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# Generation Vax

## Leveraging intergenerational relations to increase routine vaccination uptake

Health and care
Community
Prevention
International
Inequalities
Life expectancy
Diseases and conditions

## Acknowledgements

**Open Age** is an award-winning charity that has championed an active life for older people across ethnically diverse boroughs in London for over 25 years. We used Open Age's connections to allow us to discuss our design ideas for the social media campaigns with Open Age members, who were from our target communities. This helped us to refine our ideas further. Our video campaigns featured volunteers from Open Age giving their personal views in response to questions about routine vaccines and their personal experiences in receiving them.

**The Coalition for Life-Course Immunisation** (CLCI) is a network representing public health organisations, patients, academics and health professionals across Europe that promotes wide-scale immunisation to peers and policy makers. CLCI is providing support to help disseminate the findings of this report to key EU policy makers.

**Digital Willow** is a digital communications strategy agency. We worked with them to design the social media campaigns, including filming the videos that formed part of the ad campaigns. Digital Willow also implemented the launch of the test campaigns on Facebook and Instagram, set up results tracking mechanisms, and helped us with analysis of the results.



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# Contents

## Foreword: Can we influence the behaviour of parents and grandparents?

Anyone who has attended a global public health conference over the past decade is likely to have heard about the Thai Smoking Kid.

Described as the "world's cleverest anti-smoking ad", it uses two children to approach adults to ask for a cigarette.[1] When those adults tell the children that smoking is bad for them, the children ask why the adult is smoking, and hand over a leaflet with a link to a telephone 'quitline.'

Within ten days, the video was apparently watched millions of times and calls to the quitline shot up.

But did it actually reduce smoking? Yes, smoking has been falling in Thailand over the last decade. But the falls have been slow and arguably other initiatives such as tax increases have played a much bigger part. Perhaps it made a difference to the individuals who took the leaflet and threw away the cigarette, but what change was actually achieved at a population level?

The reality is, too few public health campaigns are actually tested, effectively evaluated, or scaled. So we don't really know.

Today we live in a world where generations are both united and divided by social media. Social media is potentially a powerful tool for public health messaging, as well as for misinformation. But not all generations use social media in the same way, and there's undoubtedly an age divide in terms of which platforms older and younger people use.

This is where we come in. As far as we can tell, no research has ever tested the potential impact of using social media to deliver health messages across generations.

This report, of one of ILC's most ambitious projects ever, seeks to test whether younger people can influence the health behaviours of older people.

With the support of a grant from the Vaccine Confidence Fund, we explored whether younger people can influence older people's vaccine uptake through social media – focussing on marginalised older adults living in deprived areas, where uptake is persistently low. Our novel approach sought to explore how to use social media

to engage younger people to change their older family members' perceptions of routine immunisation, either through social media or offline.

We found that targeting older users directly on social media gave better trackable results than targeting younger audiences. Despite stereotypes to the contrary, social media campaigns appear to be able to effectively engage marginalised older adults with vaccination and increase uptake.

Our findings also suggest that younger generations were engaged with our campaign, and by some measures, more engaged than older adults. Our findings suggest they may have generated impact offline – we just couldn't fully track this.  As younger generations are cheaper to reach on social media compared to older generations, there is clearly scope for future research to dig into this question further. The case isn't closed.

**David Sinclair**

Director. International Longevity Centre (ILC-UK)

# Executive summary

## Context

### Can we use social media to improve routine vaccination uptake among marginalised older adults – and can younger generations help?

Older people from deprived areas and black communities in the UK don't get routine vaccinations – against flu, shingles and pneumococcal diseases – as much as other groups.

As more older people, including those from marginalised groups, take to social media, this channel offers a real opportunity to address these inequalities.

But younger people are still more likely to use social media and to engage with its content. As evidence suggests that they can influence the health behaviour of older relatives – and as we know that older people tend to use social media to keep up with friends and family – these younger users could be part of the solution.

But this hasn't been tested before on social media, Our study sought to try this out.

## What we did

We sought to explore:

1. Whether social media adverts can be used to increase routine vaccination uptake among older people from deprived communities (including black communities);
2. Whether it's more effective to engage older social media users directly or to use younger users as a conduit to persuade older relatives to get vaccinated.

We conducted a survey and four focus groups with people from our target groups to understand:

- the key barriers to routine vaccination, and
- the best ways to engage different age groups from these communities on social media.

We found that we should design adverts that feel:

> trustworthy, conversational and open, family-orientated, warm and emotive but not hard-hitting, and informative without coercion or guilt.

We created a number of adverts in different formats (a single image advert, GIF and video) that featured real conversations with Open Age members and their families. These targeted younger and older audiences separately, encouraging them to learn more about the flu and pneumococcal vaccines and to share the campaign; they also offered eligible people the opportunity to book an appointment.

We ran this campaign on Facebook and Instagram (the most popular platforms among our target groups), from December 2021 to January 2022.

**Our social media advertising campaigns may have cost effectively improved flu vaccination rates among deprived communities – and the pneumococcal adverts generated vaccine booking link clicks at a cheaper rate than flu adverts.**

The campaigns appeared to resonate with our target communities.

- Our campaigns received significant engagement. Engagement metrics were far higher than average for healthcare adverts: over 75% of users who saw the advert engaged, and the reactions and survey responses indicate that most users perceived them positively.
- Overall, each booking click cost an average of £35.50 – falling to just £12.50 per booking click for older audiences who saw pneumococcal adverts.
- If we take booking clicks as a close proxy for actual bookings, rough estimates indicate that the booking click cost for older audiences who saw the influenza adverts (combined with the cost of vaccination) is below NICE's cost per QALY 'threshold' over which treatments are less likely to be recommended for use in the NHS – at least for people aged 65+. We weren't able to assess the equivalent for the pneumoccoal adverts due to time constraints.
- When considering engagement metrics and booking clicks the pneumococcal campaigns had greater impact than the flu campaigns likely because many users had already received the flu vaccine, while the pneumococcal vaccine is relatively unknown and perhaps therefore generated more interest.

These findings indicate that social campaigns can help increase vaccination uptake among typically hard-to-reach deprived communities, with campaigns for less well-known vaccinations being potentially most effective. Unfortunately we weren't able to assess whether our campaign effectively engaged ethnic minorities due to the inability to track and target these groups on social media.

### Targeting older users directly on social media gave better trackable results than targeting younger audiences – but we can't rule out the effectiveness of engaging younger audiences for offline conversations.

Overall, we found that targeting older users directly generated greater trackable impact than trying to reach them through younger users. Older users were more likely to engage with our campaigns, including sharing them. The majority of older landing page survey respondents said they shared the campaign. Most importantly, the adverts targeted at older users generated more booking clicks at a lower cost per click – despite more younger users seeing the adverts, and older users being more expensive to target.

Some older survey respondents wanted more time to consult with their GP before booking, indicating that more users may have booked a vaccination in ways that we couldn't track. Older users appeared to prefer the video adverts above all formats.[a]

### Younger people were more likely to click on the adverts to learn more than older users, but were then less likely to act – although we couldn't track all potential follow-up actions.

Younger audiences showed higher engagement in one way: they were more likely to click through to the landing page. This was particularly noticeable with those who saw the GIF format. Yet once they came to the landing page, they were less likely to act and so generated relatively fewer booking clicks. This may be due to:

- Page design - which highlighted the 'book your jab' button,
- Offline conversations with older friends or relatives that we couldn't track.

[a]Only 3% of of all post engagements from the GIF came from the older audience – indicating that this ad format was not popular with this audience. However, this could partly be driven by differences in how many younger and older audiences viewed the GIF – figures we weren't able to access.

These younger audiences, on average, saw the adverts around 3.8 times, and looked at the landing pages around 4.4 times, which suggests that they were interested. Many were returning to the landing pages, but the low survey response means we can't clearly interpret results to fully answer our research question. Yet the results suggest that further exploration of approaching younger people on social media to engage with older relatives could be valuable. This is especially true as younger users are cheaper to target than older ones. Targeting users aged 35 and over rather than those in their twenties may be more effective, as this age group showed higher engagement.

### Although most advert reactions were positive, the majority of comments on the adverts were negative, indicating that our campaigns resonated more with the undecided than anti-vaxxers - but these negative comments may have increased engagement

Despite mostly positive reactions and survey responses, the majority of comments were negative. Users expressed distrust of wider systems/source of the campaigns, beliefs that natural immunity is sufficient and that vaccines are unnecessary or even dangerous - often using personal anecdotes which appeared to resonate with our target communities. Many, especially among those aged 50-65, also found the campaigns coercive – although others often replied to counter these views.

This indicates our campaigns likely resonated most with undecided users who lack awareness rather than with staunch anti-vaxxers. It is not clear, however, if the negative comments actually hindered our campaign or helped to generate the significant engagement we received.

### Our target communities claim to struggle to see the GP or book a vaccination appointment – health practices can make this easier

In terms of key barriers among engaged audiences, we saw many responses indicate that they felt it was difficult to see a GP/book a vaccination – especially for the pneumococcal vaccine, which isn't offered in pharmacies. And a lack of GP recommendation of the vaccine seemed to lead to a lack of confidence and uncertainty about eligibility. This supported our preliminary research findings,

and indicates a huge role for health practices/the health system to address these barriers and ensure consistent communication.

## Building on these findings: what can we do next?

These findings offer a clear opportunity to build on and scale up our campaigns targeting older adults.

- Social media campaigns targeting older adults in deprived areas directly have significant potential to increase vaccine uptake – especially for less well-known vaccines. We may be under-investing in such campaigns, but clearer benchmarks would make it easier to assess this.
- Younger generations were particularly keen to learn more. It's still worth exploring whether younger generations on social media can be effectively used as a conduit to engage older generations with vaccination. The case is not closed.
- Our campaign also revealed a number of quick-win opportunities for health practices/systems to address common barriers to uptake among deprived communities.

### Build the evidence base and scale up findings

The Department for Health and Social Care and the NHS should:

- Increase investment in social media campaigns to increase the uptake of routine vaccination (especially less well-known vaccines, such as the pneumococcal and shingles vaccines) among older people living in deprived areas in the UK.

### Measure the impact and cost-effectiveness of future social health campaigns

The Department for Health and Social Care and the NHS should:

- Analyse and publish the results of future social campaigns on vaccination and collaborate where relevant, to maximise learnings/impact and prevent under-investment.
- It could be useful for NICE and other key stakeholders to provide guidance on the cost per vaccine booked 'threshold' over which campaigns/vaccine improvement interventions are no longer cost effective – including for marginalised groups, where cost effectiveness is likely to differ.

## Address knowledge and accessibility barriers to vaccination

The NHS and the Department for Health and Social Care should:

- Offer the NHS pneumococcal vaccine in community pharmacies.
- Ensure that all GP practices send reminders and consistently discuss pneumococcal vaccination with eligible patients.
- Create a single online hub where people can book all routine vaccination appointments and display these options prominently on the NHS website.

## Explore further ways to use data gathered by social media for public good

Policy makers should:

- Explore ways to encourage social media owners to share data with government health systems or researchers while mitigating the risk of negative consequences – including this data being exploited.

## Test unanswered questions from our study

Health policy makers should:

- Explore whether using social media to engage younger family members is a cost-effective way to increase vaccination uptake among older family members.
- Explore whether anti-vax comments on social campaigns to promote vaccination affect the impact of those campaigns.

# Summary of findings

## Context

Social media could be a cost-effective way to influence what we think about the vaccinations recommended to us throughout our lives – including for marginalised groups, such as people living in deprived areas and people from black communities where uptake is persistently low.

But while its use is rapidly increasing among older people and those from marginalised groups, younger people still use it more often and show higher levels of engagement. Previous research, as well as our own, shows that older people mainly use social media to connect with friends and family.

There's a small but growing evidence base which suggests that younger people can significantly influence the behaviour of older family members, including their health behaviours.

For these reasons, we decided to test whether engaging with younger people on social media to reach older adults is more effective than engaging older adults on social media directly.

## What's new about this approach?

While there have been examples of health behaviour programmes that used younger generations to influence older relatives' health behaviours offline, this hasn't been tried on social media before. And previous social media campaigns promoting routine vaccination haven't explicitly targeted marginalised groups and measured the impact.

### Methodology

After some preliminary qualitative and quantitative research (through a nationally representative survey and focus groups) into attitudes, barriers and potential messaging, we created targeted test campaigns that separately targeted younger and older audiences. We worked with social media agency Digital Willow to design and test the campaigns, and with charity Open Age to record genuine conversations with Open Age members to inspire and provide content for the adverts.

We conducted a month-long campaign on Facebook and Instagram, with separate campaigns for flu and pneumococcal vaccinations. Each campaign included three adverts formats: a static image, an animated GIF and a video. The static image and the video targeted two separate audiences: people old enough to be eligible for the relevant vaccination, and younger people. The GIF was age-neutral, so targeted both older and younger audiences. Each advert called on viewers to "Learn more" – if clicked, they led to a landing page with options to book an appointment, share the campaign, complete a survey, and learn more. Both audiences were from the most deprived quintile of the population across Great Britain – with similar reach, to compare impact fairly.

## What did our preliminary research find?

### The main barriers to vaccination are lack of awareness and lack of access – the main motivators are NHS reminders and recommendations

*"I've only recently heard about shingles but my doctor hasn't invited me to have it"*

- People living in deprived areas were often unaware that they could be vaccinated against pneumococcal disease or shingles. Many hadn't had a recommendation from their GP.
- In our surveys 56% of those aged 65+ in the most deprived areas didn't know they needed the vaccination against pneumococcal disease and 69% of those aged 70+ didn't know about shingles.
- In contrast, people who hadn't been vaccinated against the flu had more varied reasons: not wanting to go to the doctor, not knowing they needed it, beliefs that the flu isn't dangerous, and not having time.
- Of those from deprived areas who *had been* vaccinated against flu, a large majority said this was because it was routine or was due to NHS reminders, as well as because flu is dangerous. For pneumococcal and shingles vaccination, compliance seems to be mostly linked with awareness and knowledge of the risks – although many also cited NHS recommendations.

### 35% of young people already try to influence the health behaviour of older relatives, offering scope to use younger social media users as conduits

*"Now that you've mentioned it, I think I'll actually discuss it with my grandparents because I'd be interested to know how they feel about that sort of vaccine, if it's even been offered to them, or if they've had it before."*

- 35% of older people said that younger relatives pass on health messages, mainly via conversation – rising to 55% among ethnic minorities - and many said these influence their health behaviour.
- The main barrier for all younger people is lack of knowledge and worry about passing on misinformation from social media – but many say they would have a conversation about a vaccination campaign, especially those in their 30s and 40s, rather than their 20s.
- Our literature review found campaigns that have either helped younger people to influence older relatives, or used intergenerational messaging that changes behaviour to protect younger generations, but there's little information available on their impact.

### People living in deprived areas and from ethnic minority backgrounds use social media as much as, or more than, other older people especially to interact with younger relatives

- Older people in general tend to distrust social media for serious health messages.
- There's no clear relationship between deprivation and social media use: findings are mixed, although people from ethnic minorities seem more likely to use the internet.
- 75% of older social media users from deprived areas who have younger relatives on social media interact with them – and this becomes more common as the level of deprivation rises.
- Older people from deprived areas prefer a trusted source for social health campaigns, with the NHS overwhelmingly preferred.

### Messaging must avoid being seen as coercive or manipulative – it should stick to information and emphasise the ease and speed of vaccination

*"It's just propaganda to me. It's like being forced. So, I can't enjoy myself unless I've had the flu vaccine?"*

- The 50-65 age group perceive themselves as healthy, are more prone to anti-vax sentiment, and suspicious of 'coercion' or 'guilt tripping'; they prefer positive, factual information.
- The 65+ age group responded more positively in general, including to factual messages and statistics and messages that it's quick and easy to get vaccinated.
- Messages for those aged 20-49 should focus on breaking down communication barriers, and encouraging them to feel comfortable about discussing health and routine vaccinations with their older relatives, including emotive messaging about looking after them.

**We settled on creating adverts that were trustworthy, conversational and open, family orientated and emotive, as well as informative.**

## Main findings: Our campaigns targeted at older adults effectively improved vaccine uptake

### Our adverts targeted directly at older adults from deprived areas appeared to cost-effectively increase flu vaccine uptake and generated more pneumococcal vaccine booking links, and at a cheaper cost per click

- Over 1 million people from our target groups saw our adverts, with over 5 million impressions
- The average cost for each (unique) booking link was £36.50 – but for older people this was £20.49, and for older people who saw the pneumococcal ads this fell to £12.50.
- The adverts for pneumococcal vs flu vaccination generated more impact per impression (ad clicks and booking link clicks) and at a cheaper rate (despite that audience being more expensive to target) because fewer people know that you can be vaccinated against pneumococcal disease and fewer people have had the pneumococcal vaccine.
- If we take booking clicks as a close proxy for actual bookings, the flu ads targeted at older people appear to be cost-effective – at least for people aged 65+. We weren't able to assess the equivalent for the pneumoccoal adverts due to time constraints.

**Recommendation: The Department for Health and Social Care (DHSC) and the NHS should increase investment in social media campaigns to increase the uptake of routine vaccination (especially pneumococcal and shingles vaccines) among older adults living in deprived areas**

*"I'm pleased there's a campaign as I personally wouldn't have known about the Pneumonia jab as I have never been offered one when visiting the Doctors."*

*"This should be advertised more. I didn't know about it until years after the time I should have had one. Had it now"*

**Issue:** There are currently few social media campaigns promoting routine vaccination that are targeted at people living in deprived areas, especially for pneumococcal and shingles vaccines, where a lack of awareness is the main barrier to uptake. This is despite our findings indicating that such campaigns can be effective at increasing uptake for this population, meaning that we may be underinvesting in this form of prevention.

**Recommendation: DHSC and the NHS should analyse the results of future social media campaigns on vaccination and publish findings on an online hub**

**Issue:** Because there are relatively few available benchmarks/ impact assessments of previous campaigns, it was difficult to compare our campaign to others and to confirm the suggestion from our findings that these are an underfunded form of prevention.

**Recommendation: NICE and other key stakeholders could provide guidance on the cost per vaccine booked 'threshold' over which campaigns/vaccine improvement interventions are no longer cost effective – including for marginalised groups.**

**Issue:** There wasn't a great deal of official guidance to help us assess whether our campaigns were cost effective: official Government, NICE guidance or guidance produced by other relevant stakeholders on the cost per vaccine booked 'threshold' over which campaigns/vaccine improvement interventions are no longer cost effective could make it easier to consistently assess the impact of future campaigns – including those targeted at marginalised groups, where cost effectiveness is likely to differ from the general population.

## The adverts resonated with our target communities – standard engagement metrics surpassed industry benchmarks – but we can't track whether our campaign resonated with people from ethnic minorities

- Our campaigns received significant engagement. We generated over 1,000,000 instances of 'post engagement' of different types: 76% of those who saw the adverts engaged with the content in some way, e.g. likes, shares, comments or three second or more video/GIF plays[b]
- The overall click through rate (CTR) was 2.5 times better than the average CTR for healthcare adverts in 2021 (0.83%) and the cost per view (CPV) was lower than the average across all industries on Facebook (0.5 vs 1-15 cents)
- None of the landing page survey responses came from black visitors, with few from any ethnic minorities, but as we can't track social media users by ethnicity it's unclear whether this means they were less engaged in general or simply didn't respond to the survey

**Recommendation: Policy makers should explore ways to encourage social media owners to share data with government health systems while mitigating the risk of negative consequences – including this data being exploited**

**Issue:** In our study we weren't able to measure whether our campaigns were effective in reaching black people or people from other ethnic minorities, nor to target them specifically. This was despite the fact that we knew health measures reveal health inequalities by ethnicity, and that our own preliminary research indicated that these groups have lower vaccination uptake figures. Social media companies gather significant data that could benefit health research in general, and assist in the creation of health and vaccination campaigns. However, there are significant risks involved. There are very good reasons for these constraints: the ability to target adverts by race/ethnicity is open to many kinds of misuse.

[b]It is likely that many of these views were due to auto-play, yet as only views that lasted for 3 or more seconds were counted, this only includes users that generally appeared to be interested enough not to quickly scroll past.

**Idea:** There may be an opportunity for governments to call upon social media owners to share relevant data in specific (regulated) instances to support government campaigns/research, while mitigating against any potential negative consequences.

### The adverts targeting older audiences directly generated the most impact overall

- 76% of all shares and saves came from our older audiences – despite the adverts only explicitly encouraging younger audiences to share;
- Older audiences were more likely to engage with the adverts and make a booking click on the landing pages;
- The video format generated most engagement and the static image format generated the least;
- Our results show that a combination of warm, emotive, family-oriented personal clips with factual content from a health professional, using informative rather than persuasive language, worked well with older audiences;
- Older audiences were least likely to engage with the GIF animation.

### But younger audiences were more likely to click through to the landing pages – they just didn't interact with it in a way we could track

- Younger audiences showed higher engagement in one clear way: they were more likely to click through to the landing page;
- Younger audiences generated more click-throughs to the landing pages than older audiences per advert view (3.5% vs 2.6%) and per impression (0.9% vs 0.7%);
- Yet once they entered the landing page, they were less likely to interact, including by sharing, generating fewer booking clicks than older audiences.

### Younger audiences may have been prompted to talk with older friends and family members about vaccination in ways we weren't able to track

- The lack of actions on the landing may be due to page design, which highlighted the "book your jab" button. It's also possible

that these visitors had offline conversations with older friends or relatives that we were unable to track, as suggested by survey responses;

- Younger (and older) visitors to the landing site visited more than four times on average (more times than the adverts were showed to them on social media), which suggests interest - but the low survey response means we can't clearly interpret results to fully answer our research question;
- The results suggest that further exploration of approaching younger people on social media to engage with older relatives could be valuable, especially as younger users are cheaper to target than older ones (£25 vs £38 per thousand);
- Targeting people whose parents (rather than grandparents) are eligible for routine vaccinations is likely to be more effective: our survey responses indicate that those aged 35 and over were most engaged, reinforcing earlier qualitative findings.

**Recommendation: Health policy makers should explore whether using social media to engage younger family members is a cost-effective way to increase vaccination uptake among older family members**

*"I already knew about the jab but not that it can now be booked, will definitely encourage family over 65 to book. May consider paying for husband and I as we are under 65."*

**Issue:** Our study found no clear evidence that using social media to encourage younger audiences to persuade their older relatives to be vaccinated was more cost effective than targeting older people directly. However, we couldn't track all follow-up actions by our younger audiences and may have missed some outcomes. We also found that younger audiences were cheaper to reach than older ones, and were more likely to interact with the campaign landing pages, offering the potential for greater cost effectiveness.

**Idea:** As a Government test campaign may have the capacity to track follow-up actions via GPs and pharmacies, this could offer the opportunity to explore innovative ways to test the cost effectiveness of such an approach to increase not only vaccination uptake but other health behaviours among older people.

**Many survey respondents who still hadn't booked an appointment said it was because their GP hasn't recommended the vaccine or they find it difficult to book an appointment**

*"Pop down to your GP?!? Was this post written in 2018 or something, the Loch Ness monster is easier to see than a GP round here"*

- 60% of respondents to the pneumococcal landing page survey who were eligible said they're planning to, or thinking about, getting vaccinated but need more information – which suggests that many users may have booked the vaccine offline after seeking further information – which we couldn't track;
- Survey respondents who didn't make a booking click said that this was because their GP hadn't raised it with them, or they struggled to get an appointment, especially to receive the NHS pneumococcal vaccine which is not offered in local pharmacies. This is in keeping with the findings of our preliminary research.

**Recommendation: Ensure that all GP practices send reminders and consistently discuss pneumococcal vaccination with eligible patients**

*"Why has my GP not told me anything about this in the past?"*

**Issue:** Our results indicate that a significant proportion of eligible older people in deprived areas across Great Britain aren't aware of their eligibility for pneumococcal (and shingles) vaccination – or don't feel confident to book the vaccination because their GP hasn't recommended it.

**Recommendation: the NHS should create a single online hub where people can book all routine vaccination appointments, and display these options prominently on the NHS website**

*"The site is pointless as you just get bumped to your GP's site where it is not possible to book an appointment."*

*"I asked the doctors surgery but they never got back to me."*

**Issue:** Our findings revealed that some people in our target communities hadn't been vaccinated due to difficulties making an appointment, especially for pneumococcal vaccination as this is only offered via one's GP – many users commented that they find

it difficult to even contact their GP. While there is an option on the NHS website to book a flu vaccination at a local pharmacy, it's not easy to find.

**Idea:** Offering NHS pneumococcal vaccinations at pharmacies and enabling patients to book online, similarly to the flu vaccination, would also make it far easier. This should be modelled on the successful COVID-19 vaccination booking system, which is prominently promoted, quick and clear.

**Recommendation: Offer the NHS pneumococcal vaccine in community pharmacies**

*"You do well here to get your phone call answered, let alone speak to anyone!"*

**Issue:** Our preliminary quantitative findings, as well as anecdotal evidence from Facebook comments and our landing page survey, revealed that many find booking a GP vaccination appointment to be a difficult and lengthy process.

**Idea:** Offering the pneumococcal vaccine in community pharmacies – as is the case with the flu vaccine – could help address this barrier.

## While most reactions were positive, the majority of comments on our adverts were negative, indicating that our campaigns resonated with the undecided users rather than anti-vaxxers - but these comments may have increased engagement with the adverts

*"It's deceitful, full of false claims, just propaganda to coerce people to get jabbed and that worries me, nothing that is ever to our benefit is ever free and promoted as fiercely as the flu and covid jabs."*

*"So many ignorant, uninformed comments on here, it's not rocket science vaccines save lives!!"*

- While most Facebook reactions (likes, loves, cares, 'haha', 'wow', sad and angry) were positive, most comments on the adverts were negative – often personal anecdotes about the vaccine – and many were 'anti-vax', although other users often responded with positive personal comments and stories;

- Comments were mostly about: mistrust of the organisations behind vaccination (the NHS, the Government, or 'big pharma'); challenges seeing a GP; vaccine supply issues; concerns that the vaccine in question is ineffective or dangerous; and complaints that the campaigns were coercive;
- This indicates our campaigns likely resonated most with undecided users who lack awareness rather than with staunch anti-vaxxers, who perceived the adverts as controversial. It's not clear, however, if the negative comments actually hindered our campaign or helped to generate the significant engagement we received;
- Older visitors more often shared personal stories, indicating that personal anecdotes really resonate with this audience, whereas younger visitors complained of coercive messages.

**Recommendation: Explore whether anti-vax comments on social campaigns to promote vaccination affect the impact of those campaigns**

**Issue:** It's not clear whether the relatively significant engagement with our campaigns was affected by the many Facebook comments, of which the majority were negative.

**Idea:** Future studies should test this to establish whether comments should be retained or possibly disabled for future campaigns.

We believe that these results indicate that social campaigns are a cost-effective way to increase vaccination uptake among marginalised groups. Unfortunately a lack of benchmarks make it difficult to compare the results with previous campaigns. There are opportunities to scale this test up and refine the campaign further. The qualitative elements of this study have also revealed some key structural barriers to vaccination.

## Definitions

### Index of Multiple Deprivation (IMD)

This combines information from seven domains to produce an overall relative measure of deprivation for a particular area. The domains are combined using the following weights: Income Deprivation (22.5%); Employment Deprivation (22.5%); Education, Skills and Training Deprivation (13.5%); Health Deprivation and Disability (13.5%); Crime (9.3%); Barriers to Housing and Services (9.3%); Living Environment Deprivation (9.3%). IMDs are calculated separately for England, Wales, Scotland, and Northern Ireland.

