

Increasing uptake of the flu vaccination in Bradford

Scoping Report



In partnership with



Cabinet Office





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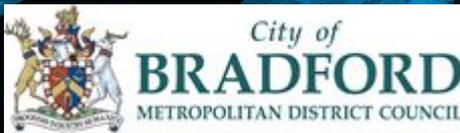
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Background



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Introduction to the project

- The goal of this project is to design, implement and evaluate a behavioural insights intervention to **improve uptake of the flu vaccination amongst patients in at-risk clinical groups in Bradford.**
- Flu vaccinations are offered for free to some people in England. This includes people with a range of medical conditions (inc. respiratory diseases, heart, liver or kidney disease or weakened immune systems). These patients are offered the vaccine both because of their increased risk of developing flu, and the more serious potential consequences for them if they catch the virus.
- Flu vaccinations are given by GP practices, who invite eligible patients. While there are [NICE guidelines](#) about how to do this, in reality processes tend to vary from practice to practice.
- Last year, uptake of the flu vaccine in Bradford was 47% (below the 55% target for England) and this varied significantly by GP practice (average uptake varied from 22% to 68%).
- This project is jointly funded by Bradford MBC and the Local Government Association. It is part of the LGA's [Behavioural Insights programme](#).



Purpose of Scoping Report

- This project begins with a short 'Scoping Period'. The goal of this period is to establish that a full project (including the design, implementation and rigorous evaluation of a behavioural insights intervention) is feasible.
- This report summarises our findings from this scoping work. On the basis of our scoping research, we believe a trial is feasible and we recommend that the project progresses.
- The report includes the following:
 - An outline trial design. We recommend a cluster randomised controlled trial (RCT).
 - A summary of our initial power calculations.
 - A summary of some of the behavioural concepts we expect to explore during the main project. These include active choice framing, planning tools and reminders.

Trial design and power calculations



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Suggested trial design

- We recommend a cluster randomised controlled trial.
- We expect our behavioural intervention to be a modified process for GP practices to follow when inviting patients or a communication targeting GPs and practice staff more directly.
- Figure 1 shows this design visually.

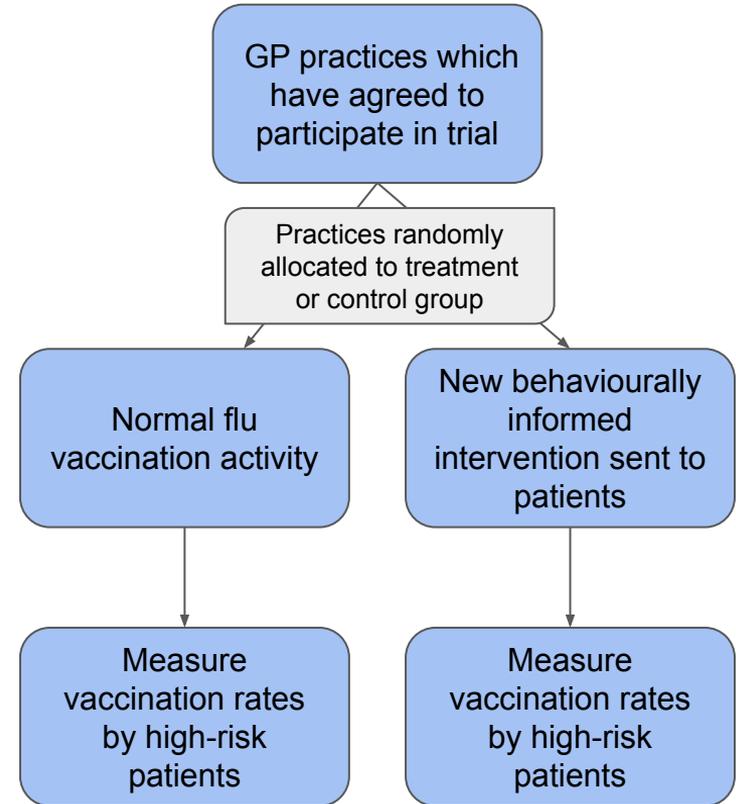


Figure 1. Outline trial design for cluster randomised control trial.



Power calculations

- We have used data about vaccination rates for high-risk patients in all 77 active GP practices in Bradford.
- Figure 2 sets out how the minimum detectable effect size (MDES) trial varies as the number of patients changes. The MDES is a measure of how large a change we would need to see in order to be statistically confident that our result was not due to chance variation.
 - If all 77 GP practices were included in the trial, the MDES from a two-armed trial would be 4.5 percentage points.
 - If only half of the GP practices were included (39), the MDES would increase to 6.4 percentage points.
 - If only a quarter of GP practices were included (20), the MDES would increase to 9.1 percentage points.

