

HEALTHCARE WORKER FLU VACCINATION RESEARCH AND STRATEGY:

A SUMMARY REPORT

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BACKGROUND

HSE recommends that all healthcare workers (HCW) in Irish health services receive the seasonal influenza vaccination each year. The recommended national uptake target is 40%. Compared to adults working in non-healthcare settings, HCWs are at significantly higher risk of influenza¹. Achieving a high uptake of influenza vaccination among HCWs is recognised as a vital infection control intervention and occupational health issue to reduce the risk of influenza transmission between patients and HCWs.

The Implementation Plan for *Healthy Ireland* in the Health Services acknowledges the importance of vaccination and listed “Promote increased uptake of the flu vaccine in line with targets in annual operational plans” as a strategic priority under “Improving Staff Health and Wellbeing”².

Adopting a life course approach to vaccination amongst HCWs promotes healthy ageing by limiting the burden of illness linked to vaccine-preventable infectious disease. This is in line with recommendations in the EU-OSHA Healthy Workplaces Campaign 2016-17 Healthy Workplaces for All Ages which states that “Fostering healthy working practices in young workers and developing good working conditions promotes sustainable work throughout their working lives and ensures healthy ageing”³.

In Ireland, the National Immunisation Guidelines recommends annual influenza vaccine for healthcare workers as follows: “Health-care workers, both for their own protection and for the protection of their patients who may have a suboptimal response to their own influenza vaccination”⁴. Despite these recommendations, relatively few health care workers are vaccinated every year and influenza outbreaks in healthcare settings have occurred annually. Data from the 2015/2016 flu season shows the highest uptake was reported among ‘medical and dental’ professionals and lowest uptake among ‘nursing’ staff⁵. The flu vaccine uptake figures for the Saolta hospital group, in 2015-2016 are outlined in Table 1.1 ranging from 11%-22%.

Table 1: **Seasonal Influenza Vaccine Uptake by Individual Hospital, 2015-2016**

HOSPITAL	TOTAL ELIGIBLE STAFF	TOTAL STAFF VACCINATED	TOTAL STAFF VACCINATED (%)
Mayo General Hospital, Castlebar	1142	154	13.5
Portuincula Hospital, Ballinasloe	771	167	21.7
University College Hospital, Galway	3594	501	13.9
Roscommon County Hospital	309	35	11.3
Sligo General Hospital	1698	304	17.9
Letterkenny University Hospital	1641	238	14.5
TOTAL SAOLTA	9155	1399	15.3

Taken from: *Uptake of the Seasonal Influenza Vaccine in Acute Hospitals and Long Term Care Facilities in Ireland in 2015-2016*. HPSC.

EXISTING EVIDENCE-BASE

Previous research shows the greatest barrier to the uptake of the flu vaccine is the individuals own assessment of their 'at risk' status while the strongest predictor of vaccine uptake is a strong belief in its effectiveness. In addition to this, research has show that if a healthcare worker (HCW) receives the flu vaccine once, they are then more likely to avail of it again the following year – thereby sustaining the intervention⁶. There is an appetite for greater clarity of information, especially more statistical evidence^{7,8}.

Multi-faceted strategies are most likely to achieve sustained improvements for complex problems such as HCW flu vaccination⁹. In Beaumont Hospital, research has demonstrated that facilitators of vaccination include further accessible clinics, use of incentives, marketing/ advertising of the vaccine, ongoing feedback and education to staff and to relevant stakeholders, multidisciplinary involvement and the use of flu champions⁷.

THE RESEARCH

This study focused on the complex problem of flu vaccination. It aimed to develop and deliver an improved understanding of the forces and dynamics of flu vaccination from a 'hospital systems' perspective. In essence, a 'hospital system' is a set of elements - e.g. people, structures, organisational procedures, practices and roles - interconnected in such a way that they produce their own pattern of behaviours and choices over time.

The project's overarching goal was to identify and tailor a multilevel, multi-causal evidence-based strategy to increase flu vaccination uptake among healthcare staff - a priority topic identified by HSE, Healthy Ireland and WHO. Specific objectives include:

OBJECTIVE 1: To conduct formative research with HCW staff in hospitals and key stakeholders to assess acceptability of flu vaccination in order to better meet HCW staff preferences and needs.

