Seasonal influenza vaccination uptake in health and social care workers in NI: Understanding the local context and creating pathways to intervention using the WHO TIP approach

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Research and Development

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Executive Summary

Seasonal influenza vaccination is a critical public health intervention that protects the health of health and social care (HSC) workers, reduces transmission of influenza to vulnerable patients and service users, and mitigates winter pressures on health and social care services. This work was commissioned by the Public Health Agency (PHA) at the request of the Chief Medical Officer for Northern Ireland to better understand declining vaccination uptake in HSC workers and inform future action.

Despite universal eligibility for free influenza vaccination among all HSC workers in Northern Ireland, uptake has declined substantially in recent years. Recorded vaccination coverage fell from 41.3% in 2021/22 to 21.4% in 2024/25. However, changes in data collection and estimation methods for staff vaccination uptake during this period complicate direct comparison across years. Even accounting for these methodological differences, uptake remains low, with particularly poor coverage among social care staff, including care home workers. This poses significant risks to health, workforce resilience, patient safety and service continuity.

This report presents findings from Phases 1 and 2 of a project undertaken by researchers at Queen's University Belfast guided by the World Health Organization's Tailoring Immunization Programmes (TIP) approach. TIP applies behavioural and social science to systematically diagnose the causes of low vaccination uptake and to inform the design of targeted, context-specific interventions. The project combined a situational analysis with stakeholder engagement and rapid evidence reviews, drawing on established behaviour change frameworks including the Behaviour Change Wheel, COM-B model, and Theoretical Domains Framework.

Executive Summary (continued)

The situational analysis highlighted a complex interplay of behavioural, structural, and organisational factors contributing to low uptake. Key challenges include widespread vaccine misinformation (particularly on social media), knowledge gaps about influenza risk and vaccine safety, and low perceived personal benefit among younger and lower-risk HSC staff. Evidence also suggests the influence of “vaccine fatigue”, defined as inertia or inaction towards vaccine information or recommendations resulting from perceived burden, overload or burnout following repeated vaccination campaigns (e.g. during and after the COVID-19 pandemic) (1). Structural barriers were also prominent, including difficulties accessing vaccination, fragmented communication, limited promotional capacity due to funding constraints, and weaknesses in vaccination data systems, particularly the recording of HSC worker vaccination status on the Vaccination Management System (VMS).

A rapid behavioural science audit of existing campaign materials found an over-reliance on threat-based motivational messaging, with scope to increase capability (knowledge and understanding) and opportunity components (access, convenience, and system support). Evidence from the literature further demonstrates that education alone is rarely effective; instead, multi-component interventions combining improved access, organisational support, social influence, and policy levers are consistently associated with higher vaccination uptake.

Executive Summary (continued)

Phase 2 stakeholder interviews reinforced these findings. Participants across trusts, pharmacies, occupational health, and the independent social care sector described access issues, communication gaps, and reduced organisational prioritisation of seasonal influenza vaccination. However, they also identified strong enablers, including leadership role-modelling, trusted relationships with community pharmacists, workplace-based and opportunistic vaccination, peer influence, and emotionally resonant, locally relevant messaging. A small poll of social care managers echoed these barriers and highlighted a need for a more granular understanding of the barriers in the care home setting.

Overall, the evidence indicates that declining influenza vaccination uptake among HSC workers in Northern Ireland cannot be addressed through information provision or motivation alone. Sustained improvement will require theory-informed, multi-level approaches that address misinformation, improve access and convenience, strengthen organisational culture and leadership, enhance data systems, and rebuild trust, particularly within the social care workforce in the post-Covid-19 era. This report provides a robust evidence base to take forward recommendations regarding further research and co-design of future interventions (latter phases of the WHO TIP approach).

Executive Summary (continued)

Recommendations & Suggested Actions

Short Term

- Plan and commission additional research with the target group (i.e. HSC workforce); taking account of the variety of job roles and staff categories across the health and social care system, including the independent care sector (CRITICAL)
- Consider re-design of PHA posters and social media communications in line with behavioural science audit feedback and Public Health Wales resources (CRITICAL)
- Ensure PHA leaders and communication team along with other communication teams (e.g., Trusts and independent care sector) are aware of mis- and dis-information report; consider a workshop to actively upskill and tackle the issue (CRITICAL)
- Ensure detailed step-by-step communications are cascaded to all organisations using the vaccine management system (VMS) to highlight the importance of ticking 'all that apply' and including 'health and/or social care worker'; OR Consider a system-level intervention to the data capture where all those using VMS have to answer a pop-up question before proceeding which asks 'Is the person being vaccinated currently working as a health and/or social care professional?' which requires a yes/no answer before proceeding to the additional eligibility criteria (e.g. over 65 years, underlying illness etc.) (IMPORTANT)
- Roll out staff training to all delivery strands of the vaccination programme on the principles of behaviour change (existing training course or bespoke training from the QUB team) (IMPORTANT)

Executive Summary (continued)

Medium term

- Co-produce a new updated seasonal flu leaflet (and posters); role model a range of staff images and modelling of the desired behaviours. NOTE: this should be informed by additional primary research with target group first (CRITICAL)
- Focus on promotion and protection of HSC workers health and wellbeing as a core component of the HSC Regional Staff Wellbeing Framework; highlighting the role of self-protection as a priority. This should be further explored in the primary research recommended above (IMPORTANT)

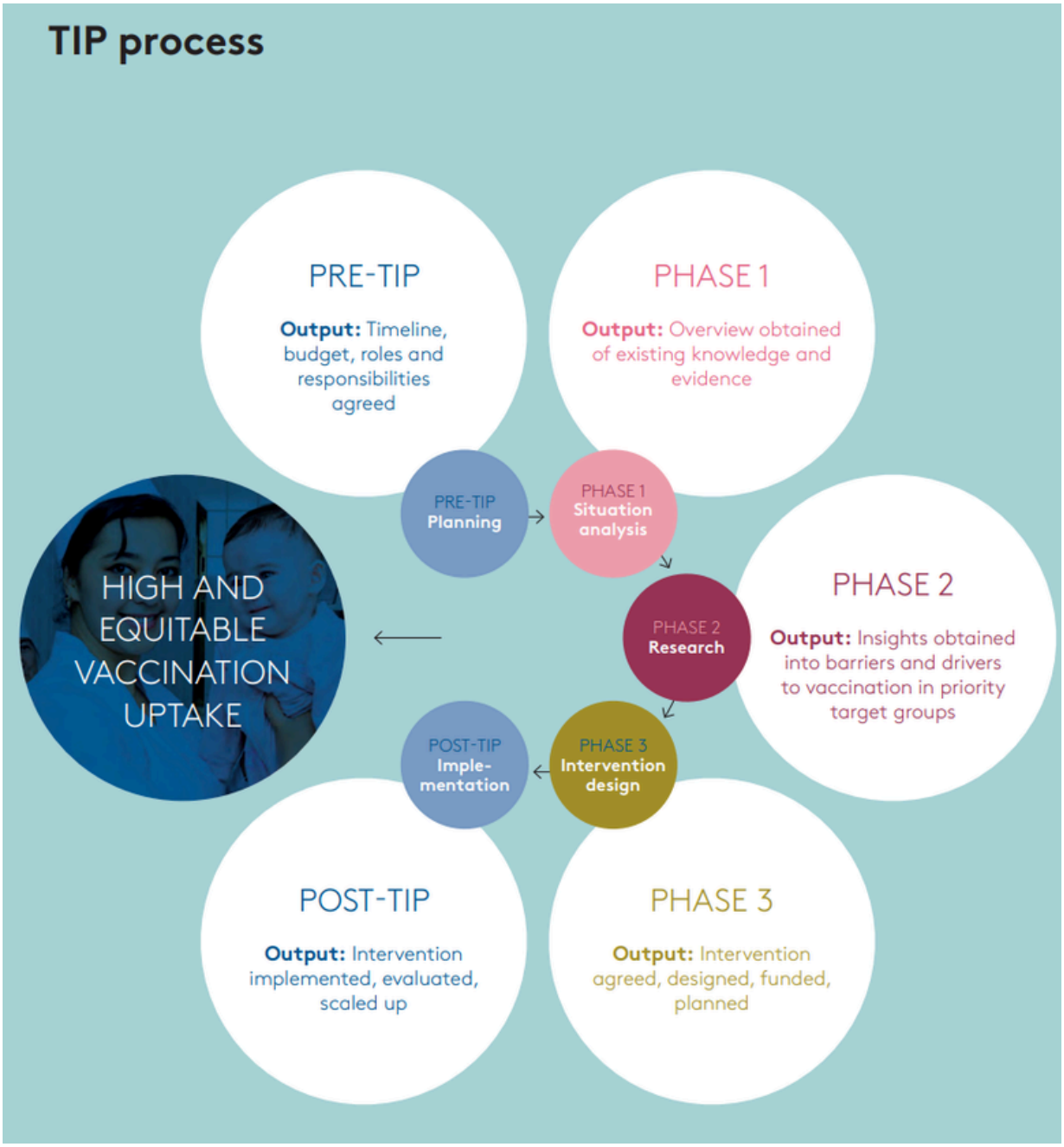
Longer term

- Consider implementing mandatory annual training for all HSC staff e.g., brief e-learning modules on self-protection (eating well, being active, sleep, vaccination, etc.) and on importance of infection control measures including vaccination (IMPORTANT)
- Consider collaboration with local educators and academics to ensure curriculum content covered in any health and social care related qualifications (IMPORTANT)
- Create a culture of 'healthy conversations' regarding seasonal influenza vaccination and provide the opportunity for these conversations to take place each year via a highly publicised and physical 'launch' event across NI, where the aim is to vaccinate as many HSC staff as possible in the first day/week/month. NOTE: it is vital to include the independent care sector actively in these communications and events to rebuild trust that may have been eroded during Covid-19; to show they are an essential player in this (IMPORTANT)

Benefits of a behaviourally informed approach to improving vaccination uptake: introduction to the WHO Tailoring Immunization Programmes approach

WHO TIP Approach

The World Health Organization's Tailoring Immunization Programmes (TIP) approach provides a structured framework for diagnosing and addressing the causes of low vaccine uptake in specific population groups. TIP is grounded in behavioural and social sciences and emphasizes the need for evidence-informed, context-specific strategies to improve immunization coverage.



Click here for link to the WHO TIP approach

WHO TIP Approach

The approach involves five key steps:

1. **Identify under-vaccinated populations**
   Use data (e.g., immunization coverage, surveillance, demographic information) to pinpoint groups with low vaccination rates.

2. **Diagnose behavioural and structural barriers and motivators to vaccination**
   Conduct qualitative and quantitative research (e.g., interviews, surveys) to understand: a) Knowledge and beliefs about vaccines, b) Social and cultural influences, c) Practical access barriers (e.g., time, location) and d) Trust in healthcare systems

3. **Segment the population based on shared characteristics**
   *Group individuals based on **shared characteristics** (e.g., attitudes, behaviours, demographics) to tailor interventions more effectively*

4. **Co-design targeted interventions**
   Co-create and implement context-specific strategies with community input. These might include: a) Communication campaigns, b) Provider training, c) Policy or system-level changes and d) Community engagement activities

5. **Monitor outcomes**
   Continuously assess the impact of interventions and adapt based on outcomes.

TIP highlights the importance of engaging communities and stakeholders throughout the process to ensure interventions are acceptable, relevant, and sustainable. TIP has been applied in various countries to address issues such as vaccine hesitancy, access barriers, and cultural or social influences on immunization. Its emphasis on participatory research and behavioural insights makes it particularly valuable in contexts where standard interventions have failed to reach or convince certain subgroups.

The Behaviour Change Wheel, COM-B Framework and the Theoretical Domains Framework

The Behaviour Change Wheel

The Behaviour Change Wheel (BCW) by Michie et al., 2011, is a systematic framework for designing behaviour-change interventions(2). It was created by synthesising 19 prior frameworks to provide a single coherent, evidence-based model. The model posits the idea that to change behaviour effectively, one must first understand the factors that influence it. The wheel is organised into three main layers. At the core lies the COM-B model, which specifies what needs to change for a behaviour to occur. Surrounding this are nine "intervention functions," (e.g. education, persuasion, training, and environmental restructuring etc.) which are broad strategies that can be used to influence behaviour. The outer layer consists of policy categories like legislation, service provision, and communication campaigns, which help support or enable the chosen interventions. Taken together, the BCW provides a structured pathway from diagnosing a behavioural issue to selecting appropriate methods for intervention.

