

**5th OIE Regional Expert Group Meeting for Implementation
of the Programme on Surveillance of Wild and Domestic
Birds along Migratory Flyways under the OIE/Japan Trust
Fund (JTF) Project for Strengthening HPAI Control in Asia
13-14 December, 2012, Tokyo**

Points for the control of HPAI and preparedness for pandemic influenza

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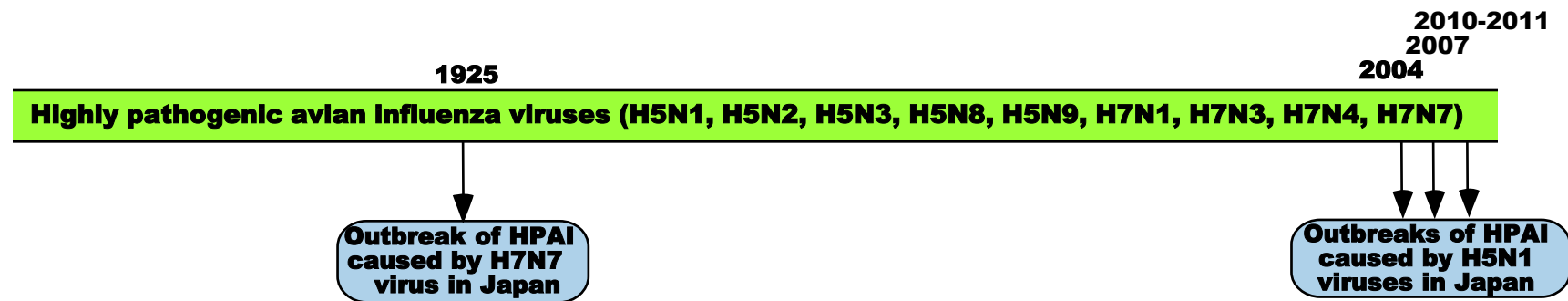
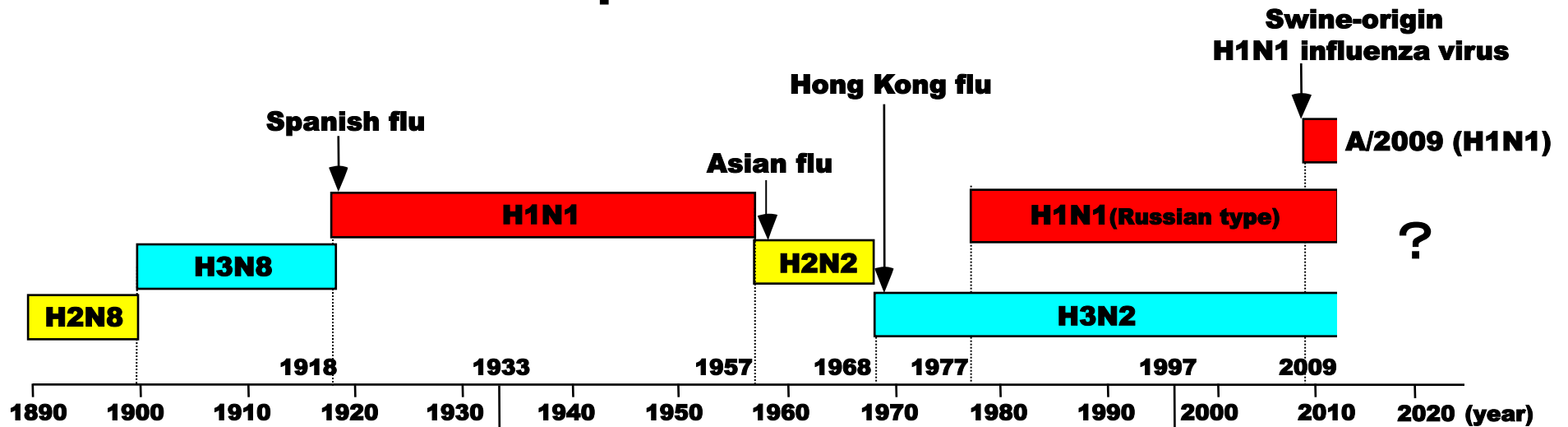
How should we control highly pathogenic avian influenza and prepare for pandemic influenza ?

