15 Key Points to Support Uptake of COVID-19 Vaccines

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Key Points:

1. Send direct correspondence (e.g. letters or leaflets) to communicate vaccination availability and the need to register to every home in the state.
2. Strongly communicate the benefits of vaccination and that it is safe. Re-emphasise the effectiveness of vaccines in reducing mortality and reducing pressure on the hospital system and emphasise progress towards vaccination goals. Address uncertainty about the impacts of new variants and other changes on potential vaccine efficacy.
3. Make it clear through-out the roll-out that vaccination is free.
4. Allow people to book their vaccination appointment through multiple channels (e.g. by phone, by text, by letter, and online). Consider providing help for those with low literacy to sign up through institutions like GP's, pharmacies, libraries etc.
5. Make it easy by minimising the number of evidentiary documents required to access vaccination and identify methods to provide access to vaccination for those who do not have access to certain evidentiary documents.
6. Send text messages, where possible, to confirm and remind about appointments.
7. Consider providing transport subsidies and additional transport services in areas where public transport is scarce or costly to get to vaccination locations.
8. Engage with industry representative bodies and emphasise the importance of employers facilitating and supporting their employees' attendance at vaccination appointments.
9. Given the need to communicate with a broad swathe of the population and to increase awareness of the registration process for vaccination, and getting vaccinated, a mass media campaign should be conducted alongside individual level communication (letters and SMS), and communication through community groups.
10. Encourage GP's, dentists, pharmacists, and hospital staff to encourage people to vaccinate when attending other appointments.
11. Engage with community groups and representative groups to encourage vaccination and vaccination registration.
12. Consider providing people with pre-scheduled appointments if possible without causing other logistical challenges.
13. Provide data on the proportion of eligible groups who have received vaccination and undertake research on the reasons for deciding not to be vaccinated.
14. Collect, monitor, and provide data on did-not-attends for vaccination appointments and undertake research on the reasons for did-not-attends.
15. Provide advice and reminders during vaccination emphasising the need to continue protective behaviours for the number of days until immunity develops.

Background/Aims

Maximising vaccination uptake is key to reducing COVID-related hospitalisations and mortality. It has been estimated that approximately 75-90% uptake is needed to achieve herd immunity presuming vaccine efficacy of 80%.[2] The aims of this short note are to:

- Identify potential interventions or design features which can help to reduce a possible intention-action gap in vaccine uptake, and maximise the number of people who are successfully vaccinated if they wish to be;
- Identify areas where further data and research is needed to assess a possible intention-action gap in vaccine uptake.

Context

Put simply, the intention-action gap refers to the difference between what people say they plan to do and what they actually do. The size of this gap varies by behaviour and context and so it is difficult to estimate an intention-action gap for Covid-19 vaccination, but it is important to consider that such a gap is likely to exist.

Accurately measuring the size of the vaccine uptake intention-action gap is difficult due to the nature of how the priority groups are defined, the fact that data on vaccine uptake intent from representative surveys cannot be linked to data on actual vaccine uptake, and the fact that the data that is publicly available on vaccination uptake is simply presented as an aggregated count.

The latest (22/03/2020) nationally representative survey of vaccination intention in Ireland[3] has shown (NB: it is important to note that vaccination intentions may be slightly inflated due to social desirability bias):

- 72% of the population will "definitely" get the covid-19 vaccine when it is offered to them. 16% of the population will "probably" get the covid-19 vaccine when it is offered to them. 5% of the population don't know if they will get the covid-19 vaccine when it is offered to them. 3% of the population will "probably not" get the covid-19 vaccine when it is offered to them. 5% of the population will "definitely not" get the covid-19 vaccine when it is offered to them;
- 77% of the population stated that "yes" they would get the Covid-19 vaccine if it was offered to them next week;
- While there has been some variability in these intentions from week to week, the proportions have not changed to a great extent since January 2021.

