



## Breast screening: achieving and maintaining the 36-month round length

### Appendix 1: calculating screening numbers and capacity

Using the BSS RISP/NTDD population estimates (breast screening population estimates – population count), the screening population for the programme can be determined. The **BSS User Guide** provides further detail on how to perform this. The population counts for 50 to 70 are required; also 47 to 49 and 71 to 73 if the service is involved in the age extension trial (AgeX). The annual counts in the estimate are cumulative. Women counted in one year are also counted in the following year unless they have moved out of the specific age range.

The population estimates look like this:

Breast Screening Select

NTDD Screening Estimate List

NHS

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Screening Estimate Title	Estimated By	Codes	Created
NTDD Estimate - Feb 2019	GP Practice	A00001,A00002,A00003,A00004,A00005,A00006,A00007,A00008,A00009,A00010,A00011,A00012,A00013,A00014,A00015,A00016,A00017,A00018,A00019,A00020,C00010,T00001,T00002,T00003,T00006	21-Feb-2019 08:45
NTDD Estimate 64	Outcode Group	TEST OUTCODE GROUP	27-Apr-2017 15:23
JD Estimate 2 (Outcode Group)	Outcode Group	GROUP ONE, GROUP TWO, AMENDING THIS, SIMPLEST	26-Apr-2017 15:18
JD NTDD Estimate	BSO		26-Apr-2017 14:02
Test Estimate 2	GP Practice Group	NORTH DEVON GP PRACTICE GROUP	25-Apr-2017 14:40
Test Estimate 1	GP Practice	A00001,A00002,A00003,A00004,A00005,A00006,A00007,A00008,A00009,A00010,A00011,A00012,A00013,A00014,A00015,A00016,A00017,A00018,A00019,A00020	25-Apr-2017 11:53

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Screening Estimate Title Round Planning 47-49 (2)

Required Start Year 2019

Recall Interval 36

Included Year of Birth from 1970 to 1972

Included Month of Birth from January to December

Estimate By BSO

Total numbers of eligible women for the BSO

Year	Call	Recall	Both
2019 (Ages 47-49)	4	988	992
2020 (Ages 47-49)	35	1,061	1,096
2021 (Ages 47-49)	338	758	1,096

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Row type	GP Practice	GP Practice Name	Outcode	Latest WF	2019 (Ages 47-49)				2020 (Ages 47-49)			2021 (Ages 47-49)		
					Call	Recall	Both	Ceased	Call	Recall	Both	Call	Recall	Both
Grand Total	All		All	1	4	988	992	0	35	1,061	1,096	338	758	1,096
Total	A00001	THE GREEN PRACTICE AT WHITCHURCH H C	All	0	0	54	54	0	0	55	55	1	55	56
Detail	A00001	THE GREEN PRACTICE AT WHITCHURCH H C	BR1	0	0	54	54	0	0	55	55	0	55	55

The example shown above shows how to determine the capacity including age extension participants. If the service is not in the AgeX trial, the method is the same, but the calculations described to ascertain the additional age extension numbers are not required.

As the population of the 47 to 49 age group is approximately twice that of the 71 to 73 age group, and services do not know which age group is going to be randomised in until the appointment stage, services can use one of the following options to ensure they have the required capacity:

- add the 2 together and divide the answer by 2 to give an average over the 3 years
- use the larger cohort age group (likely to be the 47 to 49-year age range)

For example:

	Age 47 to 49	Age 50 to 70	Age 71 to 73
Year 1	4324	32456	2176
Year 2	4432	33897	2254
Year 3	4498	34824	2324
Total	13254	101177	6754

**Total service population = ((13254 + 6754)/2 + 101177)/3 = 37060**

(using an average of the upper and lower age bands)

Or

**Total service population = (13254 + 101177)/3 = 38143**

(using the larger 47 to 49 age group population)

Then divide the total population by 3 to give the annual screening population. You must resolve any uncertainty in the accuracy of the population counts or highlight the consequences for round length to the service commissioner.

Dividing the population to be screened evenly across the 3-year cycle demonstrates whether there is enough capacity to screen the population. Your plan may involve screening some sites early to achieve an even distribution.

You must determine the number of weeks the service will operate in a year. Most services work between 42 and 48 weeks per year (depending on service pressures), to allow for holidays and maintenance.

Divide the annual screening population by the number of weeks a service is intending to operate.

For example:

If the screening service is intending to screen for 44 weeks per year:

Total population divided by 3 = number of people per annum (pa)

Number of people pa divided by 44 = number of people to be invited per week

$114,432/3 = 38,144$  pa

$38,144/44 = 867$  people per week

### Establishing screening facilities: capacity

The next stage is to establish how many screening facilities are required. These may include static units and/or mobile screening units. Divide the number to be invited per week by the number of screening facilities available.

For example:

Using the scenario above, if the screening service has one static unit and one mobile screening unit, then 434 people need to be invited each week to attend each facility.

$867 \div 2 = 434$  per week

If the screening service has one static unit and 2 mobile screening units, then 289 people need to be invited each week to attend each facility.

$867 \div 3 = 289$  per week

The example above shows an equal distribution of people to be invited across each screening unit, however this may not be the case. It is likely there will be less capacity in the static unit due to other activities carried out such as symptomatic imaging clinics and assessment clinics.

For example:

If the static unit can only screen for half a day rather than a full day, then the calculation above for the 3-unit service (for a 5-day week) would be:

3 units = 12.5 days screening (unit 1 = 5 days, unit 2 = 5 days, unit 3 = 2.5 days screening)

$867 \div 12.5 \text{ (days)} = 69.4 \text{ people to be invited per day}$

$69.4 \times 5 \text{ (days)} = 347 \text{ people to unit 1 and 347 people to unit 2 per week}$

$69.4 \times 2.5 \text{ (days)} = 173 \text{ people to unit 3 per week}$

Units 1, 2 and 3 =  $347 + 347 + 173 = 867 \text{ people screened per week}$

Finally, determine the number of people to be invited per day. At this stage, the uptake rate for the programme or the use of Smart clinics is not factored into the calculation (do this later).