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RESEARCH PAPER

Understanding motivators and barriers of hospital-based obstetric and pediatric health care worker influenza vaccination programs in Australia

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ABSTRACT

Understanding motivators and barriers of health care worker (HCW) vaccination programs is important for determining strategies to improve uptake. The aim of this study was to explore key drivers and HCW decision making related to recommended vaccines and seasonal influenza vaccination programs. We used a qualitative approach with semi-structured one-to-one interviews with 22 HCWs working at a tertiary pediatric and obstetric hospital in South Australia. A thematic analysis and coding were used to examine data. Key motivators that emerged included: sense of responsibility, convenience and ease of access, rotating trolleys, the influenza vaccine being free, basic knowledge about influenza and influenza vaccination, peer pressure, personal values and family culture, as well as the culture of support for the program. Personal decisions were the major barrier to HCWs receiving the influenza vaccine which were predominantly self-protection related or due to previous experience or fear of adverse reactions. Other barriers that emerged were misconceptions about the influenza vaccine, needle phobia and privacy concerns. This study identified both attitudinal and structural barriers that could be addressed to improve uptake of the seasonal influenza vaccine.

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Introduction

In developed countries seasonal influenza is the most common vaccine-preventable disease. In Australia, influenza is the leading cause of vaccine-preventable disease associated with hospitalisations and deaths annually.[1,2] Between 2000 and 2006, there were 18,404 hospitalisations and up to 3,457 deaths per annum with a cost to the Australian healthcare system of $115 million annually.[3] Influenza notifications, that is cases reported to the health department or authority and hospitalisation rates are highest in young children where transmission occurs rapidly and 30% of cases occur in children.[2]

Direct patient contact, along with proximity to visitors and co-workers puts healthcare workers (HCWs) at a higher risk of influenza infection.[4,5] Vaccinating HCWs against influenza reduces the transmission of the virus in health care settings; decreases staff illness and absenteeism, and indirectly benefits patients by decreasing their chance of being infected.[6,7] As pregnant women and premature infants are at particular risk of severe influenza, vaccinating HCWs who care for them is especially important.[8-14] While pregnant women are recommended to receive the vaccine during pregnancy uptake is variable and as the influenza vaccination is not recommended until after 6 months of age,[15] hospitalized neonates and young infants are not directly protected through immunisation and are therefore at risk of transmission of infection.

The Australian Immunisation Handbook[15] recommends that HCWs directly involved in patient care or the handling of human tissue be immunised for a number of diseases such as hepatitis B, influenza, mumps, measles and rubella, pertussis and varicella. Published influenza vaccination rates range between 22%–70%[16,17] for Australian HCWs and are well short of the 80% recommended to obtain the benefits of herd immunity.[18]

The reasons behind poor uptake of influenza vaccinations by Australian HCWs are largely unknown, and more specifically among HCWs caring for pediatric and obstetric populations, being among the most vulnerable groups for severe disease outcomes. A recent review[19] that examined enabling factors and barriers to seasonal influenza vaccination in Australian HCWs found that protection of self, patients and family along with convenience, to be key motivating factors. Key barriers were identified as lack of convenience along with the perception that influenza was not a serious disease or that HCWs were at low risk of infection. However, most studies used a questionnaire design and there is significant heterogeneity between study populations; only two studies included pediatric hospital staff, a further study included hospitals that covered maternity

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services and another study included a small number of midwives in its sample.[19] Studies based on survey data provide descriptive information; however they can be limited in the intensity and diversity of detail they are able to provide. While we previously conducted a quantitative survey[20] on HCW views, knowledge of recommended immunisations and predictors of influenza and pertussis vaccination uptake, the goal of this present study was to provide richer detail to determine opinions and views that could inform targeted strategies specifically for obstetric, neonatal and pediatric HCWs.

Understanding HCWs' motivators and barriers toward seasonal influenza vaccination programs is essential to plan future programs and increase coverage. While the reasons for and against influenza vaccinations have been well studied in other developed countries,[21-28] it is unclear as to whether these reasons are similar or different in Australian HCWs. Additionally, it is possible that the reasons for and against influenza vaccinations might differ for Australian HCWs serving pediatric[12] or obstetric populations compared with other patient groups. The aim of this study was to examine in detail using qualitative methodologies the experiences related to influenza vaccination delivered as part of a hospital-based seasonal influenza program in a tertiary pediatric and obstetric hospital to determine ways to improve the HCW immunisation program.