### 'Older' people

Throughout the literature reviewed in this study, different pieces of research define this group as people aged "50 and over", "55 and over", and other variations, while different types of vaccination are recommended for different age groups as well. Throughout this report we use the term 'older people' as a generic term but specify the exact age group we're referring to when citing specific studies, the groups eligible for specific vaccines, or our own quantitative and qualitative research.

### Routine vaccinations

In this report we use the term routine vaccinations to refer to vaccination against three key diseases:

#### *Pneumococcal disease*

The bacteria that cause pneumococcal infections spread through person-to-person contact. They can lead to serious infections like pneumonia, blood infections, and bacterial meningitis. The pneumococcal conjugate vaccine (PCV) is used to vaccinate children under 2 years old as part of the NHS vaccination schedule. The pneumococcal polysaccharide vaccine (PPV) is given to people aged 65 and over and people at high risk because they have long-term health conditions. The pneumococcal vaccine is generally only needed once, but people with certain health conditions may need boosters.

#### *Influenza (flu)*

An acute respiratory disease caused by human influenza viruses.

Symptoms include fever, headache, muscle pain, runny nose, sore throat, non-productive cough and a general feeling of ill-health. Flu vaccination is annual.

The NHS this year offered free vaccination to people who:

- are aged 50 and over (including those who'll be 50 by 31 March 2022)
- have certain health conditions
- are pregnant
- are in long-stay residential care
- receive a carer's allowance, or are the main carer for an older or disabled person who may be at risk if you get sick
- live with someone who is more likely to get infections (such as someone who has HIV, has had a transplant or is having certain treatments for cancer, lupus or rheumatoid arthritis)
- frontline health or social care workers

***Herpes zoster (shingles)***

A painful, blistering skin rash caused by the varicella-zoster virus, which also causes chickenpox. After a chickenpox infection, the virus remains inactive in certain nerves in the body. Shingles occurs when the virus becomes active again years later. Symptoms include severe pain, tingling or burning and the appearance of a rash and small blisters that may burst and crust over. The triggers for viral reactivation are unknown, and it is impossible to predict if and when shingles will occur. Shingles vaccination is eligible on the NHS to people aged 70 to 79. There are 2 shingles vaccines available in the UK: Zostavax, a live vaccine given as one dose and Shingrix, a non-live vaccine given as two doses. The Shingrix vaccine may be given as an alternative if the Zostavax is not suitable.

**'Target groups'**

For the purposes of this report, when we talk about reaching, influencing or engaging with our target groups, we refer to those identified in research as being less likely to take up routine vaccination: older people living in deprived areas of the UK, and older people from certain ethnic minorities (particularly people with black African and black Caribbean backgrounds).

# Introduction

The need to prevent poor health in later life will be increasingly vital as our populations age, both to support public finances and to enable people to flourish in later life.[2] Vaccination is a tried, tested and effective way to prevent disease, saving an estimated six million lives[3] and tens of billions of dollars worldwide each year.[4] This is reflected in recommendations by health authorities; for instance, in 2003 the World Health Organization (WHO) Regional Office for Europe recommended that 75% of all older people should be routinely vaccinated against flu by 2010.[5]

Improving routine vaccination rates such as influenza (flu), pneumococcal disease and shingles among older people who are eligible for these vaccines can help to prevent poor health in later life.[6]

But vaccination uptake isn't as high as it should be. UK flu vaccination rates for older people have consistently failed to meet the WHO target (until 2021 when rates shot up in response to the pandemic.[7]) And for pneumococcal vaccination, while our child vaccination rates are excellent, our rates for older people relatively low.[8]

## Uptake of routine vaccination is low for adults living in deprived communities

In the UK, everyone becomes eligible for NHS flu vaccination at 50 (before 2020 only those aged 65 and over were eligible.) We become eligible for free pneumococcal vaccination at 65, and for shingles vaccination between the ages of 70 and 79. Individuals with underlying health conditions are eligible for the flu vaccine at all ages and for the pneumococcal vaccine from the age of two.

Older people's uptake of these vaccines is significantly lower among those living in deprived areas of the UK, and those from certain ethnic minorities (particularly those from black African and black Caribbean backgrounds).[9] At the same time, people living in more deprived areas are also more likely to die from flu and pneumococcal-related diseases due to poorer overall health.[10,11,12]

Increasing the uptake of routine vaccinations among people living in more deprived areas would help to reduce health inequalities in the UK – where life expectancy is negatively associated with deprivation,[13] and significantly boost our overall vaccination rates.

## Young people may influence behavioural change

A small but growing evidence base suggests that younger people can significantly influence the behaviour of older family members, including their health behaviours. Examples range from children who are educated about the dangers of smoking going on to influence their parents,[14] to grandparents improving their general health knowledge due to spending more time with grandchildren during the pandemic.[15]

Despite some contradictory findings (which may be explained by differences in the way 'older age groups' are defined) an evidence review concludes that the older someone is, the lower their health literacy is likely to generally be.[16] There are several different age-related changes that could contribute to this apparent decrease in health literacy, including the tendency for cognitive ability to decline as we age[17] and for physical impairments, such as hearing and vision loss, to increase.[18]

## Can social media help us reach older people?

Our study took a new approach to influencing people's behaviour around preventative health.

We wanted to understand whether social media can be used to increase vaccination uptake among our target groups, by using social media campaigns to encourage younger family members to help change their behaviour.

Social media's global reach potentially offers a cost-effective way to influence its users' perceptions of routine vaccines recommended across our lives. But while social media use is rapidly increasing among older people,[19] younger people still use it more often and show higher levels of engagement with the content they see.[20] While studies have considered whether social media can be used to directly engage with older people and improve health outcomes, no study has explored whether this can be done indirectly by reaching out to younger family members.

Because the main reason older people use social media is to connect with family members;[21] this could be a fruitful avenue for behavioural change. In addition to the possibility of intergenerational interaction on social media, we also explore the idea that younger family members might respond to online messages encouraging them to talk to their

older relatives offline. Such offline interactions might encourage older people to perceive vaccination more positively and book a vaccination appointment directly via their GP/NHS website.

Our aim is to test whether reaching out to younger people on social media to act as a conduit to reach older adults is more effective than engaging older adults on social media directly. We test the impact of engaging younger family members via social media adverts which encourage them to share information with older family members, both on and offline. We compare it with the impact of adverts that target older people directly.

## What we did

### Understanding the barriers to routine vaccination

We began with preliminary research into the potential barriers stopping people in our target groups from taking up routine vaccination. We conducted a review of the existing literature, commissioned a representative survey of older people in Great Britain, and undertook four focus groups covering people in different age groups from deprived areas. Our goal was to understand:

- The key barriers to vaccination among older adults from deprived and black communities, and what messages might resonate with them;
- How younger adults influence older adults' behaviours (including health behaviours);
- Whether and how previous campaigns have used younger people to influence older people's behaviour – and to what extent these were successful;
- How younger and older people from our target communities use social media – and what campaign characteristics are most likely to engage them.

Our study includes findings from our research that relate to vaccination against shingles (recommended for those aged 70-79). Unfortunately, we weren't able to explore ways to increase uptake of this vaccination, due to the need for a tight focus during the testing phase – which was made easier by focussing on two vaccines rather than three. We believe that our findings could support future studies which seek to build upon our approach.

### Understanding social media use by target groups

This consisted of a nationally representative online survey of 2,036 people aged 50 and over in Great Britain via PanelBase, along with a question to 1000 people aged 18+ in Great Britain on social media use as part of the nationally representative YouGov omnibus survey (also online).

We explored how our target communities use social media (including how they interact with younger family members), as well as their uptake of routine vaccinations, and the key barriers and motivators affecting uptake. We also looked at how factors differ by area of deprivation (as measured by the English, Welsh and Scottish deciles of deprivation), age and ethnicity.

The sample sizes for respondents from different ethnic minorities weren't large enough to report on different ethnicities individually, so we report on all responses collectively.

### Focus group interviews

We conducted four focus groups, each covering a different age range: 20-29, 30-49, 50-64 (who hadn't had a flu jab in the past 12 months); and 65+ (who hadn't had the pneumococcal jab; if aged over 70 they also hadn't had the shingles jab).

### Testing our assumptions

The findings from our preliminary research formed the basis of test campaigns on social media. We targeted some at younger and some at older people, while a smaller number were age-neutral. We tested and compared the impact of these campaigns on both Facebook and Instagram using data analytics and an online survey. In particular, we considered which campaigns led more people from our target groups to click a link to book a vaccination appointment.

## Structure of the report

We start with the findings from our preliminary research, then describe how this was used to shape our social media test campaigns, followed by the results of the testing. The final part of this report discusses recommendations to build upon the findings of our study. There are more details on the methodology for each stage of the study in the Appendix.

## Preliminary research findings: routine vaccination uptake and barriers to uptake

- Uptake of routine vaccines tends to be much lower among people living in deprived areas and people from certain ethnic minorities (particularly people with black African and black Caribbean backgrounds). This is particularly true for vaccination against pneumococcal disease and shingles.
- Older black Caribbean people are more likely to refuse flu and shingles vaccination than older white British people.
- The key barriers to vaccination among people living in deprived areas include a lack of awareness that they could be vaccinated against pneumococcal disease or shingles and knowledge about these vaccines more generally.
- In our survey 56% of older adults eligible for routine vaccines in the most deprived areas didn't know they needed the vaccination against pneumococcal disease and 69% didn't know about shingles. 46% had never heard of the former, while 55% hadn't heard of the latter.
- In contrast, people who hadn't been vaccinated against the flu had more varied reasons: not wanting to go to the doctor, not knowing they needed it, beliefs that the flu isn't dangerous, and not having time.
- Of those from deprived areas who *had been* vaccinated against flu, a large majority said this was because it was routine(66%) or was due to NHS reminders (46%), as well as because flu is dangerous (57%).
- For pneumococcal and shingles vaccination, compliance seems to be mostly linked with awareness and knowledge of the risks – although many also cited NHS recommendations.

### Current guidance and uptake

Vaccination has long been known to be an effective and cost-effective form of disease prevention. The current COVID-19 pandemic has acted as a stark reminder of how vaccination can help protect public health.

In the UK, the COVID-19 vaccination rollout saw high uptake among

older people. And encouragingly, flu vaccination uptake rose too: in 2020, England surpassed the WHO target for vaccinations in older people (75%) for the first time.[22] This may be explained by recent findings suggesting that older people have become less complacent about the importance of vaccines since the COVID-19 pandemic.[23]

Annual flu vaccinations have been free for everyone aged 50 and older since the winter of 2020.[24] Pneumococcal vaccination is free for those with underlying health conditions and those aged over 65,[25] and the herpes zoster (shingles) vaccination is free for all in their 70s.[26] Current uptake figures in England vary, with higher levels for flu but considerably lower ones for the pneumococcal (PPV) and shingles vaccines.

**Table 1: Vaccination in older people in England (2020 to 2021)**[27, 28, 29]

| Vaccine | Uptake by eligible older people (%) |
|---|---|
| Flu | 81 |
| Pneumococcal (PPV) | 70.6 |
| Shingles (per age group) | 48-77 |
| Shingles cumulative coverage for 78 year olds | 50.6% |

Data: Public Health England

In Table 1, the figure for flu vaccination covers all those aged 65 and over who had their annual flu jab during the period from September 2020 to February 2021 – whereas the PPV figure is for the same age group but is cumulative (as pneumococcal vaccination isn't required every year) and covers the period up to 31 March 2021.

The figure for shingles vaccinations is more complicated: as another 'one-off' vaccination, the figure is also cumulative for the period up to 23 March 2021. Only those aged between 70 and 79 are eligible, and the data from Public Health England are broken down by age, with separate uptake figures of each age, from 70 to 79.

People aged 71 had the lowest uptake (48%) and 76-year-olds had the highest (77%). Cumulative coverage for 78 year olds who became eligible for the vaccine aged 70 in 2013 to 2014 – and those aged 78 in 2020 to 2021 but received the vaccine at any time – was 50.6%.

## Disparities in uptake among deprived communities

Vaccine uptake tends be much lower for ethnic minorities (particularly black communities) and people living in deprived areas than the figures in Table 1. Uptake for pneumococcal and shingles vaccination is lower in the most deprived decile in England (see Table 2).

A number of UK and English studies confirm this is the case even when controlling for factors associated with living in deprived areas, such as an ethnic minority background, indicating that these factors are unlikely to explain the relationship rather than the level of deprivation itself.[30,31,32]

**Table 2: Pneumococcal and shingles vaccination uptake by level of deprivation**

| | Most deprived decile (area) | National average | Least deprived decile (area) |
|---|---|---|---|
| Pneumococcal (PPV) (aged 65+) | 68.4% | 69.5% | 70.9% |
| Shingles (aged 70+) | 41.0% | 44.4% | 46.4% |

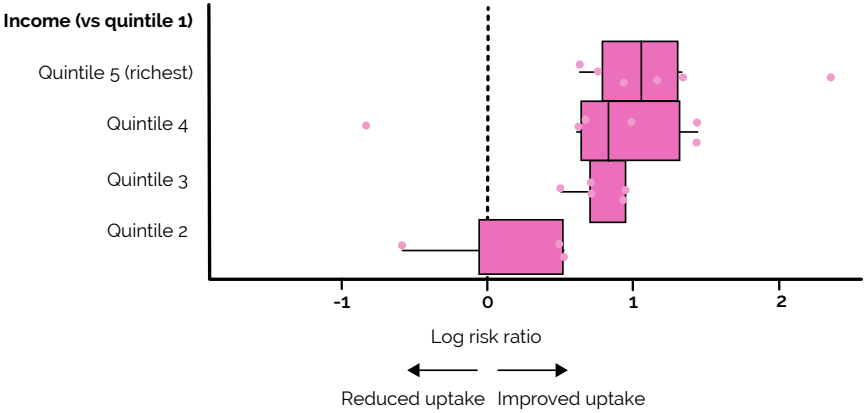
Data: Public Health England, 2016-2018[33]

Socioeconomic status assessed at area level using the Index of Multiple Deprivation (IMD) 2015 in England

One 2018 study also found that hospitalisations due to flu-associated illness among people aged 65 and over are more frequent in the most deprived areas of England.[34] This is unlikely to be fully explained by lower vaccination rates – people in poorer areas are also more likely to live in more crowded housing and have underlying health conditions.[35] Other research found that people living in more deprived areas in England are more likely to die from invasive pneumococcal disease.[36]

A systematic review of European studies from 2004 to 2017, exploring the association between various measures of deprivation (area of deprivation and socioeconomic status) and flu vaccination uptake, found that these measures of deprivation are generally associated with lower coverage. Studies focusing on area of deprivation showed the strongest link.[37] Global research has also suggested that income is a key determinant of vaccination uptake, with people from lower income quintiles being much less likely to get vaccinated.[38]

**Figure 1: Income as a determinant of vaccine uptake by quintile**




Data: Wellcome Global Monitor dataset[39]

## Disparities in uptake of routine vaccinations among minority ethnic groups

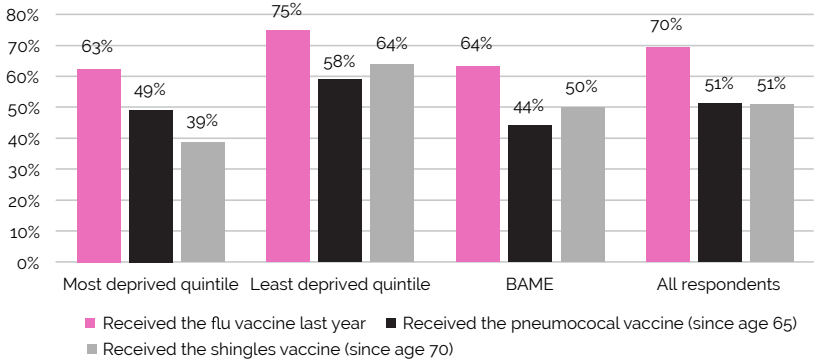
Routine vaccine uptake (for flu, pneumococcal and shingles) is generally lower among people from certain ethnic minorities. Recent UK research in the wake of the COVID-19 pandemic suggests that older black Caribbean adults are more likely to refuse flu and shingles vaccination than white British adults. And both black African and black Caribbean adults showed lower uptake for all three vaccines – even when relevant socioeconomic factors were controlled for.[40] These findings are supported by other studies.[41,42]

This is reflected in patterns in COVID vaccination uptake: previous ILC research has identified that people who are both aged over 50 and black Caribbean are 27% less likely to be vaccinated than their white British counterparts (according to ONS data).[43]

Studies from outside the UK report similar findings. Findings from the US show that black people are much less likely to be vaccinated against the flu than white people,[44] while social determinants of health (such as local health literacy, poverty, and access to information) may influence whether older people take up pneumococcal vaccination.[45] Another US study found significantly lower pneumococcal vaccine uptake in those from poorer and minority ethnic communities.[46] Non-Hispanic whites report the highest shingles vaccination coverage (35.4%), followed by Asians (30.2%), while Hispanics (16.7%) and Black people (16.0%) report the lowest coverage.[47]

Results from our quantitative research backed up these findings: we found that uptake for all three routine vaccinations is lowest for respondents living in the most deprived areas and for those from ethnic minorities. Figure 2 shows uptake by area and by whether they identify as being from an ethnic minority.

**Figure 2: Percentage of older people who have received routine vaccinations, by area and ethnicity**




There are especially stark differences in the uptake figures for the shingles vaccination by deprivation level. Respondents from ethnic minorities are considerably less likely to receive flu and pneumococcal vaccinations compared to figures for the overall response, but just as likely to get the shingles vaccination.

## Barriers to vaccine uptake - overall

Understanding the barriers that lead to low uptake is crucial. The main barriers tend to be lack of awareness and some misunderstandings of the health issues involved, but both the literature and our research showed that these can vary with different types of vaccination.

Our qualitative research also found that different age groups tended to identify different issues:

### People aged 50-64 are more reluctant to get vaccinated than other age groups

Our younger respondents (aged 29-49) showed significant lack of awareness of vaccination for pneumococcal disease or shingles. With flu, they're aware that it's a possibility but tend to think that vaccination is only for vulnerable individuals; they don't seem to be aware that age can increase vulnerability. On the whole, they weren't actively resistant to the idea of vaccination, just lacking in awareness in different ways.

*"I think I've heard of shingles. I didn't know there was a vaccine against it, but I know shingles is a very painful thing, which I'm sure everyone would want to avoid!"*

Similarly, respondents aged 65 and over tended not to have heard of the shingles vaccine in particular, while those that knew of the pneumococcal jab assumed it's for people with existing lung conditions. They tend to follow recommendations from their GP, but stated that they don't get reminders and find it hard to see them. Across all vaccinations, many thought these could only be obtained through their GP; in the absence of an invitation, some showed some reluctance to navigate the "ordeal" of trying to get an appointment. However, one respondent who was previously hesitant about flu vaccination described being offered it during a routine pharmacist visit – and taking it.

*"The pharmacist said she thought people of certain ages should be having the flu jab, so I agreed. She kind of talked me into it but I'm glad she did. I've obviously had it now with no major side effects. I feel a bit more protected now!"*

But they mostly weren't actively resistant: in fact, this group showed a stronger sense of duty regarding the risks to others. There was more awareness of the need to keep infection rates among their families and communities down.

*"Following our group discussion about vaccinations, I booked my shingles and pneumococcal vaccines. I would have never known about them and I will be giving my GP a piece of my mind when he contacts me later on today"*

However, respondents from the 50-64 age group do have issues with vaccination. Some spoke of bodily autonomy and quoted misinformation about vaccines. In addition, they perceive flu to be a "mild illness"; some mentioned being less trusting of health messages and GPs since the advent of "COVID lies", even believing vaccination to be a "money making exercise".

*"Because of what's happened with COVID, I'm now very wary and sceptical. I think COVID changed my mind. Even with the flu, and even though I've had the vaccine before, I'm now very hesitant. Well, I've turned it down"*

As we'll see later on (see *Findings: social media use*), this age group is more likely to use social media and engage with it (i.e. like or share

content) more frequently than those aged 65 and over. This attitudinal difference between the two older age groups may be related to this difference, in that the 50-65 group may have more exposure to, and engagement with, COVID misinformation on social media, while not having the same level of scepticism and savvy as younger age groups. In addition, the literature shows older people are more likely to share (and thus presumably credit) 'fake news' on social media than younger people.[48]

## Everyone faces some access barriers

In the literature, surveys among healthcare professionals, parents and those eligible for adult vaccinations have found the key barriers to be:

- Timing, availability, and location of appointments,
- Associated costs, e.g. transport or taking time off work,
- Accessibility of information (including language barriers and the use of digital systems),
- Physical accessibility of vaccination facilities,
- Frequent changes of address, which can result in inaccurate or incomplete NHS records (common among some ethnic minorities).[49]

Access barriers are seen as a particular issue for people from black communities and from other ethnic minorities. Studies around COVID-19 vaccination found that black communities were 50% more likely to see the location of vaccination centres as a barrier, and almost twice as likely to express nervousness about using public transport. Given that black and minority ethnic households in the UK are over twice as likely to live in poverty, access to other forms of transport, such as private cars or taxis, may not always be an option.[50]

Studies in the US have suggested that digital access is another barrier: the challenges associated with black and Hispanic populations include the absence of a simple centralised vaccination registration system and the complexity of the scheduling system. This is a problem for those who lack access to high-speed internet connections or a computer, especially if they aren't familiar with using the technology.[51]

## Barriers to flu vaccination

### Lack of awareness, misinformation, attitudinal factors and to a lesser extent, access barriers are issues for flu vaccination uptake.

Data from the Royal Society of Public Health suggests that the most common barriers to flu vaccination uptake for those aged 65 and over are fears of side effects (40%), belief that the vaccine is ineffective (35%) and belief that they won't contract the flu (18%).[52] Other studies have shown similar results in deprived communities.[53] A European evidence review concluded that uptake among older people is higher with: awareness that flu is a serious illness; advice from a family doctor; and the wish not to transmit flu to family members and friends. Having to pay for vaccination is another barrier, especially in poorer countries.[54]

Previous ILC research has explored barriers to flu vaccination. The 2019 report *Under the skin*[55] found that attitudinal factors are a significant barrier to increasing routine vaccination among older people: it found that these were more significant than practical barriers across a number of countries (UK, Australia, Canada and Japan – vaccination is readily available in all of these countries). These attitudinal barriers largely relate to two factors:

1. Not everyone sees themselves as vulnerable to flu,
2. Not everyone believes the vaccine works.

The report concluded that seasonal flu vaccination should be framed as a way to achieve a healthy lifestyle rather than as an intervention for the "ill and frail" ; this speaks to many older people's wider beliefs, as they don't consider themselves to be vulnerable to the flu.

The 2021 ILC report *Reducing the risk*[56] also found that people from clinical risk groups face a number of barriers to receiving flu vaccination including: communication barriers such as misinformation, inaccessible information and inconsistent messaging; structural barriers due to mistrust of public organisations and fear of stigma and discrimination from healthcare providers; personal factors such as needle phobias, conflicts with individual choices, time constraints, medical pressures, and age; and accessibility issues such as physical and geographical barriers, inflexibility of appointments and a lack of vaccine supplies. To address these barriers, the report recommended three key opportunities:

- Improved vaccination communications and information, such as targeted communications and personalised messaging;
- Closer collaborations and partnerships between charities, community leaders, public health groups and pharmacies;
- Easier access, through innovative solutions and better signposting to vaccine locations.

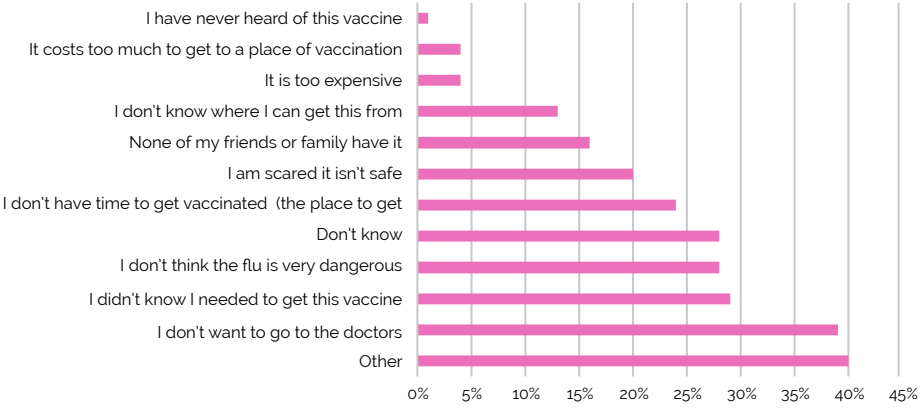
Our qualitative research reinforced these findings for the 50-64 age group (although not for the oldest age group): misinformation and distrust of authority came up, while disproportionate weight was given to possible side effects by some.

## Those from deprived areas lack both access and awareness

Unequal access often acts as a barrier for older people living in the most deprived neighbourhoods.[57] A recent UK study highlighted timing, availability and location of appointments to be at least partially correlated with socioeconomic deprivation.[58] Higher income, better education and better housing conditions are also predictors of higher vaccination uptake,[59] while lower education and health literacy may reduce it; strong cultural beliefs mean that older people may rely on traditional health practices instead of vaccination.[60]

In our quantitative research, respondents from the most deprived areas cited access and lack of knowledge as the main barriers to flu vaccination. The top reason at 39% was "not wanting to go to the doctors", with 24% citing "not having time". 29% didn't know they needed it and 28% didn't think that the flu was dangerous.

**Figure 3: Barriers to receiving flu vaccination for people aged 50+ living in deprived areas**



### Mistrust also holds back those from ethnic minorities

Research also suggests specific barriers for people from ethnic minorities, including those living in deprived areas. Studies suggest that black people in particular are more likely to have feelings of mistrust towards seasonal flu vaccination, due to previous negative healthcare discrimination and historical unethical practices.[61] Recent research into vaccination intentions in one majority black and South Asian community in the UK with high levels of deprivation found a general lack of trust in political institutions.[62] However, trust is much higher for individual health professionals: advice from a doctor is a strong driver of vaccination, and black patients are eight times more likely to receive seasonal flu vaccination through support from a physician.[63] Mistrust of and misgivings about institutions is likely to be the key barrier among black people who live in deprived areas.

## Specific barriers to pneumococcal and shingles vaccination

Lack of awareness, lack of official information, and misinformation appear to be the major issues hindering take up of pneumococcal and shingles vaccinations.

### A lack of awareness of the pneumococcal vaccine – compounded by misconceptions – is the main barrier to uptake

One European study identified the main barriers towards pneumococcal vaccination in people aged 50 and over as:

- Lack of physician recommendation or awareness of vaccination,
- Lack of concern about pneumococcal infections.

