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Influenza vaccination of healthcare workers

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Contents

Seasonal influenza vaccination is widely recommended worldwide

Background

Seasonal influenza vaccination of healthcare workers (HCW) is recommended by the World Health Organisation (WHO), the Centers for Disease Control and Prevention (CDC) in the United States (US), the Healthcare Infection Control Practices Advisory Committee (HICPAC) in the US, the Advisory Committee on Immunisation Practices (ACIP), the European Centre for Disease Prevention & Control (ECDC), the Joint Committee on Vaccination & Immunisation (JCVI) in the United Kingdom, the Australian Technical Advisory Group on Immunisation (ATAGI), and the Canadian National Advisory Committee on Immunisation (NACI), in conjunction with many other public health authorities worldwide.

Furthermore, professional bodies including the Medical Council, the General Medical Council (UK), the Royal College of Nursing (UK) and the Irish Society of Chartered Physiotherapists (ISCP) also recommend vaccination against common serious communicable diseases.

Whilst not a silver bullet, timely annual vaccination of clinical HCWs is one element of the multi-faceted approach recommended to healthcare institutions to minimise nosocomial spread of the virus. Other elements of such programmes include:

- Segregation and cohorting of patients suspected of ILI (influenza like illness)
- Adherence to Standard and Transmission based precautions and in particular, cough etiquette
- Education of healthcare staff to encourage staying home from work if suffering from ILI

In addition, the facilitation of HCW immunisation through convenient access, requiring minimal effort, in tandem with so-called ‘non-mandatory’ campaigns, including education, incentives, email reminders, after-hours vaccination clinics, decentralised vaccine distribution, and peer-to-peer vaccination, have been shown to be successful at increasing influenza vaccination amongst HCWs.

Regrettably however, voluntary vaccination programmes incorporating all of the above methods have failed to achieve high rates of vaccination uptake in clinical HCWs. Of note, many of those who refuse vaccination acknowledge that infection can be transmitted from employees to patients in the course of delivering care.

History of the issue

The HPSC began to collect data on flu vaccination uptake in healthcare workers (HCWs) in 2011/12. In the early years of data collection, uptake in Irish hospitals was less than 20%.

A concerted media campaign to promote vaccination, the implementation of legislation to enable pharmacists to immunise, and promotion, with incentives, by HSE management has resulted in gradually improved uptake in HCWs.

Uptake of 45% has been reported in the 2017/2018 season. However, this level is still inadequate to provide the so called 'ring of protective immunity' around vulnerable hospital patients during the influenza season.

Current practice

HCW flu vaccination in hospitals is delivered by occupational health teams and in recent years by teams of peer vaccinators. This is supplemented by vaccination by GPs and pharmacies though capturing the level of this activity is challenging within organisations. The uptake for 2017/2018 was reported at 45% and a new target of 60% has been set for 2018/2019 season. Uptake has generally been higher in larger hospitals and highest in the Acute Paediatric Hospital Services Group (56.7%)[1].

There have been a number of initiatives introduced to support and encourage HCW vaccination in Ireland. These include:

- **Leadership**: strong promotion by leadership team and local management.
- **Protocols**: the requirement of all acute hospital groups and CHOs to produce 'Flu Plans' and appoint 'Flu Champions' each season, 'Flu Leads' appointed in Departments of Public Health, medication protocols have been developed.
- **Access**: focus on increased accessibility in all sites, provision of educational sessions, development of peer vaccinator programmes with support for occupational health departments,
- **Communication**: multi- media plans with input from national and local media with radio ads, press articles and promotion amongst risk groups, development of information materials
- **Incentives**: promotional materials such as pens, badges and lanyards, and an award being provided for the hospitals and LTCFs that achieve the top three flu vaccine uptake rates amongst their staff

The impact and consequences of low vaccination rates

Healthcare organisations are host to many patients who are inherently vulnerable to influenza infection by virtue of their age (elderly and infants) or their underlying diseases, particularly if they are immunocompromised. Healthcare organisations have a duty of care to protect both patients and HCWs.