Research and data on the proportion of those eligible for vaccination in each priority/age group who have successfully received their vaccination, are required. Data on the proportion of individuals who respond to invitations to vaccinate would also be useful. It is also worth keeping in mind that while vaccination intentions have been relatively stable since January, that intentions can change over time.

Recommendation: Provide data regularly on the proportion of eligible groups who have received vaccination and undertake research on the reasons for deciding not to be vaccinated.

Recommendation: Collect, monitor, and provide data on did-not-attends for vaccination appointments and undertake research on the reasons for did-not-attends.

Key details to Communicate to Maximise Vaccine Uptake

Vaccination is Free

Previous research by the ESRI investigating understanding of the test and trace system, conducted in July of 2020, showed that only 56% of respondents knew that the GP assessment to determine the need for covid testing was free[4]. Similarly, only 63% of respondents knew that the test itself was free. Knowledge that the test was free affected intent to call a GP; those who were certain that the test was free reported that they were more willing to call their GP if they were to experience symptoms of COVID-19.

While there is no evidence available in Ireland indicating people's level of knowledge of the cost of vaccination, it is possible that similar misperceptions may arise, and so communications should emphasise that vaccination will be offered free of charge.

Recommendation: Strongly communicate throughout the vaccination roll-out that vaccination is free.

Vaccination is Effective and Safe

Previous research by the ESRI[5] indicated that one of the strongest benefits in increasing intention to vaccinate was that the vaccine offered protection against infection, transmission, and long covid. The same study found that "many hesitant participants did not mention any benefits to vaccination at all. Not mentioning benefits was as high as 99% in the 'definitely no' group, 56% in the 'probably no' group, 38% in the 'probably yes' group, and just 9% in the 'definitely yes' group. In addition, a recent review of international data on COVID-19 vaccination intentions by the University of Limerick and the Department of Health[6] found that the two most frequently cited reasons for willingness to vaccinate are vaccine efficacy / evidence of testing, and the protection of self and others.

With regard to actual behaviour a literature review, by the Department of Health and DCU, of international evidence on correspondence shown to increase flu vaccination rates found that the second most common content was that the vaccine could help avoid serious complications and that the vaccine is effective[7], and a review of patient reported reasons for do not attends for hospital appointments shows a common reason is that patients' felt the appointment appeared to have no benefit[8].

The previously cited report by the University of Limerick and the Department of Health found that the most frequently cited reasons for unwillingness to vaccinate was concerns about side effects. An analysis of Amárach data by the Department, the University of Limerick and LSE[9] found that *not* reporting a concern about getting the vaccine is a significant predictor of positive COVID-19 vaccination intentions.

Recommendation: Strongly communicate the benefits of vaccination and that it is safe.

Employers Should Facilitate Employees Vaccination Appointments

Previous research by the Department of Health[8] has shown that patients often report trouble getting time off work to attend scheduled hospital appointments.

Recommendation: Engage with industry representative bodies and emphasise the importance of employers facilitating and supporting their employees' attendance at vaccination appointments.

Communication Channels and Frequencies to Maximise Vaccine Uptake

Conduct a mass media campaign based on behaviourally pre-tested messages to encourage vaccination and vaccination registration

Given the need to communicate with a broad swathe of the population and to increase awareness of the registration process for vaccination, and getting vaccinated, a mass media campaign should be conducted[10] alongside individual level communication (letters and SMS), and communication through community groups. Running online experiments can be a useful way to test the effectiveness of messaging and for determining the usability of the registration portal. If possible, behavioural pre-testing of both should be conducted. However, previous evidence from a review conducted by the Department of Health[11] could also be used to identify messages likely to reduce hesitancy[12] and increase vaccination intention.

Communications are most effective when they are provided in multiple languages to ensure that messages are received by all groups. Personal stories of vaccination tend to be more effective in encouraging behavioural change and should be representative of different groups in Ireland. Messaging should be tailored to each cohort being targeted for vaccination.

