Using behavioural insights to increase the return rate of HIV self-sampling kits

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Outline

• Background
• Text message development
• Trial design
• Participant flow
• Results
• Limitations
• Implications

Increasing the return rate of home sampling kits using behavioural insights
Background

• Advances in the understanding of the impact of behavioural messaging around health care are showing that lives and money can be saved using often quite simple changes to the way that we administer healthcare.

• This research aimed to test if sending behaviourally informed SMS primer and reminder messages to individuals who ordered self-sampling kits from www.freetesting.hiv could increase the kit return rate.
Text message development

• Survey of non-returners to inform behavioural analysis

• 2 existing opportunities to apply behavioural insights & 1 additional opportunity

• Applying behavioural insights techniques to text messages

Michie, van Stralen, & West, 2011
If you want to encourage a behaviour, make it:

- Easy
- Attractive
- Timely
- Social

Service et al., 2014
Increasing the return rate of home sampling kits using behavioural insights
Increasing the return rate of home sampling kits using behavioural insights
Hi Joe, your kit (PX9216028) is on its way. Remember to set aside 10 minutes to complete your kit. Top tip: Keeping your hands warm will make taking the test easy.
Hi Joe, hopefully your test kit has arrived (or will soon). If you need help collecting a sample, check our video at www.test.hiv/i

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Hi Joe, hopefully your test kit has arrived (or will soon). If you need help collecting a sample, check our video at www.test.hiv/i.

Hi Joe, Remember to return your kit as soon as possible. We've already paid for postage, so once you're done, put the completed kit in the post and we'll take care of the rest.

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Increasing the return rate of home sampling kits using behavioural insights.
Hi Joe, if you’ve not already returned your test kit (PX9216028) don’t forget to. Need a replacement kit? See www.test.hiv for details.

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Increasing the return rate of home sampling kits using behavioural insights
Participant flow
Requested HIV self-sampling kit on freetesting.hiv and eligible for free testing (n=15,593)

Excluded (n=6,008)
- Not meeting inclusion criteria (n=0)
- Declined to participate (n=6,008)
- Other reasons (n=0)

Randomised (n=9,585)

Allocated to control (n=2,396)
- Received allocated intervention (n=2,243)
- Did not receive allocated intervention (at least one SMS not delivered successfully) (n=153)

Allocated to intervention (n=2,421)
- Received allocated intervention (n=2,276)
- Did not receive allocated intervention (at least one SMS not delivered successfully) (n=145)

Allocated to intervention (n=2,357)
- Received allocated intervention (n=2,214)
- Did not receive allocated intervention (at least one SMS not delivered successfully) (n=143)

Allocated to intervention (n=2,411)
- Received allocated intervention (n=2,267)
- Did not receive allocated intervention (at least one SMS not delivered successfully) (n=144)

Follow-Up
- Lost to follow-up (give reasons) (n=0)
- Discontinued intervention (give reasons) (n=0)

Analysis (n=8,999)
- Analysed (n=2,243)
  - Excluded from analysis (n=0)
- Analysed (n=2,275)
  - Excluded from analysis (sex unknown) (n=1)
- Analysed (n=2,214)
  - Excluded from analysis (n=0)
- Analysed (n=2,267)
  - Excluded from analysis (n=0)

Allocation
- Not applicable

The outcome of whether the sampling kit was returned cannot be differentiated from loss to follow-up in this trial.
### Kit return by intervention combination