Results

Twenty-two HCWs participated in the study: 21 females and one male; 14 registered nurses, 5 midwives, 2 medical doctors and one administrative officer. It was not possible to ascertain reasons for non-participation. The same interview script was used for all participants with interviews lasting from 6 to 33 minutes (median time 18.5 minutes). Responses were coded and grouped into 6 categories with the first 2 categories addressing HCW vaccination in general: 1. Awareness of free HCW vaccines and access to them; 2. Opinions on mandatory HCW vaccinations; 3. Awareness and decision making about the obstetric and pediatric seasonal influenza vaccination programs; 4. Barriers to the hospital seasonal influenza program; 5. Motivators to HCW vaccination; and 6. Program improvements.

Awareness of free HCW vaccines and accessing them

When asked about their awareness of other (besides influenza) free vaccines being available to them as HCWs, most respondents demonstrated a low level of awareness that vaccines recommended for HCWs were available at no cost to them (Table 1). Some knew there was a service provided and dedicated immunisation staff at the hospital but remained unaware that some vaccines are available to them at no cost. In contrast, there were many HCWs who lacked any awareness of recommended vaccines altogether. Others were well aware as they had been contacted by the immunisation service, but lacked motivation to do anything about it. Others exemplified the expectation that as adults, HCWs should be responsible for their own vaccinations and commented that, without individual HCWs being in receipt of specific knowledge needed to follow-up on their own vaccinations that this was a near impossible task.

Table 1. Awareness of free HCW vaccines and accessing them.

Oh, a vague awareness …I wouldn't know what and when and when it's appropriate to have it. (Nurse 1 (OT))
No not that I'm aware and I wouldn't know where to go to get it. (Nurse 5)
I know that we're eligible for a whole range of them but, to be honest, I haven't looked into them beyond the obvious. (Nurse 11)
I forget how many years ago … they had a bit of a drive. The Occupational Health and Safety nurses had come to the ward and told us the different vaccines we could get…(Nurse 2)
I do unfortunately keep getting this letter sent to me saying I'm due for something and I haven't done anything about it. But yeah, I do realize that we are entitled. (Nurse 12)
I guess that's through occ health and safety … But we really don't get information. I haven't received much information. (Nurse 13)
… I remember when I first started here…I had a vaccine then… and I remember them explaining to me then that you can always come and get your vaccines here and ring us up at any time and organize a time… they make it quite obvious that you can get things. (Nurse 14)
I wouldn't have a clue. All I know is the flu is something that they do annually. (Midwife 3)
…as an adult and I'm responsible for myself, you kind of have to rely on your knowledge, and if you don't have it. Then who knows? There's no reason for me to worry about it. (Nurse 9)

Note: All non-midwives were pediatric nurses unless otherwise stated. OT=Operating theater nurse caring for both obstetric and pediatric patients.

Table 2. Should vaccinations be mandatory for HCWs?

I've got no problem having the flu vac. But I'm a bit of a stubborn person. I don't like being told that I have to do something. …Because it's my body and it's my choice. … it's like assault. Like forcing me to do something I don't want to do. Then I would dig my heels in and go no, I'm not having it just to spite them. (Nurse 12)
…why my body needs that something injected into my body if maybe I don't need to have it. …if it's for a big epidemic, most definitely I would have the vaccination. (Admin 1)
… I don't think you can make it mandatory but I don't know… There could be exclusions or that kind of thing, but I don't think you can actually force people to have it. (Nurse 1)
I think the flu one should be because it is seasonal. It is each year. It's not something that you have to have and then you've got it for a 10-year span. (Nurse 6)
I do - personally I think everyone should get vaccinated … at the moment we've got children with things – having to deal with things that they shouldn't have to because they're not old enough to be vaccinated yet. And so they're sick from diseases that could have been prevented if everyone got vaccinated. (Nurse 7)
I guess that's tricky because it still takes away someone's decision to be able to say they're against it and not necessarily all health care workers will be pro vaccinations, so probably - I don't think it should be mandatory. (Dr 1)
It would be good if you could make something like the flu vaccine mandatory for sure. (Midwife 5)
… it's a personal choice. You are injecting yourself with a foreign body. So whether people agree with that or not, that should be their choice. (Nurse 10)
… I feel like people should still be able to have a choice, but I suppose if there was …an outbreak … staff really would have a responsibility to themselves and to their patients to have a vaccine… I'm a bit undecided there… I wouldn't be fussed, but I can imagine that some people would be very upset. (Nurse 2)
Personally I do. (Midwife 1)
Yeah, absolutely. (Nurse 4 (OT))
No. How can you be made to have a medical intervention? It's illegal. Mandatory is not an option. (Midwife 4)