Older people may also have misconceptions that this vaccination is mainly for children.[64]

There's limited UK literature on this topic that's specific to older people or marginalised groups (findings often focus on clinical risk groups and those aged under 65).[65] A US study has suggested uptake is much lower among older people from poorer communities, with 31% uptake among the lowest income decile vs 54% uptake for the highest. This study found that adults from poorer and minority ethnic backgrounds are much less likely to receive pneumococcal (PCV) vaccination following government recommendation, suggesting

communication barriers and lack of trust. Lack of access to reliable transportation and fewer primary care physicians in the community may also act as barriers.[66]

## Similarly very few know about the shingles vaccination

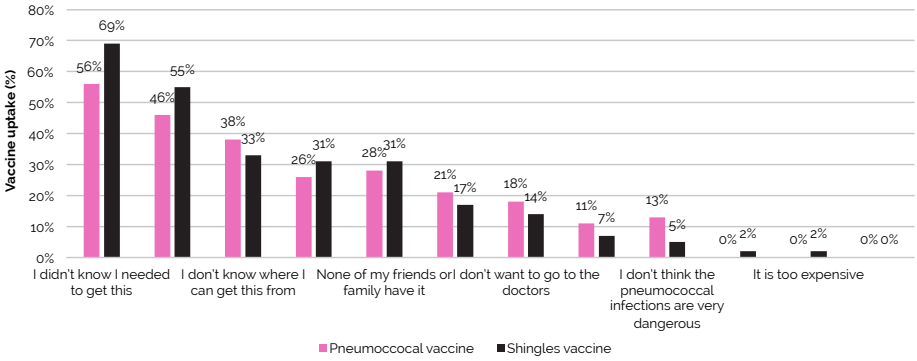
The key barriers to shingles vaccination among older adults are similar: lack of doctor's recommendations and lack of awareness. One UK study found nearly nine out of ten (87.1%) older respondents had limited knowledge,[67] while over half of those aged over 50 in a US study reported not knowing about it.[68] Research from the Netherlands has attributed low uptake to a lack of recommendation by GPs, unwillingness to comply with the doctor's advice, perception of low risk of contracting shingles, perception that shingles only causes short-term pain, and the opinion that vaccinations weaken one's natural defences.[69] Literature focusing on older and deprived populations in the UK is limited, however.

Our quantitative and qualitative research also found awareness to be a major factor. In our surveys 56% of those aged 65+ in the most deprived areas didn't know they needed the vaccination against pneumococcal disease and 69% of those aged 70+ didn't know about shingles. 46% had never heard of the former, while 55% hadn't heard of the latter.

One respondent said:

*"I'm quite happy to have the flu jab and more than happy to have COVID-19. I've only recently heard about shingles but my doctor hasn't invited me to have it"*

**Figure 4: Barriers to pneumococcal vaccinations (ages 65+) and shingles vaccinations (ages 70+) for older people living in deprived areas**




## Awareness of both vaccines is also low among people from ethnic minorities

There's limited UK literature exploring barriers to vaccination against pneumococcal disease and shingles for older black people, but US findings suggest that racial/ethnic disparities persist even after statistical adjustment for education, income, occupation, and place of residence. Disparities in uptake cannot be solely attributed to sociodemographic factors,[70] suggesting more structural barriers in healthcare access and provision due to racism may play a part. In certain parts of the US, lower educational attainment is a determinant of lower uptake among some ethnic minorities.[71] Almost half (47.8%) of African-American adults in one study were unaware of the pneumococcal vaccine; they were 6.5 times less likely to be vaccinated than participants who were aware.[72]

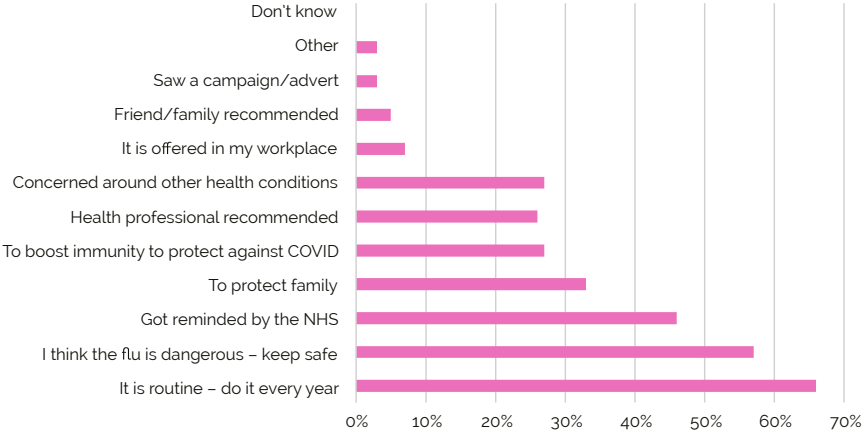
Among older people from ethnic minorities in the UK, barriers to shingles vaccination mainly relate to lack of awareness. One study suggests that non-white people may lack awareness of the disease because of their lower lifetime risk of contracting it; this may be due to genetic factors, but there are also beneficial social mixing patterns (living in extended families) which may provide a boost to immunity in these communities.[73] Having less experience of the disease might limit this group's understanding of the need for vaccination.

## Why do people choose to vaccinate?

### The main reason our target communities have received the flu vaccine is because it is routine (you get it every year)

As our quantitative research covered some people from deprived areas[c] who had been vaccinated, we were able to explore their stated reasons for doing so. For flu vaccinations, the greatest motivator may be habit: 66% responded that "it's routine – do it every year", while 46% said they're reminded by the NHS. But a hefty 57% did think that the flu vaccine was dangerous, with another 27% doing it "to boost immunity to protect against COVID", while 33% said it was "to protect family".

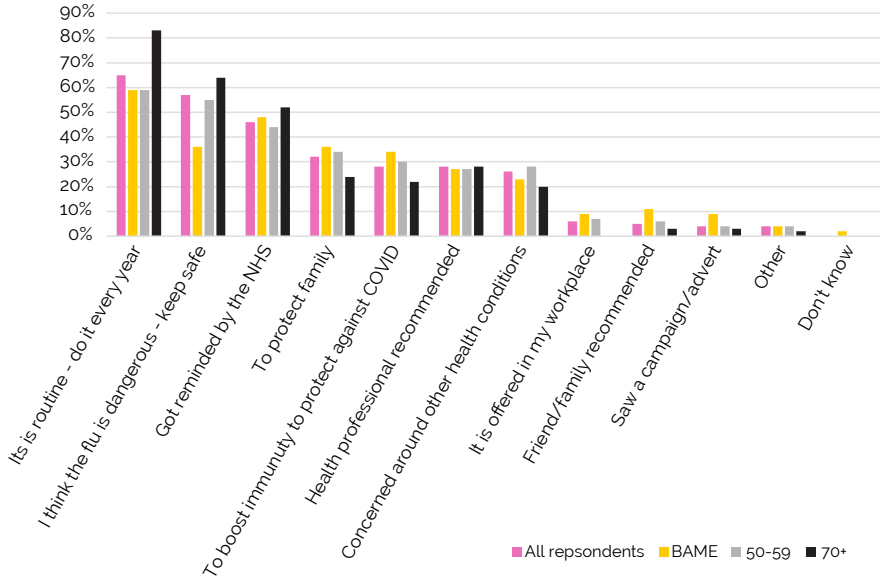
**Figure 5: Reasons people aged 50+ living in deprived areas have received the flu vaccine**




We also found that people from ethnic minorities were least likely to say they had their flu jab "to keep safe" but more or less corresponded to the overall response in saying it was "routine", that they were "reminded by the NHS", or they did it "to protect family" or "to protect against COVID-19". This may indicate that they're more likely to act to protect family or their community than themselves, or that they don't believe that flu is a serious illness.

[c]As measured by the English, Welsh and Scottish deciles of deprivation.

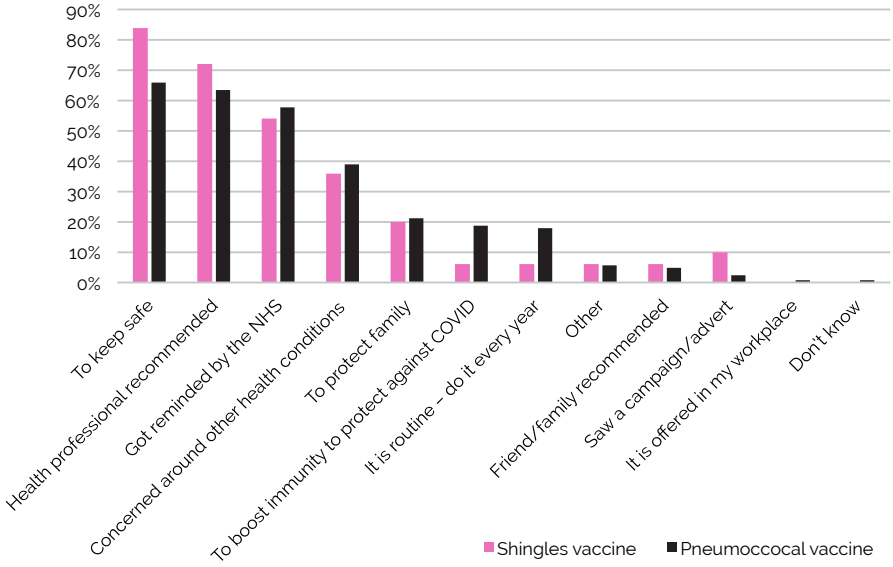
**Figure 6: Reasons people aged 50+ have received the flu vaccine, by age and ethnicity**




## For other routine vaccinations, awareness and knowledge of the dangers are key

For the other routine vaccines in our study, compliance seems to be mostly linked with awareness and knowledge of the risks. 65% of those who had received the pneumococcal jab and 75% of those receiving the shingles one responded that those infections are dangerous. Recommendations or reminders from a health professional were at 63% for the former and 61% for the latter, while concern about other health conditions was less prevalent but clear (38% and 39%).

**Figure 7: Reasons older people living in deprived areas have received the pneumococcal vaccine (ages 65+) and the shingles vaccine (ages 70+)**



## Preliminary research findings: social media use

- Although more older people are online and using social media than ever, they're less likely to use social media than younger people: Our YouGov survey found that 93% of people aged 25 to 34 use social media compared to 83% of those aged 55 and over.
- Older people use social media to keep in touch with friends and family.
- 75% of older social users from deprived areas with younger family members on social media interact with them;
- 43% share content, messaging each other and liking each others' posts;
- This is more prevalent in the most deprived areas (43%) than the least (34%) – and for those with the lowest socioeconomic status (46%) compared to the highest (35%).
- There's some distrust among older people using social media as a channel for serious health messages.
- Older people from deprived areas focus on a trusted source for social health campaigns – with the NHS at the top, family members of the same age second.

### Older adults' social media use is increasing – but use is still lower than younger adults

There's no doubt that internet use is surging among older people in the UK. And of those now using the internet, many are on social media. Ofcom figures[74] show that in 2021, 77% of those aged 65 and over used the internet at home – and 59% of those had a social media account. Breaking the age group down a little further, almost half of those aged 65-74 (48%) that do use the internet now have a social media account, while the number of those internet users aged 75 with one has nearly doubled since 2012 – from 19% to 41%.

The same figures from Ofcom showed that 88% of 16-24s who were online in 2021 had a social media account, compared to 59% for older people.[75] Looking at which platforms they favoured, nine out of ten (91%) social media users aged 65 and over had a Facebook profile, with 83% saying it was their main social media account. In comparison, only 69% of social media users aged between 16 and 24 had a

Facebook profile, and just 19% said it was their main social media account, behind Instagram (24%) and Snapchat (21%).

Table 3 gives a breakdown of the most used social media apps by age group.

**Table 3: Main social media account by age group**

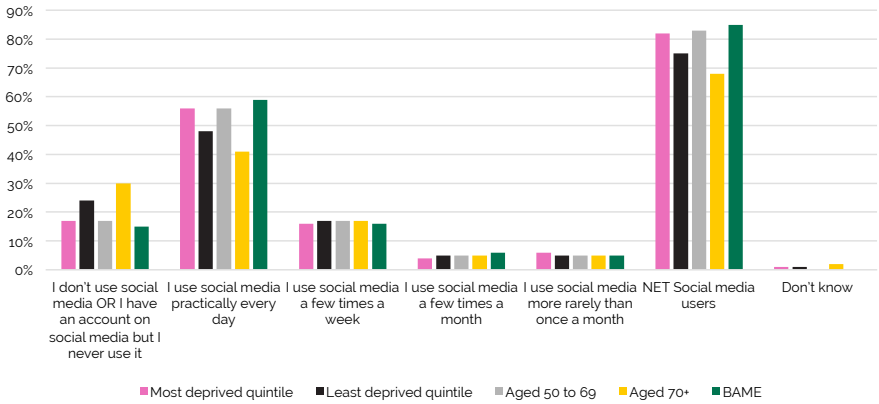
| | 16-24s (%) | Over-65s (%) |
|---|---|---|
| Instagram | 24 | 1 |
| Snapchat | 21 | 1 |
| Facebook | 19 | 83 |
| TikTok | 13 | n/a |
| YouTube | 11 | 5 |
| Twitter | 5 | 4 |
| Others/don't know | 7 | 6 |

Data: Ofcom 2021[76]

Globally, research also shows that although use is increasing, older people are still less likely than younger to use social media. In a European study, people aged 18-24 spent three times as much time on social media than those aged 58-66, although 56% of the older age group used Facebook daily.[77] US research suggests that 73% of those aged 50 to 64 and 50% of those aged over 65 use Facebook.[78]

Our quantitative research echoed this, with those aged over 55 being both less likely to use social media and using it less often than younger people. Our YouGov survey results found that social media use is highest for people aged 25 to 34 and lowest for those aged 55 and over (93% vs 83%). Respondents from the most deprived areas and ethnic minorities were slightly more likely to use it more often too. Our PanelBase survey results show that 82% of older people in the most deprived areas use social media (compared to those in the least deprived areas at 75%), with 72% using it at least a few times a week, as seen in Figure 8.

**Figure 8: Social media use by age, area and ethnicity**




Use appears considerably higher among people aged 50-69 (83%) than those aged 70 and over (68%). The older group were also most likely to say that they don't use social media at all, at 30%.

## Older users are less engaged when using social media

The literature suggests that older people primarily use social media to stay connected with family.[79] In one study, 53% said they were most likely to use it to keep in touch with friends and family, 46% specified that they follow only friends and family, while just 9% said they follow celebrities or influencers. Only 18% of those aged 58-66 said they'd clicked on a targeted advert on Facebook within the past month, compared to 20% of those aged 18-24.[80] In UK research, those aged 50-60 are far more likely to say that they "never post anything on social media" than those aged 16-35 (32% vs 15%).[81]

This tallies with findings from our qualitative research, where "socialising with friends" and "staying in touch with family" were given as the most common reasons.

Our youngest age group said that they used Instagram, TikTok and Snapchat to connect with friends. They mostly maintained family relationships offline – and mostly thought that their older relatives weren't on social media anyway. But those in the age group 30-49 were more likely to stay in touch with them that way: *"Facebook is getting a little dated, but I still use it for my dad."*

Some in their 40s were most attracted to the chance to share information and debate: *"...I'm getting to hear different viewpoints from*

*people I actually know…. just hearing the experiences and perspectives of my black friends… it's not necessarily the kind of conversation we would have had in person. [Social media] is informative, people seem to be more open to share their opinions.*

The two older age groups emphasised staying in touch with family – although mostly they were talking about distant relatives, not closer ones. There was little evidence of intergenerational sharing.

## Mixed findings on those from deprived regions and ethnic minorities

The literature discussing the relationship between deprivation and social media use in the UK gives conflicting results. Some studies suggest that despite being less active online overall, those from more deprived areas are still more likely to use social media than those from more wealthy regions. A 2015 UK study found that the lowest socioeconomic category (known as 'DE') had both the highest proportion of 'limited [internet] users' and the highest proportion of social media users.[82] Other research has suggested that this category has proportionally more users focused on social media compared to other socioeconomic categories. Despite being nearly four times less likely to use the internet than the highest category[83] those from D,E are more than twice as likely to use it for social media than those in AB.[84]

But Ofcom data from 2019 showed that AB adults are more likely to have a social media profile (74%) than DE adults (56%),[85] while 2021 data suggested that DE households were less likely to use messaging sites or apps than the average household.[86] The 2021 data also showed that when people from more deprived areas go online, it's primarily for social media: DE or most financially vulnerable households are more likely to be 'narrow'[d] internet users. Narrow internet users (10% of users) are more likely than average to only use a smartphone.

US findings suggested that people with high household incomes and high education use social media the most, although those on the lowest incomes used Facebook 'several times a day' – 7% more than those on the highest incomes.[87]

There's limited UK literature to suggest whether there are differences in social media use by ethnic background. But UK internet usage data

[d]The Ofcom report defined 'narrow' internet users as those who had undertaken 1 to 10 activities, of 20 specified online activities. It defined 'medium' users as those who had undertaken 11-15 activities, and 'broad' users as those who had undertaken 16-20 activities.

suggests that nearly all ethnicities use it more than white British populations.[88] Among some older age demographics too, usage is higher among ethnic minorities: black people aged 55-64 use the internet more than white people of the same age (94.5% versus 93.5% respectively).[89] Findings in the US: 74% of black American adults use Facebook compared to 67% of white American adults.[90]

In our quantitative research, we found no evidence that higher levels of deprivation reduced use of, or engagement with, social media – in fact there was some suggestion that it might be linked to more use.

But those from more deprived areas who haven't received routine vaccinations are slightly less likely to use social media: most often Facebook (69%), followed at some distance by YouTube (12%) and Twitter (11%). Among respondents aged 70 and over, the overwhelming majority (81%) use Facebook. It's clear that Facebook is the only social platform that could reach most of this audience – although YouTube should also be considered when targeting older people from ethnic minorities, as although half use Facebook, another 31% prefer YouTube.

Where older social media users from deprived areas have younger family members who also use social media, 75% say they interact with them, and 88% say they use the same platform. 43% said they interact a lot, sharing content, messaging each other and liking each other's posts. We see this more in the most deprived areas (43%) compared to the least deprived (34%) – and in those with the lowest socioeconomic status (46%) compared to the highest (35%).

## Using social health campaigns to influence our target groups

Previous literature has argued that older people could find social media an effective tool to learn about prevention, diagnosis, and treatment of specific conditions and disorders.[91,92,93]

There have been a number of social media campaigns to encourage older people and specific minority groups to get vaccinated. Many have been campaigns to improve the uptake of the COVID-19 vaccine, where low uptake and hesitancy has been higher among people from some ethnic minorities. For instance, the Asian Resource Centre Croydon (ARCC) has used YouTube to showcase COVID-19 vaccination Q&As with medical professionals,[94] to encourage older, Asian minority groups to get jabbed.

In the US, the Alliance for Aging Research launched an online vaccination campaign targeting older people called 'Our Best Shot'. The campaign includes materials on routine vaccination, such as fact sheets, videos and a hashtag #OurBestShot.[95] The CDC has also launched a '#SleeveUp' social media campaign, with content and profile picture frames which can be used by individuals to encourage people in the community to get their flu vaccine.[96]

A study exploring the impact of anti-smoking campaigns that target people with low socio-economic status concluded that "emotionally evocative" adverts and adverts that contain personalised stories about the effects of smoking and quitting" may be especially effective in promoting smoking cessation and reducing socioeconomic disparities in smoking.[97]

Unfortunately, few of these campaigns have been properly evaluated for impact on uptake; most have simply measured engagement via social media. This makes it difficult to glean any practical information that might help develop more effective social media campaigns in the future.

### Neither age group trusts social media for health information

In a US study nearly half (49%) of older people reported seeking health information from the Internet.[98] An ILC study, Next Generation Health Consumers, found that the most common response across Europe on how hard respondents found it to look for health information was "fairly easy".[99] An Australian social marketing campaign increased the asthma information-seeking behaviours of older people over a three-month period.[100,101]

But when it comes to social media in particular, our qualitative results showed that older age groups consider information on social media as "infotainment" – not for important topics like health. Healthy eating was mentioned as a topic they might give credence to, but they generally didn't consider it an appropriate or trusted source for essential health information, including vaccination. Instead they suggested more reliable sources might be their GPs and pharmacists, print news advertising and editorial, and the NHS website.

Respondents who appeared to be attitudinally more 'pro-vaccine' even expressed annoyance at social media's role in spreading misinformation around vaccination, in particular the COVID-19 vaccine. Vaccination information was mostly sought and trusted by those

looking for validation of their own opinions or for alternative views to the official narrative.

*"I use Facebook and obviously you do see stories about vaccinations and COVID. I'll read it but then I'll research things myself and decide whether it is something true, how much of the information is made up, how much of it is being changed along the way. I wouldn't take it as gospel!"*

Those who admitted to having been the target of misinformation on social media said that they did turn to their family to reach conclusions.

Nor did our younger age groups feel that social media is a good source for health information – they suggested Google or, again, the NHS website. Many also felt that their parents and grandparents wouldn't trust information if they told them it was from social media – only if it came from the doctor or pharmacist. Although others in this age group also felt it was their duty to warn older relatives of the dangers of misinformation on social media.

*"The thing I notice about Facebook. is there's quite a lot of misinformation on there... People saying it's a myth – and because a friend follows it there'll be a lot of people who'll then jump on that bandwagon."*

Most felt unlikely to share health messages with their older relatives via social media: *"They're not that social media savvy."* They might not discuss health at all, but if they did, it would be offline: *"My grandma is diabetic. She doesn't use social media but is interested in what's going on so she relies on me to tell her."*

## Can we use social media to reach older people from marginalised groups?

The literature is limited for marginalised groups. But it could be possible to engage with people in deprived UK communities about health-related issues – especially if social media use is higher in those areas. One systematic review of global studies on health promotion[102] suggests that:

- Older people from ethnic minorities are more likely to respond to research on health promotion if it's conducted in a familiar place, if information is easier to read, and if reward-based incentives are used;

- Older people in deprived areas are more likely to engage with health promotion if it takes the form of home visits, if access barriers are removed, and if introductory meetings are held between participants and staff.

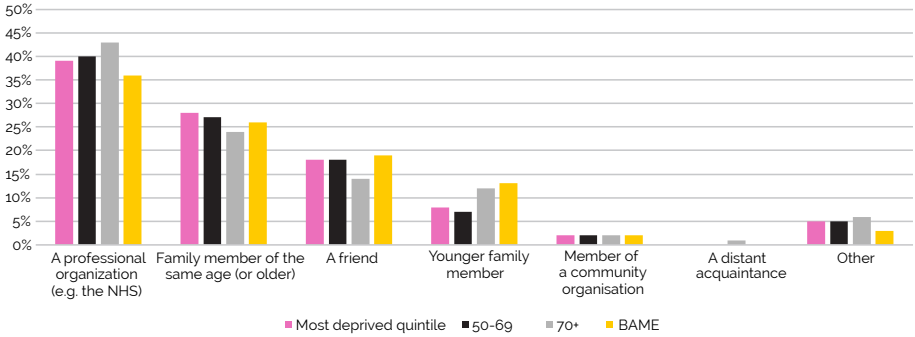
NHS South, Central and West have adopted targeted communication campaigns to provide more information and reassurance around flu vaccination to people from ethnic minorities.[103] The British Medical Association (BMA) also worked with Instagram influencers to increase COVID-19 vaccine uptake among people from ethnic minorities, with the message "spread the word, not the virus".[104]

Recent research suggests that using community-based platforms (both online and offline) to provide information on vaccination programmes can have some success in correcting misinformation and improving vaccination uptake, when combined with training programmes for trusted community leaders, such as religious leaders, third-sector organisations and community groups.[105,106] This indicates that targeting key messages through trusted, known sources can increase engagement and possibly uptake.

### Professional organisations are everyone's most trusted source

In our quantitative results, 39% of older people living in the most deprived areas said they would most likely "trust and engage with" a health campaign if it was shared by a professional organisation (e.g. the NHS). Their next preferences were for a family member of the same age/older (28%) and a friend (18%). Interestingly, few respondents said they would trust/engage with content from a younger family member (8%), a community organisation, or distant acquaintance.

**Figure 9: Most trusted sources for social health campaigns, by area, age and ethnicity**




We found very similar results among respondents from less deprived communities, those who haven't had routine vaccinations, and respondents from ethnic minorities.

These results suggest that our target communities are unlikely to respond to a social health campaign (especially one shared by a younger family member) unless it's attributed to a professional organisation or health professional.

## Preliminary research findings: can younger people influence older people?

- Over a third (35%) of respondents from the most deprived areas say that their younger relatives pass on health messages to them;
- This rises to 55% for respondents from ethnic minorities, of whom 44% also said that the messages affect their behaviour (compared to just 22% of people from deprived areas in general);
- The youngest respondents in our qualitative research (aged 20-29) said that conversations with older relatives about health and vaccination are rare, mostly due to their general lack of awareness;
- There was strong consensus among this youngest group that getting involved in the health decisions of older relatives isn't normal or familiar behaviour;
- The main barrier for all younger people is lack of knowledge and worry about passing on misinformation from social media – but many say they would have a conversation about a vaccination campaign, especially those in their 30s and 40s, rather than their 20s;
- Most older people don't see younger relatives as a primary source of information or influence.

## Previous intergenerational social media campaigns: it's hard to know the difference

A number of studies and campaigns show that younger people have been able to influence the behaviour of older family members:

- A study in China found that grandparents gained more health knowledge as a result of spending more time with their grandchildren during the COVID-19 pandemic;[107]
- Pakistani research has shown that grandparents have been willing to learn basic literacy skills along with their grandchildren during the pandemic;[108]
- A school-based intervention in China which involved educating children about the dangers of smoking to encourage them to help their fathers to quit reported that the smoking rate for fathers in the intervention group decreased from 68.8% to 60.7%.[109]

Similarly, campaigns have been created using younger people or younger family members as the focal point of the message. This is often with a notion that changes in behaviour are needed to protect or support younger family members, in order to engage with older adults and make them more health-conscious:

- Anti-smoking TV campaigns in the US have depicted the consequences of tobacco use to make adults more aware of the dangers of smoking. Some have depicted family scenes with a family member missing because of a smoking-related death; other have used images of a person exposing family and friends to environmental smoke. A study reviewing numerous smoking campaigns targeted at people of low socioeconomic status concluded that these "emotional" campaigns were relatively successful. It also found that potential exposure to anti-smoking adverts was associated with a greater likelihood of quitting at follow-up, with the odds of baseline smokers having quit at follow-up increased by 11%. The conclusion was that this effect was mainly driven by "emotional" adverts. However, the study concluded that the most effective campaigns were not only "emotional" but those that depicted personal stories.[110]
- The 'Climate Pledge: Challenge Accepted' 60-second YouTube advert featured young people to try to encourage businesses to commit to ensuring greener practices in order to secure a better future.[111] Since the launch of the advert in July 2021, over 60 companies have signed up to the pledge.[112]
- An online advert for the Thai Health Promotion Foundation (THFP) called *The Smoking Kid*. Aimed at raising awareness about the dangers of smoking and how to make adults reconsider their health choices, it depicts two children aged seven and ten offering cigarettes to adults who are smoking.[113] The campaign created a measurable behaviour change: the number of completed calls to the free THFP smoking quitline went from an average of 7,057 pre-campaign, to an average of 11,461: an increase of 62%. This outperformed all of THPF's previous anti-smoking campaigns over the past 20 years.[114]
- The American Association of Retired Persons (AARP) ran a marketing campaign (both on social media and in local communities) during the early 2000s called "Active for Life" (AFL), in which they used imagery of older people making reference to

their younger loved ones and why they want to stay healthy for them. Each commercial featured a voice-over in which the advert's main character explained their reasons for staying active.[115] An evaluation concluded that although viewers who recalled seeing the social media adverts thought they were visually appealing and likeable, only a small segment of viewers – about 13% – recalled hearing about the campaign.[116]

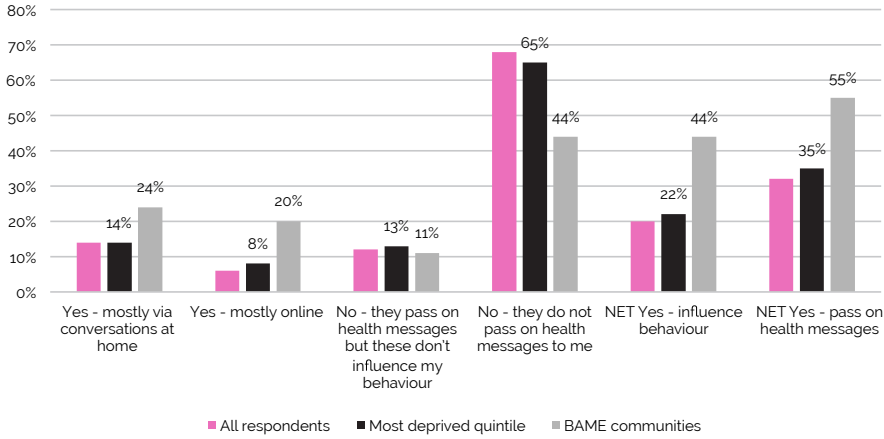
While we have some evidence that campaigns that use TV adverts and direct interventions may have influenced health behaviour, there's very little sign that the impact of social media campaigns is evaluated effectively. While we can sometimes find figures on how much users have engaged with a campaign (such as likes, shares or clicks) there's little evidence on whether there's an impact on behaviour, whether that's becoming more active, quitting smoking or getting vaccinated.