<table>
<thead>
<tr>
<th></th>
<th>No primer</th>
<th>Primer</th>
<th>Marginal total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard reminders</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) 1,175 (52.39%)</td>
<td>(2) 1,204 (52.92%)</td>
<td>2,379 (52.66%)</td>
<td></td>
</tr>
<tr>
<td>(n=2,243)</td>
<td>(n=2,275)</td>
<td>(n=4,518)</td>
<td></td>
</tr>
<tr>
<td><strong>BI reminders</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) 1,222 (55.19%)</td>
<td>(4) 1,276 (56.29%)</td>
<td>2,498 (55.75%)</td>
<td></td>
</tr>
<tr>
<td>(n=2,214)</td>
<td>(n=2,267)</td>
<td>(n=4,481)</td>
<td></td>
</tr>
<tr>
<td><strong>Marginal total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,397 (53.78%)</td>
<td>2,480 (54.60%)</td>
<td>4,877 (54.19%)</td>
<td></td>
</tr>
<tr>
<td>(n=4,457)</td>
<td>(n=4,542)</td>
<td>(n=8,999)</td>
<td></td>
</tr>
</tbody>
</table>

Increasing the return rate of home sampling kits using behavioural insights
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Kit return by intervention combination

No primer

Primer

Kits returned (%)

57.00

56.50

56.00

55.50

55.00

54.50

54.00

53.50

53.00

52.50

52.00

1

2

3

4

Standard reminders

Behavioural insights reminders

Increasing the return rate of home sampling kits using behavioural insights
# How effective were the two interventions?

<table>
<thead>
<tr>
<th>Trial arms</th>
<th>(1) No primer + standard reminders</th>
<th>(2) Primer + standard reminders</th>
<th>(3) No primer + BI reminders</th>
<th>(4) Primer + BI reminders</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) No primer + standard reminders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Primer + standard reminders</td>
<td></td>
<td>1.02 (0.91-1.15)</td>
<td>0.717</td>
<td></td>
</tr>
<tr>
<td>(3) No primer + BI reminders</td>
<td>1.12 (1.00-1.32)</td>
<td>0.060</td>
<td>1.10 (0.97-1.23)</td>
<td>0.127</td>
</tr>
<tr>
<td>(4) Primer + BI reminders</td>
<td>1.17 (1.04-1.32)</td>
<td><strong>0.009</strong></td>
<td>1.15 (1.02-1.29)</td>
<td><strong>0.023</strong></td>
</tr>
</tbody>
</table>

**Interventions**

- Primer (2+4) vs no primer (1+3): 1.03 (0.95-1.12) **0.438**
- BI reminders (3+4) vs standard reminders (1+2): 1.13 (1.04-1.23) **0.003**

(N=8,999)

Increasing the return rate of home sampling kits using behavioural insights
Kit return by other factors

Kit return was also associated with:

- Age
- Sexual behaviour and gender identity
- Ethnicity
- Deprivation

- Last HIV test
- Unprotected sex with within the last 12 months
- Sex under the influence of alcohol or recreational drugs
Limitations

• Underpowered due to high drop-out level
  • Beneficial effect of primer unknown, warrants further testing
  • Large confidence intervals

• Dosage of messages?
• Unaddressed barriers?

• Generalisability
Implications

• 4% increase in return rate – at population level this can have a big impact.

• Low resource intervention, with no additional costs to changing the wording of the messages.

Recommendations:

• Add behavioural insights reminder messages to existing self-sampling services.

• Add primer if feasible, although its effect warrants further testing
Acknowledgements

With thanks to co-researchers Karen Tan, Luis Guerra, Carla Naidoo & Anthony Nardone (PHE) and to Tim Alston (Preventx).

References:

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Extra info
Comparisons with excluded individuals

Kit return rate for those who did not receive all messages versus those who did:
• 35.90% vs 54.19% p<0.001

Kit return rate for those not randomised versus those who were:
• 55.84% vs 53.07% p=0.001
Balance checks

• Intervention groups considered **balanced** in all respects

• Randomised versus non-randomised – **not balanced**

• All messages delivered versus at least one message failed – **not balanced**
Primer + BI reminders vs control (4 vs 1)

Primer + BI reminders vs primer (4 vs 2)

BI reminders vs standard reminders

BI reminders vs control (3 vs 1)

BI reminders vs primer (3 vs 2)

Primer + BI reminders vs BI reminders (4 vs 3)

Primer vs no primer

Primer vs control (2 vs 1)