Note: All non-midwives were pediatric nurses unless otherwise stated. OT=Operating theater nurse caring for both obstetric and pediatric patients.

Opinions on mandatory HCW vaccinations

When asked the question, 'should vaccinations be mandatory for HCWs?' HCWs were divided (Table 2). Many felt the decision to receive a vaccine was a personal choice and that making any vaccinations mandatory would remove this choice. For others there was no question that HCW vaccinations should be mandatory or if not mandatory, stricter workplace regulations should be enforced. Agreement toward mandatory vaccination for seasonal influenza was strongly aligned with HCWs' perception of risk, even in otherwise vaccine objectors. Conversely, there was also a strong sense of disapproval, at the prospect of mandatory seasonal influenza vaccination, even from vaccine acceptors.

Seasonal influenza program

Awareness and decision making about the seasonal influenza vaccination program

All participants were aware of the hospital program however respondents gave differing accounts as to how they were aware (Table 3). Almost half mentioned that it was more or less a common fact and they, 'just knew' the program happened annually. The physical presence of the 'trolley' visiting wards/departments was also discussed with the 'trolley' serving to not only raise awareness of the program but stimulate discussion of the influenza vaccine and the program among staff. Written and electronic media also communicated the presence of the program. A couple of participants highlighted the role of staff educators. Internal hospital communications, such as emailing and attaching program details to staff payslips along with overhead announcements of the influenza trolley also raised awareness. Shared knowledge of the program between staff and discussion of the program in staff meetings also featured during discussions.

Table 3. Awareness of the seasonal influenza vaccination program.

… I didn't notice it advertised anywhere … the girl with the trolley came … so just from word of mouth. (Nurse 10)
… I think everyone just knew that they came round with the trolley …(Nurse 13)
I don't know. I just knew… just always had them here for years. (Midwife 3)
…usually notices go up and on the intranet and just word of mouth when it's starting to get close to that season…the trolleys come round…(Nurse 1 (OT))
It's difficult not to hear about it. … it comes on email. We have overhead announcements of the influenza trolley. It comes by internal email and, basically, they come around to the department, so you can't miss them. (Dr 2)
… we have a memo come out, sent from someone in that department saying they're now available. We also have a nurse come around with the immunisation trolley and she offers it to all staff. (Midwife 5)
… our communication book. Also just through ward meetings and stuff like that, posters around the place, the usual. (Nurse 11)
… there's posters around, things like that, or when you go onto the internet, it'll come up about the flu season and flu shots are coming up. …over the PA and that, everyone, no matter what job you're doing, can hear it. I think most roles in the hospital will log onto the computer at some stage. Or your payslip, I remember it comes on your payslip, flu vacc now available, so everyone opens up and reads their payslip. (Nurse 14)
… over the PA. Then our educator gave us a flyer with some information … (Nurse 5)
…around the region, the newsletter that the hospital put out, in the past through my line manager when I didn't have email access, and when I first started at the hospital the Occupational Health and Safety nurses told us. (Nurse 2)

Note: All non-midwives were pediatric nurses unless otherwise stated. OT=Operating theater nurse caring for both obstetric and pediatric patients.