OBJECTIVE 2: To identify the strategic components for a successful and sustainable disruptive multi-level intervention in the HCW workplace.

The study focused on nursing staff within the HCW category as they were the biggest grouping by staff category (~42% of all HCWs in Saolta), with one of the lowest uptake of vaccine (8.7%). A systems methodology, group model building, was used. Group model building is a highly participatory method for involving people in a modelling process¹⁰. Systems group model building moves beyond the immediate problem to understand the underlying patterns and to develop strategic leverage points for sustainable long-term change. Buy-in from all the stakeholder groups with relationship building and collective learning was critical to this system and group model building research, with participants providing practice-based evidence. In this study, the group modelling approach followed a three-stage research design.

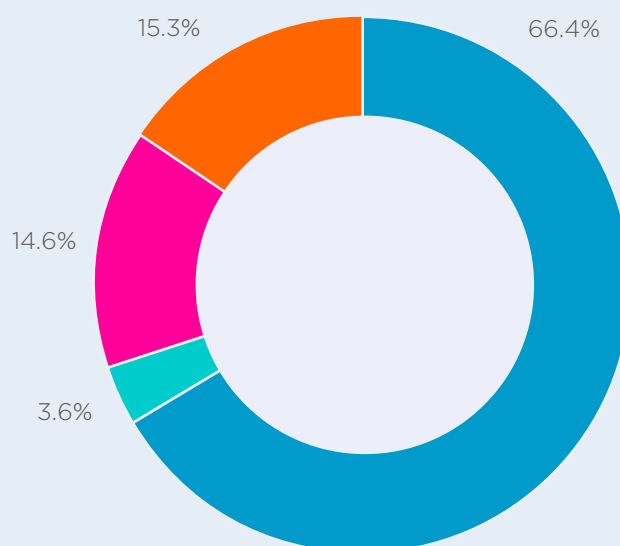
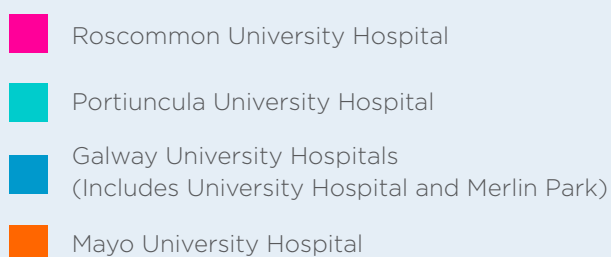
The first, a formative stage, exclusively focused on collecting primary data from nursing staff in the four chosen hospital sites in the Saolta group (n=137). Nursing staff, including dissenting voices, were surveyed to identify and list their top three barriers, with clarification statements, to the uptake of the flu vaccination among nurses. This data identified all the inhibitors perceived by nurses to affect the existing flu vaccination system in the Saolta group. The second phase, an explanatory stage, analysed all the causes and effects and dynamic multi-causal relationships between all these perceived forces, together with enabling forces documented in the literature. It also identified the central driving forces and entrenched patterns in the system. This resulted in a multi-causal flu vaccination systems map, depicting the interactions between the structural, behavioural and stakeholder elements that inhibit and/or enable flu vaccination uptake for nurses in the Saolta group (see Figure 3). The final stage of the research, a triangulation stage, consisted of Key Stakeholder Interviews (KSI) with two nursing staff in four Saolta hospital sites (n = 8). This final stage also identified solutions and leverage points across the Flu Vaccination systems map that are feasible, impactful and achievable within reasonable timeframes and resources.

FINDINGS

In total, 137 nurses responded to the formative barriers survey. They were working in one of four hospitals in the Galway/Mayo/Roscommon region with the distribution by hospital site outlined below.

Figure 1: Nurses response by hospital site.

