

## FAO-ECTAD Egypt

# Exposure patterns at animal–human interfaces associated with H5N1 influenza upsurge in human in Egypt during 2014–2015: An epidemiological investigation under One Health Initiative

### Background

Since November 2014 to April 2015, a total of 165 H5N1 influenza human cases including 48 deaths were reported in Egypt. This upsurge is the highest number ever reported by a country over a similar period.

### Objective

Identify the common ways of human exposure to H5N1 HPAI virus to understand the factors associated with human cases upsurge.

### Methodology

A joint epidemiological investigation between public and animal health sectors was conducted including laboratory RT-PCR tests for suspected poultry and human with respiratory symptoms. The analysis included the chronology of spread and proportions of infected human cases against age, sex, region, infection in birds and exposure pattern.

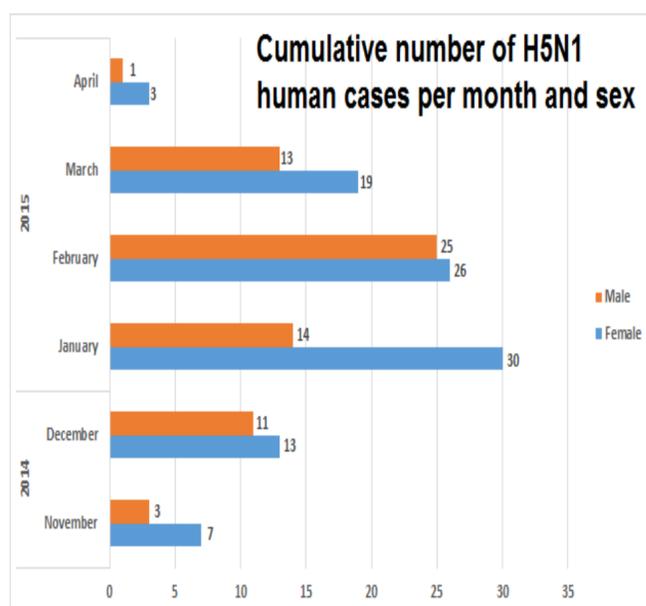


### Results

- About 1.3 humans were infected per day over the 3 months period. The infection among females was higher than males (59.3% and 40.7% respectively) and the peak proportion of cases (26%) reached in February 2015.
- The upsurge started in November and December 2014 at Upper Egypt (n=24) and Lower Egypt (n=10), however from January to April 2015, the upsurge was almost 2 times higher in Lower Egypt.
- The exposure patterns were: contact with infected birds or contaminated surface (32.12%); slaughtering of birds (10.30%); no contact with birds (9.09%) and unknown (48.48%). Only 3 poultry cases out of 145 were confirmed positive for H5N1 HPAI.

### Findings

Contact with contaminated surfaces or infected birds (without slaughtering) has been found the most prominent factor associated with human infection during the upsurge, this finding in addition to the relatively high number of infections with no apparent contact with poultry may be attributed to the emergence of novel cluster from clade 2.2.1.2 of the Egyptian virus. The low number of positive poultry cases is attributed to the long interval between infection and samples collection.



### Way forward

Close monitoring of the avian influenza viruses' H5N1, H9N2 and H5N8 (since 2006, 2011 and 2016 respectively) mutations in Egypt should be maintained to support the preparedness measures due to the co-circulation of different avian influenza sub-types.

