

## **Evaluating the Effectiveness of the NHS Health Check Programme in South England: a Quasi-Randomised Controlled Trial – supplementary materials**

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Read codes (5-byte version 2 Read codes, EMIS or BNF)

### NHS Health Check codes

8BAg NHS Health Check completed

EMISNQN6 NHS Health check completed

EMISNQN7 NHS Health check completed by practice

8BAg0 NHS Health Check completed by third party

### Blood pressure

Systolic blood pressure: ReadCode like '2469%' or ReadCode like '246Q%'

Diastolic blood pressure: ReadCode like '246A%' or ReadCode like '246R%'

246.. | O/E - blood pressure reading

246R. | Sitting diastolic blood pressure

246Q. | Sitting systolic blood pressure

### Body mass index

'22K2.', '22K1.', '22K4.', '22K5.', '22K6.', '22K7.', '22K8.', '22K9.', '22K90', '22KB.', '22K.', '22K3.'

### Total cholesterol

'44OE.' Plasma total cholesterol level

'44P..' Serum cholesterol

'44P1.' Serum cholesterol normal

'44P2.' Serum cholesterol borderline

'44P3.' Serum cholesterol raised

'44P4.' Serum cholesterol very high

'44PH.' Total cholesterol measurement

'44PJ.' Serum total cholesterol level

### 10-year risk of CVD disease

'662k%' (JBS CVD risk less than 10% over next ten years)

'662l%' (JBS CVD risk ten percent to 20% over next ten years)

'662m%' (JBS CVD risk greater than 20% up to 30% over next ten years)

'662n%' (JBS CVD risk greater than 30% over next ten years)

'38DP%' (QRISK2 cardiovascular disease 10 year risk score)

'38DF%' (QRISK cardiovascular disease 10 year risk score)

'38DR%' (Framingham 1991 cardiovascular disease 10 year risk score)

Current smoker

'137..','1372.','1373.','1374.','1375.','1376.','137b.','137c.','137C.','137D.','137d.','137e.','137E.','137f.','137G.','137h.','137H.','137J.','137m.','137a.','137X.','137Y.','137Z.','137M.','137n.','137P.','137Q.','137R.','137V.','13p0.','13p5.','67H6.','745H.','8CAg.','8CAL.','8CdB.','8H7i.','8HBM.','8HBP.','8HkQ.','8HTK.','8I Aj.','8IEK.','8IEM.','8IEo.','8T08.','9hG..','9hG0.','9hG1.','9kc..','9kc0.','9kf1.','9kf2.','9ko..','9N2k.','9N4M.','9Ndg.','9NdZ.','9OO..','9OO1.','9OO2.','9OO3.','9OO4.','9OO5.','9OO6.','9OO7.','9OO8.','9OO9.','9OO A.','9OOB.','9OOZ.','13p50%','745H0%','745H,%','745H2%','745H3%','745H4%','745Hy%','745Hz%','9 NS02%','9OOB0%','9OOB1%','9OOB2%'

Ex smoker

'137K.','137N.','137O.','137S.','137T.','13p4.','1377.','137l.','9km..','137j.','1378.','137F.','137B.','1379.','137A.','137L.','137i.','137K0%'

Non-smoker

'137L.'

Never smoking

'1371.'

Hypertension

QOFv28 - Hypertension

G2...

G20..%

G24.. - G2z.. (Excluding G24z1, G2400, G2410, G27..)

Gyu2.

Gyu20

Ischaemic heart disease

QOF v28 - Secondary Prevention of Coronary Heart Disease

G3... - G309.

G30B. - G330z (excluding G310.)

G33z. - G3401

G342. - G35X.

G38.. - G3z..

Gyu3.% (excluding Gyu31)

Diabetes

QOF v28 - Diabetes

C10.., C109J, C109K, C10C., C10D., C10E.%, C10F.% (Excluding C10F8), C10G.%, C10H.%, C10M.%, C10N.%, PKyP., C10P.%

CKD

QOF v28 - CKD

1Z12.

