fatal stroke | 22.59 (21.25 - 23.93) | 22.44 (21.11 - 23.78) | 22.56 (21.20 - 23.91) | 21.28 (19.98 - 22.58) |
|  Secondary non-fatal CVD | 302.33 (284.70 - 319.97) | 302.11 (284.42 - 319.79) | 302.56 (284.74 - 320.38) | 285.76 (268.51 - 303.01) |
|  Secondary fatal CVD | 35.79 (34.42 - 37.17) | 34.95 (33.63 - 36.27) | 38.91 (37.42 - 40.41) | 31.59 (30.33 - 32.84) |
|  Dead from other causes | 266.73 (225.11 - 228.35) | 219.70 (218.12 - 22.28) | 248.78 (247.03 - 250.53) | 208.46 (206.98 - 209.95) |
|   |  |  |  |  |
| No statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 109.72 (101.22 - 118.21) | 113.65 (104.99 - 122.32) | 106.01 (97.77 - 114.25) | 98.25 (90.47 - 106.03) |
|  Primary fatal CHD | 12.39 (11.43 - 13.35) | 12.81 (11.84 - 13.79) | 11.98 (11.05 - 12.91) | 11.08 (10.21 - 11.96) |
|  Primary non-fatal stroke | 153.65 (139.92 - 167.37) | 160.23 (146.22 - 174.25) | 153.09 (139.39 - 166.79) | 142.12 (129.11 - 155.14) |
|  Primary fatal stroke | 10.68 (9.71 - 11.64) | 11.15 (10.17 - 12.14) | 10.67 (9.71 - 11.63) | 9.88 (8.96 - 10.79) |
|  Secondary non-fatal CVD | 19.98 (18.49 - 21.47) | 21.12 (19.57 - 22.66) | 20.08 (18.57 - 21.59) | 18.05 (16.66 - 19.43) |
|  Secondary fatal CVD | 10.07 (9.32 - 10.82) | 10.63 (9.85 - 11.40) | 10.73 (9.92 - 11.53) | 8.93 (8.25 - 9.62) |
|  Dead from other causes | 248.57 (246.91 - 250.22) | 242.83 (241.21 - 244.46) | 274.54 (272.73 - 276.35) | 225.35 (223.83 - 226.87) |

**eTable 7: Number of events per 1000 individuals, stratified by risk and statin therapy at baseline, for each CVD algorithm when a CVD risk threshold of a) 10% and b) 20% was employed (continued).**

1. **10% CVD risk threshold (continued)**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** |
|
| **Low risk, mean (95% CI)** |  |  |  |  |
| Statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 161.07 (150.09 - 172.05) | 157.89 (147.02 - 168.76) | 203.76 (191.54 - 215.99) | 150.17 (139.64 - 160.71) |
|  Primary fatal CHD | 18.32 (17.06 - 19.59) | 17.88 (16.64 - 19.12) | 23.02 (21.63 - 24.41) | 16.99 (15.79 - 18.18) |
|  Primary non-fatal stroke | 190.44 (175.50 - 205.38) | 186.84 (172.09 - 201.58) | 219.50 (204.01 - 235.00) | 171.19 (157.31 - 185.08) |
|  Primary fatal stroke | 13.27 (12.22 - 14.32) | 12.93 (11.90 - 13.97) | 15.26 (14.16 - 16.36) | 11.74 (10.78 - 12.71) |
|  Secondary non-fatal CVD | 26.26 (24.70 - 27.81) | 26.19 (24.61 - 27.76) | 32.50 (30.87 - 34.14) | 22.46 (21.08 - 23.83) |
|  Secondary fatal CVD | 9.93 (9.34 - 10.53) | 10.47 (9.84 - 11.10) | 12.54 (11.91 - 13.17) | 8.56 (8.04 - 9.08) |
|  Dead from other causes | 100.62 (99.87 - 101.37) | 108.19 (107.38 - 108.99) | 107.34 (106.54 - 108.14) | 86.32 (85.65 - 86.98) |
|   |  |  |  |  |
| No statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 49.77 (45.12 - 54.42) | 51.98 (47.18 - 56.78) | 55.07 (50.12 - 60.02) | 49.13 (44.56 - 53.70) |
|  Primary fatal CHD | 5.62 (5.10 - 6.15) | 5.88 (5.34 - 6.43) | 6.23 (5.67 - 6.79) | 5.55 (5.03 - 6.06) |
|  Primary non-fatal stroke | 65.86 (58.06 - 73.67) | 68.28 (60.29 - 76.27) | 71.26 (63.16 - 79.35) | 63.17 (55.58 - 70.76) |
|  Primary fatal stroke | 4.58 (4.03 - 5.13) | 4.74 (4.18 - 5.30) | 4.96 (4.39 - 5.53) | 4.39 (3.85 - 4.92) |
|  Secondary non-fatal CVD | 8.46 (7.65 - 9.28) | 8.91 (8.06 - 9.75) | 9.52 (8.66 - 10.39) | 8.00 (7.22 - 8.77)  |
|  Secondary fatal CVD | 2.82 (2.55 - 3.09) | 3.11 (2.82 - 3.40) | 3.19 (2.90 - 3.47) | 2.57 (2.32 - 2.82) |
|  Dead from other causes | 72.38 (71.88 - 72.88) | 80.63 (80.08 - 81.18) | 74.52 (74.00 - 75.03) | 69.27 (68.79 - 69.74) |