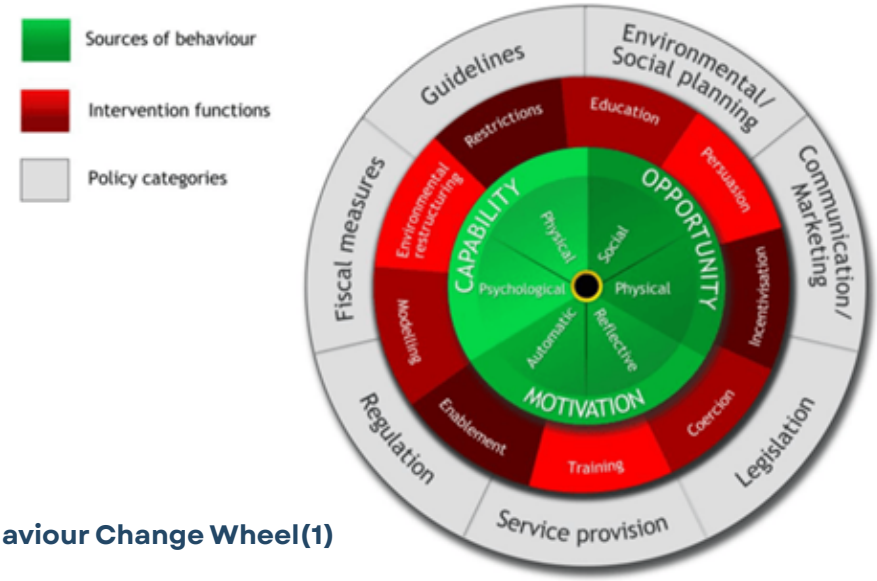


Figure 1 - The Behaviour Change Wheel(1)

Michie S, van Stralen MM, West R. Behaviour Change Wheel. Licensed under Creative Commons Attribution 4.0 International (CC BY 4.0).

The COM-B Framework

The COM-B framework proposes that behaviour (B) arises from the interaction between Capability (C), Opportunity (O), and Motivation (M). Capability refers to a person's psychological and physical capacity to engage in a behaviour, including understanding, skills, and physical abilities. Opportunity concerns the external factors that make the behaviour possible or prompt it, such as time, resources, physical surroundings, or social norms. Motivation includes both reflective processes like conscious decision-making and planning and automatic processes such as habits, emotions, and impulses. According to the COM-B model, if any one of these components is lacking or insufficient, the behaviour is less likely to occur. This framework therefore helps identify what needs to change before an intervention can be effective.

The Behaviour Change Wheel, COM-B Framework and the Theoretical Domains Framework

The Theoretical Domains Framework (TDF)

The Theoretical Domains Framework (TDF) provides a more detailed psychological lens to better understand the specific determinants of behaviour, which the framework organises into fourteen domains(3). These include knowledge, skills, beliefs about capabilities, beliefs about consequences, social influences, environmental context and resources, emotion, and behavioural regulation, among others. Because it is more granular than COM-B, the TDF is especially useful for diagnosing specific barriers and facilitators of a behaviour. For example, lack of knowledge is different from lack of confidence, and both are different from environmental constraints, yet all may contribute to the same behavioural problem. The TDF allows researchers or practitioners to pinpoint these underlying influences with greater precision.

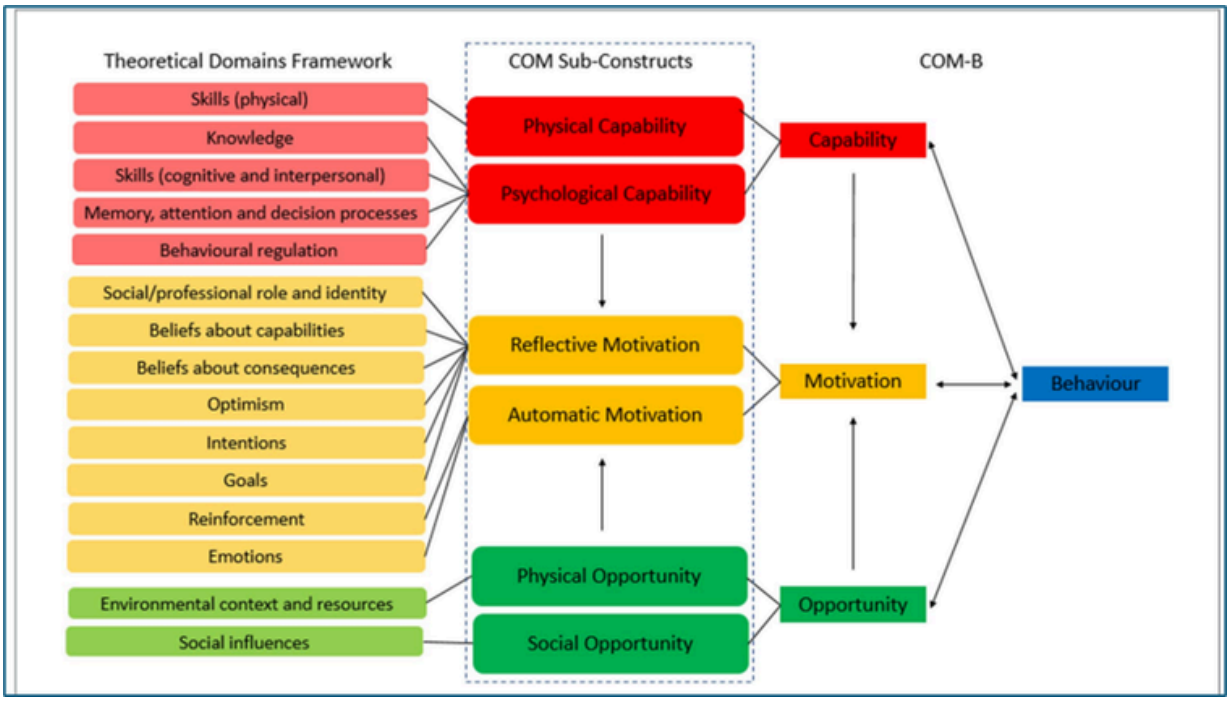
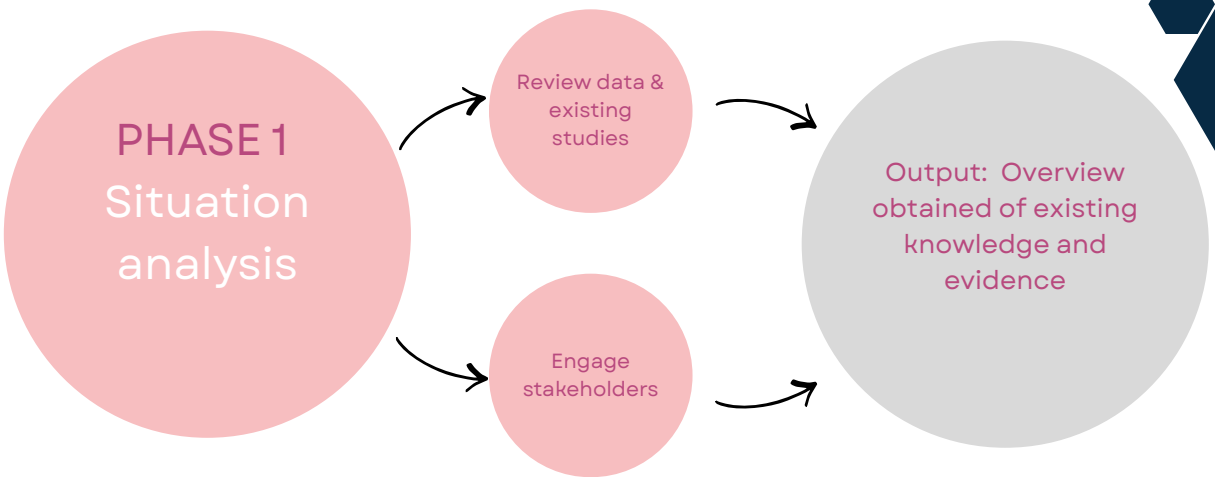


Figure 2 - The Theoretical Domains Framework (4)

Together, the BCW, COM-B, and the TDF offer a powerful, integrated approach to understanding and changing behaviour. COM-B provides a high-level structure for diagnosing what must change; the TDF helps unpack the psychological and contextual details underpinning these components; and the BCW links these insights to appropriate intervention functions and policy strategies. By using the three frameworks in combination, practitioners can move from identifying the behavioural problem to designing well-targeted, evidence-based interventions that are more likely to succeed.



1. Background to the seasonal influenza vaccination programme in NI

1.1. Local context

Influenza is an acute respiratory infection caused primarily by seasonal influenza viruses A and B, which circulate widely and cause considerable morbidity and mortality worldwide each year (5). Transmission of influenza (or flu) occurs predominantly during the winter seasons in temperate climates, resulting in annual epidemics of seasonal influenza (6). Northern Ireland (NI) is similarly affected, with 7,584 influenza episodes recorded in the 2024/2025 Annual Surveillance Report; however, true infection rates are likely higher due to under-diagnosis and under-reporting.

Vaccination remains the most effective way to prevent influenza and reduce the severity of illness (7). The seasonal influenza vaccination programme is the largest and most comprehensive vaccination programme in NI. The programme typically runs from October to March each year and provides influenza immunisation to eligible groups in NI, based on advice from the Joint Committee on Vaccinations and Immunisations (JCVI) and guidance set out in the the UK Health Security Agency's Green Book on Immunisation against infectious diseases. Each year, the Chief Medical Officer (CMO) for NI issues an Operational Letter with guidance on those eligible for vaccination under the current programme.

Immunisation of HSC workers is a key component of the programme. Vaccination is recommended for staff in direct contact with patients or clients to protect the workforce, reduce transmission within health and social care settings, help safeguard individuals who may have a suboptimal response to vaccination, and minimise disruption to essential services. Evidence from the SIREN cohort study (8) demonstrates that seasonal influenza vaccination provides meaningful protection against infection among UK healthcare workers (approximately 40%). The study estimated that when applied across the UK healthcare workforce, vaccination could prevent more than 50,000 infections in a single season, reinforcing its role in maintaining workforce resilience and patient safety.

1.2. Eligibility

Eligible groups for the 2025 to 2026 season include: all preschool children aged two to four years, eligible school-aged children (up to and including year 12), those that are pregnant, all those aged 65 years and over, care home residents, carers, other 'at risk' clinical groups and health and social care (HSC) workers.

Influenza vaccination is currently offered to all HSC workers in NI and has been since 2021, whereas JCVI guidance refers to 'frontline' HSC workers only. The change reflects a move towards a more inclusive and protective approach, recognising the wider workforce's role in reducing transmission and maintaining service capacity (it was felt that the 'frontline' message may have undermined some roles).

1.3. Aim

The influenza vaccination programme provides protection to those at higher risk of influenza-induced illness and mortality and reduces overall transmission rates by vaccinating children.

The aim is to demonstrate a 100% offer to all eligible groups and to exceed the uptake levels achieved among each cohort during the previous year's flu season.

Vaccination of HSC workers (an eligible group) aims to reduce influenza transmission within health and social care settings and residential care homes, which makes a valuable contribution to the protection of individuals with a suboptimal response to their own immunisations. By conferring protection to the individual staff member, staff absences and associated disruption to care services are reduced, alleviating winter pressures on the health service (9).

1.4. Operations/Communications of the vaccination programme (to HSC workers)

The Public Health Agency (PHA) oversee the operational aspects of the influenza vaccination programme in NI and are involved in the procurement of vaccinations through the Department of Health. The CMO Operational Letter states which age/population groups are to be vaccinated and the type of vaccine to be administered to each specific group (e.g. LAIV - live attenuated influenza vaccine to be given to pre-school/school-aged children). Flu vaccinations are available through GP surgeries, school vaccination teams, HSC Trust vaccination clinics/occupational health and via over 350 participating community pharmacies throughout the flu season.

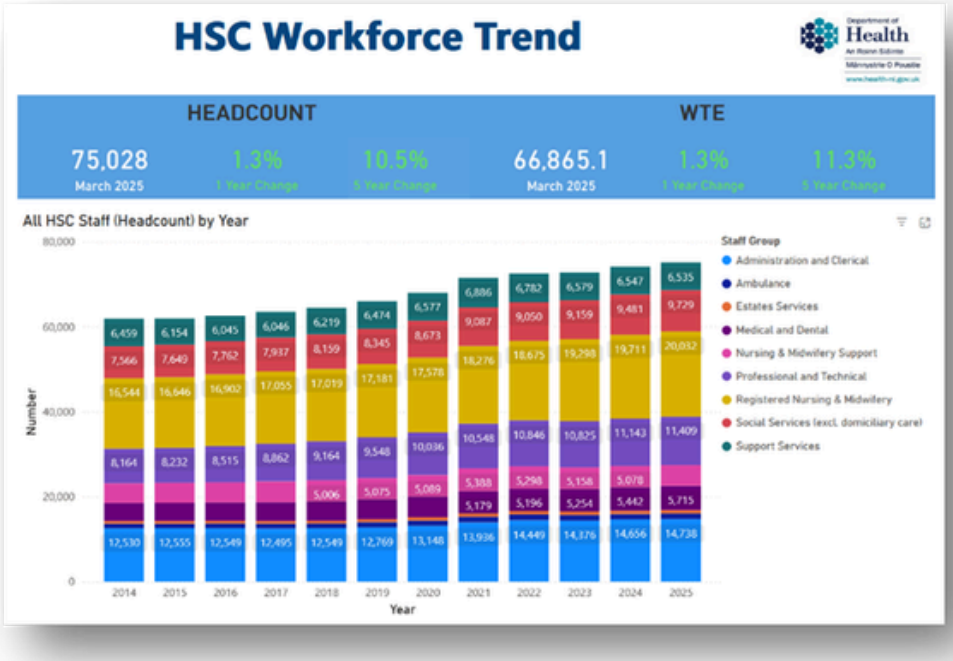
All vaccinations are recorded on the Vaccination Management System or VMS (with the exception of school-based vaccinations which are recorded on the NI Child Health System which feeds into VMS). Each HSC Trust has a dedicated vaccination lead who generally coordinates the programme in their local trust (vaccinating staff and the public in a model adapted from HSC mass vaccination centres during the Covid-19 pandemic). However, some trusts are adopting an occupational health-led model for the vaccination of HSC workers for the 2025-2026 flu season. Occupational health ran the flu vaccination programme for HSC workers prior to the Covid-19 pandemic, often through peer vaccination (being a peer vaccinator was an unpaid role and goodwill to volunteer for this has waned since the pandemic). HSC workers, as an eligible group, can also obtain their flu vaccine from their GP practice or from a community pharmacy. Community Pharmacy NI coordinate the vaccination of care home residents (and staff) in NI by carrying out visits to Care Home Facilities.

