

Bird Flu News 16 – 22 August 2006

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Vietnam to import bird flu poultry vaccines from Russia

16 August 2006

Vietnam will import 30-50 million doses of bird flu poultry vaccines from Russia in the coming time, local newspaper Saigon Liberation reported Tuesday.

Vietnam's Ministry of Agriculture and Rural Development is working with the Russian side about the purchase of bird flu vaccines which will be used among fowls nationwide late 2006 and early 2007.

To be more active in vaccination, Vietnam plans to use bird flu vaccines developed by itself in the coming years. Two local firms have so far produced 200,000 doses of vaccines on trial basis, according to the Department of Animal Health under the Vietnamese Ministry of Agriculture and Rural Development.

Vietnam has so far this year vaccinated nearly 134 million fowls nationwide. Testing 10,621 specimens from vaccinated chickens and ducks indicated that 75 percent of the fowls have developed capacity of not contracting bird flu virus strain H5.

Vietnam had a total poultry population of 254 million by late 2002, and it has annually grown by an average of 6.5 percent. Bird flu outbreaks, starting in the country in December 2003, have led to the forced culling of dozens of millions of fowls.

The last outbreak of bird flu among poultry in Vietnam was in December 2005, said the department.

- Source: Xinhua

City issues ban on poultry farms as bird flu precaution



Health workers participate in a drill to provide medical aid to bird flu patients. The exercise, held on Sunday in the central province of Quang Tri, drew 300 people from different sectors. — VNA/VNS Photo Ho Cau

HCM CITY — HCM City has suspended poultry farming until next February to ward off possible bird flu outbreaks this winter, the peak season for the epidemic.

The City's People's Committee instructed the city's districts to apply all measures drawn up to prevent bird flu and H5N1 flu (type A) in humans.

It also told the departments of agriculture and rural development, and animal health, to raise public awareness about the disease and the devastating consequences if an epidemic resurfaced.

Under emergency plans, animal health officials would seal off infected areas, step up border checks, and vaccinate poultry against the disease.

Nationwide alert

The Ministry of Health has asked localities nationwide to be vigilant against bird flu and warned people of a possible recurrence of the deadly virus in the coming autumn-winter period.

People were not fully aware of the possibility of a recurrence of bird flu, Deputy Health Minister Trinh Quan Huan said in a directive issued last week.

He added that in some localities, where scattered dead birds were found, concerned agencies and poultry farmers did not pay enough attention to reporting the situation and taking prompt preventive measures.

The ministry asked localities to increase inspections of the cross-border transportation of poultry and poultry products and to ensure that the transportation, slaughtering and marketing of poultry is conducted in accordance with all relevant regulations.

According to World Health Organisation, bird flu has returned to Southeast Asia, specifically Laos, Thailand and Indonesia.

Viet Nam is the only country among the 10 nations that hasn't reported new human infection since early this year.

As a way of prevention, Dr Nguyen Duc Hien, who is the director of the Central Institute for Clinical Medicine and Tropical Diseases, warned people to vaccinate themselves against the common flu.

Hien said although vaccines were not effective in preventing bird flu, they could help reduce the dangerous combination of normal flu and bird flu.

He urged health officials and those who have direct contact with poultry in particular to get immunised.

- Source: Viet Nam News - Hanoi, Vietnam

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Silent spread of H5N1 in vaccinated poultry

A chink in the protection of a caged flock can dramatically increase the chances of a flu outbreak.

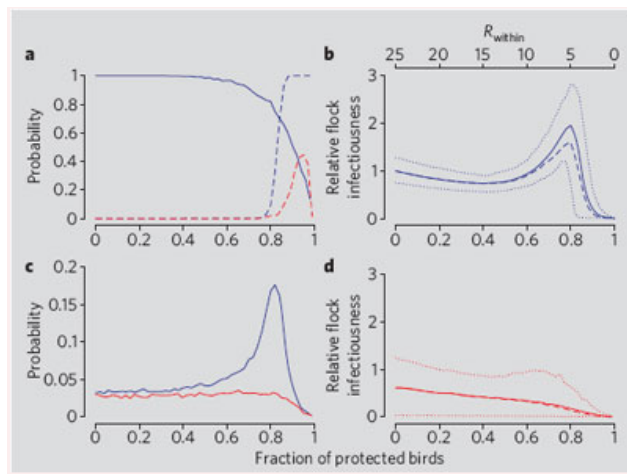
International debate on the merits of vaccinating poultry against the H5N1 influenza A virus^{1,2,3} has raised concerns about the possibility of an increased risk of between-flock transmission before outbreaks are detected⁴. Here we show that this 'silent spread' can occur because of incomplete protection at the flock level, even if a vaccine is effective in individual birds. The use of unvaccinated sentinels can mitigate, although not completely eliminate, the problem.