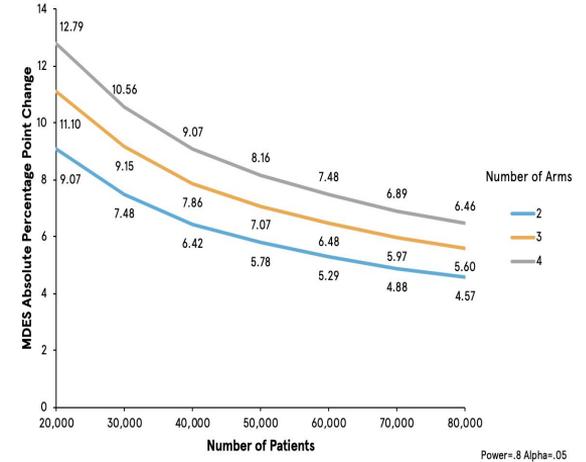


Figure 2. Power calculations for a cluster randomised trial



Recruitment

- The power calculations have been done without including any control variables so the MDES shown is a maximum. Once we have included additional data e.g. age bands, type of condition (which we know is available) the MDES will fall.
- **On this basis, we recommend that Bradford MBC should aim to recruit a minimum of 50 practices to take part in the trial.** If this number of practices can be recruited, we believe a trial is viable.
- **We recommend a 2 arm trial testing one new behaviourally informed approach against business as usual (control).**
- If we cannot recruit enough GP practices we recommend using ‘difference-in-difference’ approach. More information about this is found in Annexe B.

Key behavioural concepts



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Key behavioural concepts (1)

Each BIT project is bespoke, we are led by the evidence from existing studies and by what we observe during fieldwork visits. However, given our previous work in this area we expect to explore some of the following behavioural concepts.



Social norms. We are heavily influenced by how those around us behave (social norms). Unfortunately, in the case of flu vaccination, in many practices only a minority of patients are vaccinated. We have had success in reducing antibiotic prescriptions¹ and increasing cancer referrals² by nudging GPs themselves (rather than patients) with social norms feedback. By providing GPs with feedback about how their behaviour compares to their peers, we found we significantly shifted behaviour at low cost.



Planning. We often suffer a gap between our intentions and our actions (known as the 'intention-action' gap). This is evident in the literature on vaccination, which shows that (for example) 70% of parents intend to get their child vaccinated against flu but only 40% do.³ Helping people to make effective plans (for example through using implementation intentions) may help them to translate their intention to get vaccinated into action.⁴



Reminders. A well-timed reminder can be another powerful way of overcoming intention-action gaps. The way a reminder (such as a text message) is written can make a big difference to its impact. For example, in a trial with Imperial College Hospital, we found that a message emphasising the cost of a missed hospital appointment reduced non-attendance by 30% compared to a straightforward, 'information only' message.⁵





Key behavioural concepts (2)



Defaults. The default option has a big impact because inertia is a big driver of our behaviour, and because people can take cues about the appropriate course of action from the default choice. Moving to an opt-out default has increased cancer screening rates,⁶ pensions savings⁷ and organ donor registration.⁸ Changing the implied default in the language used by doctors (changing ‘would you like your shots today’ to ‘we have some shots today’) increased the number of parents getting their children vaccinated against flu.⁹



Harness prosocial motivations. Many people believe the flu vaccine is ineffective. One way to overcome this barrier, is to highlight the prosocial impact of vaccination (that it is also about protecting other vulnerable people). There is good indicative evidence that people who are more aware of the benefits of immunisation for others are more likely to get vaccinated.¹⁰



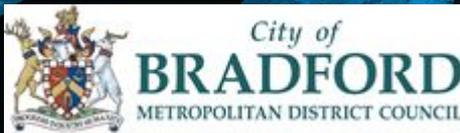
Framing. The way a message is framed can have a big impact on how it is received and its impact on behaviour. Behavioural science shows that we are generally loss-averse, meaning messages which emphasise potential losses are generally more effective than those highlighting gains.¹¹ However, this finding is less well-evidenced in the specific context of vaccination.¹² In this context, so-called ‘active choice’ framing (reframing indecision as an active choice not to get vaccinated) is more promising.¹³



