Vaccine 37 (2019) 705–710

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

The views of key stakeholders around mandatory influenza vaccination of hospital and aged care staff: Examining the current climate in Australia

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ARTICLE INFO

Article history:
Received 24 October 2018
Received in revised form 10 December 2018
Accepted 13 December 2018
Available online 6 January 2019

Keywords:
Influenza
Vaccination
Healthcare workers
Aged care
Mandatory

ABSTRACT

Background: Healthcare worker (HCW) vaccination against seasonal influenza is considered a key preventative measure within hospitals and aged-care facilities (ACFs) to reduce the risk of transmission and related disease. Despite this, many facilities experience persistently low vaccination coverage rates and mandatory vaccination has been explored as a potential strategy to improve coverage. This study explored the current climate around staff vaccination in Australia from the perspective of opinion leaders and key stakeholders.

Methods: Qualitative semi-structured interviews were conducted between April and July 2018 with 22 individuals involved in vaccination policy and program development and implementation from a range of organisations including state health departments, hospitals and ACFs across Australia. In addition, interviews were undertaken with individuals from aged care and nursing peak bodies/colleges. Interviews were transcribed, and thematic analysis was undertaken using NVivo 12 software.

Results: Major themes emerging from the interviews included a sense that attitudes around staff vaccination are changing; the persistence of administrative and resource barriers; the importance of positive workplace culture towards influenza vaccination; and the need for individualised and personal communication strategies. Perspectives were diverse on the necessity of introducing stronger policies, with participants divided in their support mandatory influenza vaccinations. Some advocated that key performance indicators should be used as an alternative to vaccine mandates.

Conclusions: This study provides policy makers with useful insights into the current Australian context around occupational vaccination policies, to inform acceptable and effective strategies to improve influenza vaccination uptake among Australian hospital and aged care staff.

1. Background

Hospitals and aged care facilities (ACFs) are both susceptible to rapid infection spread and have a high concentration of individuals who are at increased risk of influenza-related complications; including infants, the elderly and immunocompromised persons [1]. Whilst vaccination is recommended for these vulnerable population groups, the effectiveness of the vaccine depends on the age and immunocompetence of the individual [1]. In these settings, influenza vaccination is highly recommended for staff members to prevent influenza transmission to vulnerable patients [2,3]. It is now well established that seasonal influenza vaccination can also have an effect on reducing influenza infection of HCW when defined using laboratory-confirmed cases, as well as on length of absenteeism due to ILI or laboratory-confirmed infections [4]. HCW vaccination is generally considered beneficial as a means of reducing influenza illnesses in hospital patients and residents of ACFs. However, the degree of benefit is still being debated.

Despite recommendations, healthcare worker (HCW) vaccination coverage remains suboptimal, with coverage among Australian hospital staff frequently below 50% [5-7]. Of concern are the recent findings from a survey of ACFs that reported that half (54.8%) had staff vaccination uptake rates of less than 50% [8]. While national guidelines recommend that ACFs should aim for 95% of their staff to be vaccinated, only 3.5% of the surveyed ACFs

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https://doi.org/10.1016/j.vaccine.2018.12.029
0264-410X/

reported uptake rates at this level in 2018 [8,9]. Internationally, coverage rarely exceeds 50% in many hospital settings [2,10-12]. More recent studies out of the US have reported employee coverage levels at nursing homes and long-term care facilities of around 50% [13-15]. These rates tend to be low when directly compared to vaccination rates of other hospital staff [15,16].

To date most attempts to improve occupational influenza vaccine uptake have generally relied on the traditional strategies (multi-pronged approaches involving free vaccination, education, declination forms etc) [17,18]. In a voluntary system, multiple and layered strategies are used to encourage vaccination acceptance [19]. However, realistically the level of vaccine coverage achievable by these approaches is limited to around 50–70% of staff population [20].

On the other end of the spectrum is mandatory vaccination, which has gained popularity particularly in the United States as the solution to poor vaccination rates [21]. In this model, all HCWs have to be vaccinated unless with exemptible reasons such as medical contraindications [22]. Theoretically, a mandatory model ensures a definite level of vaccination since it removes the variability of personal attitudes and other behaviour barriers [20]. Prior to 2018, no Australian state required hospital staff to receive the annual influenza vaccine [23-27]. In 2018, the New South Wales state health department made a decision to update the occupational vaccination policy so that HCWs working in specified high-risk clinical areas (e.g. intensive care units (neonatal, paediatric and adult), transplant and oncology wards and antenatal, perinatal and post-natal areas) were mandated to receive the influenza vaccine [28]. Workers may refuse based on medical contraindications or by completing a non-participation form. Exempted employees are required to wear a surgical mask during the influenza season or be redeployed to a different clinical area [29]. There have been no other major changes in other States/Territories.