Recommendation: Given the need to communicate with a broad swathe of the population and to increase awareness of the registration process for vaccination, and getting vaccinated, a mass media campaign should be conducted alongside individual level communication (letters and SMS), and communication through community groups.

Encourage GP's, dentists, pharmacists, and hospital staff to encourage people to vaccinate when attending other appointments

Research conducted by Amárach for the Department of Health[13] has consistently shown that GP's (73%) and pharmacists (44%) are trusted by high proportions of the population for advice on vaccination. An econometric analysis of the Amárach data by the Department, the University of Limerick and LSE[9] also shows that trust in providers of healthcare (GPs, nurses, pharmacists) and of healthcare institutions (the Department of Health and the HSE) are significant predictors of positive COVID-19 vaccination intentions.

Previous research has shown that in-person advice with a trusted source is effective at increasing vaccination rates[14] for other diseases such as HPV.

Recommendation: Encourage GP's, dentists, pharmacists, and hospital staff to encourage people to vaccinate when attending other appointments.

Engage with community groups and representative groups to encourage vaccination and vaccination registration

Previous research has demonstrated that talking with a trusted source about vaccination, and hearing messages from trusted sources, can increase vaccination intentions and behaviour. Messages emphasising the effectiveness, safety, and public good benefits of vaccination should be communicated through community groups like the GAA, representative groups like Pavee Point, and leaders in both local and non-national communities.

Recommendation: Engage with community groups and representative groups to encourage vaccination and vaccination registration.

Consider providing people with pre-scheduled vaccination appointments if possible

Previous studies have found that providing people with pre-scheduled vaccination appointments for flu vaccination, with the ability to reschedule or cancel their appointment, increased rates of vaccination[15]. Such an approach positively challenges the emotion of anticipated-regret towards attendance. Studies from other domains have shown similar default effects to be extremely effective in encouraging a wide range of behaviours. While providing pre-scheduled vaccination appointments may be logistically challenging, especially at the initial stages of broader vaccine rollout, the option should be considered when possible as it is likely to generate higher rates of vaccination.

Recommendation: Consider providing people with pre-scheduled appointments if possible without causing other logistical challenges.

Send letters to communicate vaccination availability and the need to register

A formal meta-analysis by the Department of Health and DCU[7] of 22 international papers (37 interventions) shows that sending a single written message increases flu vaccine uptake by 18% relative to the no direct contact comparator group (i.e. mass communication alone). Previous studies by the US Office of Evaluation Sciences have shown that sending letters and postcards to Medicare beneficiaries significantly increased the number of people receiving vaccinations, including a flu vaccine, in 2015 and 2017[16]. Given that it is likely that a large number of people in the later, and larger, eligibility groups will be requested to register/schedule their appointment using an online portal[17], it will be important to prompt individuals to take action and register online.

Recommendation: Send letters to communicate vaccination availability and the need to register.

Send text messages to confirm and remind about appointments

In a recent review of reasons why patients did-not-attend outpatient appointments conducted by the Department of Health, the most common reason for not attending was that the patient simply forgot. A previous synthesis of systematic reviews found that sending SMS reminders in advance of hospital appointments reduces non-attendance (by 34%) and increases the likelihood of attendance (by 50%)[18]. Indeed, previous studies have shown that SMS reminders are a cost-effective way to reduce did-not-attends, increase the number of people who notify their intention to cancel/re-schedule, and encourage a number of health promoting behaviours including vaccination[19][20].

Recommendation: Send text messages, where possible, to confirm and remind about appointments.

Behaviourally informed wording for letters and SMS messages

A number of previous studies have been conducted testing the relative effectiveness of behaviourally informed wording of letters and text messages to increase attendance at appointments and flu vaccination rates.