Barriers

Fear of adverse reactions

While the majority of interviewees did not express a fear of adverse reactions, almost all knew of a colleague who did, and coupled with fear of the unknown and lack of knowledge surrounding the risk of influenza disease and risk of vaccination resulted in these HCWs not being vaccinated. For one participant this fear was the result of a personal experience of an adverse event. However, most of the discussions with HCWs on this topic (Table 4) did not center on serious adverse reactions but common reactions such as sore arms, headaches and feeling feverish. Hearing accounts of previous adverse reactions had a powerful impact in HCW decision making, even when these accounts were based on second or third hand descriptions.

Table 4. Barriers.

Fear of adverse reactions	…my daughter, when she had vaccinations she had a bad experience with her vaccinations, her regular vaccinations, and I fear having vaccination myself… (Admin 1)
	… I mean for most people there is no issue, but every now and then someone comes up with a bad reaction…It does affect people's confidence I suppose in the vaccine… you only need one bad reaction to make everybody think about it a little bit. (Midwife 1)
Fear of needles	*We can go around sticking needles in people all day and doing interventions to other people but when it comes to us. It's like, oh, no…I think there are certainly people definitely that avoid it. The whole needle phobia thing just amazes me. (Nurse 9)*
	…because I have an anxiety disorder around needles, hearing it announced on the speaker overhead and everyone talks about it and they start wearing the stickers around the hospital, you get a little bit more anxious than you would usually.(Nurse4 (OT))
Privacy concerns	*…we had to take our shirts off to get as high as they need to. (Nurse 8)*
	…just one little flimsy thing that anyone could look over… (Nurse 9)
	…they expect you to have the vaccine in the middle of the corridor. (Nurse2)
Personal decision not to get vaccinations	*…some people you talk to on the ward say, no, I never get it, I don't agree with vaccines. (Nurse 14).*
	…they don't want to add anything that's not natural into their system (Nurse 1(OT))
Misconception about vaccination and ingredients	*'the vaccine is actually the disease, whatever it is, even if it is in a small dose' (Admin 1)*
	I didn't want to have the Fluvax with the preservative in it so I went to my GP and got the preservative-free one there. (Midwife 4)
Lack of knowledge	*…severity plays an important role of making decisions to have vaccinations or not, but I think when I was a child I was given all these against all those diseases and it seemed like they were quite bad diseases, so it is maybe flu vaccination I don't take as seriously.(Admin 1)*
	… I think it's that belief that - you know, I'm going to get sick. If I get the flu vax I'm going to get sick. People just don't understand that it's not a live virus so you don't actually get sick. You do have an immune response sometimes and you can get cold symptoms, but it's not the flu. (Nurse 8)

Note: All non-midwives were pediatric nurses unless otherwise stated. OT=Operating theater nurse caring for both obstetric and pediatric patients.

Fear of needles

Needle phobia and dislike of vaccinations was mentioned by a small number of participants from both a personal perspective and that of other HCWs. For one participant, with a needle phobia, hearing the overhead announcements, colleagues discussing it and wearing the HCW vaccination stickers around the hospital heightened their anxiety. While this did not stop this particular HCW from getting vaccinated, it did lead to hesitation and a preference for vaccine delivery in private. One participant recalled how she thought some HCWs around her, feigned needle phobia to avoid vaccination.

Privacy concerns

For some HCWs the location of vaccine administration raised concerns about privacy. Receiving the vaccine required HCWs to unbutton and in some cases remove their shirt to expose their arm, due to the tight fit of the hospital uniform. In the hospital's cafeteria, minimal privacy was provided through the use of partitions. This issue was also raised with the use of the mobile vaccination trolley which went to the hospital wards. Some HCWs gave the impression that there was an expectation that they have the vaccine wherever the trolley was located. For a few HCWs, this perceived disregard for their privacy and expectation that they should line up for the vaccine in a public place such as the cafeteria made them feel like they were 'lining up like cattle'.

Personal decision not to be immunised

Several HCWs discussed attitudinal barriers from either a personal perspective or knew of someone who refused HCW vaccination. The main barrier seemed to stem from the vaccine (or vaccines) not being considered to be 'natural' products. The other personal decision not to get vaccinated, stemmed from individual's risk-benefit assessment and not wanting to potentially feel slightly unwell following vaccination. This view was more so in those who had previously never experienced influenza.