Australian ACFs are covered by Federal regulation and providers must meet accreditation standards; some of which relate to infection control measures and outbreak plans. Influenza vaccination is recommended for staff, but not explicitly required [30]. As a reaction to the 2017 influenza season and the resulting outbreaks that occurred in some ACFs, the Australian government introduced new requirements in May 2018 for ACFs. The requirements stipulated that ACFs must actively promote and offer staff the vaccine, and the requirement that they keep accurate records of staff members that have received the vaccine [31]. Therefore, as it stands, influenza vaccination remains 'highly recommended' for staff but not mandatory [30].

While there has been a shift in policy in hospitals in the US, to date there has been no reports of the same trends occurring in hospitals in the UK, neither in any of the major European countries including France, Germany, and Spain nor in Australia (except for NSW). Previously, we identified doubts over the feasibility of mandating the influenza vaccine for Australian HCWs [32,33]. The requirement for yearly vaccination raises unique logistical challenges and increases the difficulty of monitoring and enforcing policies [33]. Mandatory influenza vaccination programs require significant dedication and coordination of resources to enable mass vaccine delivery in a short time window [22,34]. However, uptake remains suboptimal and so there have been renewed calls to improve coverage. To inform the ongoing debate, this study aimed to examine the current climate around influenza vaccinations for Australian HCWs and aged care staff by exploring the attitudes of key stakeholders. It sought to explore the range of perspectives across Australia, within both sectors, and to capture the emerging response to changing government policies.

2. Methods

2.1. Participants

Key healthcare stakeholders were defined as individuals involved in policy-making/program development or implementation of influenza control strategies in hospitals and ACFs. This encompassed infection control officers, managers of healthcare facilities and health department leaders. In addition, we invited members of relevant peak bodies and colleges to participant. Appropriate individuals were either known to the research team or identified through searches of organisational websites to create a shortlist of potential candidates. There were no established relationships between the research team and the participants prior to the study. This list was refined, and 37 candidates were invited to participate in the study via email. Snowball recruitment was also undertaken. Efforts were made to find at least one participant from every Australian state and territory as well as establish a balance between the hospital and aged care environments. There are varying policies regarding hospital HCW vaccination and governance structures/reporting requirements across the eight states/territories which may affect current strategies and views on future approaches. Therefore, we felt it was important to recruit stakeholders from across the country.

Participants were provided with an information sheet which outlined the rational for the study and written consent for study participation and interview recording. Ethics approval was gained from the Human Research Ethics Committee of the University of New South Wales.

2.2. Interviews

Semi-structured qualitative interviews were conducted by telephone by a female researcher who has previously undertaken and published qualitative research focused on influenza vaccination (HS, Senior Lecturer, PhD, MPH, BSc). Semi-structured interviews are a highly appropriate means of exploring this topic as the interview guide allows the researcher to direct the interview without compromising this detailed discussion of ideas. The format is flexible and adaptable, enabling a richer exploration of new and unexpected material. An interview guide served as a general direction for the interview although the researcher used paraphrasing and additional questions for clarification. The following topics were included: current occupational vaccination programs, barriers to uptake and strategies to improve employee vaccination coverage, and attitudes to mandatory influenza vaccination requirements. Open-ended questions were asked to allow deeper exploration of ideas presented by participants. Member checking was used during the interviews to ensure appropriate representation of ideas. No repeat interviews were undertaken, nor were transcripts returned to participants.

2.3. Analysis

Interviews were digitally recorded and transcribed verbatim. We used NVIVO 11 for coding and management of the data. The data thematically analysed using an inductive approach and drawing on principles of grounded theory [35]. To analyze the data we followed the steps proposed by Braun and Clarke [36], that is familiarization by reading and re-reading during transcribing verbatim, generating initial codes, generating themes, reviewing themes, defining and naming themes were followed. This simultaneous data collection and analysis process enabled early identification of themes and adaptation of ongoing interviews to more

appropriately capture participant views. The researchers paid attention to the emergence of any divergent cases and new ideas. This coding framework was then articulated into higher order themes. Interviews were continued until theoretical data saturation was reached with no novel ideas elicited. Feedback on the themes was not sought from participants.

3. Results

Thirty-seven participants were initially contacted to participate in the study. Twelve of these stakeholders did not respond and three believed they were not the appropriate contact. A further 22 participants consented to participate, and semi-structured interviews were conducted between April and July 2018 (range: 20–40 min in length). Nine were from ACFs, seven from hospitals, four from government departments and two from relevant peak bodies. Every Australian state and territory were represented except for Tasmania. Participants represented a range of roles including those involved in developing state policies; those sitting on relevant immunisation committees; and those responsible for delivering vaccination programs within facilities.