- * Why have the H5N1 HPAIVs persisted in poultry for 16 years ?**
- * Why are antigenic variants selected in poultry birds ?**
- * Will the HPAIVs returned to migratory birds persist in nature ?**
- * How should HPAI be controlled just in poultry ?**
- * Does AI vaccine confer complete protective immunity ?**
- * Will H5N1 HPAIV cause pandemic influenza?**
- * Are the measures for the control of seasonal flu satisfactory ?**

To answer to these questions, it is prerequisite to understand ecology of influenza viruses in nature, birds and mammals;

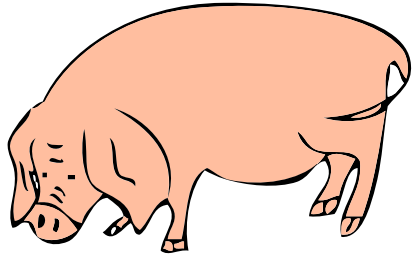
origin, perpetuation in nature, and evolution of influenza viruses, and mechanisms of the emergence of HPAIV and pandemic strains.

Human pandemic influenza



Highly pathogenic avian influenza

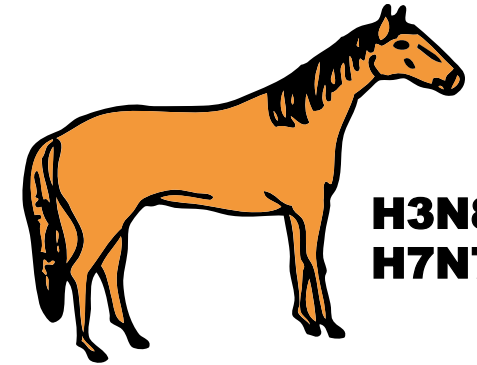
Host range, and HA and NA subtypes of influenza A virus



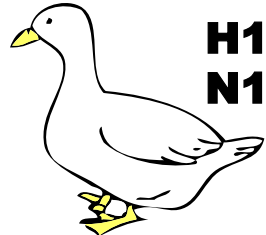
**H1N1
H1N2
H3N2
H2N3, H3N1, H3N3,
H3N8, H4N6, H5N1,
H5N2, H9N2**



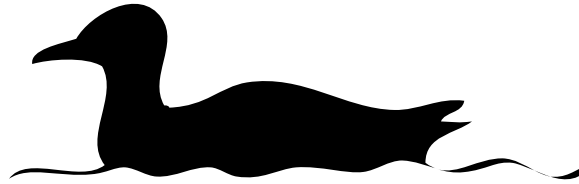
**H1N1
H2N2
H3N2
(H2N8,H3N8)
H5N1,H7N7,
H9N2**