Proposed project structure



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Project structure

This project will have the following structure:

1. **Scoping.** This report provides a summary of our work during this phase of the project.
2. **Research.** During this phase, we will complete two fieldwork visits, pull together our existing work summarising the relevant academic literature & audit existing processes at GP practices to build a picture of the barriers and opportunities.
3. **Design.** We will develop a new, behaviourally-informed intervention to increase uptake of the flu vaccination. We expect to target patients (through GPs) but we may also target GP practices themselves.
4. **Delivery.** We will work with Bradford to implement and evaluate our new intervention. This will include both a quantitative impact evaluation and a light-touch qualitative process evaluation.
5. **Evaluation.** We will analyse the results of our trial and write a Final Report summarising the project. Will also visit Bradford to present our findings.



Suggested timeline

Timeline

Scoping

Initial phone call

Produce Scoping Report

Research

Fieldwork

Light-touch evidence review

Audit existing processes in each practice

Design

Develop interventions

Delivery

Finalise trial design

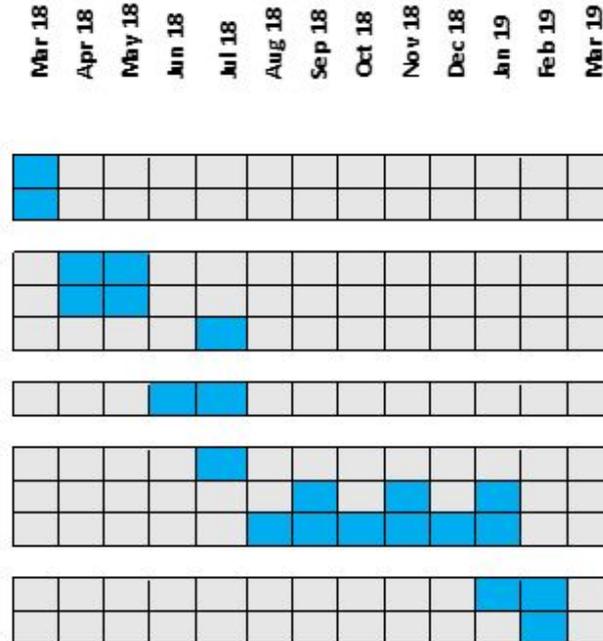
Process evaluation

Support implementation of trial

Evaluation

Analysis of results

Final Report





Key risks

Risk	Mitigation strategy
Too few GP practices are recruited for a valid trial	We have identified the number of practices required early in the project, to allow maximum time for recruitment. Recruitment will also be led by Bradford MBC, who can draw on existing partnerships and organisational links. We have also identified a different evaluation methodology (difference-in-difference) which can be used (see Annex B for more detail).
The trial is not ready by the flu season	This project is kicking off with lots of time before the flu season begins, and the project plan allows enough time for any necessary logistics (e.g. printing letters) before the flu season begins
Problems obtaining data	The trial is designed so that it does not require BIT to receive any personal data (it is 'clustered' at a GP level). This means we should not have information governance problems.
The project is delayed by NHS Ethics	The Health Research Authority decision tool suggested that this project does not count as research and so does not require NHS ethics approval. See Annex C for more details.

Annex A - References



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References

¹ Hallsworth *et al*, (2016). Provision of social norm feedback to high prescribers of antibiotics in general practice: A pragmatic national randomised controlled trial. *The Lancet*, 387(10029), 1743-1752.

² <https://www.bi.team/blogs/catching-cancer-early-in-greater-manchester-boosting-gp-referrals/>

³ Smith, L. E., Webster, R. K., Weinman, J., Amlôt, R., Yiend, J., & Rubin, G. J. (2017). Psychological factors associated with uptake of the childhood influenza vaccine and perception of post-vaccination side-effects: A cross-sectional survey in England. *Vaccine*, 35(15), 1936-1945.

⁴ Milkman, K. L., Beshears, J., Choi, J. J., Laibson, D. & Madrian, B. C. (2011). Using implementation intentions prompts to enhance influenza vaccination rates. *Proceedings of the National Academy of Sciences*. 108(26), *Sciences*. 108(26), 10415–10420.

⁵ Hallsworth, M., Berry, D., Sanders, M., Sallis, A., King, D., Vlaev, I., & Darzi, A. (2015). Stating appointment costs in SMS reminders reduces missed hospital appointments: findings from two randomised controlled trials. *PLoS one*, 10(9), e0137306.