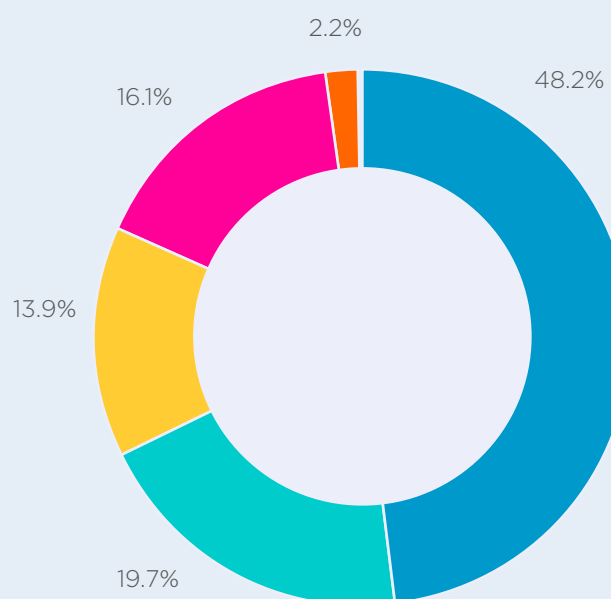
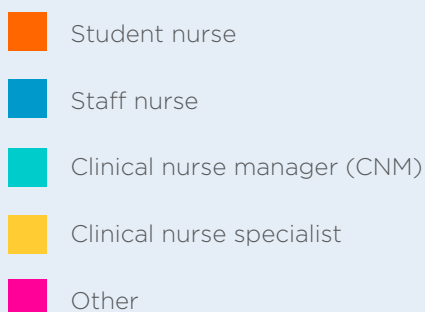
Distribution of respondents by hospital site



There was a wide distribution with staff of all grades represented as can be seen in Figure 2.

Figure 2: Nurses response by staff grade.

Distribution of respondents by staff grade



The Nurses identified 368 individual barriers to flu vaccination and from these, 14 underlying forces to flu vaccination in the broader environment. These findings are illustrated in Figure 3 on the next page.

Figure 3: A Systems Map of the Flu Vaccination Forces among Nurses in the Saolta Group

The systems map of the flu vaccination forces among nurses presents a holistic visualisation of all the interacting factors, incorporating diverse perspectives, experiences and structural issues. It captures the micro individual variables; the macro organisational and structural elements together with their interactions. The map identifies 'Fit & Healthy Beliefs' and 'Past Experiences' as the core underlying forces that undermine or block the uptake of the annual flu vaccination among nurses. These entrenched forces are vicious loops.





Fit & Healthy Beliefs:

Nurses believe that they are fit and healthy which leads to a belief that they are not vulnerable to flu or its effects. This in turn may increase misconceptions about flu, the vaccine or its effects which ultimately leads to nurses feeling that the vaccine is not necessary. Five other issues are directly connected to the Fit and Healthy beliefs nurses' have regarding influenza and flu vaccination. These interconnected forces include:

- **VACCINE INEFFECTIVENESS:** Beliefs in low vulnerability to flu and its effects causes nurses to question the effectiveness of the vaccine;
- **PEER VACCINATION:** If nurses don't believe they need the flu vaccine, they're less likely to get the vaccination and uptake will be low. If uptake remains low, flexible access to vaccination through peer vaccinators may be impacted;
- **HARMING IMMUNE SYSTEM:** Nurses believe they are fit and healthy and that they can fight any infection themselves and that a vaccination can harm your immune system;
- **APATHY:** Nurses believe they are not vulnerable to flu and even if they do get the flu, they play down the seriousness of having the flu, influencing their attitude 'what will be, will be'.
- **VACCINE NOT NEEDED:** Nurses believe in their own healthy immune system which heightens perceptions that the vaccine is not needed.

Past Experiences:

Past experiences include negative effects and experiences which tend to be discussed more, than the positive protective effects of the vaccination. Hearing these personal and anecdotal experiences influences misconceptions and increases people's fear of being unwell after flu vaccination. Directly interacting with Past Experiences are six other forces, including:

- **FEAR OF SIDE-EFFECTS:** Increased awareness of the risks of side effects and fear of getting sick after the vaccine are influenced by anecdotal past experiences. Media coverage can lead nurses to fear that future evidence may show that vaccines can do more harm than good;
- **EVIDENCE:** Nurses' perceived fears of inadequate research into flu vaccines coupled with their perceived fears that vaccines are produced hastily without proper adequate safety testing heightens the mistrust in big "pharma" and Government. This leads to the belief that future evidence could contradict existing evidence, leading nurses to believe that it is safer not to avail of the vaccine;
- **FEAR:** Mistrust feeds into part of the general fear in the population about vaccinations, their components and side effects. This heightens the perceptions of vaccine risks. As a result, nurses believe getting the vaccine is not worth the risk and this negatively impacts vaccination uptake;
- **ACCESS:** If vaccination uptake is reduced, this will negatively impact occupational health clinic flexibility and therefore impact vaccination access;
- **COMMUNICATION:** A lack of motivation or interest in vaccination will lead to ineffective communication of the facts surrounding vaccination and
- **MISCONCEPTIONS** of flu, its vaccines and their effects is fuelled by ineffective communications and shapes perceptions of past experiences.