**eTable 7: Number of events per 1000 individuals, stratified by risk and statin therapy at baseline, for each CVD algorithm when a CVD risk threshold of a) 10% and b) 20% was employed (continued).**

**b) 20% CVD risk threshold**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** |
|
| **High risk, mean (95% CI)** |   |   |   |   |
| Statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 360.36 (343.15 - 377.58) | 374.85 (357.39 - 392.30) | 361.84 (344.79 - 378.88) | 323.62 (307.45 - 339.79) |
|  Primary fatal CHD | 40.88 (38.90 - 42.85) | 42.65 (40.64 - 44.66) | 40.99 (39.03 - 42.95) | 36.63 (34.77 - 38.49) |
|  Primary non-fatal stroke | 349.83 (330.33 - 369.32) | 347.56 (328.05 - 367.06) | 353.54 (333.87 - 373.21) | 333.20 (314.14 - 352.26) |
|  Primary fatal stroke | 24.38 (22.97 - 25.79) | 24.28 (22.88 - 25.68) | 24.74 (23.33 - 26.16) | 23.27 (21.91 - 24.63) |
|  Secondary non-fatal CVD | 325.44 (307.33 - 343.56) | 323.27 (305.14 - 341.41) | 328.80 (310.51 - 347.08) | 309.93 (292.21 - 327.66) |
|  Secondary fatal CVD | 48.31 (46.62 - 49.99) | 46.56 (45.00 - 48.12) | 54.80 (52.8 7- 56.72) | 42.26 (40.69 - 43.83) |
|  Dead from other causes | 279.84 (277.79 - 281.88) | 261.78 (259.84 - 263.73) | 305.16 (302.94 - 307.37) | 254.98 (253.12 - 256.84) |
|   |  |  |  |  |
| No statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 153.12 (142.21 - 164.03) | 153.74 (142.86 - 164.63) | 137.24 (127.29 - 147.19) | 136.97 (126.95 - 146.99) |
|  Primary fatal CHD | 17.32 (16.07 - 18.57) | 17.41 (16.17 - 18.66) | 15.56 (14.42 - 16.70) | 15.47 (14.33 - 16.60) |
|  Primary non-fatal stroke | 187.67 (171.54 - 201.80) | 191.00 (175.78 - 206.22) | 174.64 (159.83 - 189.44) | 171.87 (157.52 - 186.21) |
|  Primary fatal stroke | 13.00 (11.93 - 14.07) | 13.47 (12.37 - 14.56) | 12.20 (11.15 - 13.25) | 12.01 (10.99 - 13.02) |
|  Secondary non-fatal CVD | 28.12 (26.32 - 29.92) | 28.54 (26.73 - 30.34) | 25.68 (23.96 - 27.40) | 24.94 (23.27 - 26.60) |
|  Secondary fatal CVD | 15.96 (14.94 - 16.98) | 15.66 (14.67 - 16.65) | 16.10 (15.01 - 17.19) | 13.58 (12.67 - 14.49) |
|  Dead from other causes | 323.68 (321.51 - 325.84) | 298.04 (296.03 - 300.05) | 383.61 (381.12 - 386.09) | 292.45 (290.47 - 294.43) |

**eTable 7: Number of events per 1000 individuals, stratified by risk and statin therapy at baseline, for each CVD algorithm when a CVD risk threshold of a) 10% and b) 20% was employed (continued).**