⁶ Wilson, A., & Leeming, A. (1987). Cervical cytology screening: a comparison of two call systems. *Br Med J (Clin Res Ed)*, 295(6591), 181-182.

⁷ Beshears, J., Choi, J. J., Laibson, D., & Madrian, B. C. (2009). The importance of default options for retirement saving outcomes: Evidence from the United States. In *Social security policy in a changing environment* (pp. 167-195). University of Chicago Press.

⁸ Johnson, E. J., & Goldstein, D. G. (2003). Do defaults save lives? *Science*, 302, 1338-1339.

⁹ Shim E, Chapman GB, Townsend JP, Galvani AP. The influence of altruism on influenza vaccination decisions. *Journal of The Royal Society Interface*. 2012.

¹⁰ Kahneman, D. & Tversky, A. (1992). "Advances in prospect theory: Cumulative representation of uncertainty". *Journal of Risk and Uncertainty*. 5 (4): 297–323.

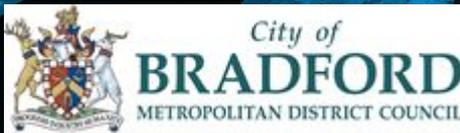
¹¹ O'Keefe, D. J., & Nan, X. (2012). The relative persuasiveness of gain-and loss-framed messages for promoting vaccination: A meta-analytic review. *Health communication*, 27(8), 776-783.

¹² Keller, P. A., Harlam, B., Loewenstein, G., & Volpp, K. G. (2011). Enhanced active choice: A new method to motivate behavior change. *Journal of Consumer psychology*, 21(4), 376-383.

Annex B - Difference-in-difference



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Difference-in-difference

Difference in difference (diff-in-diff) is an analytical approach used to evaluate the impact of an intervention or policy that is implemented in some, but not in other geographical areas (e.g. cities, states or provinces) or in this case GP practices.

Any impact evaluation faces the challenge that it has to distinguish the impact of the specific intervention from any other factors that are influencing the outcomes of interest. A diff-in-diff approach does this by comparing outcomes in the area(s) that receive the intervention (the Treatment group) to outcomes in comparable areas that did not receive the intervention (the Control group). 'Comparable' in this case means areas in which the outcome follows the same trend over time before the intervention and where we can reasonably assume that the outcome would have continued to follow the same trend without the intervention.

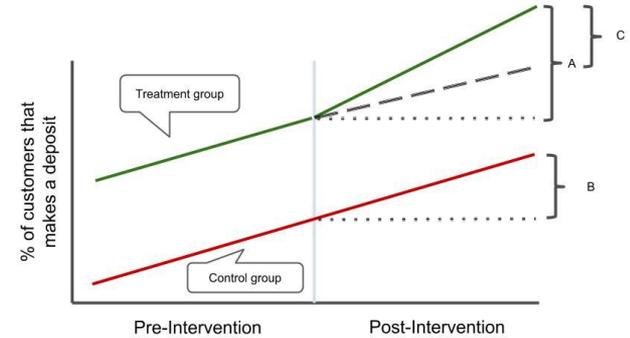
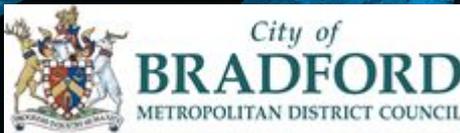


Figure 1 illustrates this. Imagine that the green line shows how the percentage of patients receiving the flu vaccine in GP's in the Treatment group; the red line shows the same for the Control group. The light grey vertical line shows when the intervention was implemented. The dashed line shows how we think the outcome in the Treatment group would have developed without the intervention - it would have followed the same trend as the Control group, i.e. the difference in outcomes between the two groups would have remained the same. Since we cannot observe this, we instead compare the changes in the Control group over time (B) to the changes in the Treatment group over time (A). The difference between the two is our estimate of the impact of the intervention (C).

Annex C - Ethics approval



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Ethics approval

Bradford MBC have decided that this project does not require ethics approval. This is based on the following:

- The Health Research Authority [decision tool](#) suggested that this project does not count as research and so does not require NHS ethics approval.
- This is a business as usual public health project which does involve randomisation, but not to treatment, care or services. Bradford MBC feel that randomisation can occur as this is an adaptation of business as usual.
- This proposal is based on an existing intervention that has already been designed and commissioned by NHS England. The trial will simply change the content of the communications that are used to invite patients for their vaccine.