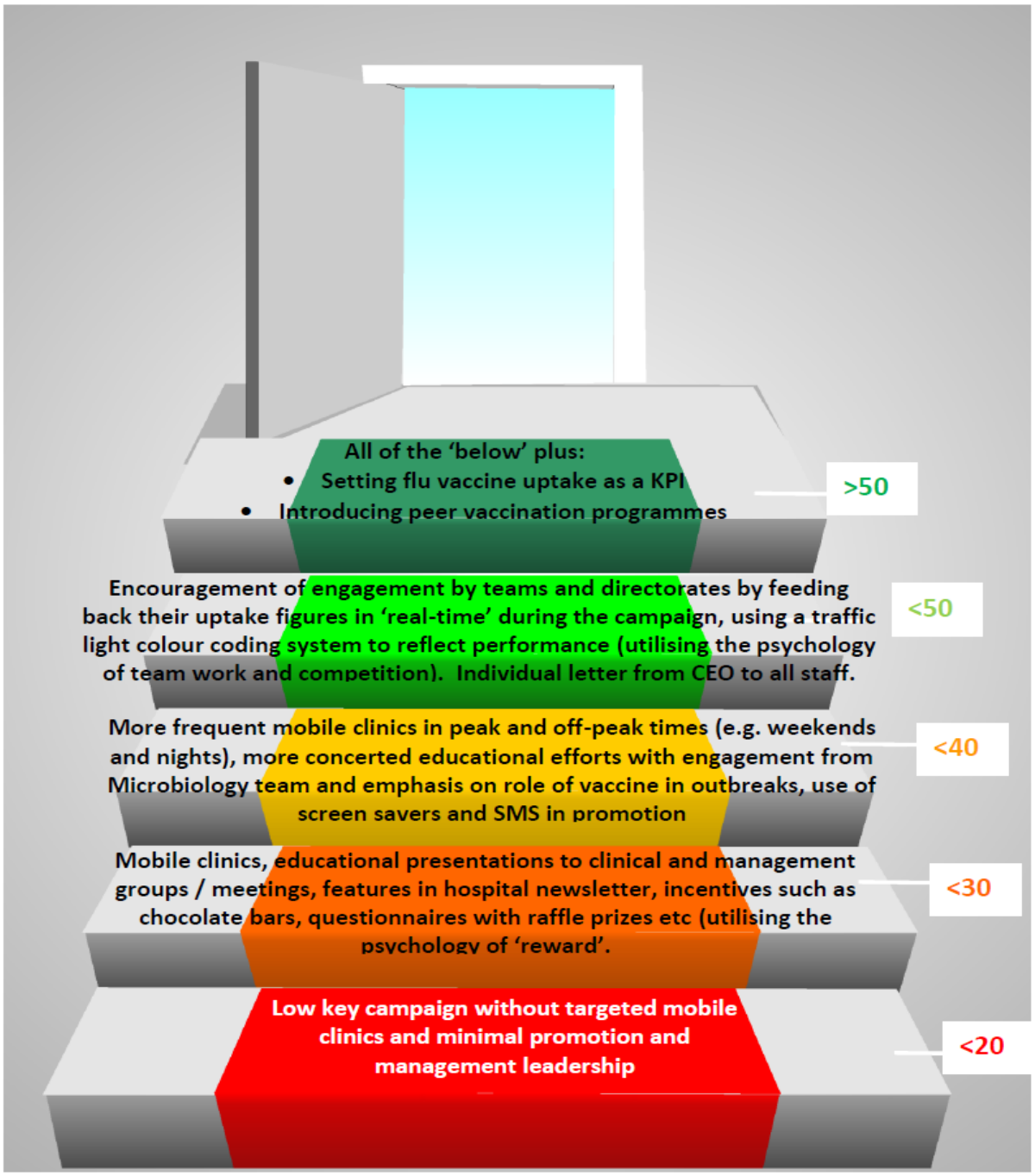
Serological studies show that influenza infection occurs in 19% of healthcare workers (HCWs) with only one third symptomatic[2]. The rate of infection, both symptomatic and asymptomatic, is higher in HCWs than in other workers, though the specific mechanisms for this have not been identified. Nonetheless, it is likely that transmission occurs between carers and patients through breaches in infection prevention and control. This is likely to be particularly problematic during the influenza season, when there is often overcrowding in addition to staff shortages (with requirements for cross-cover).