HSC workers find out about how to get their flu vaccine from leaflets, posters, social media posts (trust or PHA pages), email circulars (where workers have email addresses), through visibility of the seasonal influenza vaccination campaign in hospitals/Care Homes/other HSC settings, pharmacies, and from press releases in local news media. Budget constraints make further promotion of the seasonal vaccination programme challenging. The Department of Health has introduced restrictions on paid communications, limiting the scale and reach of promotional activity. This limits social media promotion/reach, and meant TV/Radio campaigns (which were used as a tool previously) were not possible, until recently in the 2025/2026 season, when an allocation of funds was made available for mass media advertising in response to an early surge of influenza in November. Additionally, funding is not generally built into trust budgets for staff time spent on promotion of the seasonal campaign.

1.5. Demographics of the HSC worker population in NI & uptake rates

1.5.1. Workforce demographics

According to the NI HSC Workforce Census, the HSC employed 75,028 staff on either a full-time or part-time basis, as of March 2025. The largest occupational family was Nursing and Midwifery at 33% of the workforce (including Nursing & Midwifery support – see figure 3 below).



The largest employer was the Belfast Trust (employing 28% of all staff) and the workforce was 78% female. The median age of the workforce was 42, with 42% <40 years old, 38% aged between 40-54 and 20% aged ≥55 years old.

Figure 3 - HSC Workforce Trend by staff group, 2025

Of those registered on the Northern Ireland Social Care Council (NISCC) Dashboard, most of the 17,357 residential care home workers are employed by independent providers in care homes registered with the Regulation and Quality Improvement Authority (RQIA), with fewer than 2,000 employed by local trusts*. In domiciliary care, more workers are employed by local trusts compared to residential care, but independent agencies still employ a large share. Similarly to the HSC workforce, the social care workforce is predominantly female - 78% in care homes and 90% in domiciliary care. The largest age group in residential care is 30-39, while in domiciliary care it is 20-29.

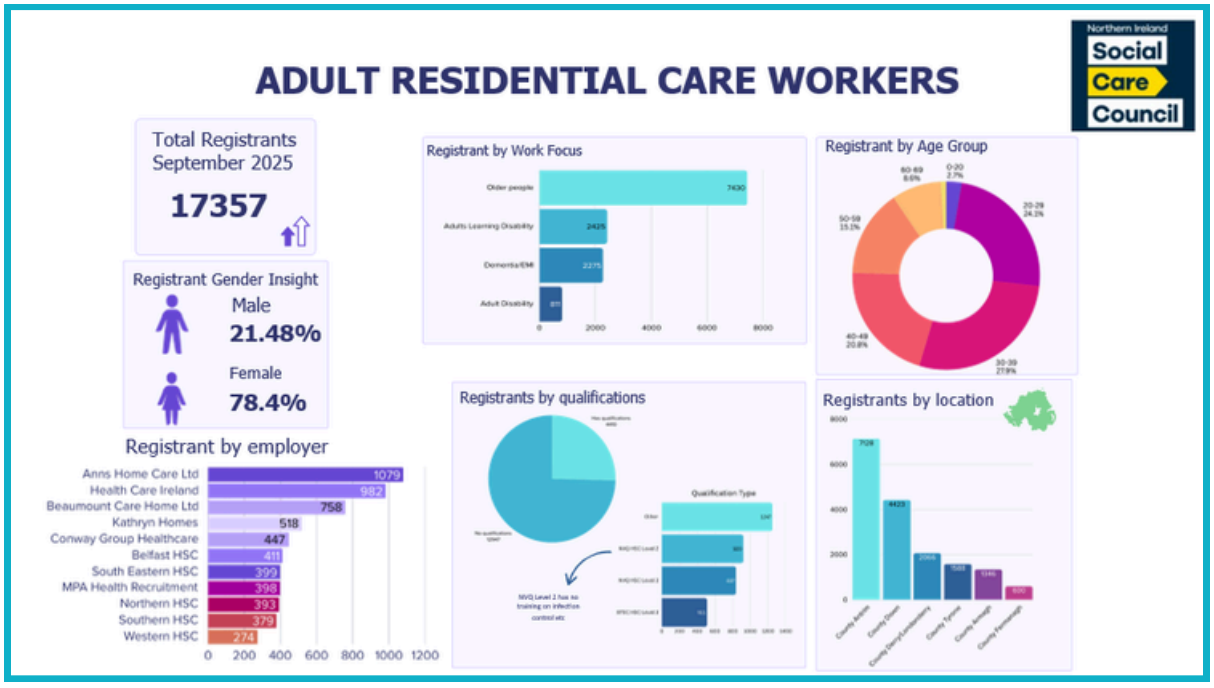


Figure 4 - Demographic profile of adult residential care workers in NI (NISCC Dashboard)

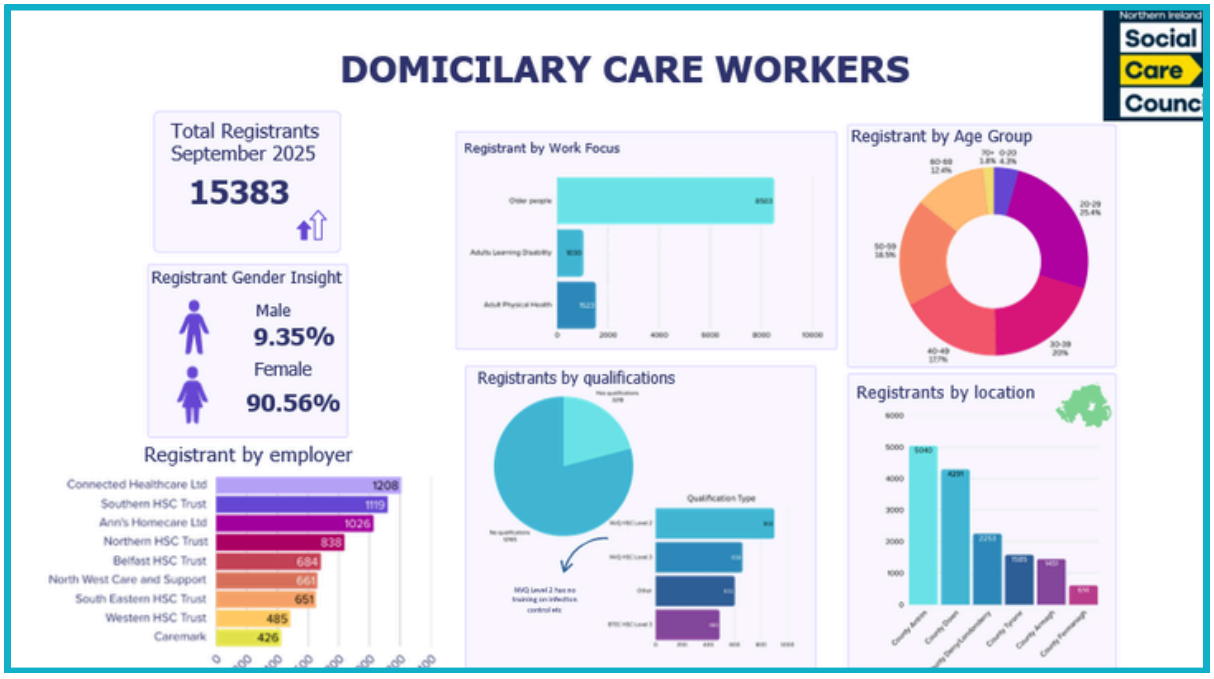


Figure 5 - Demographic profile of domicilary care workers in NI (NISCC Dashboard)

*These numbers do not include Registered Nurses employed within care homes (who are registered with the Nursing and Midwifery Council), or other care home workers not registered for any reason, and therefore the NISCC estimates of the care home workforce should be treated with caution.

1.5.2 Targets & uptake rates

The World Health Organisation (WHO) recommends a 75% target for influenza vaccination in older adults and in those with chronic conditions (10,11). Several countries also extend this target goal of 75% flu vaccination coverage in the healthcare worker population, including England and Wales (8).

Northern Ireland works towards the broader target of aiming to exceed the uptake levels achieved among each cohort during the previous flu season. In NI, flu vaccination rates in older adults tend to reach or exceed the WHO recommended 75% coverage; however, uptake rates are poor in some other cohorts, including in HSC workers. Available data for NI indicates a downward trend in the uptake of seasonal influenza vaccination amongst HSC workers, with 41.3% vaccinated in 2021/22 compared to 21.4% in 2024/25 (taken from the NI Seasonal Influenza Vaccination Surveillance Report 2024/25 by the Public Health Agency). Uptake was particularly low among Care Home Staff in the 2024/25 season surveillance report, with only 6% of all staff recorded as receiving their flu vaccine (down 10% from the previous year).

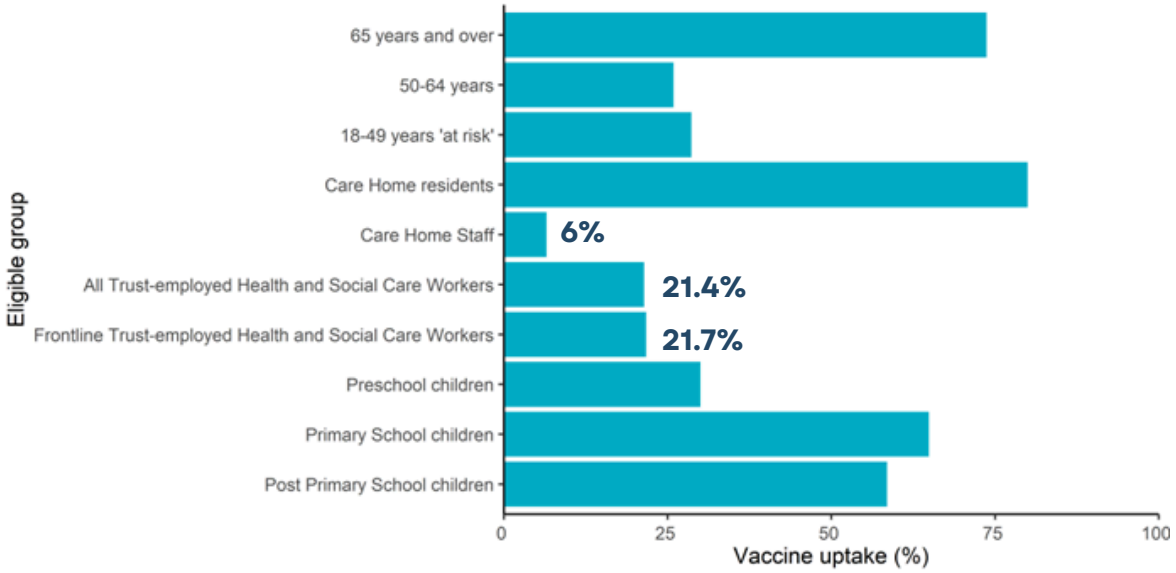


Figure 6 - Seasonal influenza vaccination uptake by eligible group in Northern Ireland, 2024/25 (NI Seasonal Influenza Vaccination Surveillance Report 2024/25 by the Public Health Agency)

In the current 2025/26 influenza season, as of 14th December 2025, 27.4% of all trust-employed HSC workers have received their flu vaccination so far, an improvement on last year's figures. Estimated uptake was highest in South Eastern HSC Trust (36.2%) and lowest to date in Southern HSC Trust (21.4%). Regarding job role category, as is usually the case each season, Medical and Dental job roles saw the highest uptake so far this season (69.9%) and those in Social Services roles had the lowest (10.4%). (Source: Seasonal influenza vaccination surveillance in Northern Ireland Autumn/ Winter 2025/26, PHA)

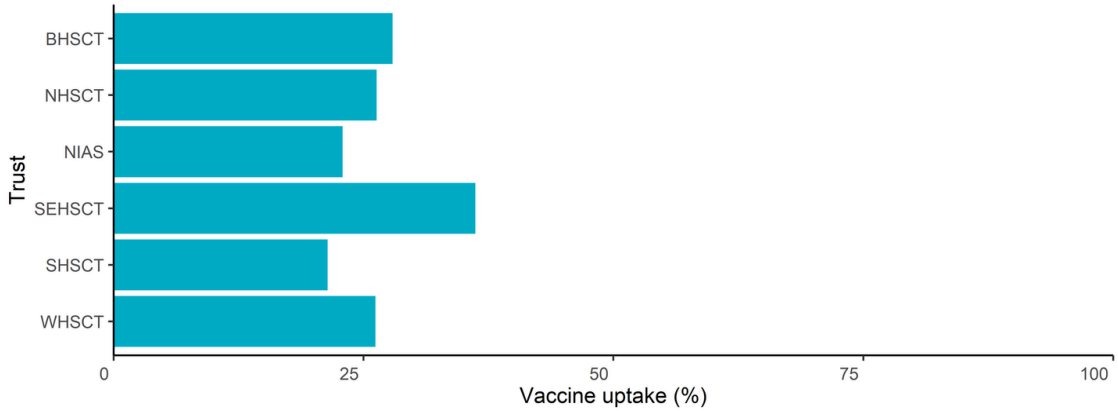


Figure 7 - Seasonal influenza vaccination uptake in all Trust-employed health and social care workers in Northern Ireland, 2025/26.