## Older people mostly listen to health professionals, then (older) family

In our quantitative research, 67% of people from deprived areas aged 50 and over said they were most likely to get health information from the NHS site, while 61% said from a health professional. A much lower, but still sizeable number said they get the information online (29%), and from talking to family (25%) – only 6% selected social media.

It may be relevant that unvaccinated older people from deprived areas are most likely to get their health information online – nearly half who hadn't received pneumococcal vaccination as compared to 27% of respondents overall. This may suggest that some of our target communities will notice online health campaigns.

**Figure 10: Do younger relatives pass on health messages that influence your behaviour, and if so, how?**




Over a third (35%) of respondents from the most deprived areas say that their younger relatives pass on health messages to them – indicating that a significant minority of younger people already naturally try to influence their relatives' health behaviours. But this rises to 55% for respondents from ethnic minorities, of whom 44% also said that the messages affect their behaviour (compared to just 22% of people from deprived areas in general). This is particularly interesting as respondents from ethnic minorities were less likely to get their health information from a health professional than the overall response (50% vs 62%).

Younger family members usually successfully influence their older family members' health behaviours via conversations at home rather than online – although for respondents from ethnic minorities, younger family members appear to exert influence both off and online.

A further potential opportunity lies in reaching the small but not insignificant subset of respondents who don't use social media at all but have a younger relative who does. Our quantitative research found that among respondents living in the most deprived areas, this includes:

- 6% of respondents who haven't taken the flu vaccine (last year),
- 10% of respondents who haven't taken the pneumococcal vaccine,
- 12% of respondents who haven't taken the shingles vaccine.

### The youngest don't feel it's their place to intervene

In our qualitative research, our younger respondents said that conversations with older relatives about health and vaccination are a rare occurrence, mostly due to their general lack of awareness. Some did report addressing COVID misinformation and affecting their family's decision to get vaccinated.

*"Now that you've mentioned it, I think I'll actually discuss it with my grandparents because I'd be interested to know how they feel about that sort of vaccine, if it's even been offered to them, or if they've had it before."*

One older respondent who had refused COVID vaccination due to perceived links to "Bill Gates" confirmed that younger relatives can play a valuable role in combatting misinformation: *"but then my children persuaded me to have it and some good friends, too."*

Overall, they said that if they had reliable information, they would be ready to have friendly conversations – rather than attempting to impose their views. Generally, they feel that it isn't their role to do so – and they do have worries about the possibility of spreading incorrect information.

*"I think I would be upset with my grandparents if they weren't getting the flu vaccine, but at the same time I would respect their decision."*

Some described their parents struggling to grasp more complex medical information; they typically saw it as their responsibility to help: *"My parents have health issues but don't use social media. They get confused about health and vaccines, so I try to explain."*

## Barriers to younger people influencing general health behaviour

### People in their 30s and above are more likely to think they can play a role in influencing older family member's vaccine uptake - but the main barriers to doing this are lack of knowledge and worry about misinformation

For younger people. there was strong consensus that getting involved in the health decisions of older relatives isn't normal or familiar behaviour. While they were aware of health issues, very few of our 20-29 age group would discuss decisions with them:

*"My dad has scarring on his lungs and I think he has the pneumococcal vaccine now that I think about it, but it's not something we really talk about."*

But the dynamic between children and parents is different: those in their 20s and early 30s saw it as their parents' role to intercede. The 30-39 age group were therefore more likely to be involved in their parents' healthcare. The barrier is lack of knowledge and worry about misinformation.

*"It is not having enough knowledge, and then the knowledge you do see, especially on Facebook, can be such polar opposites of each other, so it leaves you a little bit sceptical. But then, where do you go to get the correct information? Is it best to speak to someone about their experiences? Because obviously what you see on the NHS is the textbook version."*

Most older people don't see younger relatives as a primary source of information or influence. Most of our older respondents felt capable of getting enough information themselves to inform their own choices. But they said they'd be likely to listen if their children raised the topic of a non-COVID vaccination, or at the very least, they'd want to know why this topic had been raised.

*"I think I'd listen to my children and see if they had a point, or maybe talk to my doctor if my children had planted that seed in my mind... I wouldn't dismiss what they're saying but I wouldn't say OK straight away. I would research it myself and make an informed decision."*

### The main barrier to intervening over flu vaccinations is perceiving the flu to be a non-serious health risk

Flu was generally not seen as a serious risk or a pressing health issue to discuss – in some cases it had been overshadowed by the need for the Covid vaccine: *"I don't know, because by now they've probably had their 2 doses and their booster, what difference would the flu jab make?"*

### The main barriers to intervening over pneumococcal and shingles vaccinations is a lack of awareness

Our respondents also indicated that lack of awareness of these vaccinations and why they matter may be the main barrier. Many claimed they were unaware of the pneumococcal vaccine– but this may be down to unfamiliarity with the term "pneumococcal disease/ vaccination", as some said they had heard of a "pneumonia vaccine."

The ultimate decision would be informed by the most trustworthy source they could find – which may or may not be their children or the information their children shared with them.

## How do our findings translate into potential communications messaging?

Our preliminary research suggested that social media might be a cost-effective way to engage with, and educate, our target groups, overcoming some of the main barriers to routine vaccination. There were two possible routes by which we might engage with them: directly**,** by targeting them with appropriate messaging attributed to suitable sources, and indirectly, by encouraging their younger, more social-media-savvy relatives to start a conversation with them, whether on or offline.

For either route, we needed to determine what type of messaging resonated with our target audiences. We tested a range of potential messages through both our quantitative and qualitative research. Although our preliminary research covered vaccination against shingles as well as flu and pneumococcal disease, for the purposes of our test campaigns we restricted our efforts to promoting vaccination against the flu and pneumococcal disease for cost reasons.

- The most popular messages among older people were those that emphasised that vaccinations are free and easily available (especially among the most deprived quintile)
- Other popular messages included increasing understanding of the severity of diseases (especially among the least deprived quintile), placing vaccination in a community context (again especially among the least deprived quintile)

Our partner agency distilled the findings from our preliminary research into creative briefs for the social media test campaigns; it covered the key attitudinal findings for each audience, as well as the key barriers and motivators to action. We also fed into it the responses to potential messages and full ad executions that we received in our qualitative research.

### Older audiences

**Barriers:**

- **Flu vaccination:** Don't perceive themselves as being at risk
- **Flu:** Fear of perceived side effects outweighs the benefits
- **Flu:** Covid-19 misinformation has increased cynicism towards vaccines

- **Flu:** GP hasn't advised them to do so
- **Flu:** Length of process involved in arranging an appointment
- **Pneumococcal vaccination:** Haven't heard of the vaccine

**Motivators:**

- **Flu + pneumococcal vaccination:** Protection of self and others
- **Flu:** Protecting/keeping family safe
- **Flu:** Underlying health conditions
- **Flu:** Ease (if informed they can avoid GP appointments, e.g. through a pharmacist)

### Key considerations – the messages should not be seen to be coercive – especially for people aged 50-64

Our qualitative research found that the 50-65 age group perceive themselves as healthy; they're very sensitive to what they see as dictatorial, subliminally manipulative or guilt tripping messaging. Some were suspicious of the motives of those behind the message. For this audience we need to focus on reducing vaccine hesitancy by:

- Presenting information that highlights the seriousness of the diseases; most importantly, providing authority by linking everything to professional sources, such as the NHS;
- Presenting positive, factual information around health, wellness and living longer, making reference to the diseases and vaccinations available.

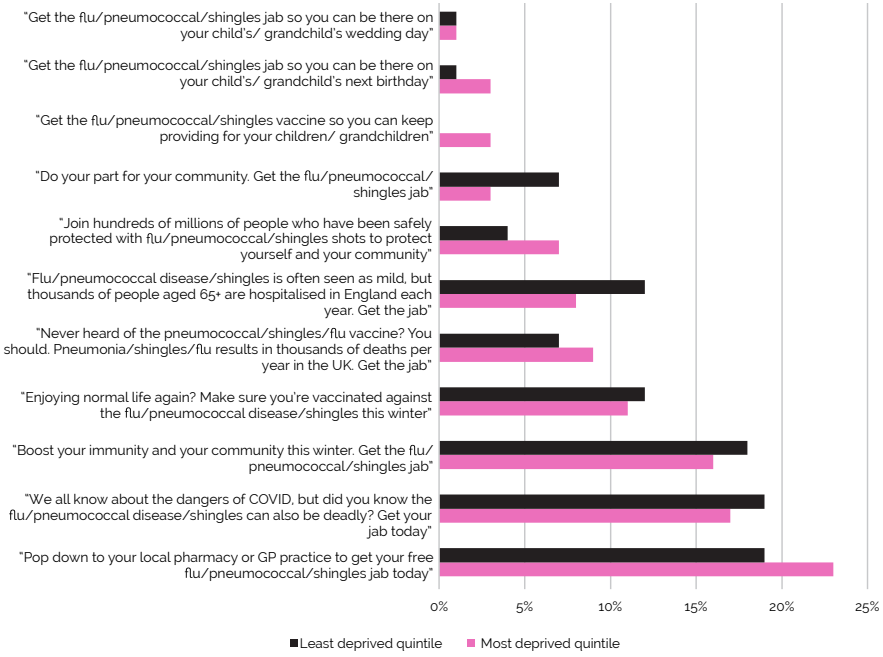
The 65+ age group responded more positively to messages focusing on education and clarifying that it's quick and easy to receive vaccinations. They also reacted positively to factual messages and statistics that helped them put the need for vaccinations into context.

### Responses to potential messages – older people preferred factual messages

In our quantitative research we asked older people who hadn't received their routine vaccinations which messages would make them most likely to get their jab. While there were some differences depending on the deprivation level of their living area, the most popular messages were generally those that emphasised vaccinations are free and easily available. Of older people living in the most deprived areas:

- 23% preferred "Pop down to your local pharmacy or GP practice to get your free flu/pneumococcal/shingles jab."
- 17% preferred "We all know about the dangers of COVID, but did you know the flu/pneumococcal disease/shingles can also be deadly? Get your jab today."
- 16% preferred "Boost your immunity and your community this winter. Get your jab today."

**Figure 11: Messaging preferences among older vaccination avoiders, by deprivation level**




We can also see differences in their response to messaging that attempts to appeal to their conscience (e.g. get the jab "so you can be there on your grandchild's wedding day") – those in the most deprived areas were slightly more favourable towards them.

There is some difference in preference by age: whereas 21% of people aged 70 and over preferred "Flu/pneumococcal disease/ shingles is often seen as mild, but thousands of people aged 65+ are hospitalised in England each year. Get the jab", this dropped to just 8% for respondents aged 50 to 69, reflecting their stated preference for less "manipulative" statements.

In our qualitative research we asked our respondents to rate a number of potential messages for adverts. The 50-65 age group objected to almost all of them, while the 65+ age group were generally much more receptive, especially to informative executions.

**The 50-65 age group objected to all of the following messages**:

**COMMUNITY-BASED**

Do your part to protect your community. Get the flu jab.

**LIFESTYLE-BASED MESSAGE**

Enjoying normal life again? Make sure you're vaccinated against the flu this winter.

**FAMILY-RELATED: DUTY**

Get the flu jab so you can keep providing for your children/ grandchildren.

**FAMILY-RELATED: EMOTIONAL**

- Get the flu jab so you can be there for your child's/ grandchild's next birthday.
- Get the flu jab so you can be there on your child's/ grandchild's wedding day.

**IMMUNITY-RELATED**

Boost your immunity and your community this winter. Get the flu jab.

**COVID COMPARISONS**

We all know about the dangers of COVID, but did you also know the flu van be deadly and has the potential to cause serious illness and hospitalisation this winter? Get your jab today.

**SAFETY**

Join hundreds of millions of people who have been safely protected with flu shots to protect yourself and your community.

**FLU**

Flu is often seen as mild but 30,000 people aged 65+ are hospitalised in England each year. Get the jab.

**PNEUMOCOCCAL MESSAGES**

- Pneumonia is responsible for more hospital admissions than any other lung disease. Get the jab.
- Never heard of the pneumococcal vaccine? You should. Pneumonia results in 29,000 deaths per year in the UK. Get your jab.

Either they felt them to be "coercive and dictatorial", or they weren't happy with the facts presented:

*"It's just propaganda to me. It's like being forced. So, I can't enjoy myself unless I've had the flu vaccine?*

*"It's trying to influence us to say, actually, you know, if you want to have a normal life, get the flu jab. I've been enjoying my normal life without having the flu jab. I think it's just trying to fool the public"*

They felt this particularly strongly for the option leaning on their duty to their family: *"Now they're trying to emotional blackmail us. Seriously?! This is absolutely the worst one!"* and for the immunity-based messaging: *"Those messages are like Big Brother! They're trying to take away all of our personal authority"*

They felt the COVID-related message employed shock tactics, as they refused to accept the facts about the seriousness of flu: *"I think flu is still relatively harmless. Most people do know it can be deadly but at the same time, for the vast majority of people it isn't"* and they objected to the idea that it might be linked to safety: *"You are not hundreds of millions of people in the community. You feel left out of the community. That's what the message is"* and *"It's 'you're not one of us if you hadn't had the jab' sort of thing"*

They felt that the messaging specific to flu and pneumococcal disease lacked credibility.

However, the 60+ age group were receptive to almost all the messages, particularly the idea of protecting their community: *"I feel strongly about that. That was the biggest factor for me getting the flu jab this year. It's not so much about me, it's actually helping the community and reducing the risk"*

They were in favour of the immunity-based option given its sense of belonging, while their main objection to the family-based options were that they thought imparting information should be key: *"I don't think that's a very good message. That doesn't get any information across".*

Similarly, they felt the safety-related messaging didn't get to the point*: "It's a bit too long winded without saying anything"*

They were positive about the COVID message, as they deemed it informative: *"People say they've had the flu when they've actually had a bad cold, so that reinforces to people that actually flu isn't a bad cold. Flu is flu and it can be debilitating. I think that's a good message".* And they were generally positive about the flu and pneumococcal disease options, although they raised questions about "underlying health conditions" mentioned in the latter.

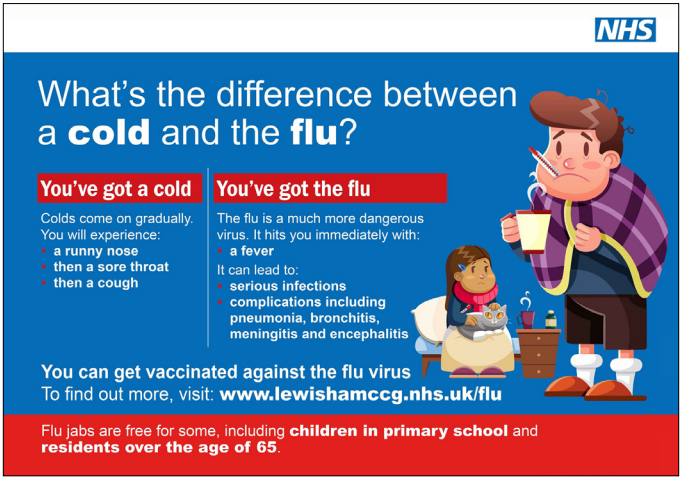
Both age groups were at least somewhat receptive to one piece of messaging that was value-neutral and informative about access (both cost and physical access):

> **COST OR EASE**
>
> Pop down to your local pharmacy or GP practice to get your free flu jab today.

The younger age group were still sceptical, but more receptive to an idea that was informative while applying no pressure: *"This is slightly better because they are just passing on the information to you. They're not putting any pressure or they're not trying to guilt trip you".*

The older age group were more positive, both due to the information and the message that you can get vaccinated without the difficulties of going through your GP.

**Responses to potential adverts[117] :** In our qualitative research, the 50-65 age group showed very strong resistance towards all adverts except one:

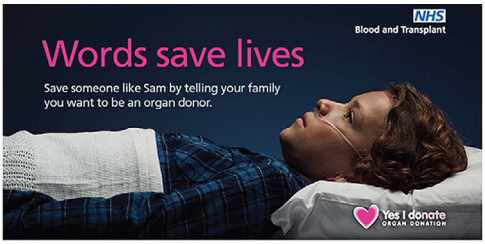


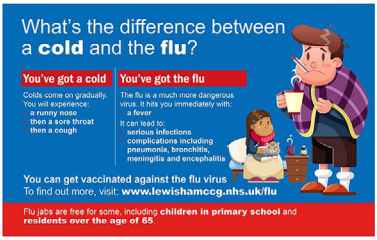

This appeared to catch their interest because it is factual, interesting and engaging without attempting to lead the audience.

*"I think it's good to differentiate between [the cold and the flu] because some people don't know, so it's good to have that information. It's informative of what the symptoms are and what to look out for".*

*"It's less propaganda. It's more factual".*

In contrast, the 60+ age group were positive about a range of adverts that offered information or encouraged communication about these diseases:







## Younger audiences

### Barriers:

- **Flu vaccination:** They don't pay much attention to this as they don't see it as relevant to their age group
- **Flu:** Perception that the flu vaccine is for vulnerable people, rather than anyone over 50
- **Pneumococcal vaccination**: Haven't heard of the vaccine
- **For both vaccinations:** Lack of knowledge and worry about spreading misinformation

**Motivators:**

- **For both vaccinations:** Protecting/keeping family safe

### Key considerations – positive emotional messages and factual information that breaks down communication barriers may be effective

Our qualitative research suggested that any campaign should focus on breaking down communication barriers for those aged 20 to 49, encouraging them to feel comfortable about discussing health and routine vaccinations with their older relatives. They might respond to:

- Emotional messaging with impact, that emphasises the importance of looking after their older relatives' health by evoking pleasant feelings about how dear they are to them;
- Rational and factual messaging to fill the knowledge gaps.

Campaigns should highlight emotional messaging to encourage dialogue, focusing on family rather than community, and safety rather than helping older relatives remain active. Language should include talking with relatives rather than "making sure" they do things, followed by detailed, factual messaging to help them support their case. Statistics and figures can help them contextualise the issue and overcome the doubt of older relatives.

### Responses to potential messages

In our qualitative research we asked respondents from our two youngest age groups to comment on a number of potential messaging for adverts intended to encourage them to talk to their older relatives.

In general, they were more positive about more messages than the two older groups, with a preference for family messages and safety and for clearly sourced information that raised awareness.

> **COMMUNITY-BASED**
>
> Make sure your parents/ grandparents get the flu jab to protect your community.

Neither age group found this message convincing – various respondents found it lacking impact and factual support: *"I don't think I would notice it that much".*

Younger respondents challenged the phrase "make sure": *"It kind of feels like our parents and grandparents aren't able to make most decisions for themselves!"*

Older respondents suggested that an authoritative source, like a GP practice, community centre library or the NHS, was needed to justify the tone: *"I would want to know who's telling me to tell my parents to get the jab. I'd be like, where's that information coming from?"*

**LIFESTYLE-BASED**

- Enjoyed being out and about with your family? Make sure your older relatives are protected with the flu jab.
- Keep your parents/ grandparents active in their community. Make sure they get the flu jab.
- Keep your parents/ grandparents active in their community. Talk to them about getting the flu jab.

Both groups preferred the first of these messages with its emphasis on family rather than community and what they could lose: *"Projecting the community isn't going to be your number one priority. Protecting your parents and grandparents, that is your number one priority".*

Again, "talk to them" was preferred to "make sure" by both groups, while the older group felt the focus should be on "safe" rather than "active".

| FAMILY-RELATED: DUTY | FACTUAL & HARD-HITTING |
|---|---|
| • Keep your parents/ grandparents safe this winter by asking them to take the flu jab.<br>• Always there for you? Ask your parents/ grandparents to get the flu jab.<br><br>**FAMILY-RELATED: EMOTIONAL**<br>• Ask your parents/ grandparents to get the flu jab, so they can be there on your next birthday.<br>• Ask your parents/ grandparents to get the flu jab, so they can be there for your/ your child's wedding day. | • Flu kills. Ask your parents/ grandparents to get the flu jab.<br>• Flu is often seen as mild but 30,000 people aged 65+ are hospitalised in England each year. Ask your parents/ grandparents to get the flu jab.<br>• Heard of the pneumococcal vaccine? Pneumonia results in 29,000 deaths per year in the UK. Ask your parents/ grandparents to get the pneumococcal vaccine. |

Both groups preferred the emotive, safety-focused language of the first family/duty message:

*"It's kind of emotive which is kind of what we're used to when we're being advertised to. This sort of language"*

*"It's more direct and to the point. It's more informal but the message is still strong"*

But neither group liked the other family-related messages: various respondents felt that they represented shock tactics, playing on insecurity, slightly coercive, even evoking guilt over something unpreventable: *"That's like moving from emotive language to emotional blackmail".*

The factual messages were preferred by both: *"You never see the 29,000 deaths or whatever it is…"* as these were informative and enlightened them about the severity of these illnesses – although again some wanted a source for the statistics: *"I don't know where the number is coming from".*

**Responses to potential adverts:** younger audiences favoured a range of messages – especially catchy statements and messages encouraging users to 'protect their family'


The younger age groups favoured a more mixed assortment of adverts:

- **#DoYourBit:** both younger groups agreed that this execution is eye-catching, and that the hashtag might encourage audiences to share the message and get it trending
- **Words Save Lives:** our 30-49 age group saw this as a good way to start a conversation: "It's just saying about opening up and communicating, making sure you communicate your preferences to friends and family so they're aware"
- **Just The Flu?:** both younger groups now recognised misconceptions about the flu and thought it was important to address and correct them
- **Protect Your Family**: this was broadly seen as effective as more than one generation was included in the message

## Translating our findings into a test campaign

- As social media is (for the most part) free to use and frequently used by many people from our target groups, using it to deliver vaccination messages might be successful in increasing uptake.
- Using social media to reach younger people as conduits, to pass on messages to their older relatives, may be an effective way to engage older people.
- Our qualitative research suggests that younger people would at least be happy to start conversations if given enough well-sourced information to feel confident.
- Any campaign should be tested through Facebook and Instagram, as these were the platforms most popular with older and younger respondents respectively.
- The most trusted source of health information for both target audiences is a "professional organisation", so the main call to action (CTA) should be: find out more/speak to a health professional.

Our literature review found that the key barriers associated with low vaccination uptake are poor communication, a lack of awareness, a lack of trust and differing personal beliefs, although access barriers are also important.

Finding new ways to improve understanding on this topic requires broadening access to information and improving the delivery of communication. As social media is (for the most part) free to use and frequently used by some older, more deprived communities, using it to deliver vaccination messages could be a successful way to increase uptake. But more research on the barriers that are specific to people living in deprived areas is needed.

Using social media to reach younger people as conduits, to pass on messages to their older relatives may be an effective way to engage older people. Use is still higher among younger people and they're more likely to engage with content. As older people are more likely to use social media to engage with their family, younger relatives may have some success starting conversations online – but we must also allow for them taking the conversation offline.

There's limited evidence in the literature that younger family members may naturally influence behaviour, including health behaviours, of older relatives, although our qualitative and quantitative research showed that this can happen. More research is needed to understand if this is common.

Campaigns that use intergenerational messaging (such as *The Smoking Kid* online adverts (see *Findings: can younger people influence older people?/It's hard to know the impact of previous intergenerational social campaigns*) and other campaigns that encouraged older people to consider the impacts of smoking on younger generations) may be effective in influencing older people's health behaviours, although evidence directly measuring their impact on health behaviours is sparse. It may that this type of messaging will be effective by itself, with no need to enlist younger relatives to relay it.

While the literature doesn't make it clear that younger people living in deprived areas and those from black communities would feel comfortable using their influence over older relatives, our qualitative research suggests that they would at least be happy to start conversations if given enough information to feel confident.

Persuading younger generations to communicate messages to older family members via social media may be an effective way to help marginalised older people engage with vaccination information. But empirical evidence is needed to assess whether this approach is more effective than using social media to target older people directly. Our test campaign is a first step to gathering this evidence.

Based on audience research, we established that any campaign should be tested through Facebook and Instagram as these were the platforms most popular with older and younger respondents respectively.

We've seen that our target audience's most trusted source of health information is from an authority figure or organisation: including the NHS, pharmacists and GPs (although GPs were felt to be too busy). For this reason, the messaging must reference health professionals – whether through imagery, logos, copy or as the social media account that the advert originates from.

## Creating and testing the campaigns

The campaigns ran from 10 December 2021 to 10 January 2022, and were targeted at people living in the most deprived quintile of Great Britain. Since the campaign was held towards the end of the flu season, it is likely that most users who would have already got vaccinated for the flu would have done so previously. This meant that the campaign could focus on influencing uptake among those who wouldn't have got vaccinated otherwise.

The adverts were shown to two clear audience groups, where we tried to keep the (paid) reach roughly constant between these two groups to fairly test our hypothesis:

- Group A: Younger people aged 18-49 (for the flu jab) and 18-64 (for the pneumonia jab)
- Group B: Older people who qualify for the flu jab (aged 50 and over) and/or pneumonia jab (aged 65 and over)

Unfortunately, we weren't able to explicitly ensure the adverts were seen by people from black communities given the inability to target adverts by ethnicity on Facebook and Instagram, or to track this data. We used three different social media advert formats: a static and a video advert, each with different messaging targeting the two different age groups and an age-neutral GIF animation for both audiences. The age-neutral adverts allowed respondents from both age groups to see an advert with the same message and characteristics, to determine whether the two groups behaved differently when faced with the same messaging. Each format also had versions targeting the two vaccine types (see Appendix for more detail).

All adverts ended with a button labelled with a call to action (CTA) to "learn more". Clicking on the CTA button took users to a landing page (one for each vaccine type), which offered a video and a number of CTAs – to book a jab, to share the campaign on social media, to complete a survey (with a prize draw for completing), or to learn more.

The results were derived from Facebook, Instagram and Google Analytics over the campaign period, and survey results on the landing pages.

