Avian Influenza (AI)

Avian Influenza (AI) or bird flu virus can be serially transmitted between and among wild and domestic bird populations and can decimate domestic production and harm trade. Migrating wild birds may transfer HPAI long distances and across international borders, and are one source of the current outbreaks. Another source is the movement of infected birds in the commercial trade, both caged wild birds and poultry. The HPAI virus may also be transmitted to humans by direct contact with infected birds, body parts and waste, leading to sickness and potential death. The worst-case scenario is that the virus may mutate to become able to be transmitted from human to human, leading to an epidemic or pandemic.

All USAID countries have various sizes of extensively and widely scattered populations of domestic poultry that are raised for income, meat and eggs by most rural and many urban peoples. All of these are susceptible to infection by HPAI. Many species of migratory birds coming to Africa from Europe, the Middle East and Asia are thought to be susceptible. According to the World Organization for Animal Health, as of May 18, 2006, 54 countries had reported outbreaks of H5N1 avian influenza virus (http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm).

USAID has classified countries into five levels of risk for avian influenza http://www.usaid.gov/our_work/global_health/home/News/news_items/avian_influenza.html:

1. Endemic, characterized by widespread and recurring H5N1 infections in animals since Dec 2003 – South Asia, East Asia, and parts of South –East Asia
2. Epidemic, with isolated H5N1 outbreaks in animals since July 2005 – China, India, Europe, Nigeria and proximal countries in West Africa
3. High Risk, countries proximal to endemic or epidemic countries, or at risk of animal outbreaks due to bird migration and/or transport of birds – Africa, except for southern Africa
4. At-Risk due to bird migration and/or transport of birds – southern Africa
5. Pandemic risk, at lower risk of animal outbreaks, but would be affected by a human pandemic – North, Central and South America.

In the spring of 2006, European researchers investigating returning migratory birds from Africa found no avian influenza virus, indicating that this route of transmission is less important than originally believed. Globally, the most important route of spread remains unrestricted poultry movements (http://www.birdlife.org/action/science/species/avian_flu/)

WHO reports on the cumulative number of laboratory-confirmed human cases and deaths from avian influenza. See http://www.who.int/csr/disease/avian_influenza/country/en. USAID Health's response to HPAI is found at the following web address: http://www.usaid.gov/our_work/global_health/home/News/news_items/avian_influenza.html. See http://www.irinnews.org/Avianflu.asp for a list of African and Asian countries and what each is doing to prepare itself against/for outbreak. For more information on migration and the potential for spread of HPAI see: http://www.fao.org/AG/AGAINFO/subjects/en/health/diseases-cards/special_avian.html.

The primary goal at present is to exclude or contain the spread of the HPAI virus, eliminate it wherever it is found and prevent the spread to humans, which may lead to mutation to human transmissibility. USAID's current plan to assist is listed briefly below.

Bird flu in ANE countries

Asia/Near East http://www.birdlife.org/action/science/species/avian_flu/

The first outbreaks of the highly pathogenic version of avian influenza were reported in Asia in 2003. 99 of the 115 human deaths from avian influenza up to May 2006 have been from five countries in Asia (Vietnam, Indonesia, Thailand, China, and Cambodia, http://www.who.int/csr/disease/avian_influenza/country/cases_table_2006_05_12/en/index.html) Like in Africa, many smallholders raise chickens or ducks as a source of income and as meat for feasts. Detection and control in these areas will be difficult.

Most outbreaks in south-east Asia can be linked to movements of poultry and poultry products (or accidental transfer of infected material from poultry farms, such as water, straw or soil on vehicles, clothes and shoes). Prior to April 2005, wild birds found dead or dying with H5N1 in Asia were largely sedentary species that scavenge near poultry, live markets or captive bird populations. The lack of a trail of H5N1 infections along migratory pathways from infected breeding habitats in Mongolia, China and Russia to southern wintering areas in Asia suggests that migratory wild birds are not spreading the disease long distances between continents. With few exceptions, there is limited correlation between the pattern and timing of spread among domestic birds and wild bird migrations.
http://www.birdlife.org/action/science/species/avian_flu/.

Description of USAID Activities

Laboratory Capacity Building:

- Training lab technicians to identify bird influenza;
- Procurement of essential equipment and supplies (including reagents, mobile Polymerase Chain Reaction (PCRs), ELISA readers, antigen kits, high bio-security lab equipment, Vertical Laminar Air Flow Hood, High security Freeze/thaw, and Viroligique Diagnostic Kits); and
- Establishing and implementing lab quality assurance procedures.
- Biohazard handling procedures

Strengthening Surveillance Systems

- Working with the U.N. Food and Agriculture Organization (FAO) and Ministries of Agriculture/Rural Development/Livestock/Environment and Sanitation to strengthen wild/migratory bird surveillance, including:
    - Procurement of equipment (laptops, Geographic Information Systems (GIS) equipment, etc.) and supplies for animal surveillance and proper handling of dead birds; and

    - Training to properly identify sick birds and use established referral mechanisms for dead bird and sample transport.
- Working with Ministries of Health to build on existing human and animal surveillance systems, including existing Integrated Disease Surveillance and Response systems and health facilities.
- Enhance country-level ability to collect and test animal and livestock samples by providing training and necessary supplies.
- Support National Avian Influenza Task Forces to develop animal and human surveillance and rapid response teams at national and district levels, including training border officials to strengthen cross-border surveillance.

Building Capacity for Human Response

- Working with the World Health Organization (WHO) and Ministries of Health to build capacity for human response, including:
    - Training health workers (including those working at community levels) to identify potentially infected patients and refer them to the appropriate level of care and contact lab facilities for initial testing; and
    - Procuring essential equipment and supplies (including personal protective equipment).

Responding to Animal Infections

- Working with Ministries of Agriculture to strengthen response to outbreaks in animals. Activities may include:
    - Procurement of protective gear for field workers handling dead and infected birds;
    - Procurement of materials and supplies for animal response, including disinfectants and infection prevention materials and materials and equipment for culling;
    - humane euthanasia and environmentally appropriate carcass disposal
    - training of appropriate use of personal protective equipment (PPE) and waste/biohazard management, and
    - Training for local communities on animal quarantine and household management of domestic poultry.

Communications and Public Awareness

- Mass media campaigns (internet, press, radio, television, posters, flyers);
- Community-based awareness and mobilization campaigns;
- Development and use of communications, including informational, educational, and behavior-change materials;
- Messages are targeted to children and adolescents at the appropriate reading level and content
- Risk communications through Information, Education and Communication materials, radio spots, print media advertisements, etc.

General Conditions (Good Management Practices) for USAID Support to AI

- Train workers on best hygiene practices, PPE use and that they could be vectors
- Wear appropriate PPE for all exposure
- Disinfect all contamination risks & tools
- Proper disposal of all contaminated PPE, sharps, dead things
- Don’t buy birds for food while on mission
- USAID treats disinfectants as pesticides
- They kill microbes, and are therefore microbiocides, a type of pesticide
- Therefore USAID requires that disinfectants are analyzed using Regulation 216.3, pesticide procedures
- Most disinfectants are EPA Class I toxins!