Deaths from hospital acquired influenza, whether community or hospital acquired are an ongoing concern for clinicians and health service managers alike.

Options to address the problem

The resources expended annually to achieve a relatively modest uptake have been significant. One Dublin hospital's experience in observing tiered interventions over 2 decades reflects the methods used heretofore in Irish healthcare (Figure 1)[3]. These include a range of activities which serve to facilitate, inform, promote and incentivise HCWs to engage, and mirrors the experience reported in the literature (Figure 2)[4]. Peer vaccination under protocol was introduced in 2016. This has the potential to augment uptake significantly when it becomes widely available, though its potential impact has been impeded by the challenge of ensuring appropriate training for vaccinators. It can be seen that even by implementing all of the standard non-mandatory measures recommended in the literature to improve uptake, the level remains <60%.

Figure 1: Stairway to success indicating percentage uptake of staff flu vaccination associated with sequential organisational interventions (Beaumont Hospital)[3]

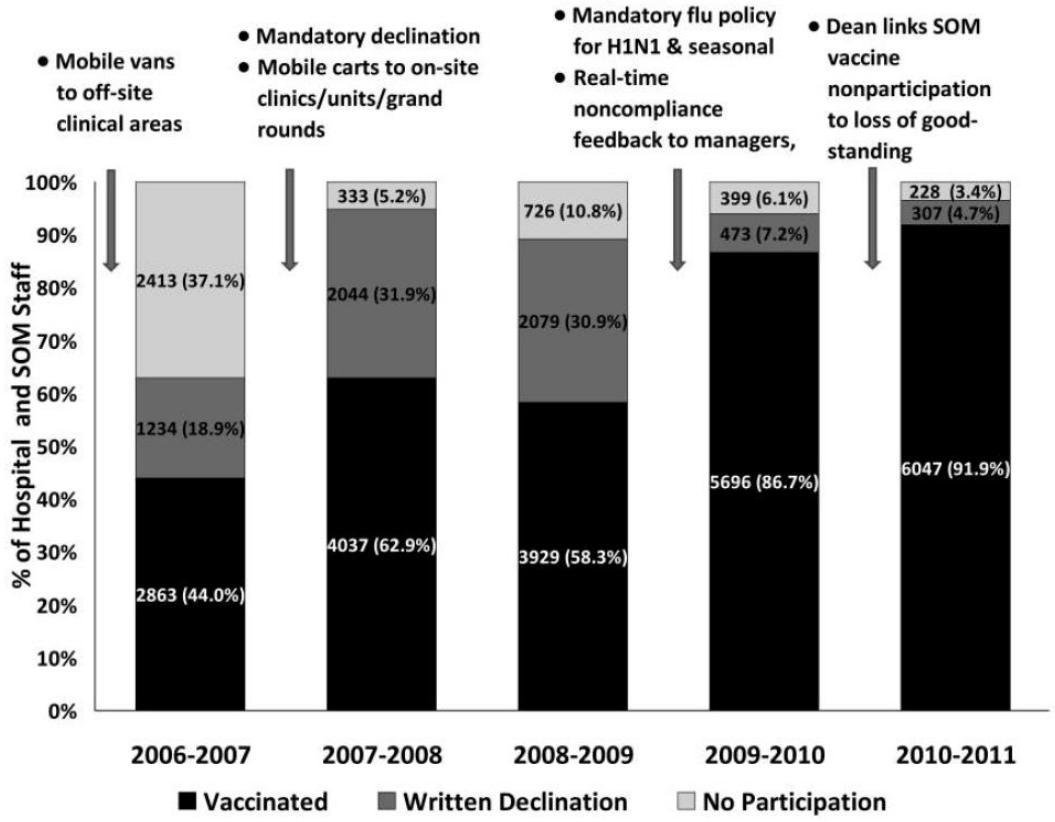


Declination forms have not been widely used in Ireland though they have been shown to improve uptake elsewhere (Figure 2). The National Immunisation Office has developed a national declination form but its use is variable.