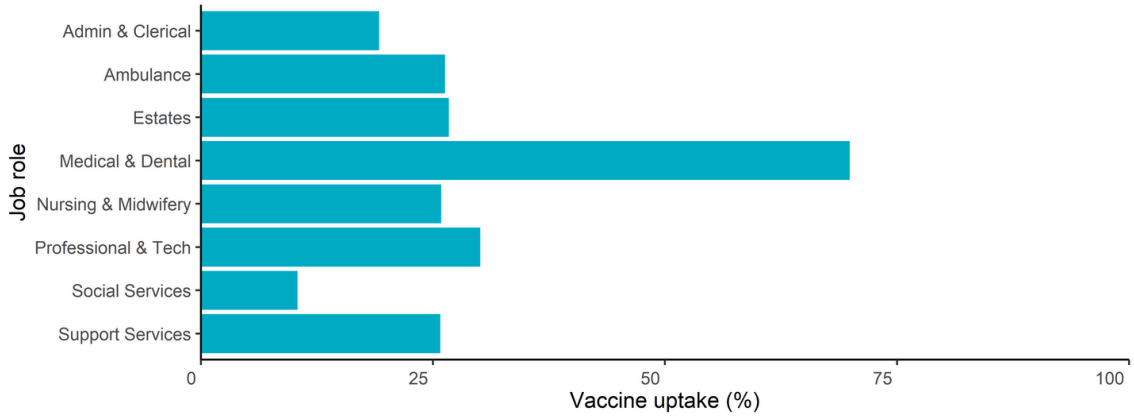


Figure 8 - Seasonal influenza vaccination uptake in all Trust-employed health and social care workers in Northern Ireland, by job role, 2025/26.

(Source: Seasonal influenza vaccination surveillance in Northern Ireland Autumn/Winter 2025/26, PHA)

1.5.3 Recording of HSC worker uptake

Vaccine uptake is defined as the number of vaccinations administered (numerator) divided by the eligible population (denominator). Although the introduction of the VMS system has greatly improved the recording of vaccination status (providing a person-level numerator), important challenges remain in accurately estimating uptake among the HSC workforce. HSC worker status is often not recorded in primary care records despite the system now having the functionality to do so. In addition, individuals who do not receive vaccination will not appear in VMS data, highlighting the absence of a reliable person-level denominator for the local HSC workforce.

Incomplete recording of HSC worker status on VMS appears to occur most frequently when individuals fall into another eligible group (e.g. pregnancy, or an at-risk clinical group). Recording of job role may also vary depending on the vaccinator, as not all applicable eligibility criteria are consistently selected, despite VMS now supporting this functionality. Furthermore, ethnicity and nationality recording tends to be only partially completed, which presents challenges in gauging uptake from ethnic minority backgrounds. Workforce datasets such as staff census returns and Northern Ireland Social Care Council (NISCC) registration data may include individuals who are on long-term leave or registered but not currently working, thereby inflating denominator estimates. Conversely, healthcare students may be recorded in vaccination numerator data as healthcare staff, despite not being included in workforce denominator datasets. Together, these issues complicate precise monitoring and interpretation of vaccination uptake trends.

1.5.4. Available data on HSC worker influenza vaccine uptake in NI

Internal estimates provided to support this project suggest variation in seasonal influenza vaccination uptake across demographic and occupational groups within the HSC workforce. These preliminary analyses indicated higher uptake among older staff and variation by professional group, with lower uptake observed among social care roles, including care home staff. However, these estimates should be interpreted with caution due to limitations in available data and workforce denominators.

The Public Health Agency (PHA) is progressing work with the Honest Broker Service to enable future analyses using pseudonymised, linked administrative data. This approach will allow more accurate estimation of vaccination uptake and stronger assessment of factors associated with vaccine acceptance across the HSC workforce.

The Office for Research Ethics Committees Northern Ireland confirmed that Research Ethics Committee approval was not required for this work.

Main Messages

- All HSC workers in NI have been eligible for free influenza vaccination since 2021
- Rates of uptake among HSC workers have been declining in NI in recent years (41.3% vaccinated in 2021/22 compared to 21.4% in 2024/25)
- Approximately 75,000 staff are employed by HSC trusts. Over 32,700 staff employed in social care sector
- Composition of the workforce - predominantly female and younger (over two thirds <49 years of age)
- Uptake of flu vaccination is usually higher in medical and dental staff and lowest in social care staff
- Social care staff - typically lower levels of educational qualifications and lack of infection control content in popular NVQ curriculum

2. Social Media Scoping Report Findings

This rapid report examines how vaccine misinformation relating to the seasonal influenza vaccine circulates on social media platforms in Northern Ireland and the wider UK. It highlights the role of platforms such as X (Twitter), Reddit, TikTok and Instagram in shaping public understanding, revealing how personal anecdotes, distrust in institutions and misinterpretation of scientific information contribute to vaccine hesitancy. While authoritative public health messaging is present, it frequently competes with highly emotive, misleading, or unverified content that can disproportionately influence public perception and health behaviours.

2.1. Main findings

The analysis found that pro-vaccination content from trusted sources is consistently visible but is often overshadowed by posts expressing scepticism, fear and distrust. Common misinformation themes include unsubstantiated claims about vaccine safety, exaggerated reports of side effects, concerns about government control or coercion, and misleading narratives linking vaccines to severe outcomes. Platforms such as TikTok and Instagram were shown to amplify anecdotal content and emotionally driven narratives, which may increase perceived personal risk and reduce public confidence in vaccination. Overall, the report concludes that social media acts as both a source of public health education and a powerful amplifier of misinformation. The prevailing consensus is that misinformation is widespread, persuasive, and capable of undermining trust in vaccination programmes, creating a complex environment in which evidence-based public health messaging struggles to compete with highly engaging misleading content. Please see **Appendix A**: Social Media Report on Vaccine Misinformation for a full version of the report, including a series of screenshots.

Main Messages

- Trusted pro-vaccination content is present but often overshadowed by misinformation posts, including from verified healthcare professionals
- Common misinformation themes include unfounded safety concerns, side-effect claims, government-control narratives, and misleading links to severe health outcomes
- TikTok and Instagram particularly amplify anecdotal, emotional content that heightens perceived personal risk
- Such emotionally driven misinformation reduces public confidence in vaccination
- Overall, misinformation is widespread, persuasive, and capable of undermining trust in vaccination programmes

3. Rapid Behavioural Science Audit of Campaign Materials

A rapid behavioural science audit was undertaken to systematically assess the existing public health campaign materials that were specifically designed for HSC workers and determine the extent to which they were informed by behavioural science principles. The materials were coded using the COM-B model (Capability, Opportunity, Motivation–Behaviour) and mapped onto the Behaviour Change Wheel intervention functions. The purpose of this audit was to evaluate the theoretical robustness of the campaign materials and to identify opportunities to strengthen their potential impact through more explicit and comprehensive application of behavioural science. The findings indicated that while some materials implicitly targeted motivational and educational components, there was limited and inconsistent coverage of capability and opportunity-based determinants, with heavy reliance on awareness-raising approaches and duplication of messaging across formats. A detailed breakdown of the rapid behavioural science audit and material-specific examples are provided in **Appendix B**: Behavioural Science Audit of Campaign Materials.

	Strengths ✓	Opportunities
Capability	• Message is simple and reinforces their capability to protect others i.e. they can take action to reduce risk.	• Assumes audience understands what "flu jab" is and where/how to get it • Does not clearly identify how and where to obtain the FREE flu vaccination (if you in an eligible group) • Does not address misconceptions about safety or eligibility. • Mild call to action (could be strengthened)
Opportunity	• Implies social opportunity (protecting loved ones)	• No environmental cue (e.g., reminder of where or when clinics run and that the vaccine is free for those who are eligible). PHA website address is very small. Suggest making this obvious and adding QR codes for visibility. • Lacks explicit social norming (e.g., that "join thousands of staff protecting their families this winter by getting their flu jab") / although, urge caution over using facts and figures which could cause mistrust, or could be misinterpreted.
Motivation	• Strong emotional appeal	• Focuses mainly on protecting others, not self-benefit (persuasion, coercion) • Could overemphasise fear/guilt without reinforcing efficacy ("you can do something about it").

Suggested enhancements based on the Behaviour Change Wheel (BCW) - The behaviour change wheel: a new method for characterising and designing behaviour change interventions - PubMed

- ➤ Add short, actionable info: "Available free at your GP or local pharmacy." (enablement), add cue "flu jabs available now" *(enablement)*
- ➤ Provide visible link or QR code to find their local participating pharmacy (and/or to booking system), eligibility checker *(enablement)*
- ➤ Add a statistic on the prevalence of flu and % of complications/deaths etc. *(education)*
- ➤ Add self-efficacy phrase: "It's quick, safe, and protects you too." *(coercion/persuasion)*
- ➤ Reinforce positive emotion: "Feel confident you're keeping loved ones safe." *(coercion/persuasion)*
- ➤ Include a social norm: "Join thousands protecting families this winter." *(modelling)*
- ➤ It is not clear from current imagery that this is a HSCW. Could be tailored to groups that have lower uptake *(modelling)*

Figure 9 - Example of behavioural science audit of a campaign poster for the 2025/26 flu season

Main Messages

- A rapid behavioural science audit was conducted to assess existing public health campaign materials for HSC workers
- Materials were systematically coded using the COM-B model and mapped to Behaviour Change Wheel intervention functions
- Findings showed a predominant focus on motivational approaches
- **Recommendation is for future campaign materials to integrate all elements of the COM-B model - capability, opportunity, and motivation**

4. Review of the literature on vaccination uptake in HSC workers

4.1. Introduction

Healthcare workers (including those working within residential and domiciliary care) are at increased risk of exposure to the influenza virus due to their close and frequent contact with patients (12, 13). Consequently, annual influenza vaccination is strongly recommended for HSC workers by global and local health authorities (e.g. the PHA and Department of Health in NI) as a critical measure to protect both staff and vulnerable patient populations (7).

Despite the well-documented benefits of influenza vaccination including reduced absenteeism, decreased transmission, and improved patient safety, uptake among healthcare workers remains suboptimal in many settings (14, 15). As already mentioned, a marked decline in influenza vaccination rates has been observed in the HSC worker population of NI. According to the literature, vaccination rates are likely influenced by a complex interaction of factors including vaccine hesitancy, access issues, perceptions of vaccine efficacy, and institutional policy (16).

This rapid literature review aims to explore the current evidence on influenza vaccination uptake among healthcare workers. It will briefly cover trends in UK flu vaccination rates, barriers and facilitators (or enablers) influencing uptake, and effectiveness of interventions designed to improve vaccination uptake rates. An understanding of the scientific/behavioural science literature on influenza vaccine acceptance (in addition to consideration of the local context) is essential before embarking upon intervention design to enhance uptake.

4.2. Trends in flu vaccination rates of health and social care workers

After relatively high flu vaccination rates among frontline healthcare workers during and just prior to the Covid-19 pandemic period, there has been a marked decline in uptake over the last few seasons in the UK. Figure 10 below is an example of the trend among healthcare workers in England over time, showing the post-covid 19 decline. Similarly, recent figures for the Republic of Ireland suggest that flu vaccine uptake in 2024 among health workers was the lowest in seven years, with 45.4% of healthcare workers across 50 public hospitals vaccinated (HPSC Seasonal Influenza & COVID-19 Vaccination Among Hospital-based Health Care Workers (HCWs)).