We use an individual-based mathematical model, parameterized from experimental and observational data⁵ (for details, see supplementary information), that tracks within-flock spread of a highly pathogenic avian influenza (HPAI) virus such as H5N1 to explore the impact of prophylactic vaccination on silent spread between flocks. We calculated the probability of outbreak occurrence and detection, as well as the

contribution of flock infectiousness during, and at the end of, a flock's production cycle to transmission to other flocks (expressed as the case reproduction ratio, R_{between}). We determined the quantitative effects on these variables of different flock structure, within-flock transmission potential of HPAI, detection thresholds, vaccine effectiveness and fraction of the flock successfully vaccinated.

Outbreaks were modelled in caged flocks seeded with a small amount of infective faeces contaminating a single cage. The fraction of birds successfully vaccinated was considered⁶, assuming a fully effective vaccine. We find that 90% of birds need to be protected to reduce the probability of an outbreak by 50% (Fig. 1a, solid line), but this can result in undetected outbreaks (Fig. 1a, blue dashed line). The infectiousness of an infected flock to other flocks (defined as the infectiousness of faeces integrated hourly over an outbreak) during the production cycle peaks at 80% protection (Fig. 1b, solid line). This is because, as the fraction protected rises, fewer birds become infected but outbreaks become harder to detect. Despite a reduced probability of outbreaks, vaccination can increase between-flock transmission at high flock-protection levels (Fig. 1b, dashed line). These results are qualitatively robust to uncertainties in parameter values (for details, see supplementary information).

Figure 1: Effects of vaccination protection levels in a flock.



Probability of an outbreak (solid line) and probability that an outbreak will ever be detected (dashed lines) in caged flocks of 10,000 birds. Line colours: blue, no sentinels; red, 100 sentinels. b, Mean (solid line) and 95 percentiles (dotted lines) of the infectiousness of infected vaccinated flocks during the production cycle, relative to infected unvaccinated flocks (no sentinels). Dashed line: infected flock infectiousness weighted by probability of outbreak occurrence. For reference, the corresponding values of within-flock transmission potential, R_{within} , are shown. c, Probability that an outbreak occurs and is undetected at the end of the production cycle, assuming a cycle period of 365 days. Line colours: blue, no sentinels; red, 100 sentinels. d, Flock infectiousness as in b, but with 100 sentinels.

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The risk of between-flock transmission is greatest at the end of a flock's production cycle, when biological security can be compromised as birds are moved and housing units cleaned. High levels of flock protection can dramatically increase the probability that HPAI is undetected at this time because of the increased outbreak duration (Fig. 1c, blue line), thus contributing to between-flock transmission.

The negative effects of vaccination can be mitigated by monitoring unvaccinated sentinel birds placed into flocks⁴ (although logistical problems arise⁷). Sentinels placed randomly among cages increase the probability of detection (although undetected outbreaks still occur; Fig. 1a, dashed red line), thereby reducing flock infectiousness (Fig. 1d) and the probability of undetected HPAI at the end of a production cycle (Fig. 1c, red line).

Between-flock transmission is related to flock infectiousness both during (Fig. 1b, d) and at the end of (Fig. 1c) a production cycle. Values of R_{between} as high as 3 to 10 have been reported⁸. To prevent an epidemic, R_{between} must be below 1 (ref. 9): to achieve this through vaccination, even with sentinels, would require very high levels of flock protection (Fig. 1c, d, red lines).

The main obstacle to achieving such protection is in ensuring that an adequate fraction of birds is properly vaccinated⁷ (typically less than 90% of birds are protected in practice²). Vaccination can be highly effective in individual birds¹⁰ and any minor deficiencies at that level are relatively unimportant (see supplementary information). A successful vaccination programme therefore requires not only a

highly effective vaccine but also a highly effective vaccine-delivery system, combined with effective biological security and the rapid detection and removal of infected flocks.

Nature 2006 Aug 17; 442(7104): 757. <http://www.nature.com/nature/journal/v442/n7104/full/442757a.html>

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Sweetgum tree could help lessen shortage of bird flu drug

Thursday, August 17, 2006



The sweetgum tree grows widely throughout the country and is known for its mace-like green fruit, which are sometimes called "gumballs." Now, this spiny fruit may become an important source of a chemical needed to make a lifesaving drug against bird flu — a drug that is currently in short supply worldwide, researchers say.