Elsewhere, in recognition of the challenge in achieving high uptake despite such measures, additional measures have been introduced:

- Mandatory vaccination has been used widely in North America and has achieved uptake levels over 90% (Figure 2).
- Recent international changes have legislated for influenza as a mandatory vaccination requirement for high risk HCWs, while continuing to recommend vaccination highly for all categories of HCW[5].

Figure 2: Effects of cumulative influenza vaccine campaigns[4]



LEGEND: Effects of cumulative influenza vaccine campaigns on the proportion of healthcare personnel (HCP) who were vaccinated, provided written declination, or were nonparticipants in 5 consecutive influenza seasons. Campaign strategies are listed by the time of initiation and are continued through all subsequent seasons (with the exception of a temporary reduction in decentralized vaccine distribution in the 2008–2009 season). The category for nonparticipation included HCP who neither were vaccinated nor provided written declination by March 31 of the respective influenza season. During the period of mandatory vaccination, written declination included the requirement of HCP masking for the influenza season. SOM in the figure refers to School of Medicine staff.

Our position

In the interest of patient safety, the Faculties of Occupational Medicine, Pathology and Public Health Medicine endorse the introduction of mandatory seasonal influenza vaccination for certain categories of healthcare worker (HCW) using a risk assessment framework.

- All HCWs working in 'high-risk' clinical areas e.g. intensive care, haematology/ oncology wards, and other areas attended by immunocompromised patients must receive flu vaccination or sign a declination form. This also applies to those working in emergency departments due to case mix and frequent overcrowding.
- All HCWs working either in hospitals or in the community with elderly patients, infants or pregnant women must receive flu vaccination or sign a declination form.
- HCWs who refuse vaccination must sign a declination form. They must also understand that they may be allocated, for the duration of the influenza season, to a lower risk area.
- It is recommended that those HCWs without a medical contraindication to influenza vaccination, who decline vaccination, wear a mask for the duration of the influenza season whilst undertaking clinical tasks and / or directly interacting with patients.
- HCW with a medical contraindication to influenza vaccination should provide evidence of same, and may decline vaccination but may be moved to a low risk or non- clinical area for the period of the flu season and may be required to wear a mask.

Why we are calling for mandatory vaccination

Influenza vaccine has 88% efficacy (95% CI: 59 to 96, p=0.0005) in preventing serologically confirmed infection in HCWs according to a randomised controlled trial undertaken in healthy young HCWs across 3 consecutive seasons[6]. The World Health Organisation (WHO) has expressed its confidence in this estimate of effect as high[7].

Mandatory vaccination is the only intervention to date that has been proven to achieve vaccine uptake rates of over 95%.

Mandatory influenza vaccination cannot and should not exist in a vacuum and should be implemented along with other well established measures to facilitate engagement by healthcare workers in the seasonal vaccination programme

(convenient access, education, incentives /rewards) and in tandem with institutional infection prevention and control best practice measures.

Certain categories of HCW (e.g. surgeons) are already precluded from undertaking invasive surgical procedures unless they provide evidence of immunity / non infectivity to blood borne viruses (e.g. hepatitis B and C). This is an existing contractual requirement which has been introduced to mitigate a risk which is of much lower frequency than the risk posed by HCWs infected with influenza.

The health of the patient population must take priority

In previous discussions regarding the topic of mandatory vaccination, the question of personal choice, and the right of the individual to manage their own healthcare (including vaccination) has been raised as a potential obstacle. However, it is the belief of the Faculties that in the healthcare setting, the health of the patient population as a whole takes priority over the personal choice of the individual healthcare worker. In addition, as HCW are free to decline seasonal influenza vaccination (with masking), their right to choice is still being respected. Ultimately however, patient safety takes priority.

Conclusion

This cross faculty position paper advocates mandatory seasonal influenza vaccination as an important patient safety measure for certain categories of healthcare worker and in certain healthcare settings.

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