1Z13.

1Z14.

1Z15.

1Z16.

1Z1B. - 1Z1L.

K053.

K054.

K055.

AF

QOF v28 - AF

G573.% (excluding G5731, G5736)

Heart Failure

QOF v28 - HF

G58..%  
 G1yz1  
 662f. – 662i.

Atherosclerosis and other peripheral vascular disease

G70% Atherosclerosis  
 G73 Other peripheral vascular disease  
 G7310 Buerger's disease  
 G7311 Presenile gangrene  
 G731z Thromboangiitis obliterans NOS  
 G732% Peripheral gangrene  
 G733 Ischaemic foot  
 G73y Other specified peripheral vascular disease  
 G73y0 Diabetic peripheral angiopathy  
 G73yz Other specified peripheral vascular disease NOS  
 G73z Peripheral vascular disease NOS  
 G73z0 Intermittent claudication  
 G73zz Peripheral vascular disease NOS

Stroke and TIA

QOF v28 – Stroke and TIA  
 G61..% (excluding G617.)  
 G63y0 - G63y1  
 G64..%  
 G66..% (excluding G669.)  
 G6760  
 G6W..  
 G6X..  
 G65.- G654.  
 G656.- G65zz  
 Gyu62 – Gyu66  
 Gyu6F  
 Gyu6G  
 ZV12D  
 Fyu55  
 G619.

Additional circulatory system disease.

Gyu% Additional circulatory system disease classification terms  
 NOT Gyu0% Acute rheumatic fever  
 NOT Gyu1% Chronic rheumatic heart disease  
 NOT Gyu2% Hypertensive diseases  
 NOT Gyu8% Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified  
 NOT Gyu9% Other and unspecified disorders of the circulatory system

STATINS

bx% LIPID-LOWERING DRUGS  
 2.12 Lipid-regulating drugs (BNF)

Antihypertensive

BNF\_Code 02.02.01.00, 02.02.02.00, 02.02.03.00, 02.04.00.00, 02.04.01.00, 02.05.04.00,  
 02.05.05.00, 02.05.05.01, 02.05.05.02, 02.06.02.00, TitleofGroup in ('Angiotensin-Converting Enzyme  
 Inhibitors','Calcium Channel Blockers','Angiotensin-II Receptor Antagonists','Potassium Sparing  
 Diuretics','Thiazides And Related Diuretics','Loop Diuretics','Alpha-Adrenoceptor Blocking  
 Drugs','Beta-Adrenoceptor Blocking Drugs','Compound Beta-Adrenoceptor Blocking Drugs','Drugs  
 Affecting The Renin-Angiotensin System')

Anti-obesity

aw...

Anti-diabetes

BNF code 06.01.00.00, and titleofGroup is : Drugs Used In Diabetes

Nicotine replacement

BNF\_Code 04.10.00.00, 04.10.02.00

K: Palliative care

1Z01	Terminal illness - late stage
2JE	Last days of life
8BA2	Terminal care
8BAP	Specialist palliative care
8BAS	Specialist palliative care treatment - daycare
8BAT	Specialist palliative care treatment - outpatient
8BAe	Anticipatory palliative care
8BJ1	Palliative treatment
8CM1%	On gold standards palliative care framework
8CM4	Liverpool care pathway for the dying
8CME	Has end of life advanced care plan
8H6A	Refer to terminal care consult
8H7L	Refer for terminal care
8H7g	Referral to palliative care service
8HH7	Referred to community specialist palliative care team
9EB5	DS 1500 Disability living allowance (terminal care) completed
9Ng7	On end of life care register
ZV57C	Palliative care

Previous health checks and CVD risk assessments

38B1	Vascular disease risk assessment
38B10	CVD (cardiovascular disease) risk assessment by third party
66f	Cardiovascular disease monitoring
66f0	Cardiovascular disease annual review
66f1	Cardiovascular disease interim monitoring
66f2	Cardiovascular disease high risk review
8BAg	NHS Health Check completed
9OhA	Cardiovascular disease risk assessment done
8BAg0	NHS Health Check completed by third party

**Table 1.** Comparison of proportions of participants with risk factor recording / detection, new diagnoses and new interventions in each of the four invited cohorts vs. uninvited cohort 5.