The following five themes emerged: impact of the previous influenza season and shifting climate around occupational vaccination policies; limitations around expanding immunisation programs; communication and promotion of the vaccine; workplace culture regarding vaccination; and adequacy of current immunisation policies.

3.1. The impact of a "bad flu year" and a changing environment

A pervasive theme throughout the interviews was the recognition by participants that the current climate on occupational influenza vaccinations for hospital and aged care staff is changing: "there's definitely a higher level of acceptance… than… 10 years ago." Participants almost universally referenced the severity of the 2017 season and many described how occupational vaccination policies at their institutions had recently changed or were undergoing major review. There was a sense that staff awareness and engagement with vaccine campaigns was increasing. The ill-preparedness of many facilities to deal with outbreaks last year was cited as a motivating factor for change.

> *"[Currently] In our organisation [there is] a more coordinated focus with head office support here… especially after last year… There was so many staff off sick, and so many outbreaks… that it had such an impact on facilities from a staffing perspective… The cost, let alone the impact on residents who became unwell… was probably the driving force."* (#10, aged care)

> *"Given the significant flu season we had last year, it's really gaining media attention and political attention… to address the issue of healthcare worker vaccination."*(#12, government)

3.2. Inability to expand immunisation programs

Participants talked extensively about the workload involved in running effective immunisation programs. This administrative burden was viewed as a constraint on the success of immunisation programs, particularly in understaffed settings. Many facilities also struggled with having adequate funding and staffing to run comprehensive immunisation programs. This seemed to be a challenge for the "generally underfunded environment" of aged care. Smaller institutions discussed the cost of delivering vaccines onsite, with several participants referencing the expense of vaccine fridges. Participants who felt that they had appropriate resources and staffing to deliver comprehensive immunisation programs, acknowledged that these were "very resource intensive". There were mixed perspectives on the capacity for vaccination programs to be expanded; whilst some participants felt expanding their programs would be possible, others felt more extensive campaigns would require additional resources.

> *"There'll come a point where there'll have to be more resources put around communications and staffing."* (#3, government/hospital)

Many participants acknowledged that the delivery of immunisation programs is complicated by variations in staff working hours; explaining the difficulty of capturing part-timers, shift-workers and volunteers within programs. This seemed to be particularly challenging for ACFs, with several participants reporting being "desperate all the time for staff".

The challenge of accurately knowing staff vaccination status was described as "time-consuming" and "a nightmare." Whilst many acknowledged that improving vaccination programs required the collection of "good quality data" on HCW vaccination rates, participants often reported not having adequate databases to record staff vaccination information in a useful way. This appeared to be a greater problem for larger institutions, with several participants explaining that even if they knew the facility coverage rates, they were not necessarily able to match data with individual employees or departments and therefore this data provided little opportunity to follow up with declining staff members.

3.3. Communication and vaccine promotion

A recurring idea was that the best immunisation programs centred around transparent communication with staff members about the reasons for having the vaccine and the risks of not having it. There was a sense that many staff members were "just not engaging" with existing promotion strategies, such as posters and online educational tools. Participants tended to believe that the most meaningful communication strategies centred around one-on-one conversations with declining staff members.

> *"The staff kind of just want to talk to somebody and talk it through and just have an open honest conversation."* (# 10, aged care)

For some participants, the idea of communication extended beyond direct staff engagement into increasing collaboration between different institutions to "share lessons" and between governments and the institutions themselves to ensure a more "consultative process". Others suggested that raising community education would create a general environment of vaccine support; simultaneously educating HCWs as "members of the community" and making it "come from the public" that staff need to be vaccinated.

3.4. Mixed views about the need for stronger immunisation policies

Participants varied in their levels of satisfaction with the current staff vaccination coverage rates at their facilities and accordingly had differing views on the need to push stronger immunisation policies.

> *"[The current recommendations] are far too lenient and they fail to protect vulnerable people in our facilities".(#* 2, hospital)

Participants were divided on the question of mandatory vaccination. Some were strongly supportive; describing a mandate as "a no-brainer" and arguing that "nothing else works". These participants commended the new policy in NSW, describing it as "fantastic" and a "progressive step towards where we need to be". There was low tolerance among this group for vaccine refusal, with strong beliefs about HCW responsibilities to protect patients:

Participants from ACFs were more likely to support mandatory policies than those from hospitals. Many viewed it as inevitable, with one participant saying; "We can see it coming – that it's going to be compulsory" and another remarking; "everyone's expecting it to be mandatory". In general, these participants tended to feel that the new requirement for ACFs to offer an immunisation service for staff was not markedly different from existing practices at their ACFs, and that stronger policies were necessary to increase uptake. Some participants thought that it was a positive step because the media coverage surrounding the policy brought aged care worker vaccination into the spotlight.

