

***Accounting for personal and professional choices for pandemic influenza vaccination amongst
English healthcare workers***

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ABSTRACT

Background

Healthcare workers (HCWs) are encouraged to get vaccinated during influenza pandemics to reduce their own, and patients', risk of infection, and to encourage their patients to get immunised. Despite extensive research on HCWs' receipt of vaccination, little is known about how HCWs articulate pandemic influenza vaccination advice to patients.

Aims

To explore HCWs' uptake of the A/H1N1 vaccine during the pandemic of 2009-2010, their recommendations to patients at the time, and their anticipated choices around influenza vaccination under different pandemic scenarios.

Method

We conducted semi-structured interviews and focus groups with eight vaccinated and seventeen non-vaccinated HCWs from primary care practices in England. The data was analysed using thematic analysis.

Results

The HCWs constructed their receipt of vaccination as a personal choice informed by personal health history and perceptions of vaccine safety, while they viewed patients' vaccination as choices made following informed consent and medical guidelines. Some HCWs received the A/H1N1 vaccine under the influence of their local practice organizational norms and values. While non-vaccinated HCWs regarded patients' vaccination as patients' choice, some vaccinated HCWs saw it also as a public health issue. The non-vaccinated HCWs emphasised that they would not allow their personal choices to influence the advice they gave to patients, whereas some vaccinated HCWs believed that by getting vaccinated themselves they could provide a reassuring example to patients, particularly those who have concerns about influenza vaccination. All HCWs indicated they would accept

vaccination under a severe pandemic scenario. However, most non-vaccinated HCWs expressed reticence to vaccinate under the mild pandemic scenario.

Conclusions

Providing evidence-based arguments about the safety of new vaccines and the priority of public health over personal choice, and creating strong social norms for influenza vaccination as part of the organizational culture, should increase uptake of influenza vaccination among primary care HCWs and their patients.

Keywords: A/H1N1; healthcare workers; influenza; pandemic; primary care; vaccination

1. Introduction

Influenza vaccination is widely encouraged among primary care healthcare workers (HCWs) because it provides personal protection, protects patients' health [1, 2, 3], and reduces absenteeism at work [4]. Moreover, immunized HCWs are more likely to encourage their patients to get vaccinated [5]. Indeed, the most common reason for lay people to accept vaccination is receiving advice from HCWs [6, 7]. Studies have indicated that during the A/H1N1 pandemic of 2009-2010 the uptake of vaccination among HCWs was relatively low in many countries [5, 8] and that the factor most associated with recommending A/H1N1 vaccination to patients was HCWs' intention to be vaccinated themselves [9]. However, there is evidence of hesitancy in accepting vaccination and ambivalence in promoting vaccination to patients if HCWs fear vaccination side-effects and doubt its efficacy [10, 11]. While there have been debates about the ethical aspects of making influenza vaccination for HCWs mandatory [12, 13], this remains largely optional in many countries such as the UK.

Few qualitative studies have examined in depth the reasons HCWs' give for their own choices *and* the advice they give to patients regarding influenza vaccination, be it pandemic or seasonal [11, 14, 15]. Some studies have examined how HCWs provide advice to patients regarding vaccination for different conditions (e.g. against the human papillomavirus), and have found that HCWs can be reluctant to recommend HPV vaccination when they have concerns about its side-effects or about the role of HCWs in promoting it [16, 17]. However, no previous studies have examined how HCWs' personal vaccination decisions may relate to their advice-giving. Therefore we adopted a qualitative study to investigate how HCWs make choices around pandemic vaccination for themselves, and how they articulate vaccination advice to patients, and explored whether HCWs' personal vaccination choices influence what they advise their patients to do. We conducted our study in England, where 40.3% of frontline HCWs received the A/H1N1 vaccine during the pandemic of 2009-2010 [18].

2. Methods

2.1. Design

Sixteen semi-structured telephone interviews (lasting from 13 to 38 minutes) and two face-to-face focus groups were conducted with HCWs from primary care practices between February and April 2014. The focus groups (lasting 27 and 32 minutes, respectively) were conducted at the primary care practices where the HCWs were employed and were moderated by the first author. The first focus group comprised four General Practitioners (GPs) and one Nurse Practitioner, all vaccinators for A/H1N1, while the second, one vaccinated and three non-vaccinated GPs. Two vaccinated and fourteen non-vaccinated HCWs were interviewed by telephone. Demographic information was collected at the end of the interviews and focus groups. The topic guide (see Table 1) elicited past experiences of A/H1N1 vaccination and intentions to vaccinate under different influenza pandemic scenarios. The study received approval from the Ethics Committee of the University of Southampton and Research Management and Governance approval from the Hampshire and Isle of Wight Comprehensive Local Research Network.

