Reviewer's report

Title: Limiting worker exposure to Highly Pathogenic Avian Influenza A (H5N1): a repeat survey at a rendering plant processing infected poultry carcasses in the UK.

Version: 1 Date: 18 April 2011

Reviewer: Nicholas Phin

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Discretionary Revisions

The content of the article seems to relate to reducing the use of antivirals rather than limiting worker exposure as suggested in the title.

Major Compulsory Revisions

Current HPA guidance advocates a strict approach when dealing with possible or actual human exposures to avian influenza H5N1 in live or dead poultry, their faeces or litter. A key principle to be adopted in these incidents is keeping the number of people exposed to the H5N1 virus to an absolute minimum. A key operational objective is the individual risk assessment of workers based on their actual or potential risk of exposure. The HPA guidance is generic in nature focusing on individual exposure because of the variability in occupational titles etc but does specifically mention disposal site operators.

The main intervention advocated in an avian influenza response is personal protective equipment (PPE) not as stated antiviral prophylaxis. Antiviral prophylaxis is advocated because of evidence that during the H7 outbreak in the Netherlands contamination of workers occurred when removing PPE or where PPE was inappropriately used.

The current guidance does not recognise a hierarchy of exposure/risk and I am not aware of the evidence that is able to support any quantification or sub-classification of exposure risk. Given the lack of data on the infectiousness of direct, indirect and close contact with H5N1 infected birds, any hierarchy of risk is therefore speculative. The authors need to present the data to support their approach.

The grading system described by the authors in table 1 is somewhat artificial as current guidance states that if there is direct, indirect or close contact (less than a metre) (A, B and C) with H5N1 infected birds, faeces or litter then PPE, antiviral prophylaxis, seasonal flu vaccination, hygiene advice and health monitoring antivirals etc should be used.

Looking at the results in Table 2, it is the more rigorous application of the risk assessment described in the HPA guidance for those people who were not in
direct, indirect or close contact with infected birds (D) that resulted in the greatest reduction in antiviral usage. It would be interesting to know why those with no direct, indirect or close contact were offered antiviral prophylaxis. Could this reflect a greater familiarity and confidence in the risk assessment process?

There is no evidence that rendering plant workers are likely to be at lower risk if exposed to high pathogenic H5N1 avian influenza compared to others in the response given the potential exposure to eviscerated birds, faeces etc.

I agree, given the lack of data on the infectiousness of direct, indirect and close contact with H5N1 infected birds, that this is an area where further research is needed.

In summary, the paper seems to support the currently advocated HPA guidance on individual risk assessments based on exposure, along with the rigorous application of measures to keep the number of potential people exposed to the risk to a minimum. I am not aware of any data to support the graded exposure approach outlined in the paper and until more evidence to support this is available then this is speculative and would not justify changing the current approach.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I work in the same organisation as the authors but apart from that I declare that I have no competing interests.