The English Seasonal Flu Immunization Programme for Poultry Workers 2007: a challenging task

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ABSTRACT

Background English Primary Care Trusts (PCTs) immunized the poultry worker population with the seasonal influenza vaccine in the 2007 winter season.

Methods In Warwickshire, the provision of vaccinations progressed in two phases: four weekday evening clinics were offered initially, then one weekend clinic was offered, plus on-site vaccination at three farms and vaccination in general practice.

Results There were 253 registered premises in Warwickshire. Eighty-eight persons were vaccinated in five clinics; 131 persons were immunized on-site. Nobody attended their general practice for vaccination; the overall uptake rate was 32%, far exceeding the expected 20%.

Conclusion On-site vaccination during working hours was by far the most effective method of vaccinating this population; community clinics were not cost-effective, nor were general practices apparently accessed. The number of workers recorded in the contact list of registered poultry premises provided by DEFRA/DH has been shown to be unreliable; this has implications for the future implementation and evaluation of this programme. Immigrant workers within the poultry worker population make communication about the benefits of vaccination and access to primary care an issue, both factors which impact on uptake. Strategies for engaging smaller farms, immigrant and non-registered workers need to be developed.

Keywords health protection, immunization

Introduction

In December 2006, the Department of Health (DH) informed English Primary Care Trusts (PCTs) that they would be expected to immunize the poultry worker population with the seasonal influenza vaccine in the remaining 3 months of the winter season. The programme had not commenced earlier due to problems with the manufacture of the vaccine. The rationale behind the programme was to reduce the ‘very slight risk’ that a new and highly pathogenic influenza virus could be created in England, by lessening the likelihood that a poultry worker would be infected with human influenza virus and avian influenza virus at the same time. England was following the lead of other countries that vaccinate poultry workers, such as Germany and the USA. Introduction of the programme did not coincide with an increased risk of an outbreak of avian influenza amongst poultry. Immunization was not compulsory; it did not offer any protection against avian flu.

This programme was separate from the routine seasonal influenza vaccination programme, which is nationally negotiated, provided by the primary medical service (primarily general practices) and covered by a directed enhanced service. Those populations already covered by the national programme include: all those aged over 64, all those aged 6 months or over in a clinical risk group, those living in long-stay residential care homes and similar facilities, and carers.

In this paper, we will outline the key stages in implementing the programme, the key lessons we learnt during the process and the challenges inherent in vaccinating this population. To our knowledge, there are no other published papers focusing on the implementation of a routine seasonal influenza vaccination programme for poultry workers.

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Methods

In January 2007, the full details of the initiative were made clear to the PCTs. The PCTs were being asked to set up a programme to immunize poultry workers who were either registered patients of providers of primary medical services within their areas, or resident within their areas and not registered locally or elsewhere. Poultry workers who worked in registered poultry premises and at approved slaughterhouses were to be offered seasonal influenza vaccine up until the end of March. Additional funding was provided by the DH for the PCTs, based on the number of poultry workers in their areas. Vaccine and information leaflets in a variety of languages were provided free to the PCTs.

A 'poultry worker' was defined in the guidance (see Box 1), as were those persons not thought to be at a higher risk of exposure to avian influenza virus than the general population, who were excluded from the programme (see Box 2). Family members, including children, if they met the definition for poultry worker, were eligible for vaccination. State veterinary staff who met the definition were also eligible. 'Poultry premises' were defined as premises that keep 50 or more birds of designated poultry species that were required to be registered, and poultry slaughterhouses. Premises on which fewer birds were kept were not thought to pose an increased risk of human infection with avian influenza.²

Box 1 Definition of 'poultry worker'²

A poultry worker means

(a) an individual who while on poultry premises and in the course of his employment (including self-employment):
   (i) accesses enclosed poultry rearing or egg production areas,
   (ii) performs initial sorting of poultry eggs if the sorting area is an integral part of the production unit,
   (iii) catches or culs poultry within enclosed poultry rearing or egg production areas or
   (iv) performs the final clean down of poultry sheds following depopulation of a poultry house;
(b) an individual who while on poultry premises and in the course of his employment (including self-employment) collects or removes poultry manure or litter from within enclosed poultry rearing or egg production areas of poultry premises or
(c) an individual who while on poultry premises and in the course of his employment (including self-employment):
   (i) catches or handles live birds,
   (ii) kills or eviscerates birds or
   (iii) cleanses or disinfects areas and equipment contaminated by poultry faeces.