## Results of the test campaign

### What did we find – and what are the answers to our research questions?

**Q1. Can social media adverts be used to improve routine vaccine uptake among older people from deprived communities (including black communities)?**

***A: Social media can be used to improve vaccine uptake among people living in deprived areas.***

- The flu adverts targeted at older adults may have cost-effectively increased vaccine uptake – at least for people aged 65+.
- The pneumococcal adverts targeted at older adults generated the most booking link clicks and the cheapest cost per click (£12.50 per click) but we weren't able to assess whether this was cost effective.
- We weren't able to determine if our campaigns influenced uptake among black communities given the inability to track this on Facebook and Instagram- but our survey results suggest this didn't occur.

**Q2. Is it more effective to engage older social media users directly – or use younger users as a conduit to persuade older relatives to get vaccinated?**

***A: It's more effective to target older adults directly – but due to our inability to track offline follow-up actions, we can't be sure this is the case.***

- The adverts targeted at older adults generated more booking link clicks, as well as, interestingly, more shares.
- Younger audiences were, however, more likely to click on the landing pages – indicating that they were interested in the campaigns – but less likely to take follow-up actions on this.
- Younger audiences may have had conversations with older adults offline (our survey results suggest this) but couldn't track this. This indicates we can't be sure that targeting older adults directly is more effective than targeting younger adults. As it is also cheaper to target younger audiences on social media – this may be worth exploring further in future research.

## Key results

**Overall click through rate: 2.08% - 2.5X the industry benchmark**

**76% of those who saw the adverts reacted or engaged in some way**

**Cost per booking click flu adverts: younger audience - £241 vs older audience - £45**

**Cost per booking click pneumococcal adverts: younger audience - £142 vs older audience - £13**

**Overall shares: older audience - 0.03% vs younger audience - 0.015%**

**3.5% of younger people clicked on the adverts through to the landing page vs 2.6% of older people**

- Our flu campaigns directly targeted at older adults were likely to be cost-effective in terms of increasing vaccination uptake – at least for people aged 65+
- The pneumococcal adverts generated more click throughs and booking clicks than the flu adverts and at a cheaper cost per click, despite the fact that the older audience was more expensive to reach: perhaps because there is lower general awareness of this vaccination
- Engagement for the campaign overall was significant - and far exceeded industry benchmarks
- Older audiences were more expensive to reach but were more likely to engage with the adverts.
- It was more expensive to target and reach older audiences than younger ones mainly because there are fewer older people on social media
- Older audiences made 90.5% of all booking clicks and 76% of total shares and saves despite fewer older audiences reached by the campaign
- Younger audiences were more likely than older audiences to click on the adverts, but less likely to take actions once they were on

the landing page and ultimately generate booking link clicks

- We can't rule out, however, that younger audiences took follow-up actions offline that we could not track
- The ad comments attracted largely anti-vaccination sentiments – although largely positive Facebook ad reactions and positive survey responses suggest that the campaigns were generally perceived positively by those who engaged

## Key results explained

While we couldn't directly track vaccination bookings resulting from the test campaigns (because these would have occurred either via the NHS website or within a GP/pharmacy), we could track whether users clicked on the "book a jab" link on each landing page, which took them to the NHS booking site for that vaccine.

We used these 'booking clicks' as a proxy to suggest how many additional vaccination bookings might be linked to our test campaigns. We weren't however able to track whether others booked a vaccine appointment offline – meaning this may underestimate the full impact.

We can take the cost per booking click as the return on investment generated by the adverts targeted at younger audiences and older audiences.

- Cost per click for the older audience for the flu campaign: £45.21
- Cost per click for the older audience for the pneumococcal campaign: £12.52
- Cost per click for the younger audience for the flu campaign: £241.42
- Cost per click for the younger audience for the pneumococcal campaign: £142.74

It was more expensive to reach the older audience, due to Facebook's charging mechanism. Facebook charges more for targeting as audiences become more niche. There are fewer older people on social media, making them more of a niche audience and therefore more expensive to reach.

## Engagement and qualitative results

We used Google Analytics to pull the following data from Facebook and Instagram during the campaign period:

1. Metrics and data on Facebook and Instagram activity across both audiences and all three ad formats (single image, video and animated GIF);
2. Metrics and data from the campaign landing pages, which featured CTA buttons to book a pneumococcal/flu jab and share the campaigns on social media;
3. Survey results from the option to fill in a survey on the flu and pneumonia campaign landing pages.

## Vaccination booking clicks

- The flu vaccine campaigns targeted at older adults were likely to be cost-effective in terms of generating booking clicks,
- The cost per unique booking click was £35.50,
- The pneumococcal campaigns generated more (unique) booking clicks than the flu adverts (893 v 294) – but we weren't able to assess if this was cost effective,
- Cost per booking click was also lower, e.g. for the pneumococcal adverts targeted at older people this was £12.52 relative to £45.21 for the flu adverts,
- In total, our test campaigns generated 1,179 unique booking clicks, across all audience ages and vaccination types. As our media spend was just under £43,000, this makes the cost per unique booking click £35.50 overall.

The pneumococcal campaigns generated more unique booking clicks than the flu campaigns, (893 vs 294) and booking clicks per impression (0.04% vs 0.01%). This made the average cost per unique booking click lower overall, at £23.34 for the pneumococcal campaigns and £74.62 for the flu campaigns. When isolating the cost per unique booking clicks for older people the equivalent figures were £12.52 and £45.21.

If we take booking clicks as a close proxy for actual bookings, rough estimates indicate that the campaign is below the typically reported NICE cost per QALY 'threshold' over which treatments are less likely

to be recommended for use in the NHS (£20,000 to £30,000) – at least for people aged 65+ - using the booking click cost[e] for older audiences synthesised with the wider literature. Rough calculations found that the incremental cost-effectiveness ratio (ICER) per Quality Adjusted Life Year (QALY) for the flu adverts for people aged 65 and over was around £7,486.21 per QALY (See Appendix). It should be noted that conservative assumptions were used in the case of evidence gaps, e.g. hospitalisation rates for healthy adults who have contracted influenza were used in the absence of rates for older people, and self-reported flu incidence rates were used in the absence of official rates, which are likely to be underestimates. Less conservative assumptions would be likely to reduce the estimated cost per QALY.

We were only able to calculate the incremental cost-effectiveness ratio for people aged 65+ because we weren't able to find suitable mortality estimates for people aged 50-64 who have contracted influenza and have been vaccinated relative to those who haven't been vaccinated. We also weren't able to determine the proportion of older adults who clicked on the adverts targeted at older adults by these two age groups. A recent study did find, however, that vaccinating all 50-64 years olds in the UK is likely to be cost effective, and cost-saving when influenza-induced productivity losses were taken into account.[118] Our rough estimates reveal that the average productivity loss as a result of people aged 50-64 contracting influenza in the UK due to lost work days is around £235 per person,[f] while other research finds that the average health care costs per person aged 50-64 is £1924 per person.[119,120] In comparison, we estimate the total cost per flu vaccine booking link clicked (including the costs of designing the campaigns, social media spend and the NHS costs from purchasing the influenza vaccine) to be just £83.

## Interpreting cost-effectiveness findings

Since we did not use sensitivity analysis and the inputs for this analysis were not based on systematic searches and were based on

[e] Incorporating both social media spend and the cost to create the campaigns.
[f] To calculate the economic productivity loss for people aged 50 to 64 resulting from lost work days due to influenza into the decision tree, we used the following formula: *Productivity cost = employment rate * time lost * cost per day missed*. We assumed that influenza results in 3 days of work lost per case – the lower bound of the estimated range reported in most studies focusing on laboratory confirmed influenza (3 to 5), and used ONS Labour Force Survey data on UK average weekly wages for December 2021 and on the UK employment rate for people aged 50-64 from October to December 2021. These inputs yielded an estimate of the average productivity loss per person with influenza as £235.

a deterministic decision tree structure, further research would need to confirm our findings. We must also bear in mind that these figures are based on proxy measures – we don't know how many people who followed the link to the NHS booking sites booked a vaccination appointment. Our analysis also assumes that the alternative for those who clicked the vaccine booking link was no vaccination – although some of these individuals may have booked the flu vaccine as a result of other routes, e.g. GP contact.

On the other hand, given that our campaign took place from the 10th of December to the 10th January – towards the end of the flu seasons, it is likely that most users who would have taken the vaccine as a result of other routes would have done so already. To account for the potential for our figures to be over-estimates - we did not account for flu complications when calculating the probability of an individual dying if they are hospitalised due to influenza, and for the estimates for people aged 65+ - we used hospitalisation rates of healthy populations – despite poor health being more prevalent at older ages.[121]

### Our booking link click figures may be underestimates – as they fail to capture bookings made directly via the NHS

At the same time, the landing page survey findings (see landing page visits and survey section) suggests that many users who engaged with the campaigns didn't book a vaccination immediately because they wanted time to think about this first or to speak to a health professional – which may mean that they later booked directly through the NHS. This suggests that we may not have been able to track all follow-up actions - and that our booking click vaccine estimates may be under-estimates. As our campaign was solely targeted at people living in deprived areas, you could expect the cost effectiveness of campaigns targeting people in deprived areas to be higher to overall figures, as the risk of transmission/hospitalisation is found to be higher for this population – once infected.[122] We also may expect the cost of improving uptake for deprived populations to be higher than for the rest of the population – given persistently lower uptake for this hard-to-reach group – although our analysis wasn't able to compare findings by deprivation level.

We weren't able to assess whether the pneumococcal adverts targeted at older adults were cost effective in the time-frame of this study, given the significant time required to calculate this because

of the complexity of diseases prevented by this vaccine. The social and economic costs of pneumococcal vaccine preventable diseases, however, are likely to be significant. Community-acquired pneumonia in the UK was found to incur a direct healthcare cost of £440.7 million annually at 1992/1993 prices – with per patient hospitalisation costs ranging between £1,700 – £5,100.[123] The PPV vaccination for people aged 65+ is also found to be cost-effective in the UK,[124] while previous studies in the US have calculated that it is cost-effective and economically efficient to improve pneumococcal vaccine uptake among older adults.[125]

### How can we make it easier to assess the cost effectiveness of social media vaccine campaigns targeted at marginalised groups?

The difficulty in assessing the cost-effectiveness of vaccine improvement programs suggests that it could be useful for NICE and other key stakeholders to provide guidance on the cost per vaccine booked 'threshold' over which campaigns/vaccine improvement interventions are no longer cost effective– including for marginalised groups, where cost effectiveness is likely to differ (due to higher incidence and hospitalisation rates among these groups).[126]

The difficulty of assessing follow-up actions in our study, and social media campaigns in general also indicates that it could be beneficial for government to collaborate more with non-governmental media campaigns on vaccination, to help assess the impact of such campaigns and improve future work.

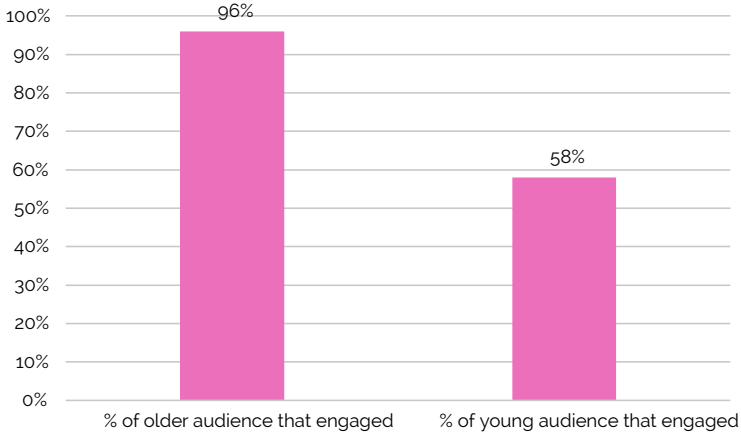
## Targeting younger adults vs older adults directly

### Targeting older people seems more effective – but younger people were more likely to click on the adverts onto the landing page

- The campaigns targeted at older audiences generated greater engagement in terms of shares, reactions, comments, etc,
- This includes shares for all campaigns, both directly from adverts and from landing pages,
- 0.03% of older audiences shared the adverts vs 0.015% of younger audiences – the only formats that they shared more were the GIFs,
- But younger people were more likely to click on the adverts and go to the landing page than older people (3.5% v 2.6%) – while they were less likely to take actions once they entered the landing page.

Across both vaccination types, adverts targeted at older audiences generated more engagement than those targeted at younger audiences, as we can see in Figure 12.

**Figure 12: Post engagement, by age group (%)**




NB: 'Post engagements' include all actions that directly involve posts, including shares, reactions ('like's, 'heart's, etc.), post saves, comments, interactions, three-second video views, and link clicks.

Overall CTR (all clicks on each advert – including likes, comments etc per impression) was higher for the adverts targeted at older audiences (2.77% for older vs 1.6% for younger). But the adverts targeted at younger audiences generated more click-throughs to the landing pages. This may reflect what we found in our preliminary research: that many younger people don't feel informed enough about this topic to take immediate public action, but are still engaged, and would like to learn more.

However, once they arrived on a landing page, our younger audiences were less likely to take action, as can be seen in Figure 13 – in particular, they didn't tend to use the share facility. So relatively few eligible people made a booking click as a result of having the landing page shared with them by one of our younger audiences.

**Figure 13: Landing page views and the proportion of page views that led to actions (%)**

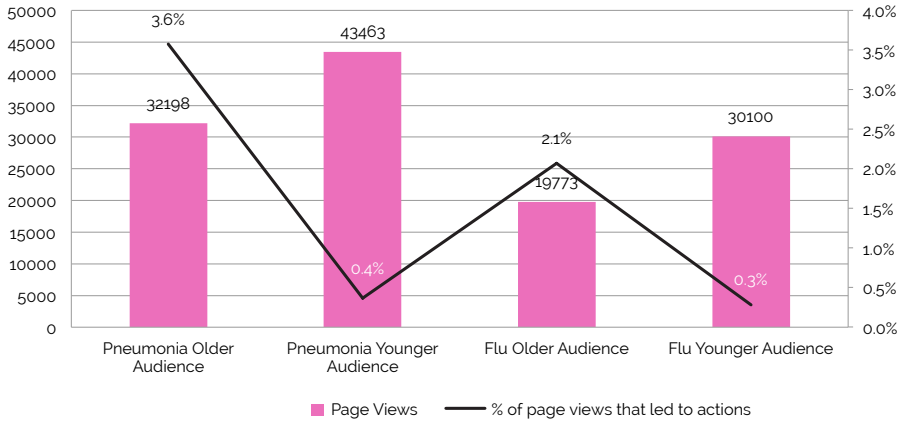


**Table 4: Actions taken on the landing pages**

| | Overall actions | Book vaccine button clicked | Shares | Survey responses (unique) |
|---|---|---|---|---|
| **Pneumococcal landing page for older people** | 1136 | 900 (810 unique) | 98 | 138 |
| **Pneumococcal landing page for younger people** | 155 | 83 (79) | 42 | 30 |
| **Flu landing page-ages for older people** | 401 | 288 (261) | 79 | 34 |
| **Flu landing page-ages for younger people** | 84 | 42 (33) | 36 | 6 |
| **Total** | 1776 | 1313 (1179 unique) | 255 | 268 |

## Engagement on social media: the social campaigns generated outstanding engagement

### The campaigns received significant engagement on social media – mainly via three-second video auto-plays followed by link clicks

- 5,203,569 impressions (it was viewed 5 million times)
- 44,045 users clicked on the campaigns
- Click through rate (CTR): 2.08% - 2.5 times the average for the health sector
- Link click through rate (LCTR) – 0.85%
- Over 1,000,000 forms of post engagement (75% of those who saw the adverts engaged)
- Cost per view (CPV) was lower than the average across all industries on Facebook (0.5 vs 1-15 cents)

It was clear the campaign resonated with our target audience when considering key engagement rate metrics. The CTR (the percentage of impressions that resulted in all kinds of clicks including likes and shares) was significantly higher than average for the healthcare sector – 2.5 times the average CTR in 2021 (0.83%).[127] The LCTR (the percentage of impressions that resulted in clicks to the landing page) as 0.85%.

76% of those who saw the adverts reacted or engaged with the content, for instance with a like, share or comment: the majority of actions were three-second or more video plays, followed by link clicks. The cost per view (CPV) was £0.04, which was lower than the average across all industries on Facebook in 2019 (0.5 vs 1-15 cents).[128]

It's important to note that, although the majority of reaction emojis were positive (e.g. on Facebook, the most common emoji reaction to the adverts were likes, and the least common were angry emojis) there was significant negative sentiment expressed via the comments (see sentiment analysis section for further detail).

**Table 5: Engagement by channel**

| Format | Audience | Post engagements | Reactions | Post shares | Saves | Post comments | Click Throughs to the Landing Page (CTLP) | Video autoplays |
|---|---|---|---|---|---|---|---|---|
| Video | Flu Older | 316,931 | 1,497 | 161 | 17 | 740 | 5,708 | 308,808 |
| Video | Flu Younger | 80,531 | 651 | 28 | 11 | 270 | 2,403 | 77,168 |
| Video | Pneumonia Older | 215,140 | 762 | 246 | 66 | 310 | 5,546 | 208,210 |
| Video | Pneumonia Younger | 154,065 | 214 | 88 | 18 | 97 | 6,847 | 146,801 |
| Single Image | Flu Older | 1,378 | 159 | 50 | 3 | 111 | 1,055 | - |
| Single Image | Flu Younger | 3,465 | 162 | 14 | 2 | 66 | 3,221 | - |
| Single Image | Pneumonia Older | 3,231 | 346 | 130 | 18 | 170 | 2,567 | - |
| Single Image | Pneumonia Younger | 2,571 | 67 | 28 | 4 | 23 | 2,449 | - |
| Gif (age-neutral) | Flu Older | 7,015 | 19 | 4 | - | 7 | 120 | 6,865 |
| Gif (age-neutral) | Flu Younger | 92,802 | 85 | 3 | 2 | 4 | 4,129 | 88,579 |
| Gif (age-neutral) | Pneumonia Older | 112 | 3 | 1 | - | 1 | 4 | 103 |
| Gif (age-neutral) | Pneumonia Younger | 139,595 | 69 | 8 | 2 | 13 | 9,996 | 129,507 |

- Video adverts generated the most overall engagement and link clicks. The GIF advert was the least popular with older audiences, but it was most effective at generating link clicks from younger audiences.
- Table 5 shows that the video format generated most engagement, followed by the GIF format, especially when considering click-throughs to the landing pages (CTLP). This is expected given that the video offers a more convincing communication style due to having moving images, real people and sound.
- The GIF format was more popular with the younger audiences; 97% of all post engagements from the GIF came from the younger audience – and the GIFS generated the highest CTLP by younger audiences among all the ad formats, perhaps because the shorter clip of the GIF was better able to retain their attention, although the video format pneumococcal ad had the highest post engagement from this group overall.
- Older adults preferred the GIF adverts the least out of all the ad formats. They may be less familiar with the GIF format than younger audiences, especially as it has no sound, and may also have preferred the additional content that the video format offered – both more factual information as well as personal stories from real people – where the latter has been shown to be effective in changing health behaviours in people from deprived backgrounds.
- However the GIF format was the least likely of all the adverts to be shared– for younger audiences this could reflect the fact it didn't contain as much factual content – as prioritised by younger respondents in our qualitative preliminary research.
- Another explanation could be that given the GIF was age-neutral - the messaging encouraging users to share the campaign was relatively less clear than the other adverts targeted at younger audiences.

## Pneumococcal vs flu adverts

### The pneumococcal adverts had more impact than the flu adverts – likely due to relatively low pneumococcal vaccine awareness and uptake

- Pneumococcal adverts generated a higher CTR and overall post engagement rate per impression than flu adverts (22% vs 14% and 0.97% vs 0.34%);
- The audience size was older and therefore smaller, making them more expensive to target;
- But the cost per unique booking link was still three times higher for flu vaccination than for pneumococcal (£75 vs £22) - because the pneumococcal adverts generated far more additional actions, which offset the difference in the cost per reach.

We believe that the findings from our preliminary research can explain why the pneumococcal adverts had more impact than the flu adverts. Our qualitative results in particular showed that there was much lower awareness of the pneumococcal vaccine and much more interest when respondents were informed of it. This suggests that we would have seen similar results with a campaign promoting vaccination against shingles. In addition, a much greater share of the target audience is likely to have already received flu vaccination, as uptake is also higher. Another potential factor is that it is likely that fewer users from our target communities have received the pneumococcal compared to the flu vaccine (see preliminary results section) – and would therefore be more likely to take action after seeing the pneumococcal adverts.

As pneumococcal vaccination is only freely available for those aged 65 and over, we can also speculate that attitudinal differences between age groups may play a part. Our qualitative findings showed that those aged 50 to 64 are more active on social media and more likely to hold broad anti-vax sentiments than their older counterparts.

It is also important to note, however, that while overall engagement with the pneumococcal adverts was higher than with the flu adverts, the flu video targeting older adults received far more overall post engagements than the equivalent pneumococcal video (316,931 vs 215,540). Generally the pneumococcal adverts received relatively more shares and saves, while some of the flu adverts received

more reactions and comments. One explanation is that more users may have commented on some of the flu adverts – because the flu vaccine is more well-known, and more people are likely to have personal stories to share – yet this didn't lead to as many additional actions as a greater share of these users will likely have taken the vaccine. The pneumococcal adverts may have been more likely to be shared because users may have felt that they are sharing information that is less well-known.

## Landing page visits and survey responses

- Most landing page visits (over 95%) originated from the ad campaigns,
- Both younger and older audiences viewed the landing page 4-5 times on average,
- Far more visitors of all ages shared directly from the original social media page rather than on the landing page,
- Most popular sharing channels from the landing page were Facebook and WhatsApp,
- Survey responses were almost exclusively from those aged 65 and over,
- Young people may have discussed the campaigns with older relatives but we can't track this,
- As it's less expensive to reach younger audiences on social media, we recommend further research into Approach A to explore further whether they were reaching out to older relatives.

## Younger audiences may have engaged older friends/ family members in ways we weren't able to track

Both younger and older visitors viewed the landing page four to five times each, on average. This is higher than the number of times those visitors saw the original adverts, which means that there were visitors to the landing page who didn't visit via the adverts. It's clear that users of all ages were going back to the landing page – and potentially thinking about the information.

But while we saw a higher level of engagement behaviour from older audiences, younger audiences appeared to disengage after arriving. We can speculate that they visited multiple times and then shared what they'd learned with older relatives offline, by phone or in person.

This is suggested by our landing page survey findings (discussed in further detail later on): most of the younger survey respondents said that they'd shared the campaign or planned to do so – mainly outside of social media via discussions over the phone/in-person - which are hard to track. Given that any such conversations would likely not have required younger people to share the campaign or the landing page (given they involved conversations about the campaign), any bookings resulting from them could have been made directly via the NHS/ health professionals rather than through booking clicks.

Another possible action would be older people coming to the landing page following offline conversations with younger relatives – but in that case we would expect to see landing page visitors arriving from external sources. In fact, landing page visitors overwhelmingly arrived from either Facebook or Instagram (see Table 6), leaving little chance that this was occurring post offline discussions.

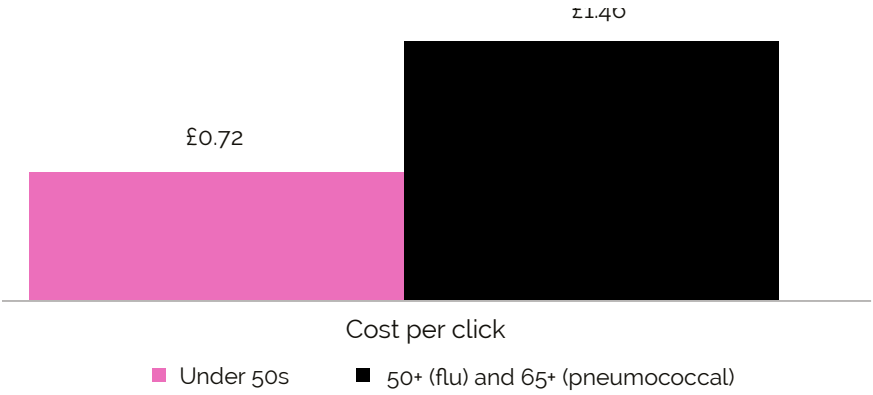
**Table 6: Landing page visitors originating from outside Facebook or Instagram**

| Landing page | % of visitors arriving from outside Facebook or Instagram |
|---|---|
| Pneumococcal – older audiences | 1.04% |
| Pneumococcal – younger audiences | 0.26% |
| Flu – older audiences | 0.33% |
| Flu – younger audiences | 0.87% |

NB: Younger audiences refer to people aged under 50, older audiences refer to people aged 65+ for the pneumococcal adverts and 50+ for the flu adverts.

Since it was cheaper to reach younger people than older adults via social media (£25 vs £38 per 1000 reached: see Figure 14), it may be worthwhile for future studies to fully assess the impact of reaching out to younger social media users as a conduit to influence vaccination uptake among older people.

**Figure 14: Cost per click by age of the audience**



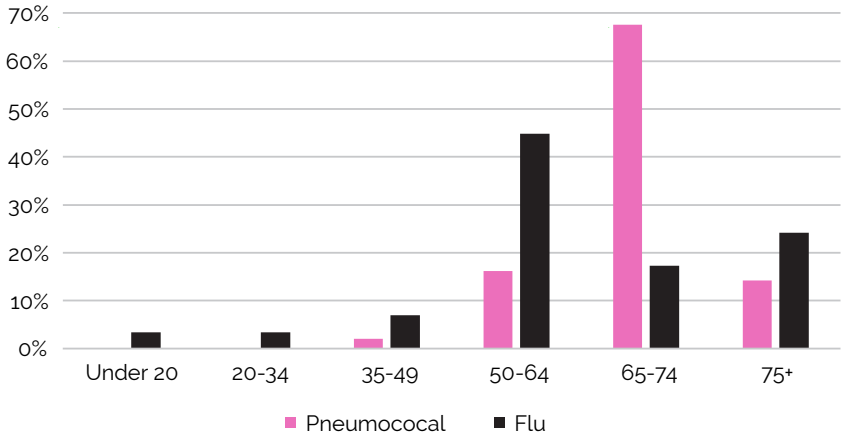

## Survey respondents were mostly older, with very few from ethnic minorities

The landing page for each campaign included a link to a survey, incentivised with a £50 cash prize draw for all entrants. Nevertheless, response was limited: 150 people completed the survey on the landing page for the pneumococcal campaigns, with just 29 respondents relating to the flu campaigns. The small sample sizes, and the fact that all respondents were self-selected, should be borne in mind.

Unfortunately, there were no black respondents: for surveys from the pneumococcal landing pages, 96.97% of respondents identified as white, 0.68% as Asian or Asian British and 1.35% as 'any other ethnic group'. For the flu campaign equivalents, 7% reported being from 'any other ethnic group'.

As seen in Figure 15, respondents were overwhelmingly from older audiences: 25 of the 29 respondents to the flu survey were of the age group eligible for the relevant vaccination (aged 50 and over), while 121 of the 150 respondents for the pneumococcal survey were eligible (aged 65 and over).