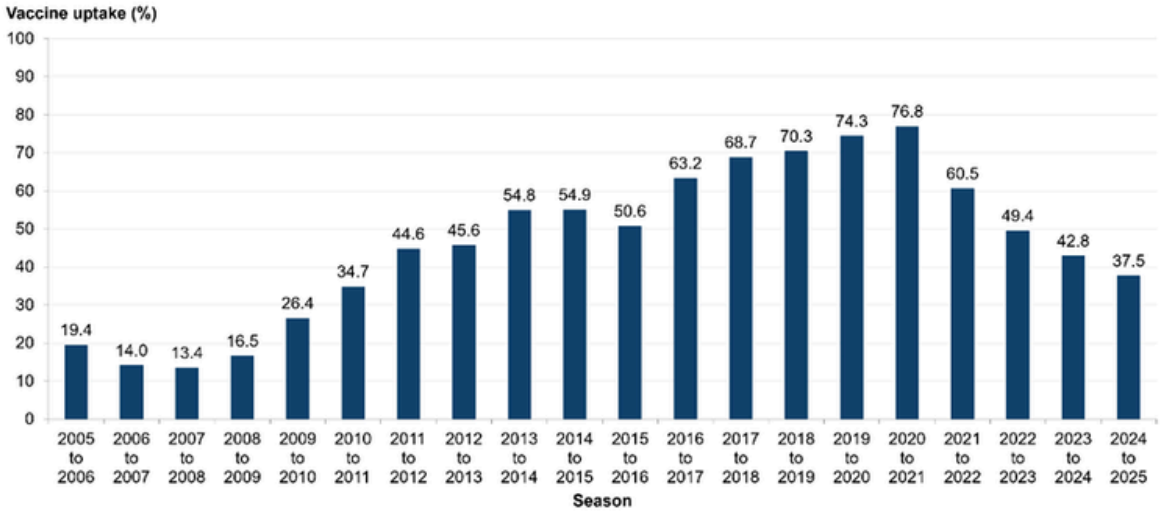


Figure 10 - Seasonal influenza vaccine uptake in frontline healthcare workers in NHS trusts in England for the 2024 to 2025 season compared with the 19 previous seasons. Source: UK Health Security Agency (Official Statistics)

Data for NI suggests a similar decline, however calculation/measurement of uptake figures have changed in recent years making year on year comparisons more difficult. In 2021, NI extended the offer of vaccination from frontline HSC workers only (i.e. those with direct patient contact) to all HSC workers. Therefore, uptake in 2021 to 2022 onwards is not comparable as it was not possible to disaggregate frontline and non-frontline staff (i.e. data sources differ between 2020 to 2021 and 2022 to 2023 in table 1 below which shows the trend in flu vaccination uptake among NI HSC workers from 2018/2019 to the 2024/2025 season).

Table 1 - trend in flu vaccination uptake among NI HSC workers from 2018/2019 to the 2024/2025 season

Year	HSC worker uptake of the flu vaccine in NI
2018-2019	35.4% (frontline only)
2019-2020	36.8% (frontline only)
2020-2021	49.8% (frontline only)
2021-2022	Unavailable
2022-2023	37.5%
2023-2024	21.5%
2024-2025	21.4%

Source of data: Seasonal Influenza Annual Surveillance Reports for NI, by the PHA

4.3. Barriers and facilitators to vaccination uptake in health and social care workers

A rapid literature search was conducted on Pubmed and Google Scholar to find papers that focused on barriers and facilitators to influenza and/or covid-19 vaccination in healthcare workers. Variations in terminology were accounted for in the searches e.g. 'enablers', 'drivers' were used as alternative search terms for 'facilitators' to capture all relevant studies where possible. Relevant articles identified were screened and main findings of the studies are reported in a table in **Appendix C**. Of particular interest were studies that reported findings in line with the TDF Framework or expressed barriers and facilitators in enough granular detail that they could be easily mapped to the TDF.

The following studies provide an overview of the main barriers and facilitators in relation to healthcare worker flu vaccination uptake from the literature. TDF barriers/ facilitators that were coded specifically within the studies themselves are displayed in *italics*.

Alsaif et al., 2023 – A systematic review of barriers and enablers associated with uptake of influenza vaccine among care home staff (13)

Key TDF barriers to vaccination among care home staff included:

- Insufficient understanding about influenza vaccines, their benefits, or safety *(knowledge gaps)*
- Misconceptions or beliefs that the vaccine is ineffective or unsafe *(beliefs about consequences)*
- Fear of side effects *(emotional concerns)*
- Difficulty accessing the vaccine *(logistical or environmental constraints)*
- Peer norms, influence from others *(social influences)*

Kenny et al., 2020 – Barriers to seasonal influenza vaccine uptake among health care workers in long-term care facilities: A cross-sectional analysis (17)

This cross-sectional study surveyed 372 healthcare workers (HCWs) in 21 long-term care facilities in western Ireland to identify psychological factors influencing influenza vaccine uptake.

TDF -related components identified as significant predictors of vaccine uptake:

- *Past vaccination*,
- *personal goals and intentions*,
- *social influences*
- *reinforcement*

These could be targets for reducing barriers/increasing facilitation of behaviour.

Guillari et al., 2021 – Influenza vaccination and healthcare workers: barriers and predisposing factors. A literature review (18)

The authors identified various barriers and predisposing factors affecting healthcare workers' influenza vaccine uptake in this narrative review (e.g. personal beliefs, institutional/organisational issues).

Facilitators included:

- self-protection, protecting others, community responsibility, and awareness of benefits (both for self and patients),
- positive attitudes toward vaccination
- organisational measures such as free access, reminders, or institutional encouragement

Key barriers included:

- misconceptions about vaccine safety and effectiveness (e.g., belief the vaccine causes flu)
- perceived low risk of contracting flu
- belief in natural immunity, laziness and trivialising the disease
- a lack of institutional support or incentives

Boey et al., 2018 – Attitudes, beliefs, determinants and organisational barriers behind the low seasonal influenza vaccination uptake in healthcare workers – A cross-sectional survey (19)

The study surveyed 5,141 Belgian healthcare workers from 13 hospitals and 14 nursing homes and included interviews with vaccination campaign coordinators.

Facilitators included:

- Encouragement by supervisors
- well organised vaccination campaigns, especially with on-site vaccination availability

Barriers included:

- Misconceptions about influenza and the vaccine (e.g. belief in vaccine causing influenza, weakening immunity).
- Underestimating the risk of contracting influenza, either by themselves or posing risk to patients.

4.4. Effectiveness of interventions designed to improve vaccination uptake rates

A rapid review was conducted using the Elicit AI platform to identify effective interventions for improving seasonal influenza vaccination uptake among healthcare workers. Elicit retrieved eight relevant articles, comprising seven systematic reviews and one randomised controlled trial, and automatically extracted key data from each study. Evidence from these articles indicated that mandates and policy-based approaches produced the strongest effects, with mandatory vaccination achieving uptake rates of 90-98.4%, and mandates combined with free on-site clinics increasing uptake from 57% to 75% (20). Multi-component interventions were also found to be consistently more effective than single strategies across studies (21, 22), demonstrating risk ratios ranging from 1.37 to 1.58 and absolute increases in uptake of 37-43% (22).

Interventions that improved access and convenience showed significant effects, with relative risks of being unvaccinated ranging from 0.64 to 0.88 (23), and on-site, free vaccination clinics being particularly effective when combined with other strategies (20). In contrast, educational approaches alone were reported as rarely effective, showing no significant impact in isolation (21) and only demonstrating benefit when included within broader multi-component interventions (20). Nudging and social norm-based strategies produced mixed results: personalised reminders were associated with modest improvements, such as an 11% absolute increase in some studies (24), whereas social norm reminders (25) and incentives (23) showed no significant effect.

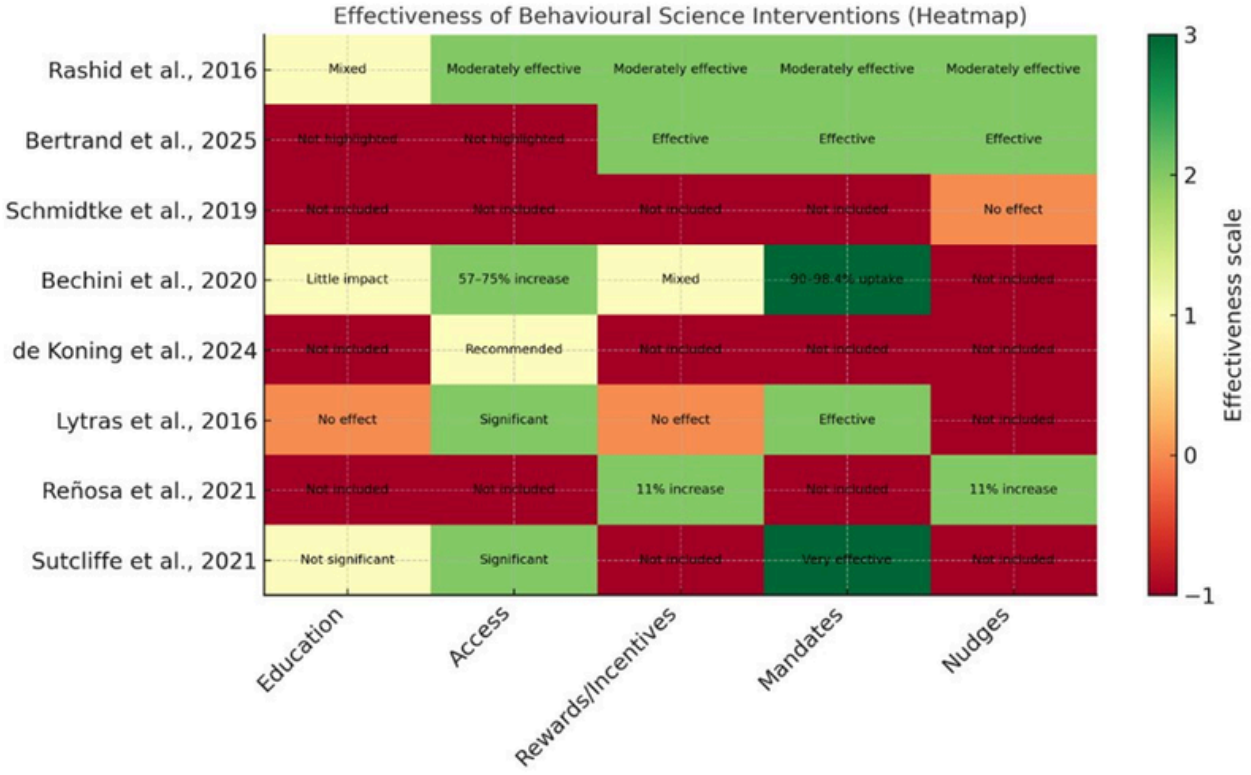


Figure 11. Heat Map of Included Articles Detailing the Effectiveness of Behavioural Science Interventions for Seasonal Flu Vaccination Uptake among HSC workers

Main Messages

- Influenza vaccination strongly recommended in HSC workers due to well-documented benefits - reduced absenteeism, decreased transmission, and improved patient safety
- However, uptake among healthcare workers remains suboptimal, especially since the Covid-19 pandemic
- **Facilitators** of vaccine uptake from the literature include self-protection, protection of others, past vaccination and positive organisational measures (e.g. free access, on site availability and encouragement from supervisors)
- **Barriers** include misconceptions about the vaccine and fear of side effects, underestimation of flu risk, knowledge gaps about vaccine benefit and institutional or access issues

Key findings regarding intervention effectiveness:

✅ Mandates drive the highest uptake (over 90%)

🚪 Easy access matters – free or on-site clinics boost rates

💡 Nudges help – reminders and framing give small but steady gains

🎁 Rewards work best in combination, not alone

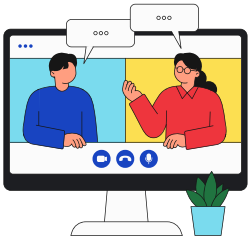
📘 Education alone isn't enough –stronger when paired with access or policy

🔑 **Takeaway:** the most effective intervention strategies are **multi-layered**

1. Stakeholder engagement

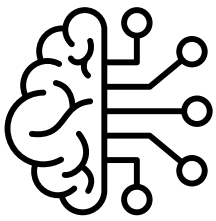
To more fully understand the context surrounding seasonal flu vaccination in NI, a piece of qualitative research was undertaken with a range of staff drawn from relevant organisations.

1.1. Methods



- Semi-structured stakeholder interviews were conducted with health and social care professionals using Microsoft Teams.
- Participants were purposively sampled to capture perspectives from a range of settings, including community pharmacy, occupational health, primary care, NHS trust vaccination leads, trust communications teams, and staff working in private care home sectors across diverse care home settings.
- In total, ten interviews were undertaken, each lasting approximately 40–60 minutes. All interviews were audio-recorded and transcribed verbatim using the Microsoft Teams transcription function.

1.2. Interview Analysis



- Transcripts were cleaned and anonymised prior to analysis.
- The anonymised transcripts were uploaded to ChatGPT version 5.0 to support qualitative analysis. The AI tool was used as an analytical assistant to facilitate coding against the COM-B framework by identifying barriers and enablers to vaccination uptake and mapping these to the domains of Capability, Opportunity, and Motivation.
- All AI-generated codes were independently reviewed by RR and AK, who verified their accuracy, added any omitted barriers and enablers, and consolidated the data into a final, agreed coding framework. This hybrid approach combined human and AI-assisted analysis to enhance analytic efficiency while maintaining methodological rigour.