1. **20% risk threshold (continued)**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** |
|
| **Low risk, mean (95% CI)**  |   |   |   |   |
| Statin therapy |   |   |   |   |
|  Primary non-fatal CHD | 209.51 (196.60 - 222.42) | 211.26 (198.26 - 224.26) | 218.96 (205.76 - 232.16) | 206.44 (193.67 - 219.21) |
|  Primary fatal CHD | 23.77 (22.31 - 25.23) | 23.95 (22.47 - 25.42) | 24.75 (23.25 - 26.24) | 23.44 (21.98 - 24.90) |
|  Primary non-fatal stroke | 230.25 (214.51 - 246.00) | 235.68 (219.82 - 251.54) | 236.96 (221.06 - 252.86) | 220.08 (204.71 - 235.46) |
|  Primary fatal stroke | 16.01 (14.89 - 17.13) | 16.44 (15.31 - 17.57) | 16.64 (15.50 - 17.78) | 15.35 (14.26 - 16.44) |
|  Secondary non-fatal CVD | 35.99 (34.19 - 37.80) | 37.90 (36.03 - 39.78) | 37.72 (35.89 - 39.55) | 34.06 (32.33 - 35.78) |
|  Secondary fatal CVD | 16.19 (15.38 - 17.00) | 17.95 (17.07 - 18.83) | 16.50 (15.70 -17.30) | 14.51 (13.77 - 15.24) |
|  Dead from other causes | 138.63 (137.59 - 139.67) | 149.94 (148.83 - 151.05) | 141.01 (139.96 -142.06) | 130.07 (129.12 - 131.03) |
|   |  |  |  |  |
| No statin therapy |  |  |  |  |
|  Primary non-fatal CHD | 62.04 (56.40 - 67.67) | 62.22 (56.57 - 67.87) | 64.78 (59.02 -70.54) | 60.12 (54.59 - 65.65) |
|  Primary fatal CHD | 7.04 (6.39 - 7.69) | 7.07 (6.42 - 7.71) | 7.33 (6.68 - 7.99) | 6.83 (6.19 - 7.46) |
|  Primary non-fatal stroke | 76.49 (68.47 - 84.51) | 76.36 (68.34 - 84.37) | 78.99 (70.88 - 87.10) | 73.92 (66.08 - 81.77) |
|  Primary fatal stroke | 5.36 (4.79 - 5.93) | 5.34 (4.77 - 5.91) | 5.52 (4.95 - 6.10) | 5.18 (4.62 - 5.73) |
|  Secondary non-fatal CVD | 10.98 (10.06 - 11.89) | 10.97 (10.05 - 11.88) | 11.62 (10.68 - 12.55) | 10.45 (9.57 - 11.34) |
|  Secondary fatal CVD | 4.26 (3.91 - 4.61) | 4.32 (3.97 - 4.68) | 4.54 (4.18 - 4.90) | 3.99 (3.65 - 4.32) |
|  Dead from other causes | 99.56 (98.87 - 100.26) | 101.60 (100.90 - 102.31) | 99.66 (98.95 - 100.36) | 95.90 (95.23 - 96.57) |

**eTable 8: Deterministic analyses when a) the mean values for all variables are held (the base case deterministic analysis), b) all costs are doubled, c) CVD risk management with statin therapy costs are doubled, d) CVD risk algorithm costs are doubled, e) cardiovascular event costs are doubled, f) the utility for severe mental illness (SMI) is altered to the utility associated with relapse, g) the utility for SMI is altered to the utility associated with extra pyramidal symptoms (EPS), h) the effect of statin therapy is reduced to the upper odds ratio of the 95% confidence interval and i) compliance with statin therapy is reduced to 50%.**