	C1 vs C5 (p- value)	C2 vs C5 (p- value)	C3 vs C5 (p- value)	C4 vs C5 (p- value)
<b>RECORDING %</b>				
BP	<0.001	<0.001	<0.001	<0.001
BMI	<0.001	<0.001	<0.001	<0.001
TC	<0.001	<0.001	<0.001	<0.001
CVD risk	<0.001	<0.001	<0.001	<0.001
Smoking status	<0.001	<0.001	<0.001	<0.001
<b>DETECTION %</b>				
CVD risk >10%	<0.001	<0.001	<0.001	<0.001
% of CVD risk recorded with >10%	<0.001	<0.001	<0.001	<0.001
CVD risk >20%	<0.001	<0.001	<0.001	0.392
% of CVD risk recorded with >20%	<0.001	<0.001	<0.001	<0.001
SBP >140 or DBP > 90 mmHg	<0.001	<0.001	<0.001	<0.001
% of BP recorded with >140 or >90	<0.001	0.911	0.804	0.009
Current smoker	0.170	0.475	0.826	0.013
% of smoking status recorded who currently smoke	<0.001	<0.001	<0.001	<0.001
BMI >30 kg/m <sup>2</sup>	<0.001	<0.001	<0.001	<0.001
% BMI recoded with >30	<0.001	<0.001	<0.001	<0.001
TC >5.5 mmol/L	<0.001	<0.001	<0.001	<0.001
% of TC recorded with >5.5 mmol/L	0.005	0.002	<0.001	<0.001
TC >7.5 mmol/L	<0.001	<0.001	<0.001	<0.001
% of TC recorded with >7.5 mmol/L	0.584	0.005	<0.001	<0.001
<b>DIAGNOSES %</b>				
Hypertension	<0.001	<0.001	0.003	<0.001

% of SBP >140 or DBP > 90 with hypertension diagnosis	<0.001	0.148	0.271	0.007
AF	<0.001	0.855	0.012	0.783
CKD	0.118	0.040	0.443	0.741
Diabetes	0.129	0.624	0.065	0.015
<b>INTERVENTIONS %</b>				
Statin	<0.001	<0.001	<0.001	0.017
% of CVD>10% prescribed statins	<0.001	<0.001	<0.001	<0.001
% of CVD>20% prescribed statins	<0.001	<0.001	<0.001	<0.001
Antihypertensive	<0.001	<0.001	0.077	0.205
% of hypertensives prescribed antihypertensive	0.450	0.415	0.711	0.003
Antiglycaemics	0.515	0.192	0.957	0.481
% of diabetics prescribed antiglycaemics	<0.001	<0.001	<0.001	<0.001
NRT	0.405	0.757	0.789	0.881
% of current smokers prescribed NRT	0.400	0.552	0.370	0.397
Stop smoking advice	0.003	<0.001	<0.001	<0.001
% of current smokers given advice	0.010	<0.001	0.035	0.024
Weight advice/referral	<0.001	<0.001	<0.001	<0.001
% of BMI>30 kg/m <sup>2</sup> given advice/referral	<0.001	<0.001	<0.001	<0.001
Anti-obesity	0.503	0.491	0.893	0.708
% of BMI>30 kg/m <sup>2</sup> prescribed anti-obesity	0.002	0.398	<0.001	<0.001

Attended (Att), Blood pressure (BP), body mass index (BMI), total cholesterol (TC), cardiovascular disease (CVD), systolic blood pressure (SBP), diastolic blood pressure (DBP), atrial fibrillation (AF), chronic kidney disease (CKD), Nicotine replacement therapy (NRT)