1.3. Results

- The COM-B-informed analysis revealed that barriers to vaccination were most prominent within the **Capability** and **Opportunity** domains, particularly relating to **knowledge gaps**, **misinformation**, **system-level constraints**, and **limitations in communication**, **clinic access**, and **data infrastructure** for monitoring and recording data.
- Motivational barriers were largely characterised by **vaccine fatigue**, **residual distrust in vaccinations following the COVID-19 pandemic**, and **low perceived personal risk**. It also highlighted a need for improved trust and working relationships between the Public Health Agency and the independent care sector.
- In contrast, several strong enablers were identified across all domains, including **clear leadership role-modelling**, **trusted relationships with pharmacists**, **convenient workplace-based vaccination**, and the **use of emotionally resonant and peer-led messaging**.
- Overall, the findings highlight that vaccination behaviour among HSC workers is shaped by an interplay of structural access, organisational culture, and individual beliefs, suggesting that multifaceted, theory-informed interventions are required to address persistent gaps in uptake. See **Appendix D** for a consolidated summary table of barriers and enablers identified from stakeholder interviews.

CAPABILITY

Barriers

- Limited staff qualification and formal infection control training
- Communication and coordination problems
- Pharmacy- or system-related barriers
- Limited external support
- Misinformation
- Lack of clarity re: eligibility / staff identification
- Staff sickness or capacity issues
- Barriers related to timing/planning of flu vaccine campaign
- Slow uptake and training of peer vaccinators
- Access / clinic scheduling barriers
- Limited promotional or supportive communication
- Lack of accurate vaccine knowledge
- Perceived side effects / misunderstanding
- Professional identity – protecting residents
- Lack of data on why staff do not get vaccinated
- Reliance on guesswork when designing comms
- VMS / data collection issues (barrier to assessing vaccination uptake rates accurately in HSC workers)

Enablers

- Practical and online infection control training
- Manager awareness of reporting and data collection processes
- Dispelling myths and addressing safety concerns
- Experience managing vaccination programmes across multiple homes
- Record-keeping and monitoring processes
- Internal capacity to analyse barriers using COM-B
- Experience delivering flu campaigns long-term
- Organisational ability to communicate information
- Staff explanations of immunity and protection
- High professional competency of vaccinators
- Opportunistic vaccination
- Improved VMS options
- Professional identity – protecting residents
- Strong in-house capacity to design comms materials
- Experience with humour and behavioural messaging

OPPORTUNITY

Barriers

- Limited promotional or supportive communication
- Pharmacy- or system-related barriers
- Access / clinic scheduling barriers
- Lack of clarity re: eligibility / staff identification
- Limited external support
- Misinformation
- Residual distrust following COVID-19 pandemic
- Very limited funding for staff flu programmes
- Staff sickness or capacity issues
- Communication and coordination problems
- Negative norms / tearoom culture
- Mobile clinics not effective
- Variation in care-home organisation
- Poor visibility of Trust clinics
- Barriers related to timing/planning of flu vaccine campaign
- Only one practice nurse
- Lack of specific advertising for HSC workers
- VMS / data collection issues (barrier to assessing vaccination uptake rates accurately in HSC workers)
- No budget for comms or incentives
- Absence of posters in trust buildings
- Reduced workplace discussion

Enablers

- Convenient access to vaccination in the workplace
- Flexible arrangements via pharmacy partnership
- Clear internal communication methods
- Strong relationships between care homes and pharmacies
- Use of vaccine champions and operational support
- Walk-in vaccination options
- Proactive care home managers who notify pharmacy about staff who want to be vaccinated
- Multiple communication channels within the organisation
- Flexibility in vaccination access
- Strong leadership role-modelling and advocacy
- Walk-around clinics improving accessibility
- Peer vaccinators embedded in local settings
- Real-time daily communication
- Staff stories and local videos
- Trusted sources like Fact Check NI
- Established communication networks
- Use of branded internal materials
- Visual promotion in offices
- Wide clinic availability and flexible hours
- Extensive geographical coverage and walk-in access
- Flexible opening hours (evenings/weekends)
- Pharmacy–care home pairing & mop-up clinics
- Sessional vaccinators available
- QR codes linking to NI Direct
- VMS text messaging capability
- Workplace vaccination clinics & webinars
- Multiple vaccination options
- Text message invitations
- Midwife referrals
- Staff allowed to get vaccinated anytime
- Reduced workplace discussion
- Tea room discussion
- GP modelling
- Peer encouragement
- Staff vaccination opportunities on-site
- Precise recording by pharmacy
- Leadership involvement in videos and messaging
- High visibility through internal comms (desktop screens, emails, newsletters)
- Press releases and local newspaper coverage

MOTIVATION

Barriers

- Vaccine fatigue and COVID-related disengagement
- Scepticism and misinformation about vaccine safety
- Belief in personal responsibility and control
- Fear of consequences (side effects, income loss)
- Low perceived benefit / complacency
- Conspiracy beliefs
- Perception of natural immunity
- Belief flu is mild
- Residual distrust following COVID-19 pandemic
- Misinformation
- Negative norms / tearoom culture
- Staff dislike being told what to do
- Lack of incentive for organisations and staff
- Perception that vaccination messaging equals coercion
- Leadership/Manager influence
- COVID-related vaccine hesitancy spillover
- Assumption HSC workers will get vaccinated elsewhere
- Reduced organisational prioritisation / encouragement
- Low trust – cultural influences
- Decline in social media "buzz" around vaccines
- Need to avoid pressuring staff

Enablers

- Professional endorsement for high-risk staff
- Positive example of full uptake among residents during COVID
- Trust and influence of pharmacists and managers
- Positive feedback and satisfaction with programme
- Tailored reassurance and risk assessment
- Manager openness to providing more information
- Older and high-risk staff more motivated to vaccinate
- Professional responsibility among nurses
- Fear of infecting residents or family
- Peer influence / social proof
- Personalised stories about severe illness
- Staff videos from relatable colleagues
- Bad flu seasons increase uptake
- Encouraging and positive messaging
- Understanding the need for emotional, story-driven campaigns
- Pregnancy increases protective motivation
- Support for mandatory vaccination
- Monetary consequences / incentives
- Clear communication of benefits to staff
- Positive vaccination experience encourages repeat uptake
- Perceived convenience of pharmacy one-stop model
- Desire to reduce winter pressures
- Habit formation from COVID era
- Professional and protective identity
- Accepting if offered
- Protecting family as motivator
- Reinforcement from visiting teams
- Strong emotionally driven storytelling approach
- Leadership role modelling (videos, endorsements)
- Humour and creative slogans
- Messaging emphasising severity of flu
- Staff stories and local videos

1.4 NICSS Event - Brief Poll Results

- A short anonymous poll was administered at a Northern Ireland Social Care Council event to assess seasonal influenza vaccination uptake and perceived barriers and enablers among HSC workers.
- A total of 12 individuals completed the survey, the majority of whom were managers or supervisors working in residential care, domiciliary care, housing support, or supported living settings (11/12).
- Most respondents reported that they had not received the seasonal influenza vaccine during the 2024–2025 season (8/12).
- Among those who had been vaccinated, the **main motivators were protecting themselves and their families**.
- **Frequently reported barriers** to uptake included **difficulties accessing vaccination**, **concerns about side effects**, **perceptions that vaccination was unnecessary**, **limited employer promotion**, and **lack of time or opportunity to arrange vaccination**.
- Vaccination most commonly took place in GP practices.
- Respondents reported that organisations promoted vaccination through posters, emails, internal campaigns, on-site vaccination, and manager-led training sessions.
- Participants also identified wider barriers affecting this workforce and these are presented in Figure 12.
- Such barriers could be mapped against COM-B elements, for example, knowledge and awareness relates to Capability; fear and mistrust relate to Motivation and access relates to Opportunity.

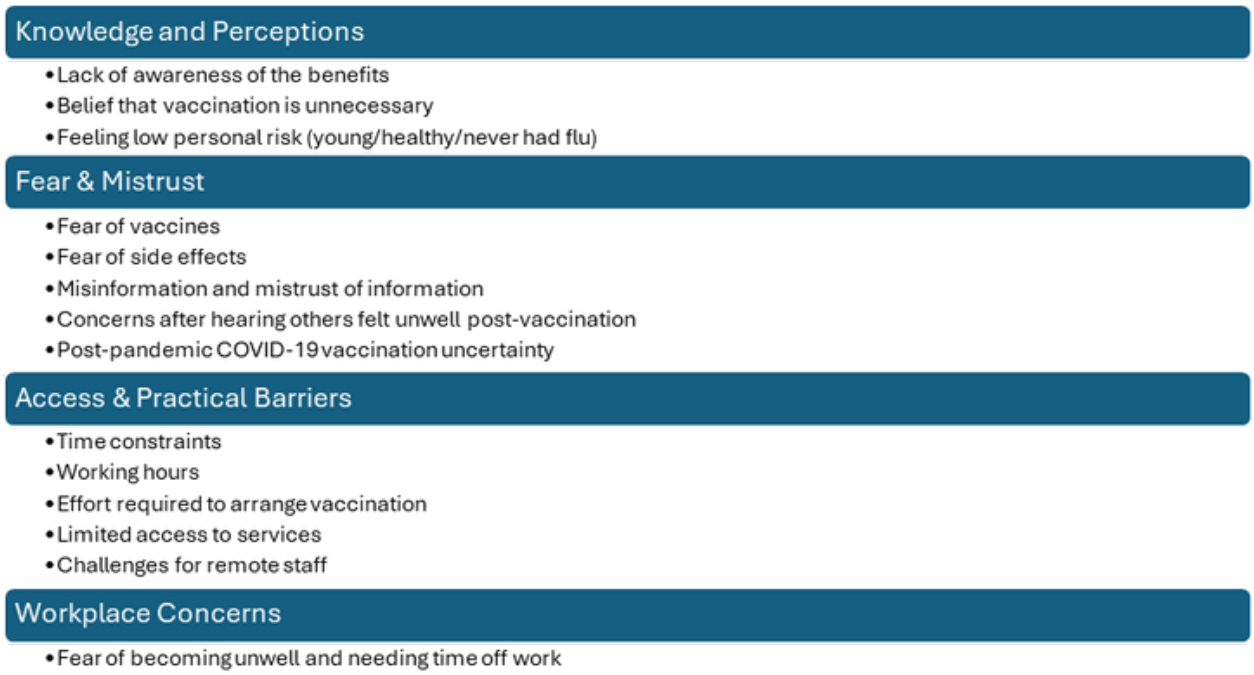


Figure 12 - Identified barriers to seasonal flu vaccination uptake among HSC workers from NICSS poll

2. Added value and impact for the 2025/26 season

Over the course of this project, the research team have actively engaged with Health and Social Care and Public Health Agency colleagues in NI regarding the following aspects of the current season's influenza programme, contributing 'added value' in the form of brief interventions.

These brief interventions have included:

- **Revising staff communications:** Providing detailed feedback on letters and circulars issued to health and education staff (HSC/EA), including restructuring content to to focus on the behaviour first (getting vaccinated) versus leading with motivational messaging. This behavioural reframing strengthened clarity and action orientation.
- **Raising awareness of vaccines at events** (NI social care event); this involved QUB staff presence at a social care management event raising the issue of seasonal influenza (increasing staff knowledge or 'capability') and highlighting the important role the social care sector play regarding seasonal influenza, helping to build trust and relationships
- **Improving campaign messaging and design:** Commenting on design briefs and scripts for a late public information campaign in NI, ensuring behavioural science principles were reflected in messages, tone and calls to action.
- **Infographic feedback and other communications** regarding promotion of the flu vaccination programme to the public; this involved editing infographic content for wider circulation, editing PHA social media assets, national newspaper adverts, and Youtube/video scripts)

Whilst it was not possible to track the impact directly of these brief behaviourally-informed interventions, it has shown success in the methods of working between academia and PHA colleagues for the benefit of public health. Side-by-side comparisons of selected materials before and after revision are available to illustrate enhancements made.

Main Messages

- Limited insight into the lived experiences, barriers and enablers of seasonal flu vaccination among health and social care staff from a range of occupational categories, including care home and domiciliary care staff remains a key gap

- Stakeholders identified ongoing issues relating to staff knowledge gaps, misinformation, and uncertainty about vaccine safety and necessity. These were compounded by vaccine fatigue and reduced perceived personal risk, particularly in the post-COVID-19 context, which together undermine motivation to engage with seasonal vaccination programmes

- Interviews consistently pointed to wider structural challenges, including difficulties accessing vaccination, fragmented communication, lack of support, and limitations in data infrastructure. Specific concerns were raised around vaccination management system (VMS) recording of HSC worker vaccination uptake

- Brief NICSS event poll findings reinforce access and engagement challenges within social care; highlighting that the majority of participants (social care managers/supervisors) had not received the seasonal influenza vaccine during the 2024–2025 season. Barriers mirrored interview findings and included access difficulties, concerns about side effects, low perceived necessity, limited employer-led promotion, and lack of time or opportunity to arrange vaccination

Considerations & Future Opportunities

Overview

This section highlights the knowledge gained to date from completing WHO TIP Phases 1 and 2 of a project aiming to explore the uptake of influenza vaccination by health and social care workers in Northern Ireland. It will also acknowledge the gaps that remain where further research is needed, and highlight possible future approaches to intervention, while keeping in mind the importance of co-design with stakeholders and planning for post-tip evaluation.