A SYSTEM STRATEGY FOR ANNUAL FLU VACCINATIONS

Seven strategic components were identified for a sustainable systems and iterative flu intervention strategy in the HCW workplace. These evidence-based leverage points directly target the **'Fit & Healthy Beliefs'** and **'Past Experiences'**; the deep structure of the nurses' flu map, driving other overlapping factors. They represent a coherent set of forces that if engaged, have the greatest potential to create positive change and shift the system towards higher annual flu vaccination rates with relatively modest resources. They also align with the Saolta group capabilities to impact the system.

- 1 PEER VACCINATION** - this represents a bright spot where positive change is happening and new patterns are emerging. It has the potential to directly affect the deep structure of the current system and to generate ripple effect.
- 2 FLU CHAMPIONS** - they represent a bright spot for positive change and new behavioural patterns. They also have the potential to directly affect the deep structure of the current system and to generate positive domino effects. Flu champions augment and amplify peer vaccination, creating new dynamics.
- 3 MUTUAL NOT MORAL FOCUS** - Mutual not moral focus - approaching nurses from a mutual gain platform is central to the success of Peer Vaccination and Flu Champions. Mutuality refers to flu vaccination being presented and perceived as a 'win-win' for the nurses, their family and friends. If flu vaccination is presented as a moral obligation of nurses to take care of their patients, significant resistance will ensue and become a negative force in the system. A moralistic approach will not catalyse systemic change. A moralistic stance acts as a significant threat and potential blockage to flu vaccination by adopting a 'them versus us' position, attributing fault and blame.
- 4 WARD/UNIT CONTEXT** - refers to the nurses interactions contextualised as part of a ward or unit within their hospital, including the influence of doctors, colleagues and other HCWs. A shift away from a 'nurses only' approach to dealing with 'nurses in the context' of their ward or unit alters the social dynamics at work, disrupts the negative status quo and creates a new social team/peer dynamic. It will cultivate a more co-operative and collaborative working environment, supportive of annual flu vaccinations.
- 5 FLU LITERACY** - flu and flu vaccination information, education and communication can promote a culture of greater flu literacy throughout the system. Flu literacy takes two forms (1) facts and figures to increase awareness, knowledge and understanding of influenza, its strains, vaccination and side effects and (2) stories, narratives and scripts to counteract myths, perceptions and feelings. Flu literacy aims to weaken the negative dynamics and strengthen positive forces.
- 6 HOSPITAL SIZE** - communication mechanisms and approaches work differently in big and small hospitals. Reflecting this, information, education, communication and flu literacy mechanisms are adapted for large and small hospital size to support engagement of nurses and hospital transitions towards increasing flu vaccination rates.
- 7 INFLUENZA FRAMING** - in the current system, the strongest flu associations are with colds and other minor illnesses. Reframing 'flu' as 'influenza' in certain situations, e.g. factual information and educational workshops, will redirect and realign individual nurse perceptions towards the complex facts and truth of influenza. It shifts how people in the system think of and feel about the situation. An 'influenza' frame will activate judgements and strengthen the seriousness of the annual flu vaccination. The key to the reframing of influenza is to work with, not against the dynamics of the system. In this case, influenza could be reframed as the "ultimate immune boost"¹¹.

CONCLUSION

This research project sought to achieve the Healthy Ireland 2020 objective to increase the prevalence of flu vaccination among HCW staff and is congruent with HSE strategy and WHO goals. It used a highly participatory systems approach. It found negative belief dynamics are deeply entrenched and account for low uptake of flu vaccinations in the Saolta group. A sustainable annual flu vaccination strategy requires both individual and systemic factors to increase flu vaccination rates to 40%+ among HCWs.

The evidence-based strategic leverage points for change are:

- 1) Peer vaccination
- 2) Flu champions
- 3) A mutual not moral focus
- 4) A ward/unit context
- 5) Flu literacy
- 6) Hospital size and
- 7) Influenza framing.

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