Misconception about vaccines and vaccination

Common misconceptions about influenza or influenza vaccination discussed by participants included: the belief that the vaccine may cause influenza or influenza-like illness; the belief that influenza is not a serious illness or that HCWs are at low risk of influenza virus infection. Other participants voiced their frustration at misconceptions. Concerns about the efficacy of the vaccine were highly prevalent, either from interviewees themselves or their colleagues. The decision about receiving the vaccine was often complicated by inaccurate knowledge of contraindications. A few participants highlighted the misconception of not having the influenza vaccine if at all unwell. One HCW commented how not thinking that influenza was a serious disease impacted on vaccination decisions. For the same respondent, the risk of influenza was not sufficient to be vaccinated. Interestingly this participant stated that they would be willing to change their mind if the risk of disease was severe enough, '…if it's for a big epidemic, most definitely I would have the vaccination.' (Admin 1) For a minority, the way that vaccines work or their constituents was a barrier with one respondent thinking that if they were quite healthy and fit and their immune system was quite good, then there preference was for their body 'to do the work'. Another stated that she preferred the preservative-free influenza vaccine and so visited her GP to receive it, convinced they had less of a generalized reaction receiving the 'preservative-free one'.

Motivators

Sense of responsibility

Table 5. Motivators.

Sense of responsibility	guess the pros for me are for the children here. I want to make sure that I'm not going to make them sick. (Nurse 12) you don't want to pass it on to your family or anyone that you're working with or any of your patients, especially with our patients here because most of them are quite vulnerable. (Nurse 14) … if I got sick I wouldn't want to give it to the patients that I'm looking after. (Midwife 2) It's just something you have to do, especially working with vulnerable people. (Nurse 4 (OT)) I mean yeah, I don't want to spread on to any mothers and babies that's the only reason why I would do it. I don't necessarily do it for myself. (Midwife 4)
Convenience and ease of access	*The convenience, obviously. It's one of the - it would be the top thing. They're just easy. They come around. We don't have to have to try and fit in appointments after hours or fit it in with work. It's all on-site. (Nurse 8)*
Free cost	*It doesn't cost you anything here. If you go to the GP it's going to cost you for the vaccine plus the visit to the GP. (Midwife 3)*
Culture of support for the program	*Peer discussions. Everyone talks about it and advocates for it … They were wearing the stickers and everyone asked have you had your flu vaccine? … You don't want to be the one that's not immune. You feel like you're bringing the team down and you're going to infect everyone…(Nurse 7)* *… we do discuss it at ward meetings that the flu vaccine is available, just to remind staff to take it up if they can. I mean there's no real pushing to make people go and have it but just to remind them… (Midwife 1)* *As coordinator, I usually do a lap of the ward, just to say to the girls they're here and do they want to have it done. I mean, I don't push it and I don't think anyone does a - you know, but it's - we just make sure that people are aware that they're on the ward or can get it done. (Nurse 10)* *… this ward it goes beyond advocacy, to the point where you are forced to do it and if you don't do it you'll probably get a very stern talking to about why you haven't done it…I've seen an instance with a student nurse where she had decided that she wasn't getting vaccinated and in front of a large group of people was very aggressively interrogated as to why she hadn't done it. (Nurse 12)* *I haven't really heard much in terms of advocating toward staff members. A lot of the consultants that I work with are advocating it very strongly to most parents…. (Doctor 1)*
Personal values and family culture	*I come from a family … all very pro-vaccination. So that's the way I've been brought up. (Nurse 7)* …mum's always you know had us vaccinated and it's - no-one in my family is against it. So that's how I've been brought up. (Nurse 8)

Note: All non-midwives were pediatric nurses unless otherwise stated. OT=Operating theater nurse caring for both obstetric and pediatric patients.