Knowledge gained from the project relevant to local NI picture

This project has successfully highlighted and collated key barriers and challenges (both behavioural and opportunity-related e.g. VMS recording of HSC worker status) in relation to HSC worker uptake of flu vaccination in NI. The findings have already been described in detail throughout this report, therefore a brief **key findings** summary can be found on the next page.

Key Findings

Influenza vaccination uptake among HSC workers in Northern Ireland is low and has been declining, however this season's figures show an improvement

The HSC workforce is large, predominantly female, younger, and heterogeneous (and often this cohort are actively engaged with social media)

Social media misinformation is widespread and undermines confidence in vaccination

Existing HSC/PHA vaccination campaigns rely too heavily on motivation and threat-based messaging alone

Barriers and facilitators identified in the literature align closely with findings from the local context (NI)

Evidence shows that single interventions are insufficient (the most effective strategies for increasing uptake are multi-component interventions, across the 'system', not single measures)

Stakeholder engagement highlights persistent structural and motivational challenges

- There remains limited insight into the lived experiences of all health and social care staff, particularly care home and domiciliary workers (i.e. their knowledge, fears, motivations).
- Stakeholders identified knowledge gaps, misinformation, vaccine fatigue, and reduced perceived personal risk as key motivational barriers in the post-COVID context.
- Structural challenges–including access difficulties, fragmented communication, and limitations in vaccination data systems (VMS) were consistently reported.

Overall takeaway

The findings of this report consistently show that **low influenza vaccination uptake among HSC workers in Northern Ireland is driven by an interplay of behavioural, structural, and organisational factors.** Declining uptake cannot be addressed through information or motivation alone. Instead, the evidence points to the need for **theory-informed, multi-level interventions** that simultaneously address **misinformation, access, organisational culture, data infrastructure (regarding vaccine uptake monitoring), and trust,** with particular attention paid to rebuilding trust post-Covid-19 with the social care workforce.

Areas for further research

One of the main suggestions arising from this project is the need for primary data collection from health and social care staff directly to help understand and address motivational aspects related to barriers and facilitators of vaccination uptake. This was not possible within the timescale of the current project but is an important aspect of incorporating all stakeholder views, in line with the WHO TIP principles.

Linking in with on-going work/efforts to increase vaccination uptake is another area that could be explored – e.g., good practice in Trusts such as the South Eastern Trust; any primary research being conducted in specific Trusts (i.e. the Northern Trust). This would serve to benefit the wider efforts being made to address this issue and reduce silo working.

Geographical differences in HSC worker flu vaccination uptake was emphasised by stakeholders and is an issue that could be addressed by additional primary research. This is a recognised issue by the PHA and ongoing research efforts are planned to address this. Furthermore, a key challenge highlighted by the present research was that of intersectionality, i.e., where multiple sociodemographic characteristics can lead to unique challenges regarding vaccine uptake. For example, lower education levels within the social care workforce; females (who have been shown to have greater vaccine hesitancy); and intersection with cultural or religious issues. These are areas which could be prioritised for further investigation.

Possible intervention approaches

Intervention design is an integral part of Phase 3 of the WHO TIP approach, and although behaviour change theory is an important thread throughout the phases of TIP, adherence to the principles of behaviour change models is crucial in the Phase 3 intervention design process.

As stated earlier in this report, the BCW, COM-B and TDF used in combination provide an integrated, evidence-based approach to behaviour change intervention design. COM-B identifies what needs to change, the TDF clarifies the underlying psychological and contextual factors, and the BCW connects these insights to appropriate intervention and policy options. Used together, they support the design of targeted interventions with a higher likelihood of success.

Opportunities identified in this research can be linked to these models/ frameworks and may provide fruitful targets for future intervention. Below are some examples with relevant COM-B constructs specified in *italics*.

- Use of communications with positive, inclusive imagery (e.g., social care sector) *(Capability, Motivation)*
- Broaden messaging (not only threat-based), follow behavioural science principles *(Capability, Motivation)*
- Modelling of the desired behaviour (senior leaders and peers; whole workplace initiatives) *(Motivation)*
- Enablement (making it easy to receive in working hours and free); consideration of a more overt launch day for HSC workers e.g., 'Stoptober' but for vaccinations, to enable visibility and workplace conversations *(Capability, Opportunity, Motivation)*
- Structural changes – e.g., promote correct data capture in VMS; vaccination access; incentivise *(Opportunity)*.

Whilst it was beyond the scope of the current project to co-produce multiple intervention strategies alongside stakeholders, the issue of combatting mis- and dis-information is worth highlighting. There are several useful resources for understanding the mis- and dis-information landscape and the following section summarises key information from a recent resource.

Combating misinformation and disinformation

Given the challenge and pervasiveness of social media for the target audience for vaccination and the findings presented in WHO TIP Phase 1 (Section 2) on the challenges in the social media landscape, the next section outlines some helpful approaches to combatting mis- and disinformation.

This section outlines key principles and options for government communications to counter mis- and disinformation effectively based on the **Government Communications Service RESIST 2 toolkit for Countering Disinformation**.

It emphasises that not all false information requires a response, and any public response should be truthful and impactful. The RESIST 2 toolkit recommends following communication best practice in relation to countering mis and disinformation and specifically refers to the Organisation for Economic Cooperation and Development (OECD) good practice principles, outlined below.

Key Communication Principles (OECD Principles)

1. **Transparency:** Honest, clear, and open communication to reduce rumours and enable public scrutiny.
2. **Inclusiveness:** Tailored messages for diverse audiences, including vulnerable and marginalised groups.
3. **Responsiveness:** Address citizens' needs and concerns through two-way dialogue.
4. **Whole-of-society:** Collaborate with stakeholders like media, civil society, and academia to build public resilience.
5. **Public-interest driven:** Ensure communication is impartial and independent from political agendas.
6. **Institutionalisation:** Consolidate interventions into coherent approaches with adequate resources and trained staff.
7. **Evidence-based:** Use reliable data and research to inform strategies and improve practices.
8. **Timeliness:** Act quickly to counter emerging narratives and prevent false information from spreading.
9. **Prevention:** Pre-empt rumours and falsehoods by identifying and addressing information gaps.
10. **Future-proof:** Invest in research and foresight to anticipate evolving threats.

Communication Options:

The toolkit also outlines a range of communication options, with Figure 13 below illustrating these options. The differing approaches to combatting mis- and disinformation are highlighted.

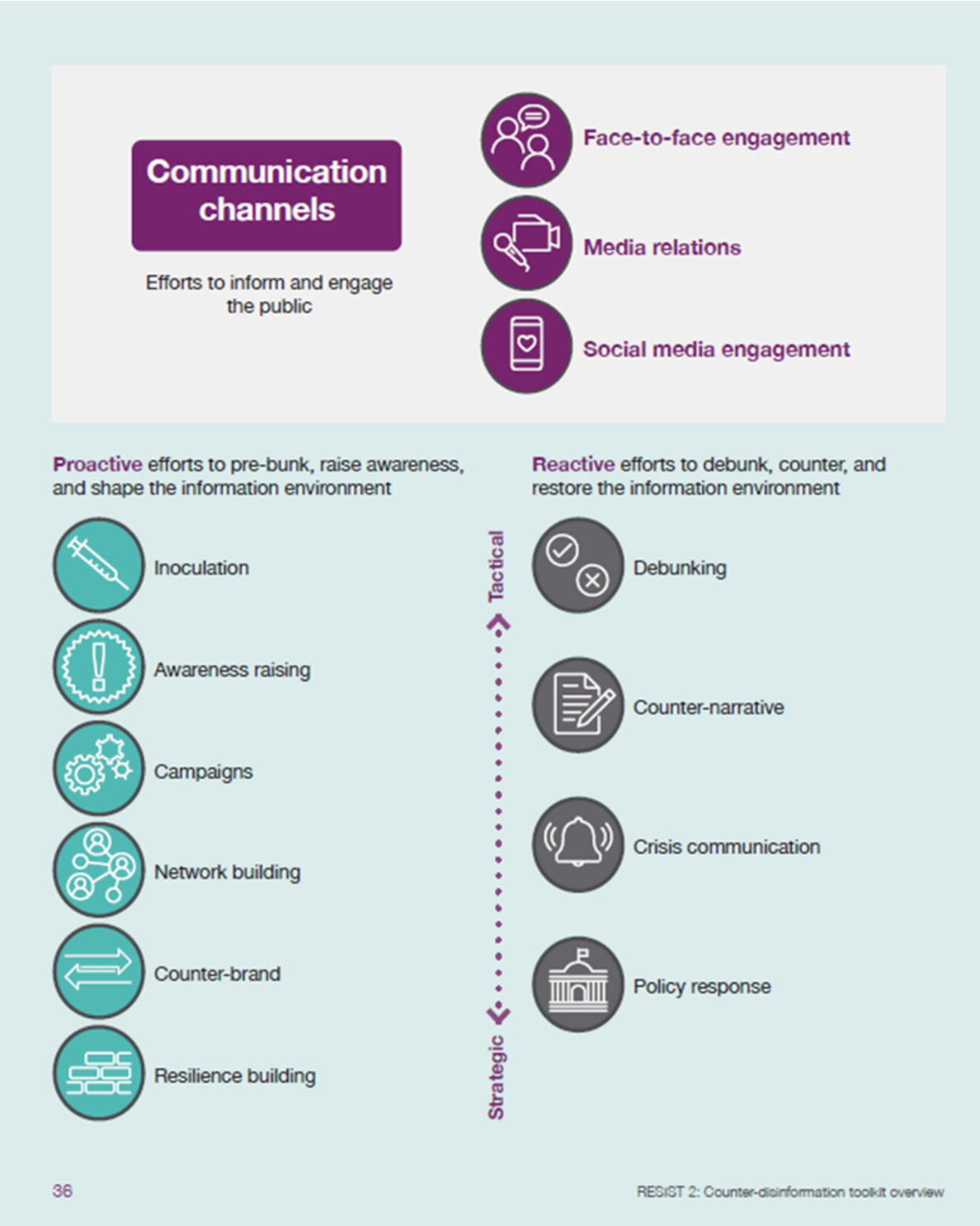


Figure 13- Communication options from the RESIST 2 Toolkit for countering misinformation

Communication Options (continued)

- **Traditional vs. Digital Channels:**

a. **Face-to-Face Engagement:** Build trust through direct communication with stakeholders, influencers, or communities.
b. **Media Relations:** Use press releases, statements, briefings, and earned media coverage to shape public discourse.
c. **Social Media Engagement:** Use owned channels to target audiences directly, employing the FACT model (Find, Assess, Create, Target) for effective responses.

- **Proactive Communication Options:**

a. **Inoculation:** Pre-emptively counter false messaging using the PROVE framework (Pre-bunk, Reliably Inform, Offer Balance, Verify Quality, Explain Uncertainty).
b. **Awareness Raising:** Shape public debate through campaigns, storytelling, and targeted advocacy.
c. **Campaigns:** Use the OASIS model to plan and execute strategic communication campaigns (Objective, Audience insight, Strategy, Implementation, and Scoring).
d. **Network Building:** Collaborate with allies, experts, and stakeholders to share knowledge and strengthen resilience.
e. **Counter-Brand:** Expose and discredit hostile actors spreading false information.
f. **Resilience Building:** Educate and train audiences to critically engage with false information.

- **Reactive Communication Options:**

a. **Debunking:** Correct false information using evidence-based messaging (Fact, Myth, Explain Fallacy, Fact).
b. **Counter-Narrative:** Replace false narratives with truthful ones to address broader misinformation.
c. **Crisis Communication:** Use tools like holding statements, interviews, stakeholder briefings, and risk mitigation communications during crises.
d. **Policy Response:** Develop policy-level actions to counter persistently hostile actors and their strategic intent.

