WHO/FAO/OIE/US-CDC/US-NAMRU-3/UNICEF

Joint high-level mission on the current H5N1 situation in Egypt

Egypt, 8–12 March 2015

Executive summary

Introduction

Between November 2014 and February 2015 Egypt saw a major rise in the number of human cases of avian influenza A(H5N1). In fact, the number of cases occurring in this period exceeded the number of cases ever found in any country since the disease's reemergence in 2004.

In view of the serious risk of a pandemic, which is enhanced by the enzootic state of H5N1 in Egypt, the Ministry for Health and Population requested a joint assessment to better understand the recent upsurge, and to provide concrete measures to curb the trend of increasing infection. From 8 to 12 March, a team representing the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), the US Centers for Disease Control and Prevention (US-CDC), the United States Naval Medical Research Unit 3 (US-NAMRU-3) and the United Nations Children's Fund (UNICEF) met with key stakeholders and analysed the current situation.

Summary of findings

Animal health

Representatives of the General Organization for Veterinary Services (GOVS) speculated that the apparent increase in avian influenza outbreaks correlated with increased surveillance activities. However, a preponderance of the evidence examined by the team suggests that there has been a real and measurable increase in the incidence of H5N1 since June 2014. Between 1 December 2014 and 28 February 2015, 333 outbreaks in poultry were observed in Egypt, while between 1 December 2013 and 28 February 2014 there were only 44 reported outbreaks. Reports indicate that H5N1 is circulating in all sectors of poultry production and geographically in all parts of Egypt.

The reasons for this increase are clearly complex and multi-factorial; however, certain factors associated with poultry production and disease control provide possible means of strengthening prevention and response.

Changes in the economy and poultry industry since 2011 have had a negative impact on food safety and the capacity of the Ministry of Agriculture and Land Reclamation (MOALR) to prevent or respond to outbreaks of disease. With the reduction in control of poultry production nationally, many small farmers have turned to raising poultry for food and income in an unmonitored and uncontrolled farming sector. Evidence suggests that H5N1 virus is deeply entrenched on such farms and in household flocks. Further, implementation of a proper control strategy is currently impeded by weak response capacity, weak public–private partnerships, sub-optimal vaccination strategies and low levels of biosecurity in some poultry production sectors.

Two excellent national laboratories that contribute significantly to the diagnosis and control of avian influenza—the National Laboratory for Quality Control of Poultry Production and Central Laboratory for Evaluation of Veterinary Biologics; both could

be used more effectively by linking diagnosis with rapid response and monitoring of disease control and vaccine use.

The national HPAI Integrated National Plan for Avian and Human Influenza that was developed with support from FAO after the 2009 joint-UN evaluation mission addresses many of the current challenges, but has not been implemented. This strategy should be brought up to date and put into force.

Since 2007, through USAID-funded FAO projects, considerable investment has been made to improve the animal health surveillance system in Egypt, including the establishment of 230 epidemiological units covering almost all districts and governorates. Four animal disease surveillance systems (passive reporting, community animal health outreach, targeted live bird market reporting, and active surveillance) are maintained by the Veterinary Services. Surveillance data are regularly shared between national stakeholders and with other relevant partners (OFFLU, EMPRES-i, etc.), including through publication in peer-reviewed journals.

Human health

Concomitant with the dramatic increase in the number of poultry outbreaks, there has been an unprecedented increase in the number of human cases detected each month, particularly from December through February. According to the Ministry of Health and Population, the numbers of H5N1 cases reported for these months greatly exceeded the expected numbers based on historical data.

This upsurge most likely results from increased exposure of people to infected poultry. Most recent human cases (approximately 70%) had exposure to backyard poultry. Children under five make up a significantly higher portion of all confirmed H5N1 cases in Egypt (33%) compared with the rest of the world (15%). Young children and women often are engaged in rearing backyard poultry, which puts them at high risk during poultry outbreaks.