A sense of responsibility was a major motivator, with almost every HCW implicitly or explicitly supporting vaccination (Table 5). The duty of care toward patients, family and friends was recognized and valued deeply by all participants. Reasons such as helping to protect oneself and immune compromised patients, stopping spread of disease and risk aversion were common themes the majority of participants listed as a motivator. Viewing vaccines as a preventive measure was a motivator for HCWs to get immunised. Many HCWs interviewed also recognized the importance of preventing contracting or spreading of the influenza virus, particularly in a hospital and among vulnerable patients.

Convenience and ease of access

Convenience and ease of access was considered important. The fact that it was readily available when they were at work, the visibility and duration of the influenza trolley rotation and the influenza program was greatly favored – almost every participant commented on the convenience and accessibility of the hospital influenza program.

Rotating trolleys

Many participants voiced being in favor of the rotating trolleys, due to the ability to access the program closer to their direct work environment. Additionally for some, the rotating trolleys to the ward environment also gave them the chance to access the program in smaller groups with this seen as a benefit.

Free cost

For some HCWs the convenience of the program linked strongly with its financial aspect, with HCWs stating that they would always have the influenza vaccine because they couldn't afford to have the time off work due to financial and family obligations if they developed influenza. Almost all the HCWs in this study considered that the vaccination was offered free of cost, a motivator to uptake.

Culture of support for the program

A sense of support toward the program from both peers and supervisors and management appeared to act as a motivator. For the nurses interviewed, the general discussion among peers helped them to be aware the program was available and reminded them of the importance of getting vaccinated and being part of the team. The role played by coordinators, line managers and team leaders was paramount. The wards that had coordinators and educators who were pro-vaccination and encouraged and reminded their staff of the importance of vaccinations created an environment where vaccination was the norm. This was as much about providing access as encouraging them. However, there were also instances described where individuals were singled out for not being vaccinated. Interestingly, a medical doctor participant also gave another perspective in that more senior staff directed their advocacy toward patients, rather than other HCWs.

Personal values and family culture

Personal values and family culture were important motivators as well. Interviewees who had always been vaccinated or had families who believed in vaccinations continued to be favorable toward receiving HCW vaccinations. These participants also talked about the influence of the HCW program in being a motivator for recommending their own family members to receive vaccines.

Program improvements

Many recommendations were made to improve the program and increase uptake, with the majority of the discussion being about access and timing, advertising and knowledge and awareness. The discussion about access centered on access to the vaccine afterhours and for staff on evening or night shifts and that there was a definite need for the trolley to rotate to the wards each day and not just during business hours. For some this access improved the experience through being in a smaller group on the wards rather than being vaccinated in the hospital cafeteria set-up. Others also considered it was important to rotate the trolley time with individual ward work patterns, coinciding with quieter periods such as before shifts commence and also occurring throughout the day. Many nurses could be busy their entire shift and so aside from ward meeting times, educational hours or meal breaks, many nurse were reluctant to take time to be vaccinated. Some HCWs mentioned it would be good to have greater communication and advance notification and details to the trolley location visiting times which could be provided in posters/flyers around the ward. This advance planning would enable those with a preference to have their vaccine before or after a shift. One HCW mentioned the need for HCWs to be able to book appointments. Other HCWs highlighted a need for greater information on the influenza vaccine such as the importance of vaccination and the yearly strain changes; this knowledge was considered important to increasing people awareness of the need for an annual influenza vaccination. Other HCWs suggested immunisers provide greater information about the vaccines they were administering.

Discussion

This study was initiated to determine the barriers and facilitators to HCW vaccination at a tertiary pediatric and obstetric hospital to identify strategies to improve the HCW immunisation program. Almost all participants were aware of the hospital's seasonal influenza vaccine program. Many HCWs could identify both motivators and barriers toward the program, from their own viewpoint and the perspective of other HCW colleagues. Identified barriers included issues arising from a lack of knowledge, misconception about vaccination and constituents, fear of adverse reactions and needles, privacy concerns and a personal decision not to receive vaccinations. Motivators included a sense of responsibility, convenience and ease of access, free cost, culture of support for the program from other staff and supervisors and senior staff and personal values and family culture. Many suggestions for program improvements were made.