**Figure 15: Age group of landing page survey respondents**



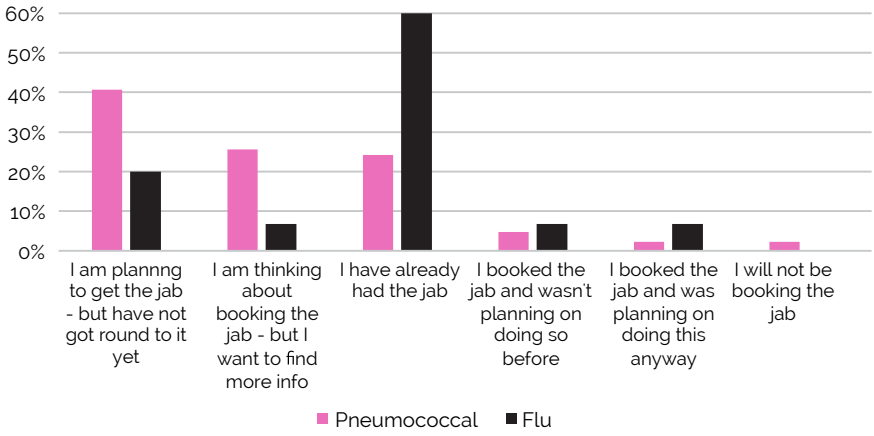

The most common age group among respondents who weren't eligible for the relevant vaccination was 50-64 for the pneumococcal survey and 35-49 for the flu survey.

## Respondents mostly came directly from the relevant ad campaign

Most survey respondents came to their landing site directly from the relevant ad campaign (pneumococcal: 81% - flu: 82%) – a very small number said it had been shared by a friend or family member (pneumococcal: private message (4%); in person/phone (2%); social media post (1%) and flu: 4% each for both in person/phone and text or email).

Of respondents from the older audiences for the pneumococcal campaigns, 67% said they were planning to get the jab, or thinking about it, after having seen the campaign – indicating that many eligible adults didn't book the vaccine straight away. But their equivalents from the flu campaigns mostly said they'd already had theirs. These and other responses can be seen in Figure 16.

**Figure 16: What will you do after receiving this information?**




As visitors came to the landing page between 4 and 5 times on average, it seems likely that it's important to include vaccination information on any future campaign landing page to address common reservations and help individuals to decide.

## Respondents are often frustrated by lack of access/ information from GPs

Respondents who said they wouldn't go on to get vaccinated mostly gave similar reasons relating to failures on the part of their GPs: for the pneumococcal survey 37% said 'their GP has not raised it with them' and for the flu survey 29% said 'it takes too long to book an appointment.' However, it should be noted that the most common response was 'other' (with the option to fill in an open-ended response), at just over 40% for both.

Among those who gave a personalised response, accessibility issues seemed prominent. Especially for the pneumococcal survey, respondents described being unable to get through to their GP.

*"You do well here to get your phone call answered, let alone speak to anyone!"*

Less common responses included lack of GP follow-up to schedule a vaccination and being unable to get vaccinated due to shortages.

*"I asked the doctor's surgery but they never got back to me."*

*"Tried to book an appointment but told there was a shortage and to try later."*

*"I have called my GP but they keep saying to just wait for an invitation letter."*

Others wanted further information, or wanted to speak/receive confirmation from their GP first:

*"Didn't realize this was being promoted…so just want to check it out… have had all my covid jabs and flu…just thinking haven't had it before and have had lots of jabs…"*

*"Why has my GP not told me anything about this in the past?"*

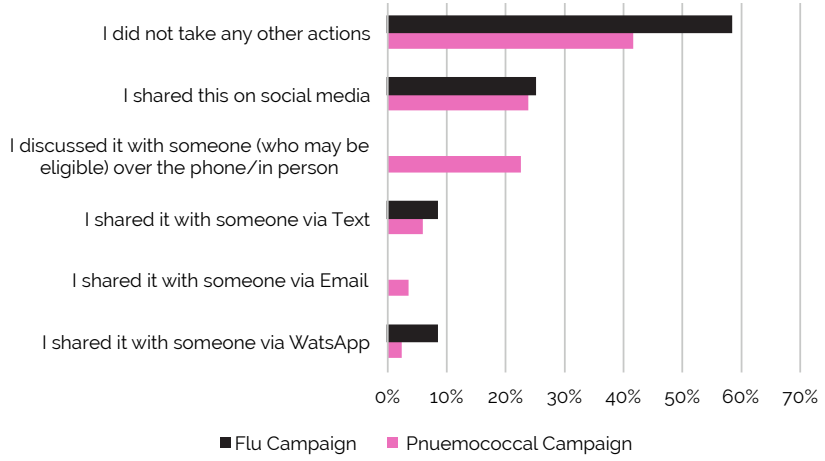
*"Will enquire at next visit to GP/Nurse."*

This indicates that some older adults may have booked their vaccine at their health practice directly – after speaking to the GP about it – which we would not have been able to track.

## The majority of older pneumococcal survey respondents shared the campaign – and the campaign had a positive impact

Many older pneumococcal survey respondents (58%) shared the campaign with a friend or family member, mainly via social media (24%) or offline conversation (23%). Only 42% of their flu survey equivalents did – mainly via social media (25%).

**Figure 17: Older respondents' follow-up actions**




This may be because the pneumococcal vaccination is far less well-known than the flu vaccination. but it's important to caveat that

the limited number of survey responses mean that these may not truly represent the follow-up responses of everyone who saw the campaign.

Survey responses suggest that the pneumococcal campaign had a positive impact: 26% said they now feel more positive about vaccination and 45% say they now know about the vaccine when they previously didn't. Only 29% said their perceptions didn't change. Among flu survey respondents 62% said their perceptions hadn't changed, although 31% said they now felt more positive.

Looking at open-ended responses suggests that the positive reception of the pneumococcal campaign is down to its informative nature:

*"I'm pleased there's a campaign as I personally wouldn't have known about the Pneumonia jab as I have never been offered one when visiting the Doctors."*

*"I wasn't aware of the vaccine, but I know someone who had pneumonia and want to be protected."*

Some respondents said that they plan to get the vaccine at a later date – and others again expressed frustration with their GPs:

*"I don't understand why this jab isn't offered."*

## Lack of younger respondents makes trends hard to track

It's harder to make authoritative statements about respondents from younger audiences due to the low response rate to our survey, but a clear majority (60%) of those responding to the pneumococcal survey said that they shared the campaign, mainly on social media. 45% said they planned to share the campaign in future, mainly offline, including by text, by phone call, or in person. We can also see that 28% reported that their perceptions of the vaccine haven't changed, while 39% said they now feel more positive about friends and family getting vaccinated, and 28% said they previously didn't know about the vaccine and now they do. It should be noted that the absolute numbers of respondents in the last three examples were all under 10.

Around 20% of younger respondents who did share the campaigns said that their friends or family members either booked a vaccination appointment or may do so, but are still thinking about it. No respondents said they that they would definitely not book the vaccine, while around 20% said they didn't know the impact.

But in their open-ended responses, we could also see a theme where they found the campaigns informative:

*"I already knew about the jab but not that it can now be booked, will definitely encourage family over 65 to book. May consider paying for husband and I as we are under 65."*

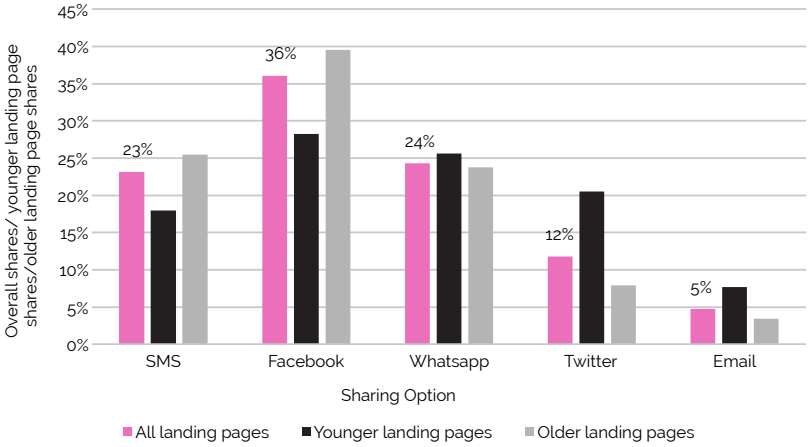
*"Lots of people do not know about this jab.. These campaigns will alert more people."*

*"I had no idea such a vaccine existed. I have multiple health conditions and I don't think my GP has ever mentioned it to me."*

The fact that a significant proportion of respondents plan to discuss/ share the campaigns offline makes it clear that younger respondents may have shared the campaign in ways we can't track. This makes it difficult to assess the comparative success of Approaches A and B (especially given younger audiences are cheaper to reach on social media).

Figure 18 compares the ways in which people shared the campaign from the landing pages. Facebook and WhatsApp were the most popular sharing options overall, accounting for 60% of total shares. The landing pages for older audiences generated significantly more shares on Facebook, suggesting older audiences may feel comfortable sharing on this platform, followed by text. Both landing pages targeting younger audiences saw more shares from Facebook and WhatsApp, followed by Twitter.

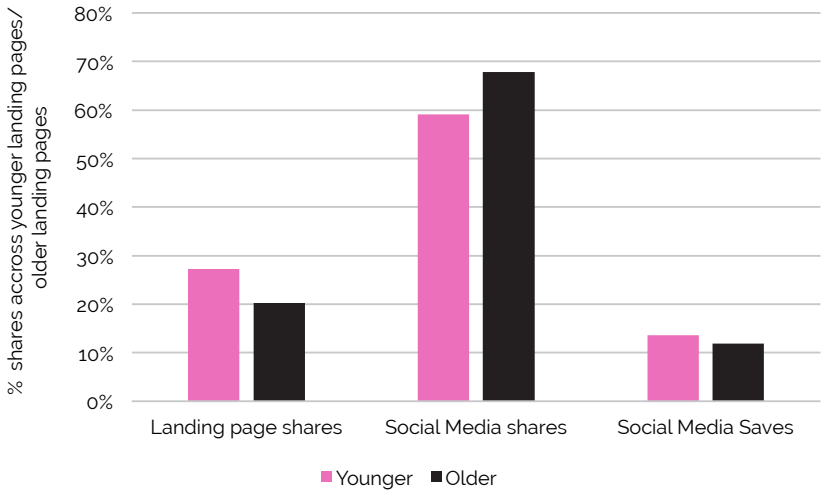
**Figure 18: Proportion of shares on the landing page, by sharing option and landing page (%)**




## Everyone preferred to share directly from Facebook/ Instagram directly than on the landing pages – especially older people

While we offered landing page visitors the option to share the campaign via Facebook, Twitter, WhatsApp, email and text, most sharers did so from the original social page they'd arrived from. This is most likely due to the lower number of clicks required to do so – a commonplace of online behaviour. But as the figures for sharing from social media were slightly higher for our older audiences (77%) than our younger ones (68%), it may also encompass younger people being more reluctant to share the campaign immediately before reading more on the subject.

**Figure 19: Method of sharing (and saving), by age group (%)**




## Sentiment analysis – what did the advert comments say?

One feature of the unexpected level of engagement was that many visitors left comments on the Facebook pages that hosted some of the campaign adverts.

Overall, the majority of comments displayed negative sentiments about the vaccines in question– either via personal anecdotes or general remarks – while a significant minority counteracted this with positive responses. Users' comments largely raised issues around distrust of broader systems (i.e., NHS/government/ pharmaceutical companies), challenges seeing the GP – especially on the pneumococcal adverts because the NHS pneumococcal vaccine is not available in pharmacies, vaccine supply issues, a lack of awareness about eligibility, concerns that the vaccine does not work (that natural immunity is better) or is dangerous and that the campaign is coercive.

### Older pneumococcal audiences mainly express distrust of institutions, raise GP access/vaccine awareness issues or vaccine efficacy

*"Probably they are all trying to make as much money as they can out of it before the government changes again.*

The most common theme was distrust of the institutions identified with vaccination: these might include the Government,

pharmaceutical companies or the NHS, along with frustration expressed about seeing vaccine information so often. The most common comments of this type questioned the need for an 'additional' jab, suggesting that this audience doesn't differentiate between different types of vaccination. The next most common suggested that these institutions purposefully instil fear to increase vaccination rates.

*"... never been offered that one, but if offered I will take it."*

*"asked our doctors and they are not doing it!!"*

The second most common theme was lack of accessibility, lack of knowledge, or confusion about eligibility requirements – many simply expressed frustration.

*"I have had pneumonia four times after having the vaccine."*

*"I had mine done as a trial for pneumococcal and it was 7 years ago and touch wood not even a common cold. Go for it nothing to lose."*

The third most common theme was that the vaccine doesn't work. But a significant minority responded to negative personal accounts with positive personal accounts. The prevalence of anecdotal accounts reinforces the idea that personal stories may be a powerful tool for forming perceptions of routine vaccinations, in line with findings from smoking campaigns for people from less advantaged socioeconomic backgrounds in particular.

Less common comments suggested that such messages are coercive, and prevent individuals from freely choosing whether to take the vaccine (a common opinion from our qualitative research), and the idea that religious faith may protect against pneumonia.

*"I said people should have the right to choose... and that is caring about people's choices.. to be human and not bloody puppets who accept all they are fed by the media."*

### Younger pneumococcal audiences expressed similar sentiments – but fewer raised GP access issues/vaccine awareness

*"I'm protecting my family from lying politicians."*

The most common theme was again distrust in the actors providing vaccination that went beyond this particular vaccine to general institutional distrust on vaccination. The most common comments

suggested that institutions are lying to make a profit, and the next most common also referenced fear-mongering.

*"Note to all, it only works in 25% of takers."*

*"Would say natural immunity is better."*

Again, the next most common theme was that this vaccine doesn't work – although this age group didn't rely as much on personal anecdote. The most common messages centred on natural immunity.

*"If you don't care enough about yourself that you won't have it, think about the young or elderly in your family!"*

*"So many ignorant, uninformed comments on here, it's not rocket science vaccines save lives!!"*

As above, a significant minority responded to negative comments about effectiveness with positive comments about the efficacy of vaccines in general or the need to protect ones family members' health.

### Older flu audiences mainly questioned vaccine efficacy, and distrust of institutions involved in creating/advertising vaccines

*"Had my flu jab in November. Currently in bed with flu."*

*"...see agenda 21 and agenda 30. Your body has a natural immune system. Jabs interfere with it. You must do your own research."*

The most prominent theme was that this vaccine doesn't work, worsens health or isn't needed. Again, the primary comments of this type centre on natural immunity,

*"Does not work but I guess it makes lots of money for doctors and pharma."*

The second most common theme, again, expressed general distrust in the institutions involved. The leading comments on this subject reference the profit-making related to the use of an annual jab; the next most common draw a link between flu and COVID-19.

*"Everyone I know that took the jab are the ones that are sick."*

*"I've only had the flu jab once and I felt like death warmed up for 3 weeks afterwards. I'll give it a miss thanks."*

The third theme is based on the idea that the vaccine is dangerous.

Most comments reference anecdotal evidence involving the individual (or a loved one) having the flu jab and then becoming ill.

*"I have the flu jab every year, never had the flu."*

Another prominent theme is in favour of this vaccination. These comments refer to it as effective, having no adverse effects, and protecting them from the flu – in addition they were normally made independently rather than in response to a negative comment.

*"Pop down to your GP?!? Was this post written in 2018 or something, the Loch Ness monster is easier to see than a GP round here."*

Other themes again touch on the ideas that these messages are coercive, and that the vaccine isn't accessible.

### Younger flu audiences raised similar themes but were more likely to perceive the adverts as coercive

*"Flu vaccines 10 percent effective in over 65s?"*

The most prominent theme was that the vaccine doesn't work. Comments touch upon natural immune systems – and often include mis-statements about the efficacy rate of the flu vaccine.

*"Haven't the pharmaceutical companies earned enough cash lately."*

The next most common theme, again, was distrust of the institutions involved.

*"Jabs are not safe at all."*

*"8 years ago I had it, I was very ill, not had a vaccination since, it put me right off."*

Third most common was the theme that the vaccine is dangerous. These comments used anecdotes to assert a range of potential dangers including adverse reactions.

*"Anyone over 50 is quite capable of choosing for themselves whether or not they get vaccines of ANY kind. I find the 'protect your loved ones' remark rather patronising."*

Another key theme that was seen in other categories was the idea that this type of messaging is coercive and resented the idea of trying to encourage older friends and family members to take the vaccine who they felt were capable of choosing to take the vaccine themselves. A small minority questioned accessibility of the flu vaccine.

*"Oh my don't start shoving this one down peoples necks. We are all adults we know how to receive the flu jab and if Mavis says no it means no…"*

## Mostly the same comments – but with some differences

The older audiences for pneumococcal vaccination included two types of comments not seen among younger audiences: lack of accessibility and the idea that religious faith will provide protection. The younger audiences for flu vaccination saw few positive comments attributing success to the vaccine compared to older ones.

One theme raised by the older audiences not raised by younger ones was that the flu vaccine isn't safe for all – this is because they're typically manufactured with egg. Another way in which comments varied for flu was that in Scotland, unlike other UK nations, there was a lot of concern about lack of accessibility.

it is notable that the younger audiences' attitudes relied less on anecdotal evidence than with the older group – presumably due to fewer personal experiences with the vaccine. They tended to refer to natural immunity as the preferred mechanism of protection over a vaccine.

One notable difference between the flu and pneumococcal key themes is the lack of the theme 'the vaccine is dangerous' in the pneumococcal responses. This could help to explain the greater success of the pneumococcal adverts – the key barrier to uptake, as identified in the preliminary research, appears to be a lack of knowledge, rather than fears of taking the vaccine.

The older pneumococcal group exhibited the unique theme of 'lack of awareness of the vaccine' that was not significantly shared by the young pneumococcal group or most of the flu groups. Comments shared regarding this theme for pneumococcal vaccine expressed confusion with eligibility requirements, payment requirements, and lack of information; it is clear the pneumococcal vaccine is not as widely understood as the flu vaccine. Despite both adverts encouraging a visit or chat with a GP to get a booking, the most significant response was seen in the pneumococcal adverts targeting older age groups. This suggests that there is a significant opportunity for government and health professionals to tackle this lack of awareness/address GP access issues/offer the vaccine at local pharmacies to increase uptake.

The significantly negative nature of the comments may have driven engagement, and led to a greater amount of click-throughs and booking clicks – but they may have also altered other users' perceptions for the worse in ways we can't measure. For future campaigns it may be worthwhile to test whether blocking or retaining comments (within reason) affects uptake. The prevalence of negative comments (despite the majority of emoji reactions being positive) indicates that our campaigns likely resonated most with undecided users who lack awareness rather than with staunch anti-vaxxers – who perceived the adverts as controversial.

# Recommendations

## Build the evidence base and scale up findings

**Recommendation 1: The Department for Health and Social Care (DHSC) and the NHS should increase investment in social campaigns to promote routine vaccination (especially pneumococcal disease and shingles), using our findings to target older people from deprived areas of the UK**

*"I'm pleased there's a campaign as I personally wouldn't have known about the Pneumonia jab as I have never been offered one when visiting the Doctors."*

*"This should be advertised more. I didn't know about it until years after the time I should have had one. Had it now"*

**Issue:**

- Although our findings revealed that many older people in deprived areas use social media (mainly Facebook) and that flu social media campaigns targeting these communities may be cost-effective – at least for people aged 65+, while pneumococcal campaigns may increase vaccination rates at a cheaper cost, there are few social media campaigns targeted at these communities.
- This is particularly the case for the pneumococcal and shingles vaccines – despite a lack of awareness being the main barrier to uptake and uptake being especially low among older adults in deprived communities.

**Ideas:**

- There's a significant opportunity for the NHS and the Department for Health and Social Care (DHSC) to create a campaign that builds on our findings;
- Future campaigns could use our findings, which reveal that certain advert attributes particularly resonated with older people, including:
    - Video clips of older people discussing personal experiences of booking and receiving vaccinations, to counteract common concerns,

- Warm clips of younger and older family members speaking about vaccination,
- Younger family members supporting their elders in this,
- Health professionals discussing key facts about the vaccine,
- Informative rather than persuasive language (which is seen as coercive),
- Combining emotive, personal clips with factual content from a health professional seemed to work well.

## Measure the impact and cost effectiveness of future social health campaigns

**Recommendation 2: DHSC and the NHS should analyse the results of future social campaigns on vaccination and publish findings on an online hub**

**Issue:** The results of most social campaigns promoting vaccination aren't published. This made it difficult to compare our results to standard campaigns and makes it difficult to track the cost effectiveness of health-related social campaigns more generally to ensure we aren't under/over investing in these campaigns. It also makes it difficult to learn from best practice to maximise the impact of future social campaigns on health or vaccination.

**Ideas**:

- Further campaigns may need to discount the possibility that our campaign results were driven by one-off events, such as COVID-19;
- A Government-led campaign could measure impact and cost effectiveness of the campaign through a monitored landing page as well as by tracking clickthrough and progress through the booking process on the NHS booking page.

**Recommendation 3: It could be useful for NICE and other key stakeholders to provide guidance on the cost per vaccine booked 'threshold' over which vaccine improvement interventions are no longer cost effective – including for marginalised groups.**

**Issue:** There wasn't a great deal of official guidance to help us assess whether our campaigns were cost effective. Official Government, NICE guidance or guidance produced by other relevant stakeholders on the cost per vaccine booked 'threshold' over which campaigns/vaccine improvement interventions are no longer cost effective could make it easier to consistently assess the impact of future campaigns – including those targeted at marginalised groups, where cost effectiveness is likely to differ from the general population.

## Address knowledge and accessibility barriers to vaccination

**Recommendation 4: DHSC and the NHS should offer the NHS pneumococcal vaccine in community pharmacies**

*"Pop down to your GP?!? Was this post written in 2018 or something, the Loch Ness monster is easier to see than a GP round here."*

**Issue:** Our preliminary quantitative findings, as well as qualitative findings from our Facebook comments and landing page survey, revealed that many find booking a GP vaccination appointment to be a difficult and lengthy process.

**Idea:** Offering the pneumococcal vaccine in community pharmacies – as is the case with the flu vaccine – could help address this barrier.

**Recommendation 5: DHSC and the NHS should ensure that all GP practices send reminders and consistently discuss pneumococcal vaccination with eligible patients**

*"No one I mentioned it to has ever even heard of the pneumonia vaccine."*

*"Why has my GP not told me anything about this in the past?"*

**Issue:** Our results indicate that a significant proportion of eligible older people in deprived areas across Great Britain aren't aware of their eligibility for pneumococcal (and shingles) vaccination – or don't feel confident to book the vaccination because their GP's hasn't recommended it.

- A significant minority say their GP hasn't discussed this vaccination with them, that they haven't had a reminder, or

they were (likely incorrectly) told by their GP practice that they weren't eligible, indicating that communication on this subject is inconsistent across GP surgeries.

**Idea**: It's vital to make consistent information and reminders standard practice across GP practices and that NHS England, Scotland and Wales check that this occurs.

**Recommendation 6: the NHS should create a single online hub where people can book all routine vaccination appointments and display these options prominently on the NHS website**

*"The site is pointless as you just get bumped to your GP's site where it is not possible to book an appointment."*

*"You do well here to get your phone call answered, let alone speak to anyone!"*

**Issue:** Our findings revealed that some people in our target communities hadn't been vaccinated due to difficulties making an appointment, especially for pneumococcal vaccination as this is only offered via one's GP – many users commented that they find it difficult to even contact their GP. While there is an option on the NHS website to book a flu vaccination at a local pharmacy, it's not easy to find.

**Idea:** Offering NHS pneumococcal vaccinations at pharmacies and enabling patients book online, similarly to the flu vaccination, would also make it far easier. This should be modelled on the successful COVID-19 vaccination booking system, which is prominently promoted, quick and clear.

## Explore further ways to use data gathered by social media for public good

**Recommendation 7: Policy makers should explore ways to encourage social media owners to share data with government health systems while mitigating the risk of negative consequences – including this data being exploited**

**Issue:** In our study we weren't able to measure whether our campaigns were effective in reaching black people or people from other ethnic minorities, nor to target them specifically. This

was despite the fact that we knew health measures reveal health inequalities by ethnicity, and that our own preliminary research indicated that these groups have lower vaccination uptake figures. Social media companies gather significant data that could benefit health research in general, and assist the creation of health and vaccination campaigns. However, there are significant risks involved. There are very good reasons for these constraints: the ability to target adverts by race/ethnicity is open to many kinds of misuse.

**Idea:** There may be an opportunity for governments to call upon social media owners to share relevant data in specific (regulated) instances to support government campaigns/research, while mitigating against any potential negative consequences.

## Test unanswered questions from our study

**Recommendation 8: National and international health policy makers should explore whether using social media to engage younger family members is a cost-effective way to increase vaccination uptake among older family members**

*"I already knew about the jab but not that it can now be booked, will definitely encourage family over 65 to book."*

**Issue:** Our study found no clear evidence that using social media to encourage younger audiences to persuade their older relatives vaccinated was cost effective – and this approach appeared to be less effective overall than engaging with older audiences directly.

- However, we couldn't track all follow-up actions by our younger audiences and may have missed some outcomes: our landing page survey results suggest that engaged younger audiences may have shared information with older friends/loved ones offline, and that this may have led to those individuals considering vaccination in future.
- We also found that younger audiences were cheaper to reach than older ones, and were more likely to interact with the campaign landing pages, offering the potential for greater cost effectiveness.

**Idea:** As a Government test campaign may have the capacity to track follow-up actions via GPs and pharmacies, this could offer the opportunity to explore innovative ways to test the cost-effectiveness of such an approach to increase not only vaccination uptake but other health behaviours among older people.

**Recommendation 9: National and international health policy makers should explore whether anti-vax comments on social campaigns to promote vaccination affect the impact of those campaigns**

*"Very positive. I will ring my GP tomorrow."*

*"It's deceitful, full of false claims, just propaganda to coerce people to get jabbed and that worries me, nothing that is ever to our benefit is ever free and promoted as fiercely as the flu and covid jabs."*

**Issue:** It's not clear whether the relatively significant engagement with our campaigns was affected by the many Facebook comments, of which the majority were negative.

**Idea**: Future studies should test this to establish whether comments should be retained or disabled for future campaigns.

## Conclusions

Tapping into the expanding reach of social media clearly offers the potential to improve uptake of routine adult vaccinations, such as flu, pneumococcal disease and shingles. One question that remains unanswered is whether it can be used to help reach older marginalised groups where uptake is lower. This encompasses older people living in deprived areas and from ethnic minorities, particularly those with a black African or black Caribbean background.

We believe that this study shows that it can be cost effective to target older people living in deprived areas directly with flu social campaigns, and pneumococcal campaigns can generate booking link clicks at a cheaper cost, but that it may still be more cost effective to target their younger friends and relatives in the hope of recruiting them to encourage uptake – we just weren't able to prove this.

### Social campaigns may be an effective way to increase vaccine uptake among older people living in deprived areas- especially pneumococcal campaigns

Using the 'booking clicks' on the campaign landing pages as a proxy for new appointment bookings, our campaigns appeared to increase flu uptake among older adults cost effectively – at least for people aged 65+, although we weren't able to determine if the pneumococcal adverts targeted at older adults were cost effective - despite generating booking clicks at the lowest cost. Overall, each booking click cost an average of £35.50 – falling to just £12.50 per booking click from older audiences for pneumococcal adverts.

These findings indicate that social campaigns can effectively help increase vaccination uptake among some marginalised groups. Unfortunately we weren't able to determine whether it was an effective way of targeting people from ethnic minorities due to the inability to target these groups specifically.