Chemists have found that the seeds of the sweetgum fruit contain significant amounts of shikimic acid, the starting material used to produce the main antiviral agent in a much-heralded drug for fighting bird flu. Their findings, which could help increase the global supply of the drug, were described today at the 231st national meeting of the American Chemical Society, the world's largest scientific society.

Shikimic acid is used to make a generic drug called oseltamivir — best known commercially as Tamiflu® — which is used to fight many types of flu viruses. Some health experts believe that this and similar antiviral drugs could help save lives by slowing the spread of the virus in the absence of a bird flu vaccine, which is still in development.

The drug, which blocks the replication of the flu virus, is being stockpiled worldwide to slow or stop a possible bird flu pandemic that some experts predict could kill millions — if the virus mutates into a form that can spread from person to person. The virus, a strain known as H5N1, primarily afflicts birds at present but has been known to kill a small but growing number of humans who have had close contact with infected birds.

There is a skyrocketing demand for Tamiflu, but some experts fear there won't be enough of the drug to treat everyone if a worldwide pandemic occurs. The supply problem resides in the drug's source: The shikimic acid used to make it is obtained almost exclusively from the Chinese star anise, a fruit that is found mainly in China and whose supply has dwindled due to high demand for the flu drug. Although shikimic acid is found in many plants, star anise has been considered the most abundant plant source, until now.

"Our work gives the hearty sweetgum tree another purpose, one that may help to alleviate the worldwide shortage of shikimic acid," says study leader Thomas Poon, Ph.D., a professor of chemistry from the W.M. Keck Science Center at The Claremont Colleges in Claremont, Calif. "They have lots of potential for fighting bird flu."

The sweetgum tree grows widely throughout the United States and other parts of the world. In this country, it is particularly common in the South, including the Carolinas, Georgia and Alabama, but also can be found as far west as Missouri, Arkansas and Oklahoma and northward in parts of Illinois.

Although shikimic acid is found in the leaves and bark of the tree, it is most abundant in the fruit, Poon says. In the mature tree, the fruit emerges as a green seedpod that later dries into a brown, spiny husk, which releases an abundance of tiny, grain-like seeds. To optimize shikimic acid extraction, the gumballs need to be harvested when they are still green and before the seeds have been dispersed, Poon says. Each tree can hold hundreds, if not thousands, of seedpods.

- Source: Newstarget.com - Taichung, Taiwan

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Bird Flu Medication Route Found In Virus' Weak Point

17 Aug 2006

While mapping the H5N1 avian flu virus, scientists from the National Institute of Research, London, discovered a weakness which could be targeted by drugs.

The N1 part of the virus (type-1 neuraminidase) has a cavity. It might be possible to target drugs into this cavity and stop the virus from spreading, say the scientists.

John Skehel, team leader, said "It is a race. You have got to try to keep ahead of variation, and in the case of H5N1 particularly the emergence of transmission from human to human".

The researchers say this finding could make it possible to treat humans, even in the event of an outbreak. However, they also added that any effective drug would probably take at least five years to come onto the market.

The team are working with pharmaceutical companies to see whether it is possible that new drugs might work in combination with Tamiflu and Relenza.

238 human have become infected with the H5N1 bird flu virus strain - the virulent one. About 60% of those who were infected died. Although most scientists believe H5N1 could eventually mutate so that it becomes easily human transmissible, there is no evidence that this has yet happened.

The best drugs on the market at the moment to treat people with H5N1 infection are Tamiflu (oseltamivir) and Relenza (zanamivir). Both drugs were originally made for use with patients who have other forms of human flu. Various countries have been stockpiling these drugs in case H5N1 does mutate and a pandemic ensues.

- Source: Medical News Today - UK

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Two more bird flu outbreaks hit ducks in Cambodia

Fri 18 Aug 2006



Bird flu outbreaks have hit two districts in eastern Cambodia, killing thousands of ducks, after a man smuggled infected birds to the region bordering Vietnam, officials said on Friday.

Two people were admitted to local hospital suspected of having contracted the virus, Ku Chanthan, a veterinary official in the province told Reuters. He said the results of tests on the two would be released in coming days.

Last week the H5N1 virus was confirmed in more than 1,300 ducks that died in Prey Veng province, 70 km (45 miles) southeast of the capital Phnom Penh.

The owner of the ducks smuggled surviving poultry to the eastern province of Kampong Cham where a bird flu outbreak killed nearly 2,000 ducks this week, Ku Chanthan said.

A further 1,000 ducks died this week in another district of Kampong Cham, about 95 km (60 miles) east of Phnom Penh. The deaths were confirmed as bird flu on Friday.

"The result of tests on duck samples taken from the two districts has shown that the virus is H5N1," senior agriculture official Yim Voenthon told Reuters.