For instance, a RCT in Ireland found that a behaviourally informed appointment offer letter halved did not attend rates (from 11% versus 5.3%).[21] The letter focused on simplification and also used a combination of design elements namely: personalisation, reciprocity, highlighting salient information, chunked image, highlighting the consequences of the patient's action, a commitment device (tear-off slip), and the messenger effect (staff name given). A review of literature testing the effect on flu vaccine uptake of sending a single written message suggests that the exact content makes a difference, four of six studies that tested the effect of different content found a difference in uptake between intervention arms.[7]

The precise wording of SMS reminders has also been shown to effect actual attendance at healthcare appointments and take-up of vaccinations. A rigorous test of the effect of SMS reminder content on flu vaccination rates, during the COVID-19 pandemic, found that reminding individuals a flu shot was "waiting" or "reserved" for them proved most effective, boosting vaccination rates by up to 11%.[22]

With regard to COVID-19 vaccination intentions, as opposed to actual behaviour, recent research from BIT shows messaging in relation to helping loved ones increased willingness to vaccinate across all hesitant groups.[23]

Recommendation: Incorporate behaviourally informed wording into letters, SMS messages and portals.

Potential Barriers to Vaccine Uptake and Potential Solutions

Difficulty in getting to vaccination centres, GP offices, or local pharmacies

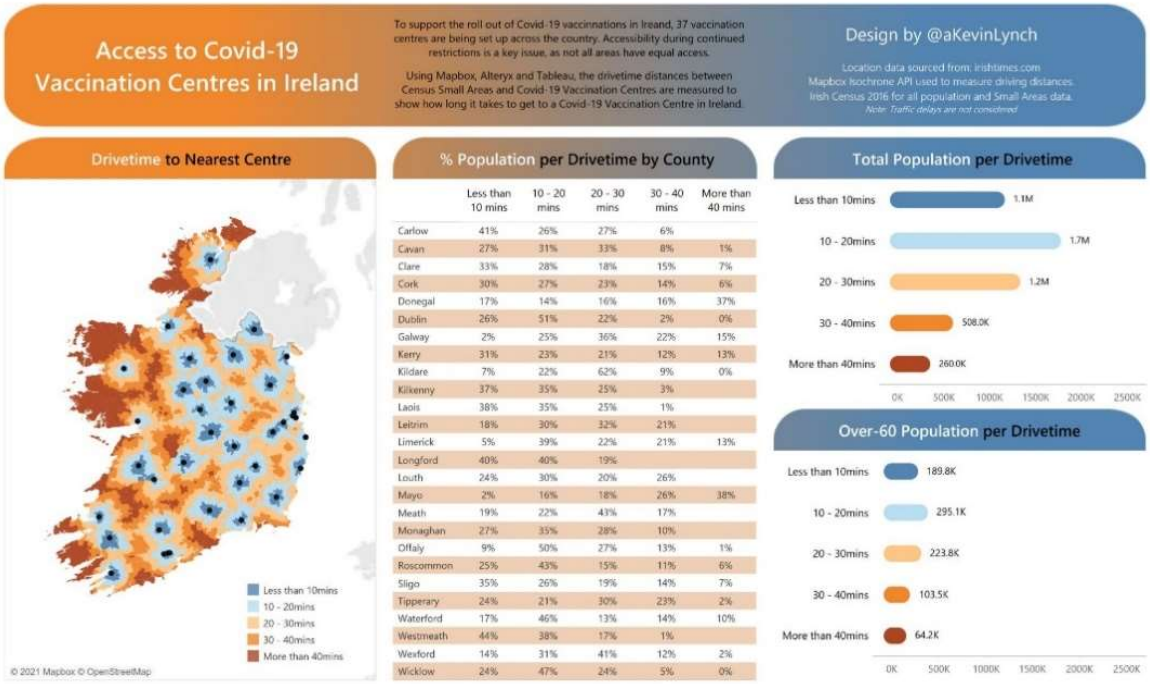
The cost, accessibility, and availability of transport has been shown to be a reported barrier to appointment attendance for hospital appointments[8]. Making vaccination available in as many places as possible should help to reduce this barrier. However, it is also worth considering whether transport cost subsidies, or additional transport services should be provided to those in areas where transport is likely to be particularly costly or difficult to access. For example, see Figure 1 below for an illustration of drive times to the then proposed COVID-19 vaccination centres across Ireland. Journey times for those relying on public transport are likely longer.

