

# Interventions to improve participation amongst underserved population groups in young person and adult national screening programmes in the UK: a systematic review

## Appendix 3: Labelling of results for forest plots

Example label:

Libby 2011 (BCSP).i I-PNL-PO v I-PNL+PIL-PO SIMD20.sa

Label structure:

Libby 2011	trial identifier (first author & year of publication)
(BCSP)	screening programme
.i	unit of randomisation (.i for individual, .c for cluster)
I-PNL-PO	control arm described using codes for: event/timing (in this example, I means at the time of invitation, which, for the BCSP, is a pre-notification letter sent two weeks before the home test kit) the type of intervention (in this example, PNL means a pre-notification letter) mode (in this example, PO means sent by post)
I-PNL+PIL-PO	intervention described as for the control arm above (in this example the patient information leaflet is sent with the pre-notification letter instead of later, with the kit)
SIMD20	underserved group, in this case the most deprived quintile (bottom 20%) as defined by the Scottish Index of Multiple Deprivation
.sa	indicates that the underserved group is a subgroup (s) defined by area demographics (a); alternative codes are wholegroup (w) and individual demographics (i)

### Intervention codes

The codes for identifying event, type and mode of intervention are as follows:

Event	Type	Mode
<b>I</b> <i>invitation</i>	<b>NFA</b> <i>no further action</i>	<b>PO</b> <i>post</i>
<b>A</b> <i>appointment</i>	<b>INV</b> <i>standard invite</i>	<b>TEL</b> <i>telephone</i>
<b>K</b> <i>home test kit</i>	<b>PIL</b> <i>patient information leaflet</i>	<b>TXT</b> <i>text message</i>
<b>R</b> <i>reminder</i>	<b>SWI</b> <i>simplified written information</i>	<b>F2F</b> <i>face-to-face</i>
<b>2R</b> <i>second reminder</i>	<b>EWI</b> <i>enhanced written information</i>	<b>GP</b> <i>general practice</i>
<b>LT</b> <i>long-term non-responder</i>	<b>PNL</b> <i>pre-notification letter</i>	
<b>pre.</b> <i>prefixes to modify the event</i>	<b>HCP</b> <i>healthcare professional</i>	
<b>post.</b> <i>codes where needed</i>	<b>PSY</b> <i>psychological/barriers</i>	
	<b>AR</b> <i>anticipated regret</i>	
	<b>REM</b> <i>(standard) reminder</i>	
	<b>ERM</b> <i>enhanced reminder</i>	
	<b>Combi</b> <i>combined invites or leaflets</i>	
	<b>GPE</b> <i>GP endorsed</i>	
	<b>GPL</b> <i>GP letter</i>	
	<b>HTK</b> <i>home test kit</i>	
	<b>IMP</b> <i>implementation intentions</i>	
	<b>INDIV</b> <i>tailored to the individual</i>	
	<b>HLOC</b> <i>health locus of control</i>	
	<b>svy</b> <i>survey (not an intervention)</i>	
	<b>ann</b> <i>annual (prefix)</i>	

The intervention codes are not complete descriptions and interpretation depends on context. An appointment in the BSP will be an appointment for mammography following an invitation, whereas an appointment in FASP will be the first (“booking”) appointment at the antenatal clinic early in pregnancy at which screening is offered. In most programmes with invitations, the invitation is to attend for a screening test; in the BCSP it is a pre-notification letter sent shortly before the home test kit.

Some codes exist to help describe a single unusual trial. For example, the trial which randomised long-term non-attenders to a nurse phone call (HCP-TEL), or a letter from a local screening commissioner (HCPcomm-PO) or a letter from Claire Rayner (celeb-PO). Not all of these single-use codes are included in the table above but where they are used it should be clear what they refer to given some contextual knowledge of the trial the result comes from.

### ***Underserved group codes***

All of the underserved groups we identified data for were defined by socioeconomic status, ethnicity, age, sex or screening history.

Socioeconomic status was most often defined by the Index of Multiple Deprivation (IMD) or, rarely, similar small-area measures (such as Townsend score). One group was defined by employment status, one by qualifications and another by tenancy. Most area-based subgroups were defined by quintiles and we have reported the most deprived 20% and the most deprived 40%. Tertiles were sometimes reported instead.

Where specific minority ethnic groups were identified we have used United Nations three letter country codes or continents based on family origin, as appropriate. Men are underserved in BCSP. Age groups are labelled by the age range.

Screening history defines three groups: first-time invitees, previous non-attenders and long-term non-attenders. A fourth group, based on attendance at the current round of screening, is recent non-attenders, (the target group for trials of reminders).

<b>Category</b>	<b>Code</b>	
Socioeconomic	<b>IMD20, SIMD20</b>	<i>Most deprived quintile (English IMD or Scottish IMD)</i>
	<b>IMD40, SIMD40</b>	<i>Two most deprived quintiles (English IMD or Scottish IMD)</i>
	<b>IMD33</b>	<i>Most deprived tertile (English)</i>
	<b>SES33</b>	<i>Most deprived tertile (Townsend score or measure not reported)</i>
	<b>NoQual</b>	<i>No formal qualifications</i>
	<b>Unemp</b>	<i>Unemployed</i>
Ethnicity	<b>Tenant</b>	<i>Housing status (renting)</i>
	<b>ETH</b>	<i>Minority ethnicity</i>
	<b>ASIAN</b>	<i>Asian family origin</i>
	<b>PAK</b>	<i>Pakistani family origin</i>
Age	<b>BGD</b>	<i>Bangladeshi family origin</i>
	<b>&lt;65</b>	<i>Under 65</i>
	<b>70+</b>	<i>Over 70</i>
Sex	<b>50-54, 55-60</b>	<i>Age range as specified</i>
	<b>MEN</b>	<i>Men</i>
Screening history	<b>FTI</b>	<i>First-time invitee</i>
	<b>pNON</b>	<i>Previous non-attender</i>
	<b>ltNON</b>	<i>Long-term non-attender</i>
Current screening status	<b>rNON</b>	<i>Recent non-attender (population recruited to trials of reminders)</i>

We have added a simple two-letter code to the underserved group codes to indicate whether the result was derived from the whole trial (w) or a subgroup (s) and also whether the classification was based on area (a) or individual (i) demographics.

.wi	whole trial population, individual demographic
.wa	whole trial population, area-based demographic
.si	subgroup, individual demographic
.sa	subgroup, area-based demographic

This information is included in the plot labels for two reasons:

- Subgroup analyses are more prone to bias, especially if they were not pre-specified in the trial protocol or plan of analysis. Trials randomising smaller geographical clusters also encountered some difficulty in producing balanced groups (which is sometimes apparent in imbalanced sample sizes for their subgroups). We have noted in the data extraction tables where there is some indication that the subgroups were pre-specified and emphasised cases where there is evidence that subgroup analysis may have been (or were) motivated by inspecting preliminary results or where cluster-randomisation may not have worked very well.
- Individual characteristics target underserved groups more precisely but area-based characteristics may be particularly useful to the screening programmes for developing more targeted strategies (eg socioeconomic status based on postcode information).