Barriers

Despite high awareness of the influenza program, significant perceptual barriers were identified toward the influenza vaccine and the program. The common misconceptions about influenza or influenza vaccination discussed by participants are consistent with key barriers to vaccination identified in other HCW groups in Australian and international studies.[19,29-34] Secondly, the issue of privacy was raised by a number of HCWs. While a privacy screen was offered in the cafeteria location many HCWs felt this was inadequate and would impact negatively on desire to be immunised. Additionally the same concerns were voiced in regards to the mobile trolley in various departments, with HCWs commenting on receiving the vaccine in the corridor. The issue of privacy has not been discussed in relation to HCWs in the literature previously and may relate to the particular processes described in the hospital seasonal influenza vaccination program. However, privacy has similarly been raised as a concern for adolescent vaccination programs.[35]

Facilitators

Interviewees also described several positive aspects of the program. Firstly, many HCWs reported a sense of responsibility toward being vaccinated which is consistent with previous studies and for other HCW groups.[31,33,34,36]

Secondly, the convenience, ease of access and free cost to HCWs was also raised by participants.

The need for an accessible and convenient program is well documented [33,36] and many interventions to increase uptake in HCWs have attempted to address this. Free cost of the vaccine was also highlighted by participants as an incentive. Previous studies have identified that free cost, as well as other incentives such as lollipops or chocolate may act as a sufficient motivator for staff.[21] Thirdly, senior support for the program correlated to a positive ward/department culture toward the program. Wards where a dialog about the program existed between HCWs or where there was strong senior/management support fostered a positive culture toward the program. In these wards HCWs reported the program to be a part of an annual routine for them. The effect of ward culture toward influenza vaccination uptake has not been discussed in the literature previously. However, previous studies have documented on the use of champions to increase participation in seasonal influenza programs.[32]

However there is also a need to recognize the autonomy of HCWs to decide for themselves and not be made an example of if they choose not to receive the vaccine. That a positive ward culture could increase coverage is logical. Previous studies suggest that nurses are more likely to be open to dialog from peers or to messages addressed to them personally.[22,23]

While program awareness was high and overall access generally considered good, many felt improved access was important. That many participants could identify ways to improve the rotating trolleys is important. While the use of rotating trolleys or mobile carts have previously been seen as a positive in other studies,[21] identifying ways in which to build on this are important if access to greater numbers of HCWs is to be achieved.

The suggestion that HCWs immunise other HCWs has been documented previously[37] and could be beneficial as wards could organize 'vaccination sessions' that best suit their quiet periods.

Removing barriers whether perceived or actual, is an important step in any organization if rates of HCW vaccination are to be improved. Hollimeyer et al in their systematic review[30] divided barriers into 2 groups, perceptual and organisational. In order to increase uptake they argue organisations must seek to understand the barriers to vaccination that may be specific to particular cultural settings and subgroups of HCWs.[30]

Several Australian and international studies have shown that following one seasonal influenza vaccination, many HCWs will continue to be vaccinated in subsequent seasons, suggesting it is well worth an organisations time to tailor strategies that best suit their individual workforce, particularly focusing on developing a strong culture for new employees.[24-27,29,32]

Many HCWs commented on the lack of privacy, location of administration and the need for greater rotational trolley to their work environment, these are organisational barriers that could readily be addressed in any future influenza vaccination campaigns to improve vaccination rates.

This is the first study to explore in depth the attitudes, barriers and motivators toward seasonal influenza vaccine uptake of Australian HCWs working in pediatric and obstetric environments. The qualitative methods used permitted us to describe rich information about their experiences which could not have been gathered from a written survey. Semi-structured interviews were identified as the most appropriate data collection method to maximise the participation rate, as the interview could be conducted in either the workplace or via telephone. Focus group discussions would not have allowed HCWs to express their views so freely and may have made some HCWs reluctant to participate. A limitation of this study is that participants were predominantly female (21/22) (nature of industry) and nurses and midwives (14/22 and 5/22 respectively). Respondents were also predominantly although not exclusively pro-vaccination; recruiting and interviewing non vaccinating HCWs was difficult. Additionally, it was not identified whether any participants worked part-time or solely weekends or if they were permanent night staff. This may be important, considering this group are often deemed to be the ones who have reduced access to the program.