The UK has been piloting "different ways to improve access for those most affected, for example working with local taxi and bus companies whose normal work has reduced because of the pandemic to help with transport, as well as large retailers and others with access to free parking[24]".

The UK have also piloted mobile vaccination services provided by "vaccination buses" to bring vaccination services to areas that might be hard to reach or that contain large numbers of people likely to be shielding. "Launched by the GP Federation Alliance for Better Care (ABC), the MVS uses a 'vaccine bus', staffed by the ABC Community Vaccination Team, providing a clean space with one way flow and easy disabled access. Vaccine doses are taken from a registered site on the day of use, and appointments for the mobile unit are by invitation only and are booked by the local GP practices".

Recommendation: Consider providing transport subsidies and additional transport services in areas where public transport is scarce or costly to get to vaccination locations.

Figure 1: Estimated drivetime to vaccination centres[25][26] - Graphic is illustrative only and should not be used for decision making



	Less than 10 mins	10 - 20 mins	20 - 30 mins	30 - 40 mins	More than 40 mins
Carlow	41%	26%	27%	6%	
Cavan	27%	31%	33%	8%	1%
Clare	33%	28%	18%	15%	7%
Cork	30%	27%	23%	14%	6%
Donegal	17%	14%	16%	16%	37%
Dublin	26%	51%	22%	2%	0%
Galway	2%	25%	36%	22%	15%
Kerry	31%	23%	21%	12%	13%
Kildare	7%	22%	62%	9%	0%
Kilkenny	37%	35%	25%	3%	
Laois	38%	35%	25%	1%	
Leitrim	18%	30%	32%	21%	
Limerick	5%	39%	22%	21%	13%
Longford	40%	40%	19%		
Louth	24%	30%	20%	26%	
Mayo	2%	16%	18%	26%	38%
Meath	19%	22%	43%	17%	
Monaghan	27%	35%	28%	10%	
Offaly	9%	50%	27%	13%	1%
Roscommon	25%	43%	15%	11%	6%
Sligo	35%	26%	19%	14%	7%
Tipperary	24%	21%	30%	23%	2%
Waterford	17%	46%	13%	14%	10%
Westmeath	44%	38%	17%	1%	
Wexford	14%	31%	41%	12%	2%
Wicklow	24%	47%	24%	5%	0%

Internet Accessibility and Capability

While the majority of people living in Ireland (91%) have access to the internet, access is not distributed evenly geographically or socio-demographically[27]. Furthermore, a recent report by NALA found that "55% of the adult population has low digital skills. This means they may struggle with reading text, doing simple maths, or searching and understanding information online". It is also important to keep in mind that 18% (one in six) of the adult population (18-65) are at or below level 1 on a five-level literacy scale[28].

Recommendation: Allow people to book their vaccination appointment through multiple channels (e.g. by phone, by text, by letter, and online). Consider providing help for those with low literacy to sign up through institutions like GP's, pharmacies, libraries etc.

Make it easy – avoid difficulty in providing evidentiary documents

While there is a need to identify individuals to accurately record vaccination events, it should be considered that the requirement of different, and in particular multiple, evidentiary documents could act as a barrier to uptake. Sunstein (2020) describes multiple examples where administrative burden reduces the number of people signing up for government programs[29]. The UK, for example, have taken care to ensure that vaccination can be offered without an NHS number where necessary[30]. Figures for the proportion of the Irish population who have a PPS number were not available to the authors at the time of drafting and so consideration should be given as to whether requiring a PPS number to book an appointment could act as a barrier.

Recommendation: Make it easy by minimising the number of evidentiary documents required to access vaccination and identify methods to provide access to vaccination for those who do not have access to certain evidentiary documents.