Likewise, the number of human samples being tested for H5N1 has increased compared with earlier poultry outbreaks. Testing has also increased as a result of rapid response by the preventive sector and increased awareness among clinicians**.**

Despite the unprecedented surge in human cases in Egypt, it does not appear that the risk of an H5N1 pandemic has changed appreciably. This conclusion is based on the following: 1) although human-to-human transmission cannot be excluded, there has been no change in the size or number of clusters of human cases during the surge compared with previous years; 2) there is no evidence of transmission from patients to healthcare workers during the surge; 3) most recent human cases had direct or indirect poultry contact; 4) genetic sequence data have not identified changes that would make human-to-human transmission efficient. Nevertheless, the presence of H5N1 viruses in Egypt with the ability to jump more readily from birds to humans than viruses in other enzootic countries is of concern and requires a high level of vigilance from the Ministries of Health and Agriculture.

The Ministry of Health and Population has strengthened multiple disease surveillance systems to monitor seasonal influenza and H5N1 cases. Systems for monitoring

influenza-like illness (ILI), severe acute respiratory infections (SARI) and avian influenza have generated valuable epidemiological information for this and other important influenza outbreaks. The Central Public Health Laboratory functions well and has provided training for regional and local laboratories.

Genetic and antigenic data from human and poultry samples are being jointly analysed by staff in Egypt along with international counterparts. However, increased real-time sharing and analysis should be encouraged. The four-way linking platform could be used to accomplish this; it should also meet fortnightly during a surge of cases and every two months when there are no outbreaks.

The Ministry of Health and Population has purchased antiviral drugs (neuraminidase inhibitors) and have been made available to clinicians for patients with suspected and laboratory-confirmed infections. This is particularly important to reduce mortality.

Coordination and collaboration

The mission found that effective structures and strategies have been developed for both animal health and public health agencies in recent years, along with a number of positive responses to the current outbreak, but these must be strengthened and implemented for definitive positive impact on health, food security, livelihoods and the economy.

Although the National Supreme Committee of Avian and Human Influenza was reactivated in late December 2014, it should be recognized as the highest authority to provide overall coordination and strategic direction in the control of avian influenza.

The four-way linking platform[1], which facilitates the sharing of information between public health, animal health, epidemiology and laboratory units and alerting institutions of human and animal cases, is functioning, but meets only on an ad hoc basis, and its recommendations are not always implemented.

Progress has been made in building capacity for epidemiologic surveillance and laboratory diagnostics. For example, Veterinary Services has large teams and a central command, with governorate and district services, and a combined surveillance system. Likewise, the Ministry of Health and Population has improved the scope and size of influenza surveillance in humans by adding avian influenza surveillance in 2006, SARI surveillance in 2007, and hospital-based and emerging infections surveillance in 2009 to the existing ILI surveillance.

Communication for behaviour change

A wealth of national communication capacities, technical experience and materials are available for quick deployment to different audiences. However, communication efforts have not been effective in changing risky behaviours. Coordination is lacking and messages are not based on current risk assessments or participatory engagement.

[1] http://www.izs.it/vet_italiana/2015/51_1/VetIt_220_680_1.pdf

Key recommendations

Coordination and strategic planning

Egypt should adopt the perspective that fighting H5N1 means making long-term sustainable investments in agriculture, health and rural communities. The need for high-level commitment of ministries and sustained, effective coordination between them is required to overcome this critical situation for the short, medium and long term.

Further, the country should adopt a community-based strategy in which ministries advice on goals, with support from WHO, FAO, OIE and UNICEF, but communities determine how they can be realistically achieved.

Egypt has structures that should be used more, such as the National Supreme Committee (NSC) for Avian and Human Influenza and its communication subcommittee. The NSC, whose membership includes Governors, should meet regularly and provide strategic direction as well as coordinate and monitor the implementation of policy recommendations that are mostly inter-sectoral. Follow-up on implementation of recommendations should be ensured and should take advantage of the crucial role of the Governors in coordination and support at local level.

The four-way linking platform is a mechanism that could be extremely valuable if used to its full potential, especially if linked with the NSC. The platform could become the Secretariat of the NSC, co-chaired by the Ministers of Health and Agriculture. It should meet regularly (fortnightly during a surge of cases) to ensure real-time sharing and analysis between key ministries.

