Using Heart Age to Boost NHS Health Check Uptake with the deprived and “hard to reach”

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Who are Habit Partners?

- We are a Community Interest Company, whose founders published Heart Age in 2008

- Our mission is to improve heart health and non communicable diseases through engaging people to improve their diet and lifestyle

- We have published extensively on the impact of Heart Age and developed versions for use in the public and private sector in multiple countries

more details at www.habitpartners.com
An Overview of Bromley Borough
## NHS Health Checks in Bromley

<table>
<thead>
<tr>
<th>Year</th>
<th>Number eligible</th>
<th>Number invited</th>
<th>% invited</th>
<th>Number received</th>
<th>% take up</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>100,037</td>
<td>23,033</td>
<td>23%</td>
<td>8,958</td>
<td>38.9%</td>
</tr>
<tr>
<td>2013-14</td>
<td>93,215</td>
<td>23,267</td>
<td>25%</td>
<td>9,028</td>
<td>38.8%</td>
</tr>
<tr>
<td>2014-15 - Total</td>
<td>93,215</td>
<td>21,400</td>
<td>22.9%</td>
<td>8,533</td>
<td>39.9%</td>
</tr>
</tbody>
</table>
What is Heart Age?

A concept and online tool, recently adopted by PHE and JBS3

Age
Blood Pressure
Cholesterol
HDL-C
Diabetes
Smoking
Weight

% CVD Risk (10 years)

Risk

30  40  50  80

Heart Age 10 years older
Heart Age 30 years older

Bromley
THE LONDON BOROUGH
www.bromley.gov.uk

habitpartners
Heart Age helps people understand risk

Perceived risk

- **Low**
- **Moderate**
- **High**

N=450, BMI>30 or smoking

Type of risk score presented to user

Heart Age reduces risk factors after one year

Heart Age reduces risk factors after one year

How Heart Age is Presented

Research shows that a simple comparison of real and heart age is most effective.

Research also shows that it is this ‘emotional’ response that is key.
Simple Question

Could Heart Age work to Increase Attendance at the NHS Health Check?
Trial Design Within the Health Check Process

43 general practices in Bromley
60% of general practices expected to consent
39 practices consented

Simple randomisation, stratified by practice, performed quarterly

Trial arm A - Heart Age invitations (50%)
Trial arm B - Standard invitations (50%)

Invitation sent as per normal protocol for each practice

Reminder letter sent, as per normal protocol for each practice

Outcome evaluation, uptake of Health Checks
Reviewed by Vascular Team in Bromley

Heart Age ‘Invite’ plus Leaflet and Website
Challenges of performing research in primary care

**Implementation plan:**

- Practice Visit by Public Health Vascular Nurse to introduce method and supervise first randomisation of invitation letters
- Invitations to be coded and additional text added if Heart Age
- Computer search designed to identify different types of invitation.
- Contact details left for any queries

**Implementation issues:**

- Variation in compliance with randomisation across and within Practices
- Variety of coding issues
- Confusing data entry in places
Trial Design

39 General Practices in Bromley

Excluded 20 general practices
- Missing coding for letter (n = 16)
- Telephone/verbal invites only (n = 4)

19 Practices checked for availability (n = 10,180)

Excluded (n = 7,234)
- Date of first letter invite (n = 3,245)
- Telephone / verbal invite (n = 1,074)
- Age (n = 39)
- Not achieve equal randomisation (n = 2,946)
- Other (n = 246)

16 practices (n = 2,946), randomisation by Practice

Heart Age- 49.8% (n = 1,466)
Control- 50.2% (n = 1,480)

Invites

Uptake?