2.2 Participants and setting

Sixteen General Practitioners (GP), five Nurse Practitioners (NP), and four nurses (N) were recruited from rural and urban practices in Hampshire county, England, where only 29.1% of HCWs with direct patient care had been vaccinated against A/H1N1 in 2009-2010 [18]. We recruited more non-vaccinated than vaccinated HCWs because we believed it was particularly important to understand why non-vaccinated HCWs rejected A/H1N1 vaccination, how they offered vaccination advice to patients, and how they might accept vaccination under different influenza pandemic scenarios; this could inform future interventions to promote vaccination uptake in HCWs and patients. The study was advertised via the local Primary Care Research Network to primary care practices actively involved in research, and the first author contacted the practice managers who had expressed an interest in the study. Subsequently, the HCWs were approached by their practice

managers and invited to participate. Participants were informed that participation was confidential and voluntary, and written consent was obtained before data collection. Our analysis reached saturation with regard to non-vaccinating HCWs' reasons for not receiving the A/H1N1 vaccine and the vaccination advice they provided to patients at the time. We did not seek data saturation regarding the vaccinating HCWs as we considered this sub-sample less relevant with regard to potential interventions to increase vaccination uptake among HCWs.

2.3 Data analysis

The interviews and focus groups were audio-recorded and transcribed verbatim. The analysis was informed by inductive thematic analysis [19], and was supported by the QSR NVivo 10.0 software. The transcripts were read iteratively and the participants' responses were coded into categories (themes) that represented frequent patterns of meaning in the data. The first author developed the initial set of codes which were revised after consultation with the last author. The coding followed the aims of the research and focused on the HCWs' motivations to vaccinate and their advice to patients about pandemic influenza vaccination. Although we elicited motivations for taking and prescribing antiviral medicines as a prophylactic measure against pandemic influenza, we do not report the findings here.

[insert Table 1 here]

3. Results

16 females and 9 males participated in total, age range = 29 to 62, median age = 52. Eight participants (32%) had accepted the A/H1N1 vaccination, and of these, six were regular vaccinators for seasonal influenza, see Table 2 for the detailed profiles of the participants.

[insert Table 2 here]

3.1. *Choosing or refusing vaccination*

3.1.1. *A/H1N1 vaccination as personal choice for HCWs*

The majority of HCWs remembered receiving information about A/H1N1 vaccination via email, while others also mentioned receiving information from their practice managers, senior colleagues, or at staff meetings. The Department of Health had in fact circulated a letter to primary care practices informing them that frontline HCWs would be prioritized to receive the A/H1N1 vaccine from 26 October 2009.

Most HCWs remembered the A/H1N1 vaccine as having been “recommended”, “encouraged”, or “offered”, but not made mandatory for HCWs. The mild nature of the pandemic was used to argue that, in the context of that particular pandemic, vaccination was optional and even unnecessary by the time the vaccine had become available:

“Some had it, some didn’t have it. It was never made absolutely compulsory and by the time people were saying, ‘it’s a professional thing and you should really have it’, the flu epidemic was dying down.” (Female GP, 56, non-vaccinator)

3.1.2. *HCWs’ reasons for choosing vaccination*

Two female GPs, of whom one was a regular vaccinator for seasonal influenza, vaccinated against A/H1N1 because they wanted to protect their young and unborn children, respectively. Five HCWs vaccinated because the organizational culture at their practice encouraged them to be “*the first in line*” to have the seasonal influenza vaccine. One nurse got vaccinated because she wanted to feel confident when recommending it to patients, aware that her own receipt of vaccination could serve as an example:

“I had it because I felt I couldn’t say to the patients, ‘No, I haven’t had it, but I’m expecting you to have it’. I didn’t particularly want it, not for any particular reason other than I don’t

normally take the flu vaccine. But I had to feel confident to say, 'Well, I've had it and I'm fine'." (Female N, 48, vaccinator)

With regard to the pandemic scenarios, virtually all HCWs stated that they would accept vaccination under the 'severe' scenario. However, under the 'mild' scenario, some non-vaccinated HCWs said they would not *"really bother about getting the vaccine"*. Other vaccinated and non-vaccinated HCWs viewed receipt of vaccination under the 'mild' scenario as part of their *"duty of care"*: *"we provide a service, so I think we need to be vaccinated"* (Male GP, 40, vaccinator).