**a) Deterministic analyses with 5,000 iterations when the mean values for all variables are held (the base case deterministic analysis).**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £557,265 | £555,615 | £557,715 | £558,293 | £546,095 |
|  QALY discounted | 6,944 | 6,942 | 6,944 | 6,944 | 6,939 |
|  Cost compared to no algorithm | £11,170 | £9,520 | £11,620 | £12,198 |  |
|  QALY compared to no algorithm | 5 | 3 | 5 | 5 |  |
|  Primary CVD | 98.53 | 99.37 | 100.14 | 97.59 | 106.82 |
|  Secondary CVD | 8.32 | 8.39 | 8.57 | 8.24 | 9.81 |
|  Death from other causes | 119.98 | 120.00 | 119.69 | 119.89 | 120.09 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £138,321,726 | £138,286,240 | £138,323,280 | £138,325,660 | £138,225,080 |
|  £30,000 WTP threshold | £207,761,2215 | £207,707,167 | £207,763,778 | £207,767,637 | £207,610,6676 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**b) Deterministic analyses with 5,000 iterations when all costs are doubled.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £1,113,829 | £1,110,118 | £1,113,288 | £1,120,755 | £1,091,295 |
|  QALY discounted | 6,944 | 6,944 | 6,944 | 6,945 | 6,939 |
|  Cost compared to no algorithm | £22,534 | £18,823 | £21,993 | £29,460 |  |
|  QALY compared to no algorithm | 5 | 5 | 5 | 6 |  |
|  Primary CVD | 98.59 | 99.12 | 99.93 | 97.79 | 106.74 |
|  Secondary CVD | 8.36 | 8.41 | 8.56 | 8.25 | 9.85 |
|  Death from other causes | 119.90 | 119.84 | 119.77 | 119.90 | 119.83 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £137,766,055 | £137,767,426 | £137,765,085 | £137,772,135 | £137,696,857 |
|  £30,000 WTP threshold | £207,205,997 | £207,206,198 | £207,204,272 | 207,218,580 | £207,090,933 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**c) Deterministic analyses with 5,000 iterations when CVD risk management with statin therapy costs are doubled.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £590,490 | £585,669 | £584,787 | £600,045 | £546,421 |
|  QALY discounted | 6,944 | 6,943 | 6,943 | 6,944 | 6,938 |
|  Cost compared to no algorithm | £44,069 | £39,248 | £38,366 | £53,624 |  |
|  QALY compared to no algorithm | 6 | 5 | 5 | 6 |  |
|  Primary CVD | 98.52 | 99.39 | 100.11 | 97.75 | 106.80 |
|  Secondary CVD | 8.32 | 8.43 | 8.54 | 8.21 | 9.93 |
|  Death from other causes | 119.88 | 120.13 | 119.85 | 119.95 | 119.97 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £138,288,504 | £138,272,245 | £138,281,371 | £138,284,118 | £138,213,135 |
|  £30,000 WTP threshold | £207,728,000 | £207,701,202 | £207,714,451 | £207,726,200 | £207,592,913 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**d) Deterministic analyses with 5,000 iterations when CVD risk algorithm costs are doubled.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £575,793 | £574,462 | £576,780 | £579,527 | £544,116 |
|  QALY discounted | 6,943 | 6,943 | 6,943 | 6,946 | 6,940 |
|  Cost compared to no algorithm | £31,677 | £30,346 | £32,664 | £35,411 |  |
|  QALY compared to no algorithm | 3 | 3 | 3 | 6 | 5 |
|  Primary CVD | 98.71 | 99.16 | 100.02 | 97.75 | 106.52 |
|  Secondary CVD | 8.19 | 8.45 | 8.58 | 8.37 | 9.75 |
|  Death from other causes | 119.95 | 120.09 | 119.90 | 119.58 | 119.57 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £138,286,583 | £138,278,979 | £138,273,695 | £138,338,768 | £138,260,266 |
|  £30,000 WTP threshold | £207,717,772 | £207,705,699 | £207,698,933 | £207,797,915 | £207,662,457 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**e) Deterministic analyses with 5,000 iterations when cardiovascular event costs are doubled.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £1,058,395 | £1,059,144 | £1,068,608 | £1,059,167 | £1,089,654 |
|  QALY discounted | 6,944 | 6,944 | 6,944 | 6,944 | 6,939 |
|  Cost compared to no algorithm | £31,259 | £30,510 | £21,046 | £30,487 |  |
|  QALY compared to no algorithm | 5 | 5 | 5 | 5 |  |
|  Primary CVD | 98.39 | 98.88 | 100.04 | 97.94 | 106.56 |
|  Secondary CVD | 8.32 | 8.41 | 8.62 | 8.27 | 9.78 |
|  Death from other causes | 119.91 | 119.94 | 119.80 | 120.07 | 119.72 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £137,828,691 | £137,817,831 | £137,807,069 | £137,820,564 | £137,683,766 |
|  £30,000 WTP threshold | £207,272,235 | £207,256,318 | £207,244,908 | £207,260,429 | £207,070,477 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**f) Deterministic analysis with 5,000 iterations when the utility for severe mental illness is altered to the utility associated with relapse of 0.479.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £555,344 | £555,354 | £557,254 | £558,074 | £546,564 |
|  QALY discounted | 3,833 | 3,832 | 3,832 | 3,833 | 3,828 |
|  Cost compared to no algorithm | £8,780 | £8,790 | £10,690 | £11,510 |  |
|  QALY compared to no algorithm | 5 | 4 | 4 | 5 |  |
|  Primary CVD | 98.57 | 99.07 | 100.00 | 97.64 | 106.82 |
|  Secondary CVD | 8.28 | 8.48 | 8.45 | 8.19 | 9.88 |
|  Death from other causes | 119.67 | 119.91 | 119.87 | 119.80 | 119.90 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £76,100,361 | £76,088,059 | £76,081,687 | £76,097,587 | £76,012,360 |
|  £30,000 WTP threshold | £114,428,213 | £114,409,765 | £114,401,157 | £114,425,417 | £114,291,822 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**g) Deterministic analysis with 5,000 iterations when the utility for severe mental illness is altered to the utility of severe mental illness with extra pyramidal symptoms of 0.604.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £556,527 | £555,894 | £557,176 | £559,607 | £545,562 |
|  QALY discounted | 4,840 | 4,840 | 4,839 | 4,840 | 4,836 |
|  Cost compared to no algorithm | £10,965 | £10,332 | £11,614 | £14,045 |  |
|  QALY compared to no algorithm | 4 | 4 | 4 | 4 |  |
|  Primary CVD | 98.68 | 99.28 | 100.01 | 97.74 | 106.73 |
|  Secondary CVD | 8.41 | 8.44 | 8.59 | 8.31 | 9.78 |
|  Death from other causes | 119.92 | 119.82 | 119.94 | 120.04 | 119.78 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £96,238,127 | £96,236,757 | £96,222,616 | £96,235,392 | £96,168,074 |
|  £30,000 WTP threshold | £144,635,453 | £144,633,082 | £144,612,512 | £144,632,891 | £144,524,892 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**h) Deterministic analysis with 5,000 iterations when the effect of statin therapy is reduced to the upper odds ratio value of the 95% confidence interval of 0.8 and 0.89 for coronary heart disease and stroke respectively.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £573,260 | £569,690 | £569,217 | £575,899 | £543,790 |
|  QALY discounted | 6,942 | 6,942 | 6,943 | 6,944 | 6,940 |
|  Cost compared to no algorithm | £29,470 | £25,900 | £25,427 | £32,109 |  |
|  QALY compared to no algorithm | 2 | 2 | 3 | 4 |  |
|  Primary CVD | 101.64 | 101.84 | 102.22 | 101.09 | 106.56 |
|  Secondary CVD | 8.48 | 8.72 | 8.82 | 8.43 | 9.78 |
|  Death from other causes | 120.06 | 120.00 | 119.78 | 120.04 | 119.57 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £138,269,835 | £138,275,280 | £138,290,040 | £138,294,240 | £138,246,564 |
|  £30,000 WTP threshold | £207,691,382 | £207,697,765 | £207,719,669 | £207,729,309 | £207,641,741 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.

