Are second timed appointments for non-attenders effective in increasing participation to breast cancer screening?

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  – The NHS Breast Screening Programme

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• **Acknowledgements**
Background / 1

- Uptake of breast screening invitations is lower for women in areas of socioeconomic deprivation
- Uptake has been *decreasing* for the last 10 years in England

In particular for women at prevalent round of invitation

![Graph showing decrease in uptake](image)

Background / 2

The NHS Breast Screening Programme:
- women aged 50-70 years
- invitation to screening every 3 years
- invitation letter with *fixed* date and time

Non-attenders

- **SECOND TIMED APPOINTMENT** with *fixed* date and time
- **OPEN LETTER** with number to call for rebooking

![Images from Freepik.com](image)
Methods

- **Randomised controlled trial:**
  - 6 sites across England
  - from June 2014 to September 2015
  - women aged 50-70 years who had **not attended** their screening appointment

- **Primary endpoint:**
  attendance within 90 days of first offered appointment

INTERVENTION
Second timed appointment

CONTROL
Open letter

Results / 1

Total observations (after exclusions): 26,054

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th>Control</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended within 90 days of FOA</td>
<td>2,861 (22.3%)</td>
<td>1,632 (12.3%)</td>
<td>2.05 (1.92-2.19)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12,807</td>
<td>13,247</td>
<td></td>
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</table>

FOA = First Offered Appointment

Women in the **intervention** arm were more likely to attend
Results / 2

- Women at **prevalent screen**: 
  OR **2.72** (95% CI: 2.22-3.34) \( p < 0.001 \)

- Women at **incident screens**: 
  OR **1.98** (95% CI: 1.83-2.14) \( p < 0.001 \)

- By **index of multiple deprivation** quintile: 
  higher ORs for more deprived women but no significant heterogeneity of the effect of the intervention by quintile

- By **screening site**: 
  highest effect in South-East London 
  OR **2.69** (95% CI: 2.22-3.26) \( p < 0.001 \)

Results / 3

**Effect with time since last screen**

<table>
<thead>
<tr>
<th>Time since last screen</th>
<th>Intervention</th>
<th>Control</th>
<th>Second timed appointments needed per additional attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;3 years previously</td>
<td>1,307 (45.8%)</td>
<td>876 (29.3%)</td>
<td>6</td>
</tr>
<tr>
<td>3&lt;6 years previously</td>
<td>568 (34.8%)</td>
<td>306 (18.7%)</td>
<td>6</td>
</tr>
<tr>
<td>6&lt;9 years previously</td>
<td>71 (13.4%)</td>
<td>39 (6.7%)</td>
<td>15</td>
</tr>
<tr>
<td>9+ years previously</td>
<td>35 (7.4%)</td>
<td>16 (3.5%)</td>
<td>26</td>
</tr>
</tbody>
</table>
Conclusions

Almost twice as many attenders in the intervention group

Absolute increase in uptake among non-attenders 10.4%

Absolute increase in uptake among all women 3-4%

Open questions

– Can the policy vary by time since last attended screen?
– What are the economic implications?

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