3.1.3 HCWs' reasons for refusing vaccination

Many HCWs declined the A/H1N1 vaccine because they did not believe they were at risk, either because they had never been ill with influenza before, or because their constant exposure to ill patients had helped them build immunity over the years. However, most HCWs rejected A/H1N1 vaccination because they perceived a lack of safety around the *"rapidly"* developed vaccine:

"I think everyone was a bit scared, there was suddenly this vaccine that hadn't been tried out on anybody, it came very quickly out for treatment and I think everybody was a little bit worried about the effects it could have. [...] We were just told that there wasn't any long term data on it so we didn't know about the safety." (Female GP, 47, non-vaccinator)

The HCWs questioned the value of A/H1N1 vaccination in the absence of safety certainty and argued that *"we're meant to practise evidence-based medicine, but here we're being asked to do actions without evidence, which goes against the grain"* (Male GP, 58, non-vaccinator). Many non-vaccinated HCWs sought information about the A/H1N1 vaccine safety record and thought there was not enough evidence to be able to accept it personally.

3.2. Advising patients about vaccination

3.2.1 Informed consent

The HCWs, particularly the non-vaccinated ones, constructed the vaccination advice they gave to patients as “options” or “patient’s choice” and emphasised that they had encouraged their patients to make an “informed decision” about having the A/H1N1 vaccination so that they knew its risks and benefits, sometimes explaining that vaccination was for their protection:

“I encouraged [them]. I gave them informed consent, told them the information that I’d had, and if they were particularly vulnerable. [...] I certainly would advocate vaccines actually.”

(Female N, 45, non-vaccinator)

The HCWs viewed their patients as having “full authority” over their own bodies, and their professional role as limited to providing advice. However, some vaccinated HCWs had “pushed the vaccination as hard as they could” (Male GP, 58, vaccinator) among their patients as they professed to be “very keen on vaccination” and on persuading people to get immunized (Female GP, 54, vaccinator). If patients had refused vaccination, this was accepted as “fair enough” although informing patients about the benefits of influenza vaccination was seen as “constant teaching”.

Most HCWs did not see patient vaccination problematic under the ‘severe’ pandemic scenario because in that context they would expect patients to accept and even request vaccination. However, the HCWs’ responses were more varied under the ‘mild’ scenario, for example, some were willing to recommend it to the at-risk groups “but not the population as a whole”, or only if they could guarantee no negative side-effects. While most non-vaccinated HCWs regarded vaccination as patients’ choice, some vaccinated HCWs saw it also as a “public health issue” and as necessary to “suppress the spread of the condition through the nation” (Male GP, 61, vaccinator).

3.2.2 Maintaining professional behaviour

The non-vaccinating HCWs drew boundaries between their personal choices and the advice they gave to patients, e.g. *"it's a dichotomy, I have no qualms about doing that, I'm quite happy to recommend it to other people"* (Female NP, 62, non-vaccinator), and argued that they would not let their personal opinions or choices affect patients' decisions, thus projecting an image of professionalism and objectivity. However, this rather impersonal reliance on official guidelines may have inadvertently minimized the greater persuasive power that HCWs could have exercised over their patients' choices:

"I gave them advice and the recommendation and obviously it is their own informed decision with no personal input from me, but their informed decision in a professional way." (Female NP, 58, non-vaccinator)

The HCWs described the advice pertaining to patients' vaccination as *"guidelines"*, *"targets"*, or *"party line"*, and emphasised that such regulations *"are taken out of the normal GP's hands"* as HCWs rely on guidelines from health authorities. Some HCWs viewed giving advice from personal experience as problematic, because HCWs are *"just told what they have to do"* and *"patients can choose, but we can't recommend really"* (Female GP, 47, non-vaccinator). Nonetheless, some vaccinated HCWs recognized that primary care staff, including receptionists, could serve as a model to patients by holding themselves as examples of risk-free vaccination:

"The receptionists, if they know patients really well and if they know they need it, they say, 'Look, I've had it and I was ok'". (Female N, 48, vaccinator)

4. Discussion

This study adds to existing research on health professionals' attitudes to pandemic influenza vaccination by offering novel insights into how healthcare workers (HCWs) reflect on their personal vaccination choices *and* the vaccination advice they give to patients. The non-vaccinated HCWs

separated their personal choices from their professional role, but some vaccinated HCWs believed that by getting vaccinated themselves they could provide a reassuring example to patients. While all HCWs followed official guidelines when recommending influenza immunization to patients, the non-vaccinated HCWs mostly regarded patients' vaccination as patients' choice, whereas some vaccinated HCWs saw it also as a public health issue.