**i) Deterministic analysis with 5,000 iterations when compliance with statin therapy is reduced to 50%.**

|  |  |
| --- | --- |
| **Outcomes** | **Algorithm** |
| **General lipid algorithm** | **SMI-specific lipid algorithm** | **General BMI algorithm** | **SMI-specific BMI algorithm** | **No algorithm** |
| Costs, QALYs and number of events, mean |   |   |   |   |   |
|  Total costs discounted | £550,166 | £551,821 | £552,657 | £551,173 | £545,588 |
|  QALY discounted | 6,944 | 6,943 | 6,942 | 6,944 | 6,939 |
|  Cost compared to no algorithm | £4,578 | £6,233 | £7,069 | £5,585 |  |
|  QALY compared to no algorithm | 5 | 4 | 3 | 5 |  |
|  Primary CVD | 100.07 | 100.80 | 101.46 | 99.58 | 106.63 |
|  Secondary CVD | 8.37 | 8.43 | 8.59 | 8.27 | 9.81 |
|  Death from other causes | 119.90 | 120.03 | 119.98 | 120.16 | 119.97 |
| Net monetary benefit per patient, mean |  |  |  |  |  |
|  £20,000 WTP threshold | £138,329,253 | £138,312,446 | £138,290,292 | £138,317,735 | £138,223,896 |
|  £30,000 WTP threshold | £207,768,962 | £207,744,580 | £207,711,676 | £207,752,189 | £207,608,638 |

QALYs are the quality adjusted life years, WTP is the willingness to pay, and discounted costs and QALYs reflect time-preference for current benefits over future ones.