The Department for the Environment, Food and Rural Affairs (DEFRA) and the Food Standards Agency (FSA) issued letters to every poultry premises and slaughter house in the country. In addition to the keeper’s letter, a letter for the workers, an information leaflet, a question and answer sheet and a data collection consent form were sent out. The keepers were asked to identify eligible workers and give them a copy of the above documentation. They were also asked to retrieve the data collection consent forms once completed. The information requested on the data collection consent form is given in Box 3.⁶ The British Egg Industry Council also sent out letters to alert catchers and cullers to their entitlement to free flu vaccine; this group was asked to contact their PCT if any individuals wished to take up the offer of vaccination.

The PCTs were provided with a contact list of registered poultry premises and approved poultry slaughterhouses within their boundaries, and a list of local Animal Health Divisional offices. Warwickshire PCT then contacted each registered keeper by letter requesting the return of the data collection consent forms via a pre-paid self-addressed envelope. In addition, the total number of eligible workers was requested from each keeper. The local Animal Health Divisional office was contacted by phone so that eligible workers (state veterinary staff) could be identified and offered vaccination.

In Warwickshire PCT, the provision of vaccinations progressed in two phases. In the first phase, four weekday evening clinics were offered at sites across Warwickshire. In the second phase, one weekend clinic was offered, in addition to on-site vaccination at all farms with 10 or more eligible persons requesting vaccination. Workers were also given the option of attending their general practices for immunization. General Practitioners (GP) were informed where their patients were vaccinated at a clinic or on-site.

The clinics were sited dependent upon number of workers in the locality and ease of access. The clinics were timed to coincide with the end of the working day. Poultry workers were made aware of the clinics by means of A4 sized posters which were sent to each registered poultry keeper to be displayed on the premises. The clinics were not advertised in the local press as small scale poultry keepers may then have attended; this group was not eligible for free vaccination under the programme. It was emphasized that booking was not required for attendance at the clinics, and that the vaccination was free. Children who attended received their second vaccination at their general practices. The Local Medical Committee, all general practices within
Warwickshire, the out-of-hours services and the Patient Advice and Liaison Service were kept informed of how workers could obtain vaccination.

**Box 2 Persons not included in the definition of ‘poultry worker’**
- Workers in poultry units that do not require statutory registration;
- Workers in and around farms that have registered poultry units, but do not enter the enclosed poultry management areas or egg sorting facilities;
- Workers delivering materials to poultry units;
- Workers collecting or delivering eggs or poultry (live or dead) from poultry premises (unless undertaking duties included in (a)(iii) above);
- Workers in poultry processing units handling poultry carcasses but not involved in killing or eviscerating poultry (unless also undertaking duties included in (c)(iii) above);
- Workers in non-approved poultry slaughterhouses;
- SVS staff whose work does not involve them in regular close contact with poultry on premises;
- Bird swabbers who take samples or swab dead shot birds, and other dead birds as part of the avian influenza surveillance of wild birds.

**Results**

There were 253 registered premises in Warwickshire, with, according to the DEFRA/DH contact list, 690 eligible poultry workers. Most of these premises were small, with only 10 recording 10 or more workers.

Only 35 premises returned the data collection forms. The clinics were not well attended; 88 persons were vaccinated in the five clinics. On-site vaccinations were carried out at three farms, where 131 persons were immunized. Uptake at these premises was 62, 87 and >100% (more persons vaccinated than were apparently eligible). Nobody attended their general practice for vaccination. Seven people were known to decline immunization. A total of 219 people were vaccinated during this campaign. Eighty-eight workers were identified as having been vaccinated prior to the campaign, 64 of them having been immunized as part of a privately commissioned work programme organized by one business. Excluding this group, the overall uptake rate was 32%.

**Box 3 Information requested on the data collection consent forms**
- Name
- Date of birth
- Address
- Contact telephone number
- GP name
- GP address
- GP telephone number

**Discussion**

**Main finding of this study**

On-site vaccination during working hours was by far the most effective method of immunization; it captured the greatest number of people and was the most convenient approach for the businesses involved.

**What is already known on this topic**

No published papers were identified focusing on the practical aspects of implementing a routine seasonal influenza vaccination programme for poultry workers, although one article and one news report were identified where immunization had taken place following an outbreak.7,8 However, a number of articles have dealt with seasonal influenza vaccination of health care workers.9–21 These articles focus primarily on uptake rates, the reasons for non-vaccination, and improving uptake among this group in a service setting. The evidence from these articles shows that ease of access, on-site vaccinations and the provision of free vaccine improve uptake rates.9–14 No articles were found that discussed the problem of identifying the eligible population or the other issues particular to this occupational group.