Cross-sectoral collaboration should be further pursued**,** mainly between the animal and public health sectors, in joint disease investigation, response risk analysis and behavioral change communication efforts and other capacity-strengthening initiatives.

Ministry of Agriculture and Land Reclamation

The MOALR, along with all involved stakeholders, including the private sector, should review the current avian influenza control strategy. The MOALR should concentrate on preventing virus spread within poultry populations, including:

- efficient and timely detection and reporting of virus transmission through surveillance (including silent virus shedding in vaccinated poultry);
- preventing trade of infected animals; and
- linking all surveillance to rapid action by authorities, including safe disposal of infected birds.

The NSC should consider modification of existing or introduction of new policies. For example, the country has a large number of unlicensed commercial and semi-commercial farms on which proper GOVS interventions for influenza prevention and control cannot be implemented. Most of these farms are not part of any professional

association and are often economically independent and quite fragile, which does not favor improved poultry rearing practices.

In addition, local poultry marketing systems should be modernized in a rational manner, which could increase both animal and public health safety, as well as profitability. Informal markets for buying and selling of sick poultry must be stopped. Alternative models for government purchase and safe destruction and disposal of potentially infected poultry should be considered for rapid implementation nationally.

Avian influenza vaccination in households needs to be discontinued. Vaccination of nursery farms should be resumed only after a rigorous evaluation of its effectiveness in trial nurseries.

Ministry of Health and Population

Electronic systems for timely sharing of data and information across all levels of the health sector should be strengthened.

It would be preferable for the Central Public Health Laboratory (CPHL) to begin to develop its own capabilities to conduct genetic sequencing and phylogenetic analysis of H5N1 viruses. Because isolation of H5N1 viruses from human samples requires use of a biosafety level 3 laboratory, CPHL should continue working toward having access to such a facility. Sub-national laboratory capacity should be strengthened through additional laboratory training.

Monitoring of virus evolution and corresponding viral and antigenic properties to assist with pandemic risk assessment should be further strengthened.

Respiratory specimens (a minimum of 1500) should be tested for H5N1 each year to enhance the sensitivity of the surveillance system. It is necessary to keep improving surveillance systems and databases in order for the MOHP to keep pace with the state of the art.

Critical technical and scientific studies should be conducted on the cases that have occurred from November 2014-March 2015 to better inform an understanding of risk exposures and the pathogenesis and transmission properties of the current viruses in birds and in mammalian models and to refine health communication messages.

Communication for behavior change

The current H5N1 situation calls for immediate intensification of communication efforts. This should be considered as part of a long-term investment. The National Avian Influenza Communication sub-committee should be revitalized, with clear terms of reference, to ensure coordination between sectors and strategies. This committee should be able to review existing communication strategies, refine messages and target children, use effective the mechanisms to reach communities and evaluate messages on behaviour change. Selecting communication channels and developing messages should be done in collaboration with agriculture sociologists, anthropologists or economists.

Communications to raise awareness of poultry keepers and the general public should be intensified. Messages should focus on changing risky behaviours. Specific messages should be developed to prevent children from interacting with poultry.

The partners involved in the mission are committed to providing support in the implementation of the recommendations. FAO, WHO and UNICEF will continue to provide direct support to the MOALR and MOHP through technical assistance.

The way forward

A successful approach to addressing H5N1 requires long-term, sustainable investments in agriculture, health and communities. In particular, close collaboration between sectors is required in communications, policy development, surveillance and response, and the production and sharing of information. Accurate, regular assessment of the impact of control measures is required to evaluate progress.

The government should undertake one or more pilot projects at the district level to determine which changes in policies and practices are most effective in reducing spread of infection among poultry and to humans and sustainable on a medium- to long-term basis. Addressing H5N1 nationally will require long-term changes in policies, practices, culture, awareness and community engagement.

Within three months, a two-year action plan that encompasses these recommendations and includes clear outcomes and indicators for monitoring will be developed by the ministries of health, agriculture and local development. FAO, WHO and OIE will support development of the plan, which will be presented to the NSC.