By contrast, other participants expressed strong opposition to vaccine mandates. Some were generally opposed to mandates, believing them to be unethical; ("I'm not a big fan of making things mandatory"), whilst others argued the influenza vaccine was not sufficiently effective to justify a mandatory policy. Notably, there was particularly strong resistance to vaccine mandates by Victorian participants.

"I think to make something mandatory ... you need to have the highest level of evidence... that it's really effective, and... well the evidence for the influenza vaccine is mixed. It's not overwhelming. (#11, hospital)

"Given that the flu vaccine is not that effective or, variable efficacy every year... I don't think the public health benefits outweigh the loss of autonomy for staff" (# 9, hospital/government)

Others felt that a mandatory policy was not feasible or worth the effort involved in its implementation and dealing with anticipated resistance from staff. Participants also questioned the enforceability of a mandate, especially in the cases of highly specialised staff members, or staff shortages.

"There's... marginal utility of doing more and more things...with diminishing returns... you could spend a lot of time and resources chasing the last little bit". (# 1, hospital)

"If there were mandatory vaccination requirements and people didn't have the right vaccination status... we wouldn't have a staff member in that place and that would be... a huge risk to service delivery." (#5, hospital/government)

Several participants believed that facilities had other challenges to face aside from dedicating time and energy to mandating the influenza vaccine for staff. These participants anticipated mandatory policies would require additional allocation of staff and resources that could be more efficiently utilised in other ways.

"I think there are other infection control priorities that I would have put higher than flu vaccine"(#1, hospital)

Countering this, many participants who were supportive of a mandate believed that these anticipated hurdles associated with the implementation of a mandatory policy were "not insurmountable" and that resistance would be minimal. Some even felt that making the vaccine compulsory would "make it a lot easier" and reduce the workload associated with advocating and pushing a voluntary vaccine.

"The first year is really painful because everybody who doesn't like it complains... But by the second year everybody just does it." (#3, hospital/aged care)

Participants were generally supportive of the use of KPIs and targets to increase coverage. This was particularly popular in Victoria where targets for staff vaccination rates in public hospitals are set by the state. Whilst not tied to funding agreements, there is public reporting of this information and discussions with executives at underperforming institutions. This approach was believed by many participants to be an alternative to a mandatory policy.

"KPIs just focus the attention of hospital executives... So free the resources and all of the competing demands that you have in the infection control team." (#11, hospital/government)

Many smaller facilities reported using internal coverage targets as goals for their institutions, particularly if they were multi-centre facilities. There was a general sense that targets were a good way of increasing focus on immunisation program with one participant commenting; "What you measure you focus on".

There were variations between participants from the hospital and aged care sector when it came to their acceptance of authoritative government policies based on the state they worked in. A contrast was noted between NSW and Victoria: whilst the former has a history of imposing occupational vaccine mandates; Victoria tends to have a more liberal approach, focussing on KPIs. Therefore, perhaps different approaches would suit different states better. Commenting on these contextual differences, one participant observed, "NSW approach is pretty directive and regulatory: "I'm going to issue a directive and you must comply" ... Now the Victorian experience...is that you just couldn't get away with [that]" (#4, hospital).

Overall, most participants agreed that there was a great need for ongoing research and data collection on the benefits of HCW vaccination to act as "a driver for change" and assist in continually improving immunisation programs.

4. Discussion

Our study explored the current climate across Australia around influenza vaccinations for hospital and aged care staff, and towards attitudes regarding occupational vaccine mandates. From the interviews undertaken there appeared to be a sense of momentum around vaccination; partly influenced by the previous influenza season's severity. Perhaps as a result, there appears to be a shift for positive change in occupational vaccination policies at hospitals and ACFs compared to when attitudes were previously explored [37,38]. From our interviews there was a sense that the previous year influenza season (2017) created an impetus for change around occupational vaccinations, perhaps linked to an increased disease risk perception. This indicates that facility managers and executives may be able to use "bad flu seasons" to gain increases in vaccination uptake. This shifting environment and push for change seems particularly strong in Australian ACFs, although previous research exploring this topic in ACFs to compare this with is scarce.