**What this study adds**

Identifying the eligible population was a major challenge to the successful implementation of this programme. Less than 14% of registered premises returned the data consent forms and/or the request for the total number of eligible workers in their employ, which was requested on the letter sent out by the PCT. This was despite the dispatch of personalized letters and stamped, self-addressed envelopes to every registered keeper. There was not the resource within the PCT to telephone the non-returners due to the large number of...
small farms in the area. Recorded in the contact list of registered poultry premises provided by DEFRA/DH was the number of workers at each premises, but this did not necessarily relate to the figures provided to us by those that did return the forms. Of the total number of premises (21) for which the number of eligible workers were supplied to the PCT by the farms’ management, 33% reported a greater number of workers than were recorded (220 workers where only 64 were recorded), 43% reported fewer workers than were recorded (32 workers where 72 were recorded) and 24% reported the same number as that recorded on the contact list. In addition, one of the larger farms was not identified on the contact list at all. This clearly demonstrates how unreliable the contact list was and how difficult it was to identify the bigger premises. The difference observed between the contact list and direct reporting could have been related to the definition of poultry worker used in this campaign which may be different to that employed by DEFRA, the inclusion of family members as eligible persons, the exclusion of migrant workers by some employers from the original list, or potential confusion by keepers over the definition. Not being able to establish the denominator population had a number of implications:

- despite the majority of those who did attend for vaccination agreeing to their details being kept, the database compiled by Warwickshire PCT of eligible workers is incomplete. Therefore inclusion of family members as eligible persons, the exclusion of migrant workers by some employers from the original list, or potential confusion by keepers over the definition. Not being able to establish the denominator population had a number of implications:

- the true proportion of the at-risk population vaccinated remains unknown. This is essential for evaluation of the programme. Our uptake rate is apparently excellent, but the majority of persons vaccinated under another category, either prior to, or prompted by, the campaign. The PCTs financial records suggest that not one poultry worker accessed their general practice to receive vaccination under this category. These workers, if they did attend under another category, were never identified; primary care practitioners are not required to ask occupational status prior to vaccination. These data were required by the DH in the returns for the 2007/08 campaign. Our experience in 2007 suggests that PCTs would not have been able to accurately assess the size of this group.

We could not identify why the clinics were so poorly attended. Four of the clinics occurred in the week following the outbreak of bird flu among poultry in Suffolk which was expected to motivate workers to come forward for vaccination; proximity to avian flu activity was associated with increased uptake among healthcare workers in Singapore and Greece.\(^2\)\(^1\) Feedback from clinic attenders was that the threat of bird flu was not a real concern. However, a number of families attended to ensure their children were protected. Due to the low attendance, running the clinics was a relatively expensive option.

The on-site vaccinations revealed the composition of the poultry worker population. Of the 131 persons vaccinated on-site, only 18 were from Warwickshire. Although the majority came from Birmingham, some came from as far field as North Yorkshire, Lincolnshire and Wales. One farm had a high immigrant workforce; of the 31 workers vaccinated, only two were British. The remainder were from Central Asia, the Indian Subcontinent and Poland. This group barely spoke English and only 55% were registered with a GP. Insisting that this group were vaccinated by the general practices with which they were registered would probably have resulted in non-vaccination for the majority. Although on-site vaccination was an effective strategy for engaging workers at the bigger farms, ensuring vaccination at the smaller farms and for workers not registered with a GP remains a challenge. Theoretically the clinics should have provided an option for those not registered and given choices to those who were, but the majority of persons vaccinated at the clinics were registered with a GP and attendance was poor. However, clinics may still need to be part of a wider strategy to engage workers at smaller farms, and to reach the immigrant and unregistered populations. Monitoring of those who do attend would be essential to evaluate whether the objectives of the clinics are being met and the strategy successful.

**Limitations of this study**

This paper reflects only the experience of Warwickshire PCT in implementing this campaign. It would be interesting to compare our experience, in terms of data collection form returns, uptake of vaccination and clinic attendance with other areas, particularly those with a large number of small holdings.
Conclusions

On-site vaccination during working hours was by far the most effective method of vaccinating this population; community clinics were not cost-effective and this group apparently chose not to access their general practices. The number of workers recorded in the contact list of registered poultry premises provided by DEFRA/DH has been shown to be unreliable; this has implications for the future implementation and evaluation of this programme. Immigrant workers within the poultry worker population make communication about the benefits of vaccination and access to primary care an issue, both factors which impact on uptake. Strategies for engaging smaller farms, immigrant and non-registered workers need to be developed.

Recommendations

(i) The most efficient method of ensuring vaccination is by offering vaccination during working hours and on-site.
(ii) Strategies need to be in place to improve the return of data from poultry keepers.
(iii) Data collection from poultry keepers needs to be more comprehensive. In addition to the data already collected, the PCT needs to be informed of the total number of workers and the number that have already been vaccinated that season for other reasons.
(iv) Strategies for engaging smaller farms, immigrant and non-registered workers need to be developed.

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