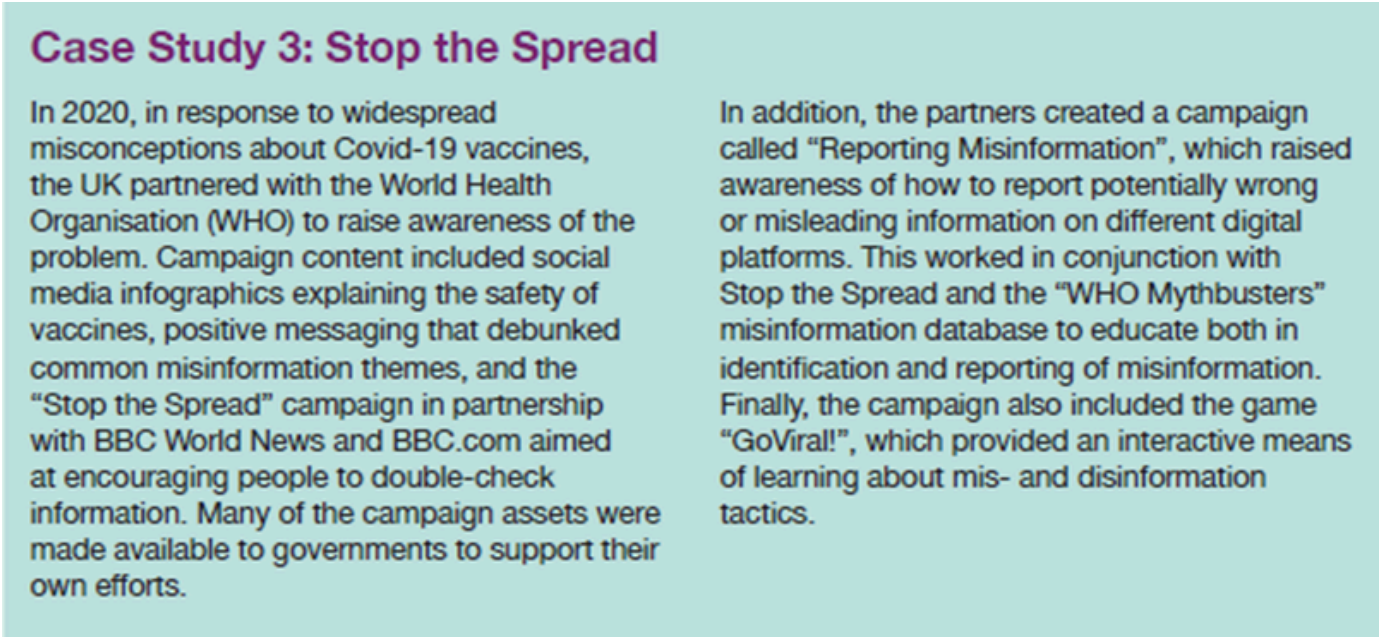
Differing Approaches

- High-priority issues require immediate, reactive responses, such as media relations and counter-branding.
- Medium-priority issues benefit from a mix of proactive and reactive measures, including campaigns and counter-narratives.
- Low-priority issues may only require monitoring and long-term resilience-building efforts.

Case Study

An example case study from the **RESIST 2 toolkit for Countering Disinformation** of particular relevance is the WHO/BBC 'Stop the Spread' Campaign which was implemented during the Covid-19 pandemic.

Stop the Spread Campaign: Partnered with WHO and BBC to raise awareness about COVID-19 misinformation, promote vaccine confidence, and educate the public on identifying and reporting misinformation.



Case Study 3: Stop the Spread

In 2020, in response to widespread misconceptions about Covid-19 vaccines, the UK partnered with the World Health Organisation (WHO) to raise awareness of the problem. Campaign content included social media infographics explaining the safety of vaccines, positive messaging that debunked common misinformation themes, and the "Stop the Spread" campaign in partnership with BBC World News and BBC.com aimed at encouraging people to double-check information. Many of the campaign assets were made available to governments to support their own efforts.

In addition, the partners created a campaign called "Reporting Misinformation", which raised awareness of how to report potentially wrong or misleading information on different digital platforms. This worked in conjunction with Stop the Spread and the "WHO Mythbusters" misinformation database to educate both in identification and reporting of misinformation. Finally, the campaign also included the game "GoViral!", which provided an interactive means of learning about mis- and disinformation tactics.

Figure 14- Example case study - "Stop the spread" campaign Source: RESIST 2 toolkit for Countering Disinformation

Overall, the RESIST 2 toolkit highlights the importance of tailoring communication strategies to the priority level of the disinformation and using a combination of proactive and reactive approaches to effectively counter false and misleading information.

Conclusion

This rapid piece of behavioural research commissioned by the Public Health Agency, funded by the Health and Social Care Research and Development Division and conducted by Queen's University Belfast has highlighted current challenges faced in Northern Ireland regarding HSC worker uptake of seasonal influenza vaccination. It has followed the WHO TIP approach and embedded models and frameworks of behaviour change into all stages of the process, including COM-B and the TDF.

Findings have shown that multi-layered interventions are needed to address barriers to vaccination including those which are practical and opportunity-related (vaccination clinic location, accessibility, recording of vaccination status on VMS); and highlighted where more research is needed to fully explore workforce sentiment regarding vaccination. Capability and motivational challenges to vaccination remain persistent, for example, poor and inaccurate knowledge regarding flu vaccination benefits, fears about side effects, apathy, and inaccurate beliefs about low levels of personal susceptibility (and/or severity) of flu. Furthermore, messaging may need to reprioritise the health and wellbeing of HSC workers to more fully engage individuals with the desired behaviour.

The recommendations set out in the final section suggest possible approaches to address these challenges, both at the level of the organisation and the individual (i.e. HSC staff). This dual approach will be of importance to ensure the wider health and social care system supports routine vaccination amongst staff, creating a culture of acceptance and action.

Recommendations & Suggested Actions

The recommendations below summarise possible actions which could be taken across varying levels of the HSC system to encourage a positive workforce culture regarding vaccination which may lead to increased vaccine uptake. These final recommendations have been developed based on the breadth of evidence gathered as part of this rapid research project. Short, medium and long term recommendations are listed in separate tables.

SHORT-TERM	RATIONALE	MAPPED TO COM-B	WHO SHOULD TAKE ACTION?	LEVEL OF IMPORTANCE
Plan and commission additional research with the target group (i.e. HSC workforce); taking account of the variety of job roles and staff categories across the health and social care system, including the independent care sector	Primary research is needed to fully explore HSC worker's beliefs about routine vaccination; providing a more granular understanding of barriers and enablers to the behaviour prior to an intervention co-design process	Capability	PHA Senior Leaders, HSC R&D	**CRITICAL**
Consider re-design of PHA posters and social media communications in line with behavioural science audit feedback and Public Health Wales resources	Consider all elements of COM-B in mass media/print-based communications; move beyond threat-based messaging and ensure the desired behaviour is being modelled and enabled	Capability (ensure factual knowledge about vaccination) Opportunity (ensure it is clear how and where people can take action) Motivation (use tested messaging that is not only threat-based)	PHA Communications team in conjunction with Trust communication teams and those from independent care sector who design staff communications	**CRITICAL**
Ensure PHA leaders and communication team along with other communication teams (e.g., Trusts and independent care sector) are aware of mis- and dis-information report; consider a workshop to actively upskill and tackle the issue	Mis- and dis-information on seasonal flu vaccination is highly prevalent on social media on multiple outlets; it is important to consider the RESIST 2 approach to communications to tackle the issue. This is particularly key as the main demographic group who are being targeted for increased vaccination (women; under 49 years) are likely to be high consumers of social media	Capability (provide accurate knowledge) Motivation (counter negative emotions on vaccination by dispelling mis- and dis- content)	PHA leaders, PHA Communications team in conjunction with Trust communication teams and those from independent care sector who design staff communications	**CRITICAL**
Ensure detailed step-by-step communications are cascaded to all organisations using the vaccine management system (VMS) to highlight the importance of ticking 'all that apply' and including 'health and/or social care worker'; **OR** Consider a system-level intervention to the data capture where all those using VMS have to answer a pop-up question before proceeding which asks 'Is the person being vaccinated currently working as a health and/or social care professional?' which requires a yes/no answer before proceeding to the additional eligibility criteria (e.g. over 65 years, underlying illness etc.)	The issue of recording on VMS can be addressed by cascading clear information on the importance of recording whether people are HSC workers AND how to do this on the system; however, a data capture change to add filter question which would require a response to whether the person being vaccinated is a current HSC worker would also more accurately solve this issue	Capability (increase staff knowledge at community pharmacies and GP practices) Opportunity (restructuring the system would positively impact data collection)	PHA leaders and specific programme managers working with those who build/edit the VMS; practice managers, community pharmacists	**IMPORTANT**

SHORT-TERM	RATIONALE	MAPPED TO COM-B	WHO SHOULD TAKE ACTION?	LEVEL OF IMPORTANCE
Roll out staff training to all delivery strands of the vaccination programme on the principles of behaviour change (existing training course or bespoke training from the QUB team)	Ensures all staff have a basic understanding of behaviour change and how the principles can be applied to vaccination behaviours	Opportunity (via providing training to up skill staff) Capability (increased awareness and knowledge from training)	PHA leaders, HSC educators and HR/staff training managers	IMPORTANT

MEDIUM-TERM	RATIONALE	MAPPED TO COM-B	WHO SHOULD TAKE ACTION?	LEVEL OF IMPORTANCE
Focus on promotion and protection of HSC workers health and wellbeing as a core part of the HSC Regional Staff Wellbeing Framework; highlighting the role of self-protection as a priority. This should be further explored in the primary research recommended above	HSC workers have indicated that the focus on promoting staff vaccination to 'protect the NHS' as opposed to protecting their individual health may be a conflicted message. Use the HSC Regional Framework for staff health and wellbeing as a springboard to promote a range of self-protection behaviours, including seasonal vaccination	Capability (increase awareness of the focus on staff health and wellbeing) Motivation (increase motivation for self-protection)	PHA leaders, all senior Trust leaders, Occupational health teams	IMPORTANT
Co-produce a new updated seasonal flu leaflet (and posters); role model a range of staff images and modelling of the desired behaviours NOTE: this should be informed by additional primary research with target group first	The existing seasonal flu leaflet for HSC workers was created some time ago and would benefit from a refresh and a co-production approach, bringing in key staff from across the HSC workforce in its development (from inception)	Capability (increase accurate knowledge) Opportunity (distribute so staff will encounter the resource) Motivation (factual knowledge on benefits and case studies may increase motivation for vaccination)	PHA Communications team in conjunction with Trust communication teams and those from independent care sector who design staff communications	CRITICAL

LONGER-TERM	RATIONALE	MAPPED TO COM-B	WHO SHOULD TAKE ACTION?	LEVEL OF IMPORTANCE
Consider implementing mandatory annual training for all HSC staff e.g., brief e-learning modules on self-protection (eating well, being active, sleep, vaccination, etc.) and on importance of infection control	Given many staff, particularly in the social care workforce, have not been exposed to educational materials on the importance of vaccination and its role in infection control, it would be advisable to ensure all HSC staff are exposed to this on a regular basis. Co-production of the materials which speak to all occupational groupings is critical	Opportunity (via providing mandatory staff training) Capability (increased awareness and knowledge from completing training) Motivation (increased knowledge of benefits may impact motivation to be vaccinated)	PHA leaders, HSC educators and HR/staff training managers	IMPORTANT
Consider collaboration with local educators and academics to ensure curriculum content covered in any health and social care related qualifications	Ensure system-wide coherence of messaging around the importance of seasonal vaccination for both self-protection, protection of family and friends and protection of patients/service users and the wider HSC system	Capability Opportunity	Collaboration between educational colleagues and PHA senior leaders/programme managers, academia	IMPORTANT
Create a culture of 'healthy conversations' regarding seasonal influenza vaccination and provide the opportunity for these conversations to take place each year via a highly publicised and physical 'launch' event across NI, where the aim is to vaccinate as many HSC staff as possible in the first day/week/month NOTE: it is vital to include the independent care sector actively in these communications and events to rebuild trust that may have been eroded during Covid-19; to show they are an essential player in this. **Useful resources:**	Stakeholders (HSC staff and managers) described how flu vaccination conversations were not commonplace, or a 'priority'; providing a positively framed launch across NI where the aim would be to vaccinate as many HSC workers as possible in the first day/week/month for example, in a fundraising style event could help make way for these workplace conversations and frame them in a positive light	Opportunity Motivation	PHA leaders and vaccination programme managers, PHA communications teams, HSC Trusts, Occupational health, and independent care sector	IMPORTANT

Newly published 'Better health through behavioural science: An enabling plan for Wales
Behaviourally Informed Communications Guide
Behaviourally Informed Communications Initiative workbook
Behaviourally Informed Communications Initiative – Development and Implementation Report
Behaviourally Informed Communications Case Studies
Public Health Wales Behavioural Science Unit's impact across the public health system: A realist ripple effects mapping evaluation
Behavioural Science Community of Practice for Wales

Contributions & Acknowledgements

This research project was conducted by a Queen's University research team consisting of Dr Aoibhin Kelly and Dr Rebekah Rees (post-doctoral researchers), and led by Dr Laura McGowan (Senior Lecturer in Nutrition & Behaviour Change). Any queries can be directed to **Laura.McGowan@qub.ac.uk.**

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Lastly, we would like to take this opportunity to acknowledge all stakeholders who generously gave us their time for interviews, making this research project possible in a short timeframe.

Appendix A - Social Media Report
Appendix B - Behavioural science audit of campaign materials
Appendix C - Rapid literature review table of included studies
Appendix D - Table showing consolidation of COM-B coded barriers & enablers from stakeholder interviews

Also attached:

Behavioural Science Forum event ppt (27th Nov 25)
Final project Master ppt (1st Dec 25)

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