### Targeting older users directly with the correct messaging works

Overall, we found that targeting older users directly generated greater impact than trying to reach them through younger users. Older users were more likely to engage with our campaigns including sharing (despite only adverts targeted at younger users explicitly encouraging this). Most importantly, the adverts targeted at older

users generated more booking clicks at a lower cost per click – despite more younger users seeing the adverts, and older users being more expensive to target adverts to. Given that most older landing page survey respondents said they needed more time to think, or to consult with their GP, before making a booking click, there may have been further increases in vaccination uptake that we couldn't track directly.

### Younger people were harder to track – but may want to learn more

Younger audiences showed higher engagement in one, less publicly visible way – they were more likely to click through to the landing page. But they were least likely to engage when they got there. This may be due to page design, which gave greatest prominence to the booking CTA – an action which they wouldn't be eligible to undertake. It may also reflect that their main desire was to learn more, as suggested by our preliminary research. They may also have taken further action offline, such as having conversations with older friends or relatives, which we were unable to track. Their survey responses suggest this, but their extremely low response means we can't determine it.

These findings indicate that we haven't been able to fully answer our research question; we believe further exploration is warranted into whether approaching younger generations on social media as a conduit to engage older adults can be successful. This is especially important to determine as younger users are cheaper to target with social media adverts than older users.

### It's most effective to target low-hanging fruit – including structural barriers

The pneumococcal campaigns had greater impact than the flu campaigns. Many of our respondents had already received the flu vaccine, while the pneumococcal vaccine is relatively unknown. This lack of knowledge and lower coverage is likely to be the reason it had more impact. Campaigns raising awareness of lesser known vaccinations may be the most effective – we believe that a similar campaign for shingles vaccination should be equally successful. In addition, responses from our focus groups and Facebook advert comments suggest that eligible people may find it difficult to see their GP or book a vaccination, particularly for the pneumococcal

vaccination, as it isn't offered in pharmacies. This suggests uptake could be improved by a straightforward but broad intervention from the NHS to address consistent communication across all GP practices.

The significant number of negative comments, along with our focus groups' findings from respondents aged between 50 and 64, suggest a widespread distrust of authority figures, a tendency to react to any non-neutral messaging as 'coercive', and a lack of understanding of how dangerous these diseases can be. These may be coupled with beliefs that natural immunity is sufficient and that vaccines are unnecessary or even dangerous. However, it was welcome to see many users replying to comments with positive anecdotal messages. This indicates our campaigns likely resonated most with undecided users who lack awareness, making them the most effective audience for future campaigns, rather than with staunch anti-vaxxers.

## Building on these findings

These findings offer a clear opportunity to build on and scale up our campaigns. Clearly social media has significant potential to increase uptake among marginalised groups – but a lack of clear benchmarks make it unclear whether our campaign particularly hit a chord, or whether it is common for similar social media campaigns targeted at similar audiences to cheaply generate significant impact. Understanding this will help us to clarify whether we are under-investing in such campaigns as a form of prevention – which our study seems to suggest – especially to increase uptake of the pneumococcal vaccine.

There are also clear opportunities for future studies to test findings that are still unclear – especially whether it would be more cost effective to target social campaigns at younger people to reach their older friends and relatives.

# Appendix: methodologies

## Quantitative research

Our responses came from a nationally representative online survey of 2,036 adults aged 50 and over in Great Britain, conducted by PanelBase in November 2021, and a question in the nationally representative YouGov omnibus survey, also conducted online, covering 1,000 adults aged 18+ in Great Britain, conducted over 10-11 November 2021.

## Qualitative research

Our responses came from four focus groups. Two groups were younger: aged 18-29 and 30-49, and two were older: aged 50 to 64 and 65+. There were general and group-specific quotas, which included, but were not limited, to:

- All participants to live in the 1st to 4th deprivation deciles
- All participants in the younger two groups to have parents/grandparents aged 65+; all in the older two groups to have children/grandchildren aged 18+
- Minimum two participants in each group to identify as black/black British/mixed black
- All participants in the 50-64 age group to not have had the flu vaccine in the past 12 months
- All participants in the 65+ age group to not have had the pneumococcal vaccine and, where applicable, the shingles vaccine since turning 70 years old

**20-29**

- Three living in 1st deprivation decile, three in 2nd decile and two in 4th decile
- Household incomes ranging from £12k to £27k per annum
- Two identifying as black British, two as Asian British, and four as white British
- Two having parents and six having grandparents aged 65+

**30-49**

- Four living in 1st deprivation decile, three in 2nd decile and one in 3rd
- Household incomes ranging from £17k to £45k per annum
- Three identifying as black British, two as Asian British & three as white British
- Four having parents and four having grandparents aged 65+

**50-65**

- Two living in 1st decile, one in 2nd decile, three in 3rd decile and one in 4th decile
- Household incomes ranging from £12k to £40k per annum
- Four identifying as black British, three as Asian British, one as white British
- All having children aged 18+
- None having taken the flu vaccine in the past 12 months

**65+**

- Two living in 2nd deprivation decile, one in 3rd decile and one in 4th decile
- Household incomes ranging from £9k to £20k per annum
- One identifying as black British and four as white British
- All having children aged 18+
- None having taken the pneumococcal or shingles vaccine in the past

## Research questions

Our testing aims were to understand specifically:

1. Whether engaging older people from deprived communities (both those who use social media and those who don't) by first engaging with younger people on social media (Approach A) is more / less effective than engaging the targets directly (Approach B).
- We compared whether older people from deprived areas (living in IMD deprivation deciles 1 and 2 across the UK) engage more

with campaigns they see directly, or with those seen by younger people on social media who are encouraged share these online and offline (e.g. via social media, WhatsApp, email and text). This was measured by whether they clicked on a link to book a vaccination appointment

- To allow us to assess which approach generated more impact, we ensured that Approach A and Approach B were broadly comparable in terms of 'reach' (the number of unique views for each campaign) and 'frequency (the number of times individuals viewed each campaign).
- In addition to comparing the effectiveness of each approach, we considered how our results differed for other marginalised groups, for example people from black communities in the same areas.

2. Why did the most effective approach generate more impact?

- Are younger people likely/unlikely to share social campaigns with older friends/family members? Are older people more/less responsive to campaigns shared by younger friends/family than those they see directly? Is Approach A more effective when the younger people share via social media or offline?

3. Which message and channel (and other specific attributes for each given campaign execution) are most effective for each approach?

- Were emotive messages that convey the need to stay healthy to support one's family through life more effective when younger relatives are the conduit? Were more factual messages more effective if shown to older people directly?

4. Does effectiveness depend on which vaccination is featured (flu vs pneumococcal) and is this affected by the specific barriers to uptake for that vaccination?

- If messages about pneumococcal vaccination generated most impact, does this mean that social campaigns (and campaigns that encourage younger generations to pass on messages) are more effective in increasing vaccination uptake where there's limited public knowledge?

## Campaign formats and platforms

In line with our preliminary findings we seeded the campaigns on Facebook and Instagram, to reach older and younger people respectively. The campaigns ran from 10 December 2021 to 10 January 2022.

We created separate campaigns focusing on flu and pneumococcal vaccinations.

For flu vaccination we created:

- One video advert[9] and one static advert (aimed at people aged >50)
- One static advert and one video advert (aimed at people aged 50+)
- One age-neutral animated GIF

For pneumococcal vaccination we created:

- One video advert and one static advert (aimed at people aged >50)
- One static advert and one video advert (aimed at people aged 65+)
- One age-neutral animated GIF

## Testing the questions

We compared the impact of the campaigns designed to implement either Approach A or Approach B. These two routes had slightly different creative briefs to determine their messages and characteristics depending on their target audience – for instance, for the adverts targeted at a younger audience to encourage viewers to speak to their older relatives to 'help protect them', and for the adverts targeted at older audiences to include additional factual information on how to get the vaccine/eligibility criteria. We compared how much engagement each campaign generated as a way of measuring their impact. We also included an age-neutral campaign for each type of vaccination – these allowed respondents from both age groups to see an advert with the same message and characteristics, to determine whether the two groups behaved differently when faced with the same messaging.

Each advert directed users to a landing page with content appropriate for the type of vaccination featured. The page contained further

[9]The videos featured real-life conversations with people from our target communities: Open Age members and their families.

information about that particular vaccine and an option for eligible readers to book via the NHS website. It also contained options to share the landing page and campaign on social media, WhatsApp, email and text, and a link to a survey

### Key test indicator

We created a different (visually identical) landing page for each Approach, allowing us to tell which actions originated from which Approach. We compared which Approach generated more clicks on the booking link for a given level of paid reach and frequency.

### Further indicators to effectiveness

We used data analytics (through Google Analytics) to track engagement with each social campaign (e.g. likes, shares and views) to understand which Approach (and which campaign for each Approach) generated more engagement on social media.

We tracked whether younger people shared the campaigns more regularly on social media or offline (e.g. WhatsApp, email or text), and whether the individuals who clicked on the links generally used social media or not. The latter was to understand whether each Approach engaged our targets on social media or via offline discussions.

The landing pages contained a link to a survey asking users how they found the campaign, with questions designed to establish which characteristics were associated with a greater propensity to share it. These included asking who shared the campaign with them (age, relationship to the user), how it was shared (including face-to-face conversations), and what follow-up actions they took (did they book a vaccination without clicking on our link or share the campaign themselves?). We also asked users whether their perceptions of vaccination have changed, or whether they're planning to book, or considering booking a vaccination.

We used these findings to complement the quantitative analytics with a qualitative element. In addition, the campaigns received hundreds of comments on Facebook, which we analysed separately for a further qualitative and attitudinal input.

### Campaign creative

We devised a creative brief for the campaign creative from the findings of our preliminary research.

We targeted two different audiences, segmented by age:

- **Group A**: younger people aged 18-49 (for the flu jab) and 18-64 (for the pneumonia jab)
- **Group B:** older people who qualify for the flu jab (50 and over) and/or pneumonia jab (65 and over)

We could differentiate whether respondents came from England, Scotland or Wales. We focused on deprived areas within Great Britain, as these tend to have a lower uptake for both flu and pneumonia vaccination. We targeted those audiences (via the first half of their postcodes) using the Postcode Directory for England and Government Indexes for Scotland and Wales.

We targeted postcodes to make sure we had an even split across the two age groups (Group A and Group B). All postcodes were in deprivation deciles 1 and 2 – which means they reside in areas that are within the most deprived 20% of Great Britain.

## Visual and conceptual themes

A key finding (mentioned numerous times during the qualitative research) was that campaigns shouldn't be overtly emotional, manipulative or coercive – especially for those aged 50 to 65, who appeared to be especially averse to these types of messages.

As a result of these findings, the brief also specified that the adverts should feel:

- Trustworthy
- Conversational
- Open
- Family orientated
- Warm and emotive but not hard hitting
- Informative without coercion or guilt

There was little insight from the research around what audiences responded best to visually. However both age groups liked adverts with large bold text on a striking background. The brief also recommended that the visuals should be:

- **Intergenerational:** Show real families having face-to-face conversations, with a diverse range of people and ages. Visuals should look warm and emotive, portraying positive relationships

and the importance of family. No shock tactics.

- **Trusted:** We must reference authoritative health sources. This could be through imagery with nurses/pharmacists engaging with our target audiences or through the use of NHS logos or associated colours/fonts.
- **Eye-catching:** Adverts must stand out on social media feeds and be brightly coloured with bold and legible writing.

**Table 7: Addressing the issues discovered in research**

| Issue | Solution |
|---|---|
| Young people don't feel it's their place to tell older relatives to get vaccinated | Messages should prompt an initial conversation between young and old – not be dictatorial |
| Great mistrust in social media as a way to obtain credible information. Those from deprived areas use social to socialise rather than as an information source | Social media should be used to raise awareness of vaccination by providing factual information from trusted sources to encourage taking conversations about this offline |
| The COVID-19 vaccine has some audiences more sceptical and fatigued around promotion of vaccination, especially on social media | Messaging should distance routine vaccinations from COVID-19 vaccination, exploring alternative terms to the word "vaccine" |
| Retaining ownership around making the final decision on vaccination is important to some older audiences | Younger audiences should be encouraged to be a conduit, presenting older relatives with the facts about vaccination, empowering older relatives to make their own informed decisions.<br>The main call to action (CTA) should be: find out more/speak to a health professional. |
| The most trusted source for health information are voices of authority: including the NHS, pharmacists and GPs (although GPs were felt to be too busy) | Social media adverts must reference health professionals – whether through imagery, logos, messaging or "source account" |

| | |
|---|---|
| Young people don't pay much attention to routine vaccination as it's not for their age group | Adverts must portray this as being for the good of their wider family |
| A barrier to vaccination uptake for older people is being scared of going to the GP, or thinking it takes too much time | Present an alternative - pharmacists |

### Messaging: *Start a conversation to protect your family*

A central proposition from the research around 'starting a conversation' will ensure that creative and messages resonate with audiences who don't want to be told what to do but are interested in the facts. This exact phrase will not be used in the campaigns but all the creative should reflect the idea, and it can be used as a helpful tool to check back against as creative is developed. This is about:

- Encouraging a short conversation that can have a significant impact
- Empowering people to protect those they love in a non-confrontational way
- Making vaccine chat casual
- Providing clear guidance on what to do next: speak to a health professional or family member

## Determining cost effectiveness

To determine cost effectiveness we used a simple deterministic decision-tree model, which included the probability of getting influenza, of being hospitalised and then dying from influenza (as well as not being hospitalised and not dying) for people who are vaccinated and unvaccinated. We calculated the costs associated with each of these branches (including the cost of the flu vaccine and social media spending per booking link click, the cost of seeing a GP and going into hospital if ill as a result of influenza), and included the utility associated with being hospitalised or dying as a result of catching influenza (which we assumed would occur mid-way through the year) to inform QALYs, as well as not transitioning into these states (see Table 8 for parameters).

We were only able to calculate the incremental cost effectiveness ratio for people aged 65+ (this would likely differ for people aged

50-54 since older populations are more likely to be hospitalised and die as a result of the flu) – because we weren't able to find suitable mortality estimates for people aged 50-64 who have contracted influenza who have been vaccinated relative to those who haven't been vaccinated (that take into account that the former were more likely to have underlying health conditions when the NHS vaccine was not offered to all people aged 50-64). We weren't able to determine the proportion of older adults who clicked on the ads targeted at older adults by these two age groups.

Table 8 lists all parameters and sources used in the analysis.

**Table 8: parameters used for cost-effectiveness**

| Parameters | Base case (mean) | Reference/notes |
|---|---|---|
| **Incidence of flu** | **3.0%** | In 2018/19 the overall rate of self-reported influenza-like-illness cases was 3.1%. Public Health England, (2019). *Surveillance of influenza and other respiratory viruses in the UK* Winter 2018 to 2019. Retrieved from: Surveillance of influenza and other respiratory viruses in the UK Winter 2018 to 2019 (publishing.service.gov.uk) (Figure 7). Flu incidence has fallen in the UK during the COVID pandemic but we expect to return to pre=COVID levels now that we are returning to normal (e.g. no restrictions and falling COVID rates/ deaths). Our results are also cost-effective when we use the self-reported ILI rate for 2020-2021 (1.4%) – where we find an ICER of £17000 per QALY. Public Health England, (2019). Surveillance of influenza and other respiratory viruses in the UK Winter 2020 to 2021. Retrieved from: Surveillance of influenza and other seasonal respiratory viruses in the UK, Winter 2020 to 2021 (publishing.service.gov.uk). Yes as discussed, we do not expect this to be the rate in future years, which is why we chose to use the 2018-19 estimate. Our figure for the flu incidence rate is likely to be an over-estimate because it relies on self-reported cases – while some people with flu have symptoms – and during this time may still spread the virus to others. The World Health Organisation estimates that 5-15% of the population in the northern hemisphere affected by annual influenza epidemics during autumn and winter. World Health Organisation. (2022). Data and statistics. Retrieved from: https://www.euro.who.int/en/health-topics/communicable-diseases/influenza/data-and-statistics |
| **Vaccine effect for people aged 65+** | **42.00%** | Demicheli V, Jefferson T, Di Pietrantonj C, Ferroni E, Thorning S, Thomas RE, Rivetti A. (2018). *Vaccines for preventing influenza in the elderly*. Cochrane Database. Retrieved from: doi:10.1002/14651858.CD004876.pub4. PMID: 29388197; PMCID: PMC6491101.. (Risk ratio 0.42) |
| **Flu incidence: Vaccinated** | **18.44%** | Calculated by using the following inputs: incidence of flu and vaccine effect |
| **Flu incidence: Unvaccinated** | **34.99%** | Calculated by using the following inputs: incidence of flu and vaccine effect |
| **Proportion of people with influenza who have a GP visit** | **32.60%** | Ariza M, Guerrisi C, Souty C, et al. (2017). *Healthcare-seeking behaviour in case of influenza-like illness in the French general population and factors associated with a GP consultation: an observational prospective study.* BJGP Open. Retrieved from:doi:10.3399/bjgpopen17X101253 |

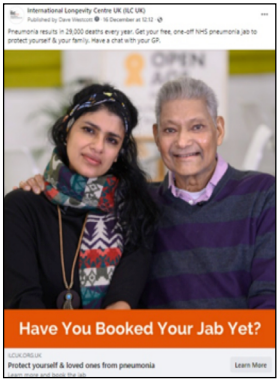
| | | |
|---|---|---|
| **Proportion of people with influenza who are vaccinated who are hospitalised** | **14.10%** | Vaccines for preventing influenza in healthy adults (Review)Demicheli V, Jefferson T, Ferroni E, Rivetti A, Di Pietrantonj C http://cochranelibrary-wiley.com/doi/10.1002/14651858.CD001269.pub6/epdf |
| **Proportion of people with influenza who are unvaccinated who are hospitalised** | **14.70%** | As above |
| **Mortality rate of people aged 65+ with influenza who are not vaccinated** | **4.3%** | Pockett RD, Watkins J, McEwan P, Meier G. (2015). *Burden of Illness in UK Subjects with Reported Respiratory Infections Vaccinated or Unvaccinated against Influenza: A Retrospective Observational Study*. PLoS ONE. Retrieved from: doi:10.1371/journal.pone.0134928. (Used overall figures rather than those for people with flu complications for all states in the decision tree – including hospitalisation due to influenza). |
| **Mortality rate of people aged 65+ with influenza who are not vaccinated** | **3.3%** | Same as above |
| **Utility decrement: Flu, No hospitalisation** | **0.01** | Kohli MA, Maschio M, Mould-Quevedo JF, Ashraf M, Drummond MF, Weinstein MC.(2021). *The Cost-Effectiveness of Expanding Vaccination with a Cell-Based Influenza Vaccine to Low Risk Adults Aged 50 to 64 Years in the United Kingdom*. Vaccines (Basel). Retrieved from: 10.3390/vaccines9060598. PMID: 34199912; PMCID: PMC8228189.; 13; Baguelin, M., Van Hoek, A.J., Jit, M., Flasche, S., White, P.J. and Edmunds, W.J., (2010). *Vaccination against pandemic influenza A/H1N1v in England: a real-time economic evaluation. Vaccine,*. Retrieved from: Vaccination against pandemic influenza A/H1N1v in England: a real-time economic evaluation - PubMed (nih.gov) (Table 1) |
| **Utility decrement: Flu, Hospitalisation** | **0.02** | Same as above |
| **Utility influenza** | **0.77** | Calculated by using the input utility decrement: flu, no hospitalisation |
| **Utility influenza if hospitalised** | **0.76** | Calculated by using the input utility decrement: flu, hospitalisation |

| | | |
|---|---|---|
| **Baseline utility** | **0.78** | Szende A, Janssen B, Cabases J,. (2014). *Self-Reported Population Health: An International Perspective based on EQ-5D.Springer*; 2014. Chapter 3 (Population Norms for the EQ-5D). Retrieved from: https://www.ncbi.nlm.nih.gov/books/NBK500364/ doi: 10.1007/978-94-007-7596-1_3. (Table 3.6, estimate for people aged 65-74 was used) |
| **Cost: Vaccination** | **£16.00** | NICE. (2022). *Medicinal forms: Influenza vaccine*. Retrieved from: https://bnf.nice.org.uk/medicinal-forms/influenza-vaccine.html average of quadrivalent vaccinations. (We used the average cost of the following influenza vaccines offered by the NHS: Supemtek Quadrivalent vaccine (recombinant) solution for injection 0.5ml pre-filled syringes (Sanofi Pasteur); Adjuvanted quadrivalent influenza vaccine (surface antigen, inactivated) suspension for injection 0.5ml pre-filled syringes (Seqirus UK Ltd); Cell-based quadrivalent influenza vaccine (surface antigen, inactivated) suspension for injection 0.5ml pre-filled syringes (Seqirus UK Ltd)) |
| **Cost: GP** | **£33.19** | Curtis, L. & Burns, A. (2020). Unit Costs of Health and Social Care 2020. Personal Social Services Research Unit, University of Kent, Canterbury. Retrieved from: DOI:10.22024/UniKent/01.02.84818 (Table 10.3b per patient contact including direct care staff costs and excluding qual costs). |
| **Cost: Hospitalisation** | **£3,103.75** | Moss, J.W.E., Davidson, C., Mattock, R. et al. (2020). *Quantifying the direct secondary health care cost of seasonal influenza in England*. BMC Public Health. Retrieved from: Quantifying the direct secondary health care cost of seasonal influenza in England | BMC Public Health | Full Text (biomedcentral.com) (Table 4, used figures for ages 65-74. ) |
| **Cost: Social campaign intervention (additional cost per vaccine booking link clicked)** | **£66.87** | Media spend divided by the number of people who booked the vaccine (£40.97) plus the cost of creating the campaigns and the landing page divided by the number of people who booked the vaccine (£25.9) |

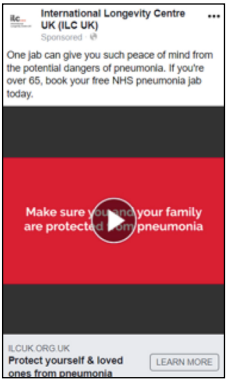
# Final campaign creative

## Figure 20: Pneumococcal vaccination executions

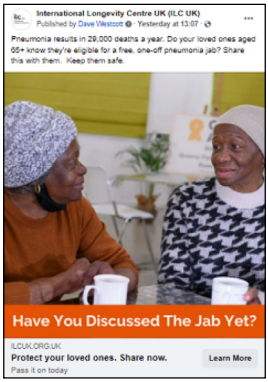
*Static image for older audiences (aged 65+)*



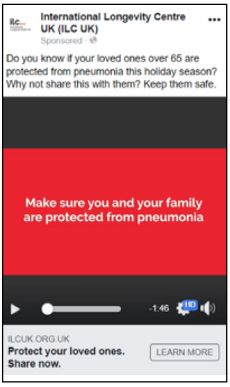

*Video for older audiences (aged 65+)*




*Static image for younger audiences (aged <50)*




*Video for younger audiences (aged <50)*




*Age-neutral animated GIF*

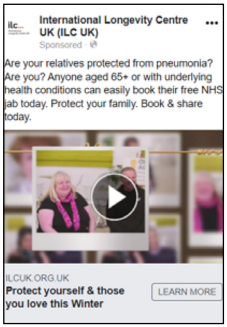
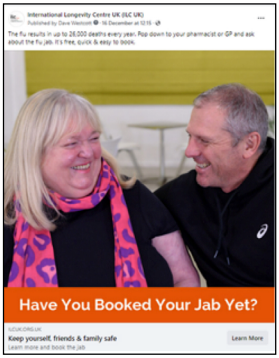
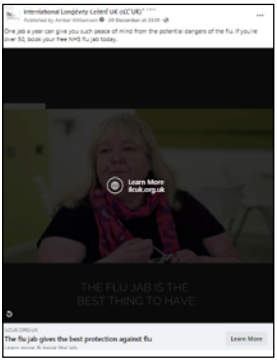


**Figure 21: Flu vaccination executions**

*Static image for older audiences (aged 65+)*

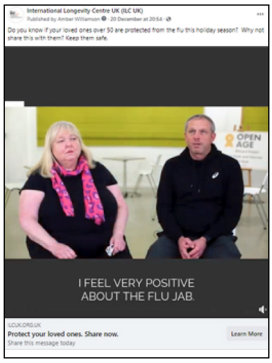



*Video for older audiences (aged 65+)*

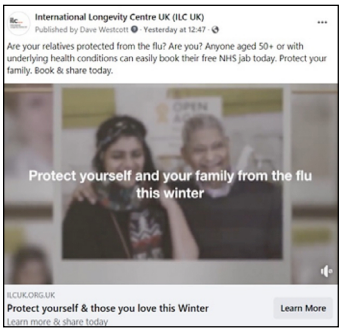



*Static image for younger audiences (aged <50)*


*Video for younger audiences (aged <50)*




*Age-neutral animated GIF*



# References


[1]Thai Health Promotion Foundation. (2013). *The Smoking Kid Campaign*. Retrieved from PowerPoint Presentation (aef.com)

[2]ILC-UK. (2020). *Never too late: Prevention in an ageing world*. Retrieved from https://ilcuk.org.uk/never-too-late-prevention-in-an-ageing-world/

[3]Kennedy, J. (2020). *Vaccine Hesitancy: A Growing Concern*. Pediatric Drugs. Retrieved from https://doi.org/10.1007/s40272-020-00385-4

[4]ILC-UK. (2020). *Delivering Prevention in an Ageing World.* Retrieved from https://ilcuk.org.uk/wp-content/uploads/2020/09/Delivering-prevention-in-an-ageing-world.pdf

[5]WHO. (2021). *Seasonal Vaccination Policies and Coverage in the European Region*. Retrieved from https://www.euro.who.int/en/health-topics/communicable-diseases/influenza/vaccination/seasonal-vaccination-policies-and-coverage-in-the-european-region

[6]Ament, A. (2000). *Cost-Effectiveness of Pneumococcal Vaccination of Older People: A Study in 5 Western European Countries*. Retrieved from https://doi.org/10.1086/313977; Kohil, M. et al. (2021). *The Cost-Effectiveness of Expanding Vaccination with a Cell-Based Influenza Vaccine to Low Risk Adults Aged 50 to 64 Years in the United Kingdom*. Retrieved from https://doi.org/10.3390/vaccines9060598

[7]England, P. H. (2021). *Seasonal Flu Vaccine Uptake in GP Patients: Monthly Data, 2020 to 2021*. GOV.UK. Retrieved from https://www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-gp-patients-monthly-data-2020-to-2021

[8]Stewart, C. (2021). *Pneumococcal Conjugate Vaccine Immunization in the UK 2019/20, by country*. Retrieved from https://www.statista.com/statistics/378689/pneumococcal-conjugate-vaccine-immunisation-completed-by-country-in-uk/; Public Health England. (2021). *Pneumococcal Polysaccharide Vaccine (PPV) coverage report, England, April 2020 to March 2021*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1035189/hpr1921-ppv-vc.pdf

[9]Tan, P.S. et al. (2021). *Influenza, Shingles and Pneumococcal Vaccine Uptake, Offer and Refusal in Adult Populations at High-Risk for COVID-19: A UK Population-Based Cohort Study*. Retrieved from https://dx.doi.org/10.2139/ssrn.3783784; Roberts, D. (2021). *National Immunisation Programme: health equity audit*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957670/immnstn-equity_AUDIT_v11.pdf

[10]untitled (silverchair.com)

[11]Reinberg, S. (2016). *Flu Hits Poor Neighborhoods the Hardest, Study Shows*. Retrieved from https://www.medicinenet.com/script/main/art.asp?articlekey=193655

[12]Lintern, S. (2021). *Poorer areas have fewer GPs as national shortage hits the least healthy more*. Retrieved from https://www.independent.co.uk/news/health/gps-poorer-health-inequalities-england-b1903890.html

[13]England, Office for National Statistics. (2021). *Health state life expectancies by national deprivation deciles, England: 2017 to 2019.* Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthinequalities/bulletins/healthstatelifeexpectanciesbyindexofmultipledeprivationimd/2017to2019

[14]Centers for Disease Control and Prevention (CDC). (1993). *School-based tobacco-use prevention – People's Republic of China*, May 1989- January 1990. Retrieved from https://www.cdc.gov/mmwr/preview/mmwrhtml/00020679.htm

[15]Lyu, K. (2021). *The implementation and effectiveness of intergenerational learning during the COVID-19 pandemic: Evidence from China*. International Review of Education. Retrieved from https://doi.org/10.1007/s11159-020-09877-4.