Authorities ordered the cull of several hundred poultry in the province.

The H5N1 bird flu virus has killed more than 140 people worldwide, including six in Cambodia, according to the World Health Organisation.

The virus has not yet shown the ability to mutate into a form that could pass easily between humans, causing a pandemic that might kill millions of people. But experts fear it might, especially in a poor country such as Cambodia, which is recovering from 30 years of civil war and where health surveillance systems are limited.

- Source: Reuters

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Regional Asia health meet seeks bird flu strategy

20 Aug 2006

More DHAKA, Aug 20 (Reuters) - South and southeast Asian countries met to discuss health strategies, including the fight against bird flu, in Bangladesh on Sunday ahead of a regional meeting of the World Health Organisation.

The two-day ministerial meeting in the capital Dhaka will discuss strategies against malaria, avian flu and pandemic-influenza and other health-related issues, officials said.

Ministers from Bangladesh, Bhutan, the Maldives, Myanmar, Nepal, North Korea, Thailand, East Timor and Sri Lanka attended the meeting inaugurated by host Prime Minister Begum Khaleda Zia.

India and Indonesia were represented by health ministry officials.

"We must devise affordable methods to contain diseases such as avian influenza, dengue, HIV/AIDS, malaria," Khaleda Zia told the meeting.

"Our countries (in the region) are faced with the unprecedented threats from emerging infectious diseases and the growing burden of chronic diseases," she said.

Bangladesh Health Minister Khandoker Mosharraf Hossain told reporters: "Not (in the) very distant past, Bangladesh was a malaria and polio-free country, but now these diseases have returned due to viruses and parasites infiltrating from neighbouring countries.

"So, regional co-operation is a must in fighting against these fatal diseases."

- Source: Source: Reuters

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Caucasus, Balkans at high risk for deadly H5N1 virus

Disease continues to spread in Africa, Asia and the Near East

The deadly H5N1 avian influenza virus, or bird flu, continues to threaten people, animals and economies in a growing number of countries, according to FAO, despite numerous successful efforts in several countries to contain the spread of the virus.

Though the disease has now been confirmed in some 55 countries in Africa, Asia and Europe, up from 45 in April this year, the rate of infection among poultry has slowed in most countries, according to FAO surveillance reports, thanks to programmes and projects to improve surveillance efforts, strengthen veterinary services and in some cases through the implementation of vaccination campaigns.

The deadly virus continues to spread in Asia, particularly in Indonesia where 45 people were confirmed to have died from bird flu. There have also been new outbreaks in Thailand recently and HPAI has been confirmed at a commercial poultry farm in Laos.

HPAI is also problematic in some African countries including Côte d'Ivoire and Nigeria, where FAO's Emergency Prevention System reports outbreaks in poultry farms near Abeokuta, the capital of Nigeria's southwestern state of Ogun.

Caucasus and southern Balkans called high-risk areas

"In Europe, we believe the southern Balkan area and Caucasus are a high-risk region for H5N1," said Juan Lubroth, head of FAO's Emergency Prevention System for Transboundary Animal Diseases. "The region is not only a prime resting ground for migratory bird species, but poultry production is mostly characterized by rural and household husbandry with little in terms of biosecurity and strong regulatory inspection. In Romania it is still too early to say if the situation has stabilized."

The bodies of two cats collected in Erbil, Iraq where 51 chickens died, tested positive with a distinct strain of the H5N1 virus first found in migrating birds in Qinghai Lake in western China in mid-2005. This is the first report of a Qinghai-like virus being detected in domestic cats, according to an FAO HPAI Situation Update.

Weak veterinary services must be improved

"We don't expect to eradicate the H5N1 virus from possible wild bird reservoirs, but we can contain and control it fully in the poultry sector, which is the best insurance we have that it will not mutate into a virus that is easily transmissible among humans," says Joseph Domenech, Chief Veterinary Officer of FAO. "But, just like a chain with a weak link, we need to find the weak links in the global effort to contain H5N1 and strengthen them. That means building up veterinary and laboratory services in the poorer countries of the world, where public services are hampered by a general lack of funds," says Domenech.

"This is why FAO is putting so much emphasis on bringing veterinary and laboratory services up to speed; thanks to donor contributions, FAO is able to respond to short term needs of affected and at risk countries, but this effort needs to be sustained in the long term in order to strengthen veterinary services and rehabilitate the animal production sector and the food industry," according to Domenech, "while a more developmental approach is required to resolve structural and institutional limitations."