Previous Australian research exploring the attitudes of health administrators and clinical leaders towards mandating the influenza vaccine for HCWs in Australian hospitals has revealed divided views on the necessity of a mandate [33,37]. Our study indicates that this division persists across Australia. Mandatory policies appear to be more acceptable in some states than others, with particularly strong negative attitudes coming out of Victoria. As the first Australian study exploring the aged care perspective on the topic, it appears that ACFs seem to struggle more than hospitals in increasing staff vaccination rates, and that there are generally more positive sentiments towards implementing stronger occupation vaccination policies. Despite the Federal Health Minister and Aged Care Minister calling for mandatory influenza vaccinations for aged care staff at the end of 2017, the new requirements introduced this year only require ACFs to offer vaccination programs [39,40]. Our work suggests that this is not remarkably different from what was already in place, with participants feeling that this new policy is an insufficient response to the number of outbreaks that occurred in 2017.

Setting targets for staff vaccination rates as KPIs for facilities, either linked to funding agreements or public reporting, may be an alternative to mandatory policies. Our study suggests that KPIs

an acceptable way of increasing the focus on staff vaccination and validating the importance of the influenza vaccine. This supports previous research that implementing KPIs for vaccine-preventable diseases sends a strong message about the dedication of a health service to ensuring patient safety and delivering quality patient care [41,42]. Considering the recent policy changes, most notably the mandate for "high-risk" HCWs in NSW and requirement for ACFs to offer staff vaccination programs, the success of these programs should be evaluated.

Our study reveals a major challenge for healthcare facilities to accurately and efficiently record staff vaccination rates, and for facilities to effectively use this information. This was a concern raised in a previous study, where facilities were using time-consuming manual forms of record-keeping [38]. Six years later, it appears that challenges associated with data entry and tracking staff receipt of vaccination persist, with these challenges particularly noticeable at larger facilities with more staff to monitor. Several successful campaigns have described developing databases as important elements of their programs and previous studies have discussed the benefits of using databases to monitor and provide feedback on HCW vaccination rates [22,43-45]. This highlights that the development and implementation of sophisticated and easy-to-use databases should be prioritised to increase hospital and aged care staff vaccination coverage and reduce the administrative burden associated with the influenza season.

Supporting previous findings, our study suggests that there would still be barriers associated with the rollout of stronger occupational vaccination policies within hospitals and ACFs. Resourcing and logistical barriers to upregulating staff vaccination programs and dealing with the anticipated employee resistance have been key findings in previous studies, with influenza vaccinations presenting the unique challenge of needing to be administered every year in a short time window [33,38]. Logistical concerns around mandatory policies and influenza vaccinations programs are still prominent in our study, but there was more of a focus on the challenges of tracking, monitoring and enforcing staff vaccination than program delivery. Staff resistance was still an idea raised by several participants, but overall this study suggests that there is now a greater level of acceptability toward the vaccine.

This study has several limitations. Unconscious biases may have influenced which candidates the researchers considered to be "key stakeholders", potentially distorting the issues explored around HCW vaccination. The use of snowballing, where participants could refer colleagues they believed should be interviewed, may have led to over-representation of perspectives from participants with similar backgrounds. No Tasmanian candidates responded to the study, meaning that the Tasmanian experience of issue was not explored. Participants from ACFs tended to come from smaller facilities and thus the context and challenges for larger ACFs may have been under-represented.

5. Conclusion

In summary we found that while stakeholders acknowledged the ongoing issues associated with improving immunisation uptake amongst hospital and aged care staff, there was not uniform views around the need to move towards mandating the vaccine for staff. Views continued to be on a spectrum from extremely strong support to extreme disagreement about the need. While, stakeholder views on mandatory policies varied, there appeared to be general support for setting targets for staff vaccination rates. Given the recent introduction of a mandatory policy in one state it will be interesting and useful to continue to track the impact this may have on other states/territories in Australia.

6. Ethics approval and consent for participate

Ethics approval was gained from the Human Research Ethics Committee of the University of New South Wales. Written informed consent was received from all participants prior to the interview.

7. Competing interesting

Dr Holly Seale has previously received funding from drug companies for investigator driven research and consulting fees to present at conferences/workshops and develop resources (bio-CSL/Sequiris, GSK and Sanofi Pasteur). She has also participated in advisory board meeting for Sanofi Pasteur. The other authors do not have anything to declare.

Author contributions

AM was responsible for data analysis and wrote the initial draft manuscript, with all authors contributed to updates to the final manuscript. HS conceived and designed this study and was responsible for completing the interviews and assisted with data analysis. MA assisted with identifying potential participants and for the development of the journal paper. All authors have read and approved the manuscript.

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