The HCWs viewed their own receipt of A/H1N1 vaccination as a choice informed by perceptions of vaccine safety and personal health history, while in relation to patients, as a choice made in light of informed consent and official guidelines. This finding ties in with past research which has revealed that HCWs opposed mandatory seasonal influenza vaccination by invoking personal autonomy and freedom of choice [20, 21]. In our study, the non-vaccinating HCWs invoked a number of personal reasons as to why they had refused, e.g. previous adverse reaction to influenza vaccination, suggesting that their choices were not necessarily made with regard to the duties defined by their professional role. In line with previous research about the A/H1N1 pandemic [8, 14], many HCWs had refused to be vaccinated because they did not believe they were at risk [2, 4, 5, 7, 22], or because they doubted the efficacy of the newly developed vaccine or were worried about its potential side-effects [23-26]. Similarly to past research [11, 22, 27], the HCWs who vaccinated did so not necessarily to protect patients' health but rather their own and that of their families. The HCWs' argument that the A/H1N1 vaccine was new and not fully safe suggests that times of crisis such as pandemics make visible processes of drug production and licensing that are usually taken for granted or seen as routine, and in turn this makes HCWs infer uncertainty about new vaccines developed promptly, just as the general public do [28]. In the UK at the time of the A/H1N1 pandemic, the media reported concerns over the safety of the fast-tracked A/H1N1 vaccine [29], and these unfounded concerns may have influenced HCWs' views [30], as has also been found among HCWs in Greece [24].

The HCWs' emphasis that they would not allow their personal choice to influence their professional role arguably served to reinforce the distinction between the personal and the professional realms. As suggested by other qualitative studies on health professionals' seasonal influenza immunization advice to patients [15], the HCWs indicated that they did not see it as their responsibility the choices that patients made. The HCWs seemed to have been caught in a dilemma between patient compliance and patient choice, which can surface at times of health crises [31], and between the competing values in public health of patient empowerment versus patient compliance with expert advice [7, 32]. The HCWs' choice not to get vaccinated may have diminished the reassurance they could have given to patients, for instance, using personal experience as example of safe vaccination. By contrast, some vaccinated HCWs advised patients out of their personal belief in the value of immunization. As public trust in health authorities is crucial at times of pandemics [33], higher vaccination rates among HCWs could foster higher intentions to recommend vaccination to patients [25] and higher uptake among the public [9-11].

The present findings reveal a need to persuade HCWs to be vaccinated in a pandemic so as to reduce ambivalence or hesitancy when advising patients to be vaccinated, and suggest several ways to do so. First, vaccination could be framed as part of their professional role and not simply as a personal decision [34]; indeed, research on Turkish HCWs' acceptance of A/H1N1 vaccination revealed that this was linked to their belief that vaccination was a professional responsibility [25]. Moreover, the organizational culture in the workplace should include norms and habits for influenza vaccination in non-pandemic contexts, whereby vaccination could be framed as a valued behaviour to be incentivized or rewarded [35], and should highlight the negative consequences of HCWs' illness from influenza, such as work absenteeism and increased burden on work colleagues [36]. Practice managers and senior GP partners should be encouraged to get vaccinated to provide positive role models as 'flu champions' [37] to reassure colleagues of the safety of new vaccines [38]. Secondly, HCWs should be provided with transparent, evidence-based arguments explaining the risk of contracting pandemic influenza, and such information should address concerns about vaccine

production, testing, and side-effects. HCWs should be made aware that pandemics are unpredictable and that preventative measures should be taken in line with the precautionary principle [39]. Furthermore, providing feedback on the past A/H1N1 pandemic might help HCWs understand the effectiveness of vaccination, and such statistics should be made easily available to staff. Thirdly, HCWs should be encouraged to see patient vaccination not as a personal choice but as a public health issue, and during influenza pandemics patients should be made aware of the urgent need to halt the wider spread of the infection.