Long-term funding needed for long-term problem

FAO has received a considerable amount of funding from donor countries, which has helped the Organization's efforts to slow and contain the spread of HPAI bird flu. (See link at right for list of donors and contributions). But, according to FAO, the fight against HPAI requires comprehensive and coordinated efforts at the local, national and international levels over a period of several years in order to overcome this animal disease and prevent possible human flu pandemic, and this requires long-term discretionary funding.

"The surest way to contain the H5N1 virus," says Lubroth, "is through early detection, rapid response and transparent international reporting of outbreaks."

The virus has killed 140 people worldwide since 2002. In 2006, 63 people died from the virus, up from 41 in 2005, according to WHO.

More than 220 million birds have died from the virus or been killed in culling activities aimed at stopping the spread of the disease.

H5N1 continues to spread mainly through trade and transport

Despite successful efforts in a number of countries to contain the virus, it has spread from the Far East to Europe, the Near East and Africa. Many veterinary experts believe the virus has been spread in the first instance by wild birds and then, after arriving in a new country, is most often spread through poultry trade and transport to wider areas.

It is for this reason that FAO, in close collaboration with the World Organisation for Animal Health (OIE), recommends that countries concentrate containment efforts on human activities such as poultry farming, trade and live poultry markets, which are not only the activities most likely to spread the virus, but are also activities that can be inspected, controlled and improved.

FAO and OIE work together to help countries face a large number of animal diseases

While there is little that can be done to control the movement of wild birds, the need to keep domestic birds away from wild birds has been widely recognized and efforts to do so are widespread, according to FAO.

FAO and OIE are working to strengthen veterinary services around the world to fight bird flu and to face a large number of transboundary animal diseases that threaten the livelihoods of people and even national economies.

To fight the disease, FAO has so far received US\$67.6 million and has signed agreements with donors for some US\$29 million, while another US\$25 million has been promised. FAO has disbursed some US\$32.5 million since countries pledged US\$1.9 billion at a Beijing donor's conference in January 2006 to support country, regional and global programmes to fight bird flu and prevent a possible human pandemic.

FAO also gives direct assistance to infected countries, countries at risk and newly infected countries and this requires additional support, which depends on the evolution of the situation and the scale of the national programmes FAO is asked to implement.

Online news from FAO: <http://www.fao.org/newsroom/>

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Both endemic and new virus strains to blame for bird flu recurrence in Asia's poultry

FAO calls for improved and sustained AI control efforts in Asia

Laboratory confirmation points to both old and new isolates of the bird flu virus as sources of recent HPAI outbreaks in Southeast Asia, FAO said today.

Vigorous implementation of recommended control measures is needed to prevent a further spread of the disease and sustain past successes in the region, the Organization warned.

Concerned about the recurrence of bird flu in Asia, close monitoring of diagnostic results by FAO has revealed that bird flu is endemic in some areas while new strains have emerged in other places.

"Last month's HPAI outbreak in Thailand's Pichit province was caused by the same virus strain circulating in the area since 2003/4. The H5N1 virus thus remained alive in central Thailand in a reservoir of birds and poultry, most probably a mix of backyard chicken, ducks and fighting cocks," said Laurence Gleeson, regional manager of FAO's bird flu centre in Bangkok today.

H5N1 endemic in Thailand's Pichit province

This indicates that the H5N1 virus is endemic in the area. While the number and size of outbreaks has been reduced, past control efforts were only partly successful.

On the other hand, the outbreaks in Nakhon Phanom and Vientiane were caused by a H5N1 virus strain previously not detected in Thailand and Laos. Instead, the virus is similar to recent isolates from southern China, suggesting that the virus spread from China to Thailand and Laos.

Risky cross-border trade continues

FAO recognizes that poultry trade across borders is continuing in Southeast and East Asia despite well-known risks to the governments and people in the region.

Countries are once more called upon to strengthen in-country as well as cross-border HPAI control measures, FAO added. In addition, regional HPAI networks need to be made stronger and sustainable with national and international support.

Recent sharing of information, epidemiological analysis and joint field missions to assess and control outbreaks in poultry have resulted in a better understanding of the month-old resurgence of bird flu in Asian countries such as Cambodia, Laos and Thailand.

Bird flu in Indonesia requires greater vigilance

"Continuing outbreaks in China, recurrence in Cambodia, Laos and Thailand, and the steady march of the disease in Indonesia underline the need for heightened vigilance in other Asian countries to prevent and detect any resurgence or introduction of the deadly bird flu virus. Timely reporting and sharing information continue to be crucial," warned He Changchui, FAO's Regional Representative for Asia and the Pacific.

The endemic presence of bird flu over the last three years coupled with the proven inroads of new virus isolates into already affected countries makes a redoubling of efforts at both national and regional level essential, FAO noted.

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