Men analysed in **control** group n= 219,439

Median list size 626e (IQR: 376, 971)

n=911 GP practices randomised (within 99 geographical areas)

Areas excluded because of zero cell within cluster:

Not approached, recruiting centre closed: 1 area: 5

No consented intervention arm practices: 2 areas: 9

No consented control arm practices: 3 areas: 12

Practices randomised to **intervention** group n= 440 (93 areas)

Practices excludeda: 42

Involved in other prostate cancer study: 10

Ceased to exist: 6

Consented but out of time: 13

Atypical population/unable to produce list: 8

Randomised in error: 5

Practices excludeda: 32

Involved in other prostate cancer study involving screening: 13

Ceased to exist: 19

Practices randomised to **control** group n= 419 (93 areas)

Practices eligible for the **intervention** group n= 398 (93 areas)

Practices eligible for the **control** group n= 387 (93 areas)

Refused: 127

Explicit refusalb: 42

Implicit refusalc: 85

Refused: 85

Explicit refusalb: 40

Implicit refusalc: 45

Practices participating in **control** group n= 302

Median list sized 6,300 (IQR: 3,793 , 9,000)

Ineligible men excluded from **intervention**a

Death pre-randomisation n=176

Prostate cancer pre-randomisation n=1,433 Failed to trace at NHS digital n=160

No record of registration with NHS digital n=257

Ineligible men excluded from **control**a

Death pre-randomisation n=286

Prostate cancer pre-randomisation n=1,688

Failed to trace at NHS digital n=95

No record of registration with NHS digital n=127

Refused n=3

Practices participating in **intervention** group n= 271

Median list sized 6,300 (IQR: 4,150 , 9,107)

Men eligible in intervention group n= 195,912

Median list sizee 695 (IQR: 407, 968)

Men eligible in control group n= 219,445

Median list sizee 626 (IQR: 376, 971)

Men analysed in **intervention** group n= 189,386

Median list sizee 663 (IQR: 385, 938)

Men excluded from primary analysisa

NHS digital type-2 opt outs n=2

No consent for flagging n=198

Event date on randomisation date n=8

Did not wish to participate n=6311f

Date of birth missing n=7

Men 50-69 years in intervention arm practices n= 197,938

Men 50-69 years in control arm practices n= 221,644

Men excluded from primary analysisa

NHS digital type-2 opt outs n=1

Event on randomisation date n=5

Areas excluded because of zero cell within cluster:

Not approached, recruiting centre closed: 1 area: 5

No consented intervention arm practices: 2 areas: 9

No consented control arm practices: 3 areas: 12