5. Limitations

This study was conducted with a small sample of HCWs from nineteen primary care practices from the relatively affluent south of England, and as such it is not representative of HCWs' views from across the United Kingdom, nor of HCWs from acute care settings who may directly care for patients affected by influenza. Furthermore, our study was conducted five years after the A/H1N1 pandemic of 2009-2010, therefore HCWs' memories of what they thought, felt, or did at the time may have been inaccurate or influenced by subsequent events.

6. Conclusions

To improve influenza vaccination uptake among HCWs, it may be helpful to have strong organizational norms to make influenza vaccination routine. HCWs should be provided with evidence-based arguments about the safety of new vaccines, and encouraged to view influenza vaccination during pandemics not as a personal choice but rather as an urgent public health issue.

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Author contributions

All authors contributed to the design of the study. The first author sought and obtained ethical approval and RM&G approval for the study, recruited and interviewed all the participants. The first and the last authors led the analysis of the data. All authors participated in the writing of the article, and all authors approved the final article.

Conflict of interest

All authors report no conflict of interest.

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Table 1: The topic guide for the interviews and focus groups with healthcare workers

Part 1: Exploratory questions about A/H1N1 pandemic influenza, vaccination, and antiviral medicines

1. What were you told about taking precautions against the pandemic flu back in 2009-2010?
2. How did you learn about the Department of Health recommendations for vaccination and antiviral medicines for the H1N1 (pandemic flu) back in 2009-2010?
 - a. What were you told officially?
 - b. What else did you hear about vaccination and antiviral medicines from other sources?
 - c. What did you think about what you heard, or were told, about vaccination at the time?
 - d. Can you tell me about any discussions about vaccination you had with colleagues? Or with patients?
3. Did you get vaccinated against pandemic flu at the time? If yes, what made you do so? If not, why not?
 - a. Were you worried about catching pandemic flu?
 - b. Do you normally get vaccinated for seasonal flu?
4. How about antiviral medicines for swine flu? What did you think about what you heard or were told at the time?
 - a. Did you take any antiviral medicines at the time against swine flu?
 - b. Can you tell me about any discussions you had with patients about antiviral medicines for pandemic flu?
 - c. Can you tell me about any discussions you had with colleagues about antiviral medicines for pandemic flu?

Part 2: Uncertainty, Mild, and Severe pandemic influenza scenarios

1. Uncertainty scenario: In the early stages of course there will always be uncertainty about how severe the pandemic will turn out to be. In this early phase:
 - a. How would you feel about taking antiviral medicines yourself?
 - b. What would you think about recommending them to your patients?
 2. Mild scenario: Assuming that by the time a vaccine had been developed, the pandemic flu outbreak turned out to be mild, like the one in 2009-2010.
 - a. In this case, how would you feel about personally getting vaccinated?
 - b. In this case, what would you think of recommending vaccination to your patients?
 - c. How about antiviral medicines? Would you take them? Would you recommend them to your patients?
 3. Severe scenario: Imagine now that the outbreak is more severe; let's say 1 in 2 healthy people become infected and 1 in 50 infected people will die.
 - a. In this case, how would you feel about personally getting vaccinated?
 - b. In this case, what would you think of recommending vaccination to your patients?
 - c. How about antiviral medicines? Would you take them? Would you recommend them to your patients?
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Table 2: Characteristics of the healthcare workers who participated in the study

Demographic	Vaccinators for A/H1N1 (N = 8)	Non-vaccinators for A/H1N1 (N = 17)
Gender		
Female	5 (62.5%)	11 (64.7%)
Male	3 (37.5%)	6 (35.3%)
Age		
Range	40-61	29-62
Median	50	52
Ethnicity		
White-UK	7 (87.5%)	13 (76.5%)
Other	1 (12.5%)	4 (23.5%)
Profession		
General Practitioner (GP)	6 (75%)	10 (58.8%)
Nurse Practitioner (NP)	1 (12.5%)	4 (23.5%)
Practice Nurse (N)	1 (12.5%)	3 (17.7%)
Usually receives seasonal influenza vaccination		
Yes	6 (75%)	7 (41.2%)
No	2 (25%)	10 (58.8%)
Responsibility for administering seasonal influenza vaccination		
Yes	8 (100%)	16 (94.11%)
No	0	1 (5.89%)
Responsibility for administering pandemic influenza vaccination		
Yes	8 (100%)	15 (88.22%)
No	0	1 (5.89%)
Don't know	0	1 (5.89%)