Figure 6- Trial flow diagram
## Example of good data

<table>
<thead>
<tr>
<th>EMIS Number</th>
<th>Age</th>
<th>Gender</th>
<th>Lower Layer Area</th>
<th>Ethnic Origin</th>
<th>Code Term</th>
<th>Associated Text</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>19039</td>
<td>61</td>
<td>Female</td>
<td>E01000694</td>
<td>Chinese - ethnic category 2001 census</td>
<td>NHS Health Check invitation first letter</td>
<td>Imported item.Coded</td>
<td>04-Sep-14</td>
</tr>
<tr>
<td>19356</td>
<td>64</td>
<td>Female</td>
<td>E01000649</td>
<td>British or mixed British - ethnic category 2001 census</td>
<td>NHS Health Check invitation first letter</td>
<td>Heart Age</td>
<td>04-Sep-14</td>
</tr>
<tr>
<td>19375</td>
<td>66</td>
<td>Female</td>
<td>E01000697</td>
<td>British or mixed British - ethnic category 2001 census</td>
<td>NHS Health Check invitation first letter</td>
<td>Imported item.Coded</td>
<td>29-Jul-14</td>
</tr>
<tr>
<td>19464</td>
<td>53</td>
<td>Male</td>
<td>E01000695</td>
<td>British or mixed British - ethnic category 2001 census</td>
<td>NHS Health Check invitation first letter</td>
<td>Heart Age</td>
<td>04-Sep-14</td>
</tr>
</tbody>
</table>
Statistical “Regression” Analyses Conducted

What factors predicted attendance at the Health Check?

• ‘Logistic Regression Model’ – which factors influenced attendance?
  • Age (p<.001)
  • Gender (p<.001)
  • There was no effect of the intervention (invite group), ethnicity, practice size or deprivation level (p>.05)

• However the effect of the intervention (invite group) ‘interacted’ with the deprivation level

• Index of Multiple Deprivation* Invite Group (p<.01)

This means that the Heart Age intervention was not working equally in all people
Heart Age increased uptake in the most deprived groups

**Bromley** Quintile of IMD deprivation (1=most deprived)

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Control</th>
<th>Heart Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 3</td>
<td>36.3</td>
<td>43.3</td>
</tr>
<tr>
<td>4</td>
<td>41.1</td>
<td>37.1</td>
</tr>
<tr>
<td>5</td>
<td>41.6</td>
<td>40.6</td>
</tr>
</tbody>
</table>

* p<0.05

n=386, n=393, n=353, n=348, n=416, n=397
A simple, effective intervention

Increasing Health Check Uptake in the harder to reach groups

- Previous studies of NHS Health Check attendance have shown that those who attend after an invitation are older, female and less deprived
- Older and female patients were also more likely to attend their NHS Health Check in this pilot
- Deprivation levels were not however a predictor of attendance in this trial
- A simple adaptation of the invitation letter and access to a website containing the Heart Age tool increased uptake in the most deprived quintile by 7% in absolute terms and 16% in relative terms
- This form of Heart Age intervention did not seem to work for those who had lower levels of deprivation
Limitations of the Research

Increasing Health Check Uptake in the harder to reach groups

- Quality of the data received back from participating practices led to many exclusions
- Issues of coding need to be better addressed across the Health Check program to evaluate outcomes
- Alternative intervention methods, beyond this form of invitation process may be required amongst those groups at lower levels of deprivation
- We did not test other invitation methods such as text, opportunistic invites etc
- Further work should use other types of communication style and formats for those individuals, and other channels such as social media
What implications does this have?

You must use Heart Age in Different Ways for Different People

Why you should attend your health check

What your results mean?

IS YOUR HEART AGE OLDER THAN YOU?

Before attending your NHS Health Check, take this quick test to find out your 'heart age' and how you could improve it. Please bring your results to your appointment.

Take the test

Motivating and Tracking Change

Adapt for Different Targets
How might this change what I do now?

Take advantage of these findings to drive uptake

• In those areas with high levels of deprivation, consider integrating Heart Age communication into the invitation process
• If using Heart Age in those areas with lower levels of deprivation, consider use of social media and test alternative messaging types
• Evidence exists to show Heart Age is valuable in communicating the output of a Health Check so consider integrating into materials for GP practices
• Review coding practices of health check providers before evaluating impact of different strategies
• We are happy to consult with any LA who wants to explore the use of Heart Age in the NHS Health Check process
Thank you for your time