Future research should focus on providing a greater understanding of the barriers in accessing hospital occupational health vaccination services, particularly, if our findings are true of HCWs working in other parts of Australia or whether our findings translate to HCWs caring for other patient populations. This qualitative study also uncovered issues that were not previously exposed during our quantitative study,[20] such as the lack of privacy and location of vaccine administration, issues that were important to HCWs. Any future quantitative surveys of HCWs on this topic should seek to incorporate these areas. Education and practice strategies should be implemented that focus on addressing identified misconceptions of the influenza vaccine by HCWs. Additional research is also required to determine the effectiveness of different strategies implemented to increase knowledge and awareness of HCW vaccine recommendations and uptake.

Conclusions

This study identified various barriers that could be addressed to improve the HCW program delivery and hence uptake of the seasonal influenza vaccine such as, a lack of knowledge surrounding influenza and privacy concerns about where and how the vaccine is administered. In addition, HCWs with specific concerns such as a needle phobia could be given the option of having the vaccine via other delivery method (i.e., the intradermal delivered influenza vaccine). Motivators that could further influence staff include their sense of responsibility and free cost of the vaccine as well as strong leadership at the ward level. Convenience and ease of access was also important and further emphasizing and increasing program accessibility should be considered particularly for staff working part-time or night duty.

Participants and methods

Study design

Semi-structured interviews were completed with HCWs involved with patient care at a tertiary pediatric and obstetric hospital, in Adelaide, South Australia between March and July 2014. This approach was selected to enable a detailed exploration of key driving factors and HCW decision making related to recommended vaccines and the seasonal influenza program. The study protocol was reviewed and approved by the Women's and Children's Health Network, Human Research Ethics Committee.

Setting and participants

The study was performed at the leading hospital provider of specialist care for children with acute and chronic conditions in South Australia, as well as the State's largest maternity and obstetric service, with over 5,000 births per year. There are 17 wards at the hospital, 11 pediatric and 6 women's health/obstetric wards. The hospital's 2013 seasonal influenza program included a 2 month period of access to an immunisation nurse stationed at the hospital cafeteria, a mobile 'flu trolley' visiting wards and a clinical practice consultant available to provide vaccinations as required.

Potential participants were identified from respondents who completed a quantitative survey on HCW views.[20] The survey was anonymous but respondents were asked to provide their contact details if they were willing to participate in a more detailed face-to-face interview. In addition announcements were made at nursing ward education sessions and through targeted recruitment to gain a range of views. Data collection aimed to capture 'staff experiences of the hospital seasonal influenza program'. To achieve this, the study was open to all staff with direct patient contact who had worked at the hospital long enough to have participated in the program. Written informed consent was collected from each participant prior to interview.

Data collection

Semi-structured, one-to-one interviews were conducted with the aim of exploring HCW experiences, opinions and views, specifically about the influenza vaccination program, as well as vaccinations in general. The interview guide was developed by 3 of the investigators (JT, JC & HM). Interviews were conducted by LS and JT. Interviews were either conducted in the department meeting room or in meeting rooms on the wards where HCWs worked. Interviews were also conducted via phone for those participants for whom this option was more convenient. Data collection ceased when saturation was reached and was defined as no additional responses.

Data analysis

All the interviews were digitally recorded and later transcribed verbatim. NVivo 10 software was used to facilitate coding. A thematic analysis was undertaken as a means to gain insight and knowledge from data gathered, enabling a deeper appreciation for the experiences and patterns of HCW vaccinations. An initial read of the data was conducted in order for the researchers to familiarize themselves with the data content. Second, a preliminary draft of coding was done by underlining phrases that stood out, held meaning and including words and phrases repeated by the HCWs interviewed. A list of various themes was then developed. After initial coding, codes were grouped under themes describing the HCW influenza vaccination program. Two authors (LS and JT) coded all the data. Any differences between the 2 coding schemes were discussed and resolved with all researchers.

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Conflict of interest

HM is an investigator on vaccine studies sponsored by Industry. Her institution has received grants from GSK, Sanofi Pasteur, Pfizer for Investigator led research. HM has not received any personal payments from industry. The other remaining authors report no conflicts of interest.

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