Behavioural Considerations Post-Vaccination

A number of commentaries have suggested that people may be more likely to engage in risky behaviour that could lead to infection following vaccination[31]. "A study led by Public Health England of vaccination in the over 70s found a "notable" rise in covid-19 infections in people immediately after they received the AstraZeneca vaccine. Similarly, a study of Israel's vaccination programme, reported in February, found a similar spike in cases among people who had just been vaccinated. It found that daily incidence approximately doubled after vaccination until about day 8. A survey by the UK's Office for National Statistics, looking at coronavirus and vaccine attitudes and behaviours in England in February shows why these spikes may be happening. Among over 80s who had received their first dose of a vaccine in the previous three weeks, 41% reported having met up with someone other than a household member, care worker, or member of their support bubble indoors since vaccination, thereby breaking lockdown regulations".

Warnings about the need to maintain protective behaviours, and that people do not establish immunity until a number of week(s) after vaccination do not appear until page 9 of the vaccination leaflet[32]. Stronger communications about the need to continue to protective behaviours, and the risk of contracting Covid-19 before immunity develops should be introduced. While there are no available studies examining effective methods for reducing the likelihood of participants to engage in risky behaviours following vaccination but before immunity develops, there are a number of interventions which may be effective. For example, having a healthcare professional detail the importance of maintaining protective behaviours, and the risks of contracting Covid-19 before immunisation fully develops, asking people to sign commitment devices (small cards with signatures) to commit to protective behaviours, or sending text reminders following vaccination.

Recommendation: Provide advice and reminders during vaccination emphasising the need to continue protective behaviours for the number of days until immunity develops.

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[1] Thanks to other members of the COVID-19 Communications and Behavioural Advisory Group for comments and input.

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[3] https://assets.gov.ie/127812/a7eaaea3-a215-401c-9a6d-b2afcdc6b48a.pdf

[4] https://www.esri.ie/pubs/SUSTAT96.pdf

[5] Previously circulated: ESRI (2021), Understanding Vaccine Intentions in the Irish Population

[6] Muldoon, O., Bradshaw, O., Jay S., Kinsella, E., Maher, P., Murphy, R. and Taaffe, C., (2021), Review of international evidence on intentions and beliefs with regard to uptake of COVID-19 vaccines, Research Paper produced for the COVID-19 Communications and Behavioural Advisory Group, University of Limerick and Research Services and Policy Unit, Department of Health. Forthcoming.

[7] Murphy, R., Taaffe, C., Ahern, E. (2021). Review of the impact of individual correspondence on flu vaccination rates: a qualitative analysis and meta-analysis. Research Paper produced for the COVID-19 Communications and Behavioural Advisory Group. Department of Health and Dublin City University. forthcoming

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[9] Murphy, R., Muldoon, O., and Delaney, L., (2021), Predictor analysis of intentions to get a COVID-19 vaccine in Ireland, Research Paper produced for the COVID-19 Communications and Behavioural Advisory Group, Research Services and Policy Unit, Department of Health, University of Limerick, and London School of Economics and Political Science. forthcoming

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[25] https://public.tableau.com/profile/kevin.lynch#!/vizhome/AccesstoCovid-19VaccinationCentresinIreland/MeasuringCovid-19VaccinationCentreAccessinIreland
[26] Please note this visualisation and the analysis underlying it has not been peer reviewed and should not be used for decision making. Rather it should be used to illustrate the ***potential*** for transport to vaccination locations to act as a barrier.
[27] https://www.cso.ie/en/releasesandpublications/ep/p-isshh/informationsocietystatistics-households2019/introductionandkeyfindings/
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[30] https://www.gov.uk/government/publications/covid-19-vaccination-uptake-plan/uk-covid-19-vaccine-uptake-plan
[31] https://www.bmj.com/content/372/bmj.n783
[32] https://www.hse.ie/eng/services/news/newsfeatures/covid19-updates/covid-19-vaccine-materials/covid-19-vaccine-information-leaflet-a4-version.pdf