[16]Chesser, A. (2016). Health Literacy and Older Adults. Gerontology and Geriatric Medicine. Retrieved from https://doi.org/10.1177/2333721416630492

[17]Craik, F. I. (1982). *Aging and cognitive deficits: The role of attentional resources. Aging and cognitive processes* (pp. 191-211). Retrieved from https://link.springer.com/chapter/10.1007/978-1-4684-4178-9_11; Cornett, S. (2006). *The effects of aging on health literacy*. Retrieved from http://medicine.osu.edu/sitetool/sites/pdfs/ahecpublic/HL_Module_Elderly.pdf; Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York, NY: Cambridge University Press.

[18]Cornett, S. (2006). *The effects of aging on health literacy*. Retrieved from http://medicine.osu.edu/sitetool/sites/pdfs/ahecpublic/HL_Module_Elderly.pdf; Speros, C. (2009); *More than words: Promoting health literacy in older adults.* OJIN: The Online Journal of Issues in Nursing, 14(3). Retrieved from http://www.medscape.com/viewarticle/717469

[19]Ofcom (2021). *Adults' Media Use and Attitudes report 2020/21*. Retrieved from https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf

[20]GlobalWebIndex. (2021). *Social media use by generation.* Retrieved from https://www.gwi.com/reports/social-media-across-generations

[21]Bell, C. (2013). *Examining social media use among older adults. Proceedings of the 24th ACM Conference on Hypertext and Social Media* (pp. 158 – 163). Retrieved from https://doi.org/10.1145/2481492.2481509

[22]England, P. H. (2020). *Seasonal flu vaccine uptake in GP patients: monthly data, 2020 to 2021*. Retrieved from https://www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-gp-patients-monthly-data-2020-to-2021

[23]Gallant, A. J. (2021). *Changes in attitudes to vaccination as a result of the COVID-19 pandemic: A longitudinal study of older adults in the UK*. Plos One. Retrieved from https://doi.org/10.1371/journal.pone.0261844.

[24]NHS (2021). *Flu vaccine*. Retrieved from https://www.nhs.uk/conditions/vaccinations/flu-influenza-vaccine/.

[25]NHS (2019). *Pneumococcal vaccine overview*. Retrieved from https://www.nhs.uk/conditions/vaccinations/pneumococcal-vaccination/.

[26]NHS (2021). *Shingles vaccine overview*. Retrieved from https://www.nhs.uk/conditions/vaccinations/shingles-vaccination/.

[27]Public Health England. (2020). *Seasonal flu vaccine uptake in GP patients: monthly data, 2020 to 2021*. Retrieved from https://www.gov.uk/government/statistics/seasonal-flu-vaccine-uptake-in-gp-patients-monthly-data-2020-to-2021

[28]Public Health England. (2020) *Pneumococcal Polysaccharide Vaccine (PPV) coverage report, England, April 2020 to March 2021.* Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1035189/hpr1921-ppv-vc.pdf.

[29]Public Health England (2021). *Shingles vaccine coverage report (adults eligible from April to December 2020 and vaccinated to March 2021): England*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/999152/hpr15_7__shngls-vc_crrctd_v2.pdf.

[30]Hungerford, D. (2018). *Influenza-associated hospitalisation, vaccine uptake and socioeconomic deprivation in an English city region: an ecological study*. BMJ. Retrieved from http://dx.doi.org/10.1136/bmjopen-2018-023275.

[31]Tan, P.S. (2021). *Influenza, Shingles and Pneumococcal Vaccine Uptake, Offer and Refusal in Adult Populations at High-Risk for COVID-19: A UK Population-Based Cohort Study*. Retrieved from https://dx.doi.org/10.2139/ssrn.3783784

[32]Jain, A. (2018) *Zoster vaccination inequalities: A population based cohort study using linked data from the UK Clinical Practice Research Datalink*. Plos One. Retrieved from https://doi.org/10.1371/journal.pone.0207183.

[33]Roberts, D. (2021). *National Immunisation Programme: health equity audit*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957670/immnstn-equity_AUDIT_v11.pdf

[34]Roberts, D. et al (2021) *National Immunisation Programme: health equity audit*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957670/immnstn-equity_AUDIT_v11.pdf

[35]Reinberg, S. (2016). *Flu Hits Poor Neighborhoods the Hardest, Study Shows*. Retrieved from https://www.medicinenet.com/script/main/art.asp?articlekey=193655.

[36]Chapman, K.E., Wilson, D., Gorton, R, (2013). *Invasive pneumococcal disease and socioeconomic deprivation: a population study from the North East of England*. Journal of Public Health. Retrieved from doi:10.1093/pubmed/fdt011

[37]Vukovic, V. (2019) *Identifying people at risk for influenza with low vaccine uptake based on deprivation status: a systematic review*. European Journal of Public Health. Retrieved from https://doi.org/10.1093/eurpub/cky264.

[38]de Figueiredo (2020). *Mapping global trends in vaccine confidence and investigating barriers to vaccine uptake: a large-scale retrospective temporal modelling study*. Lancet. Figure 4. Retrieved from https://doi.org/10.1016/.

[39]de Figueiredo, (2020). *Mapping global trends in vaccine confidence and investigating barriers to vaccine uptake: a large-scale retrospective temporal modelling study*. Lancet. Figure 4. Retrieved from https://doi.org/10.1016/.

[40]Tan, P.S. (2021). *Influenza, Shingles and Pneumococcal Vaccine Uptake, Offer and Refusal in Adult Populations at High-Risk for COVID-19: A UK Population-Based Cohort Study*. Retrieved from https://dx.doi.org/10.2139/ssrn.3783784

[41]Pebody, R.G. (2007) *Uptake of pneumococcal polysaccharide vaccine in at-risk populations in England and Wales 199-2005*. Epidemiology and Infection. Retrieved from https://www.cambridge.org/core/services/aop-cambridge-core/content/view/345BF0FB34DF920AD7E09443165D858D/S0950268807008436a.pdf/uptake-of-pneumococcal-polysaccharide-vaccine-in-at-risk-populations-in-england-and-wales-19992005.pdf

[42]Jain, A. (2018) Zoster vaccination inequalities: A population based cohort study using linked data from the UK Clinical Practice Research Datalink

[43]Mahmud, S.M. (2021). *Effect of race and ethinicity on influenza vaccine uptake among older US Medicare beneficiaries: a record-linkage cohort study*. The Lancet Healthy Longevity. Retrieved from https://doi.org/10.1016/S2666-7568(20)30074-X

[44]ILC-UK. (2021). *Ready to roll out: Improving routine vaccination uptake in the UK, post-pandemic*. Retrieved from https://ilcuk.org.uk/wp-content/uploads/2021/09/ILC-Ready-to-roll-out-Improving-routine-vaccination-uptake-in-the-UK-post-pandemic-1.pdf

[45]Gatwood, J. (2020). *Pneumococcal vaccination in older adults: An initial analysis of social determinants of health and vaccine uptake*. Vaccine. Retrieved from https://doi.org/10.1016/j.vaccine.2020.06.077

[46]McLaughlin, J.M. (2018). *Disparities in uptake of 13-valent pneumococcal conjugate vaccine among older adults in the United States*. Human Vaccines & Immunotherapeutics. Retrieved from https://doi.org/10.1080/21645515.2018.1564434.

[47]Draper, M. and Stergiopoulos, S. (2021). *Shingles vaccination uptake in Massachusetts adults aged 50 years and older*. Vaccine. Retrieved from https://doi.org/10.1016/j.vaccine.2021.09.032

[48]Guess, A. (2019). *Less than you think: Prevalence and predictors of fake news dissemination on Facebook*. Science Advances. Retrieved from https://doi.org/10.7910/DVN/IKDTPZ.

[49]Nuffield Council on Bioethics. (2021). *Vaccine access and uptake*. Retrieved from https://www.nuffieldbioethics.org/publications/vaccine-access-and-uptake/read-the-briefing-note/factors-influencing-vaccine-uptake

[50]Healthwatch. (2021). *Getting to vaccine centres more of a barrier for Black communities*. Retrieved from https://www.healthwatch.co.uk/news/2021-02-22/getting-vaccine-centres-more-barrier-black-communities

[51]Njoku, A. (2021). *Changing the Narrative: Structural Barriers and Racial and Ethnic Inequities in COVID-19 Vaccination.* International Journal of Environmental Research and Public Health. Retrieved from https://doi.org/10.3390/ijerph18189904

[52]Royal Society for Public Health (2019). *Moving the Needle: Promoting vaccination uptake across the life course*. Retrieved from https://www.rsph.org.uk/static/uploaded/3b82db00-a7ef-494c-85451e78ce18a779.pdf

[53]Mangtani, P. (2005). *Inequalities in influenza vaccine uptake among people aged over 74 years in Britain*. Preventative Medicine. https://doi.org/10.1016/j.ypmed.2005.02.001

[54]Europe Centre for Disease Prevention and Control (2013). *Review of the scientific literature on drivers and barriers of seasonal influenza vaccination coverage in the EU/EEA*. Retrieved from https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/seasonal-influenza-vaccination-drivers-barriers.pdf

[55]ILC-UK. (2019). *Under the skin: Listening to the voices of older people on influenza immunization*. Retrieved from https://ilcuk.org.uk/wp-content/uploads/2019/05/ILC-Under-the-skin.pdf

[56]ILC-UK. (2021). *Reducing the risk: Improving vaccine uptake across at-risk groups in the UK.* Retrieved from: https://ilcuk.org.uk/reducing-the-risk-report/

[57]Chiatti, C. et al (2011). *Improving the delivery of flu vaccine for the older people in times of economic recession: What social epidemiology tells us, and what else we need to know.* Human Vaccines. Retrieved from: https://doi.org/10.4161/hv.7.9.16693

[58]Loiacono, MM et al. (2020). *Patient and practice level factors associated with seasonal influenza vaccine uptake among at-risk adults in England, 2011 to 2016: an age-stratified retrospective cohort study*. Vaccine X. Retrieved from: https://doi.org/10.1016/j.jvacx.2020.100054.

[59]Chiatti, C. et al. (2011). *Improving the delivery of flu vaccine for the older people in times of economic recession: What social epidemiology tells us, and what else we need to know.* Human Vaccines. Retrieved from: https://doi.org/10.4161/hv.7.9.16693

[60]Nagata, J.M. et al. (2011). *Social determinants of health and seasonal influenza vaccination in adults 65 years: a systematic review of qualitative and quantitative data.* BMC Public Health. Retrieved from: https://doi.org/10.1186/1471-2458-13-388

[61]Acharya, A. et al. (2021). *COVID-19 vaccinations among Black Asian and Minority Ethnic (BAME) groups: Learning the lessons from influenza.* The International Journal of Clinical Practice. Retrieved from: https://doi.org/10.1111/ijcp.14641

[62]Dickerson, J. (2021). *COVID-19 vaccine hesitancy in an ethnically diverse community: descriptive findings from the Born in Bradford study [version 2; peer review: 1 approved, 1 approved with reservations].* Wellcome Open Research. Retrieved from: https://doi.org/10.12688/wellcomeopenres.16576.2

[63]Acharya, A. et al. (2021). *COVID-19 vaccinations among Black Asian and Minority Ethnic (BAME) groups: Learning the lessons from influenza.*The International Journal of Clinical Practice. Retrieved from: https://doi.org/10.1111/ijcp.14641

[64]Lode, H. et al. (2013). *Pneumococcal Infection – Low Awareness as a Potential Barrier to Vaccination: Results of a European Survey.* Advances in Therapy. Retrieved from: https://doi.org/10.1007/s12325-013-0025-4

[65]Tan, P.S. et al. (2021). *Influenza, Shingles and Pneumococcal Vaccine Uptake, Offer and Refusal in Adult Populations at High-Risk for COVID-19: A UK Population-Based Cohort Study.* Preprints with The Lancet. Retrieved from: https://dx.doi.org/10.2139/ssrn.3783784

[66]McLaughlin, J.M. et al. (2019) *Disparities in uptake of 13-valent pneumococcal conjugate vaccine among older adults in the United States.* Human Vaccines & Immunotherapeutics. Retrieved from: https://doi.org/10.1080/21645515.2018.1564434

[67]Bricout, H. et al. (2019) *Determinants of shingles vaccine acceptance in the United Kingdom.* PLoS One. Retrieved from: https://doi.org/10.1371/journal.pone.0220230

[68]Draper, M. and Stergiopoulos, S. (2021). *Shingles vaccination uptake in Massachusetts adults aged 50 years and older.* Vaccine. Retrieved from: https://doi.org/10.1016/j.vaccine.2021.09.032

[69]Opstelten, W. et al (2009) *Determinants of non-compliance with herpes zoster vaccination in the community-dwelling elderly.* Vaccine. Retrieved from: https://doi.org/10.1016/j.vaccine.2008.10.047

[70]McLaughlin, J.M. et al. (2019) *Disparities in uptake of 13-valent pneumococcal conjugate vaccine among older adults in the United States.* Human Vaccines & Immunotherapeutics. Retrieved from: https://doi.org/10.1080/21645515.2018.1564434

[71]Tse, S.C. et al. (2018) *Racial/Ethnic Differences in Influenza and Pneumococcal Vaccination Rates Among Older Adults in New York City and Los Angeles and Orange Counties.* Preventing Chronic Disease. Retrieved from: http://dx.doi.org/10.5888/pcd15.180101

[72]Fry, C.A. et al. (2016). *Addressing the Pneumococcal Vaccine Uptake Disparities among African-American Adults in the United States.* Retrieved from: https://doi.org/10.1111/phn.12257

[73]Jain, A. (2018). *Zoster vaccination inequalities: A population based cohort study using linked data from the UK Clinical Practice Research Datalink.* PLoS One. Retrieved from: https://doi.org/10.1371/journal.pone.0207183

[74]Ofcom (2021) *Adults' Media Use and Attitudes report.* Retrieved from: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf

[75]Ofcom (2021) *Adults' Media Use and Attitudes report.* Retrieved from: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf

[76]Ofcom (2021) *Adults' Media Use and Attitudes report.* Retrieved from: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf

[77]GWI. (2021). *Social media use by generation.* Retrieved from: https://www.gwi.com/reports/social-media-across-generations

[78]Pew Research Centre. (2021). *Social Media Use in 2021.* Retrieved from: https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/

[79]Proceedings of the 24th ACM Conderence on Hypertext and Social Media. (2013). *Examining social media use among older adults.* Retrieved from: https://doi.org/10.1145/2481492.2481509

[80]GWI. (2021). *Social media use by generation.* Retrieved from: https://www.gwi.com/reports/social-media-across-generations

[81]Yeung, C. (2019) *Social Media Usage Statistics By Age: Marketing to Adults Aged 50+.* Synthesio. Retrieved from: https://www.synthesio.com/blog/social-media-usage-statistics-by-age/

[82]Yates, S. et al. (2015). *Digital Media Use: Differences and Inequalities in Relation to Class and Age.* Sociological Research Online. Retrieved from: https://doi.org/10.5153%2Fsro.3751

[83]Thompson, K. (2019). *Who uses New Media?.* Revise Sociology. Retrieved from: https://revisesociology.com/2019/08/21/who-uses-new-media/

[84]Yates, S. and Lockley, E. (2018). *Social media and social class,* Figure 1. American Behavioral Scientist. Retrieved from: https://doi.org/10.1177/0002764218773821

[85]Thompson, K. (2019). *Who uses New Media?.* Revise Sociology. Retrieved from: https://revisesociology.com/2019/08/21/who-uses-new-media/

[86]Ofcom (2021) *Adults' Media Use and Attitudes report.* Retrieved from: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf

[87]Hruska, J. and Maresova, P. (2020). *Use of Social Media Platforms among Adults in the United States – Behavior on Social Media.* Societies. Retrieved from: https://doi.org/10.3390/soc10010027

[88]GOV.UK (2019). *Internet use.* Office for National Statistics. Retrieved from: https://www.ethnicity-facts-figures.service.gov.uk/culture-and-community/digital/internet-use/latest

[89]GOV.UK (2019). *Internet use.* Office for National Statistics. Retrieved from: https://www.ethnicity-facts-figures.service.gov.uk/culture-and-community/digital/internet-use/latest

[90]Pew Research Centre. (2021). *Social Media Use in 2021.* Retrieved from: https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/

[91]Leist, A.K. (2013). *Social Media Use of Older Adults: A Mini-Review.* Gerontology. Retrieved from: https://doi.org/10.1159/000346818

[92]Fu, L. and Xie, Y. (2021). *The Effects of Social Media Use on the Health of Older Adults: An Empirical Analysis Based on 2017 Chinese General Social Survey.* Healthcare. Retrieved from: https://doi.org/10.3390/healthcare9091143

[93]Lyu, S. and Sun, J. (2020). *Internet use and self-rated health among Chinese older adults: The mediating role of social capital.* Geriatrics & Gerontology International. Retrieved from: https://doi.org/10.1111/ggi.14090

[94]ARCC (2021) *Covid-19 Information.* Retrieved from: https://www.arccltd.com/covid-19

[95]Alliance for Aging Research. (2021). *Our Best Shot: The Importance of Vaccines for Older Adults.* Retrieved from: https://www.agingresearch.org/campaign/our-best-shot/

[96]CDC (2021). *Addressing Racial and Ethnic Disparities in Flu Vaccination. Retrieved from:*Powerpoint Presentation

[97]Durkin, S. et. al. (2009). *Effects of Different Types of Antismoking Ads on Reducing Disparities in Smoking Cessation Among Socioeconomic Subgroups.* American Journal of Public Health. Retrieved from: https://doi.org/10.2105/AJPH.2009.161638

[98]Meischke, H. et al. (2005). *Do older adults use the Internet for information on heart attacks? Results from a survey of seniors in King County, Washington.* Heart & Lung. Retrieved from: https://doi.org/10.1016/j.hrtlng.2004.06.006

[99]ILC-UK. (2015). *Next Generation Health Consumers: The changing face of health seeking behaviour across Europe.* Retrieved from: https://ilcuk.org.uk/wp-content/uploads/2018/10/Next-Generation-Health-Consumers-HISB-Executive-Summary.pdf

[100]Evers, U. et al (2013). *'Get Your Life Back': process and impact evaluation of an asthma social marketing campaign targeting older adults.* BMC Public Health. Retrieved from: https://doi.org/10.1186/1471-2458-13-759

[101]ILC-UK. (2015). *Next Generation Health Consumers: The changing face of health seeking behaviour across Europe.* Retrieved from: https://ilcuk.org.uk/wp-content/uploads/2018/10/Next-Generation-Health-Consumers-HISB-Executive-Summary.pdf

[102]Liljas, A.E.M. et al (2017) *Strategies to improve engagement of 'hard to reach' older people in research on health promotion: a systematic review.* BMC Public Health. Retrieved from: https://doi.org/10.1186/s12889-017-4241-8

[103]NHS South, Central and West (2021) *Deprivation and ethnicity: improving immunisation uptake across the UK.* Case Studies. Retrieved from: https://www.scwcsu.nhs.uk/case-studies/deprivation-and-ethnicity-improving-immunisation-uptake-across-the-uk

[104]BMA (2021) *Doctors launch campaign to promote vaccine to ethnic minorities.* Retrieved from: https://www.bma.org.uk/news-and-opinion/doctors-launch-campaign-to-promote-vaccine-to-ethnic-minorities

[105]Paul, E. et al (2021). *Attitudes towards vaccines and intention to vaccinate against COVID-19: Implications for public health communications.* The Lancet Regional Health – Europe. Retrieved from: https://doi.org/10.1016/j.lanepe.2020.100012

[106]Tower Hamlets Council (2008) *Review of Tobacco Cessation in Tower Hamlets.* Report of the Health Scrutiny Panel. Retrieved from: https://democracy.towerhamlets.gov.uk/documents/s8066/Smoking%20CessationAppendix.pdf

[107]Lyu, K. et al (2021) *The implementation and effectiveness of intergenerational learning during the COVID-19 pandemic: Evidence from China.* Retrieved from: https://doi.org/10.1007/s11159-020-09877-4

[108]Lyu, K. et al (2021) *The implementation and effectiveness of intergenerational learning during the COVID-19 pandemic: Evidence from China.* Retrieved from: https://doi.org/10.1007/s11159-020-09877-4

[109]CDC (1993) *School-Based Tobacco-Use Prevention – People's Republic of China, May 1989-January 1990*. Retrieved from: https://www.cdc.gov/mmwr/preview/mmwrhtml/00020679.htm

[110]Durkin, S. et. al. (2009). *Effects of Different Types of Antismoking Ads on Reducing Disparities in Smoking Cessation Among Socioeconomic Subgroups.* American Journal of Public Health. Retrieved from: https://doi.org/10.2105/AJPH.2009.161638

[111]YouTube (2021) *The Climate Pledge: Challenge Accepted Launch :60*

[112]The Climate Pledge (2021) Signatories

[113]Robinson, G. (2012) *Ad deconstructed: The 'Smoking Kid'.* Financial Times. Retrieved from: https://www.ft.com/content/4b0778b8-be99-11e1-b24b-00144feabdc0

[114]Thai Health Promotion Foundation. (2013). *'Smoking kid: a personal message to the smokers'*. 2013 Jay Chiat Awards for Strategic Excellence. Retrieved from: PowerPoint Presentation (aef.com)

[115]AARP (2007) *Community-Wide Campaign to Promote Physical Activity Among Midlife and Older Adults: Lessons Learned from AARP's Active for Life Campaign and a Synopsis of Evidence-Based Interventions.* Retrieved from: https://assets.aarp.org/www.aarp.org_/articles/health/active_for_life_chapter_01.pdfCommunity-Wide

[116]AARP (2010) *Promoting Physical Activity Among Those 50+.* Active for Life Campaign. Retrieved from: https://www.aarp.org/health/fitness/info-06-2010/promoting_physicalactivityamongthose50.html

[117]'*What's the difference between the cold and the flu':* One health Lewisham. Retrieved from: Lewisham CCG create one-stop-shop page on Flu virus & Vaccine information - One Health Lewisham'*Words save lives*.' NHS Words save lives - NHS Organ Donation *'Protect your family'*: NHS East Lancashire Clinical Commissioning Group. Retrieved from: Campaign to protect families against flu is launched this week (eastlancsccg.nhs.uk) *'Do your bit'*: North Tyneside CCG News. 2020. *'It's not too late to change your mind if you've declined your flu vaccination*'. Retrieved from: It's not too late to change your mind if you've declined your flu vaccination - North Tyneside CCG '*Just the flu*': The Hippocratic Post. (2020). Just the flu vaccination campaign. Retrieved from: Just the flu vaccination campaign - The Hippocratic Post '*Are you 70-75 or 78-79 years of age? Then you are eligible for your shingles vaccine*': UK Health Security Agency. (2018). *'Shingles: What is it and why do we need to vaccinate against it?'* Retrieved from: Shingles: What is it and why do we need to vaccinate against it? - UK Health Security Agency (blog.gov.uk)

[118]Kohli, M.A.; Maschio, M.; Mould-Quevedo, J.F.; Ashraf, M.; Drummond, M.F.; Weinstein, M.C. *The Cost-Effectiveness of Expanding Vaccination with a Cell-Based Influenza Vaccine to Low Risk Adults Aged 50 to 64 Years in the United Kingdom.* Vaccines 2021, 9, 598. https://doi.org/10.3390/ vaccines9060598

[119]Moss, J.W.E., Davidson, C., Mattock, R. et al. (2020). *Quantifying the direct secondary health care cost of seasonal influenza in England.* BMC Public Health. Retrieved from: Quantifying the direct secondary health care cost of seasonal influenza in England | BMC Public Health | Full Text (biomedcentral.com) (Table 4, used figures for ages 65-74. )

[120]Keech M, Beardsworth P. (2008). *The impact of influenza on working days lost: a review of the literature.* Pharmacoeconomics. Retrieved from doi: 10.2165/00019053-200826110-00004; Office for National Statistics. (2021). *Average weekly earnings in Great Britain: December 2021*. Retrieved from: Average weekly earnings in Great Britain - Office for National Statistics (ons.gov.uk); Office for National Statistics. (2022). *LFS: Employment rate: UK: All: Aged 50-64: %: SA.* Retrieved from : LFS: Employment rate: UK: All: Aged 50-64: %: SA - Office for National Statistics (ons.gov.uk)

[121]Maresova, P. et. al. (2019) *Consequences of chronic diseases and other limitations associated with old age – a scoping review.* BMC Public Health. Retrieved from: https://doi.org/10.1186/s12889-019-7762-5

[122]JAMA Network. (2016). *Influenza Hits Poor People Hardest.* JAMA. Retrieved from: https://jamanetwork.com/journals/jama/fullarticle/2504824

[123]Guest, JF. & Morris, A. (1997) *Community-acquired pneumonia: the annual cost to the National Health Service in the UK.* European Respiratory Journal. Retrieved from: https://pubmed.ncbi.nlm.nih.gov/9230242/

[124]Melegaro, A. & Edmunds, W. (2004). *The 23-Valent Pneumococcal Polysaccharide Vaccine. Part II. A Cost Effectiveness Analysis for Invasive Disease in the Elderly in England and Wales*. European Journal of Epidemiology. Retrieved from: https://doi.org/10.1023/B:EJEP.0000024752.48929.bd; Joint Committee on Vaccination and Immunisation. (2015). *Interim JCVI statement on adult pneumococcal vaccination in the UK.* Retrieved from: Interim JCVI statement on adult pneumococcal vaccination in the UK (publishing.service.gov.uk); Jiang, Y. et.al. (2018). *PIN43 - A COST-EFFECTIVENESS ANALYSIS OF REVACCINATING OLDER ADULTS WITH THE 23-VALENT PNEUMOCOCCAL POLYSACCHARIDE VACCINE (PPV23) COMPARED TO VACCINATING WITH A SINGLE DOSE OF PPV23 IN THE UNITED KINGDOM (UK).* Retrieved from https://doi.org/10.1016/j.jval.2018.09.1362.

[125]Smith, J, K. et. al. (2106). *Cost Effectiveness of the 4 Pillars Practice Transformation Program to Improve Vaccination of Adults Aged ≥65 years*. Retrieved from: doi:10.1111/jgs.14588

[126]Roberts, D. et al (2021) *National Immunisation Programme: health equity audit*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957670/immnstn-equity_AUDIT_v11.pdf

[127]9 clouds. (2021). *Performance Benchmarks for Healthcare Facebook Ads*. Retrieved from: Performance Benchmarks for Healthcare Facebook Ads - 9 Clouds

[128]Blend. (2019). *Do you know your Facebook Ad Benchmarks?.* Retrieved from: Do you know your Facebook Ad Benchmarks? – Blend Commerce

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