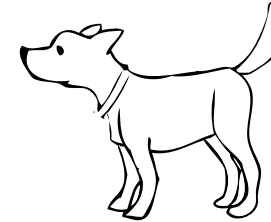
**H3N8
H7N7**



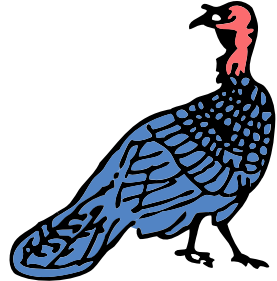
**H1-H12
N1-9**



**H1-16
N1-9**



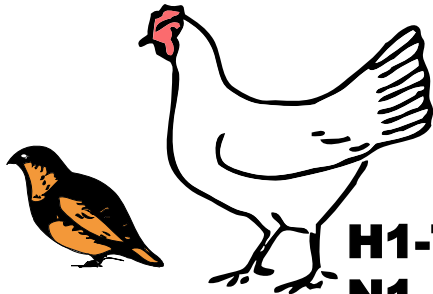
H3N8,H5N1



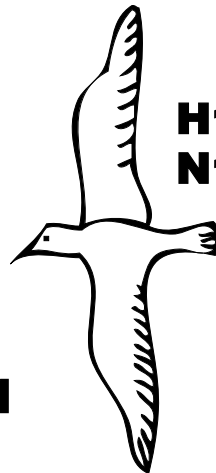
**H1-10
N1-9**



H5N1



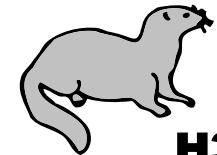
**H1-7, H9-11
N1-4, N6-8**



**H1-7, H9-16
N1-9**



**H3N3
H4N5
H7N7**



**H3N2
H5N1
H10N4**

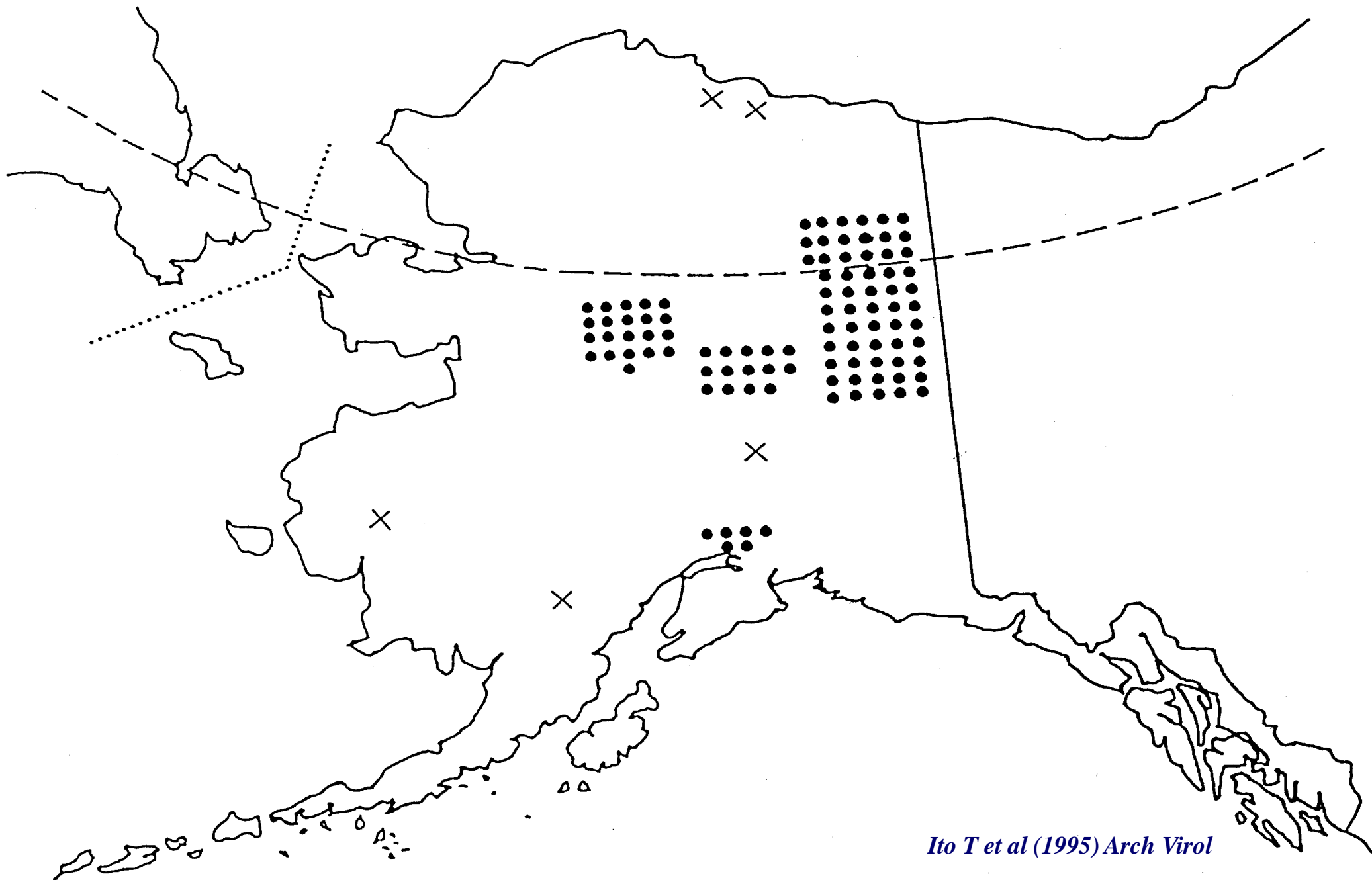


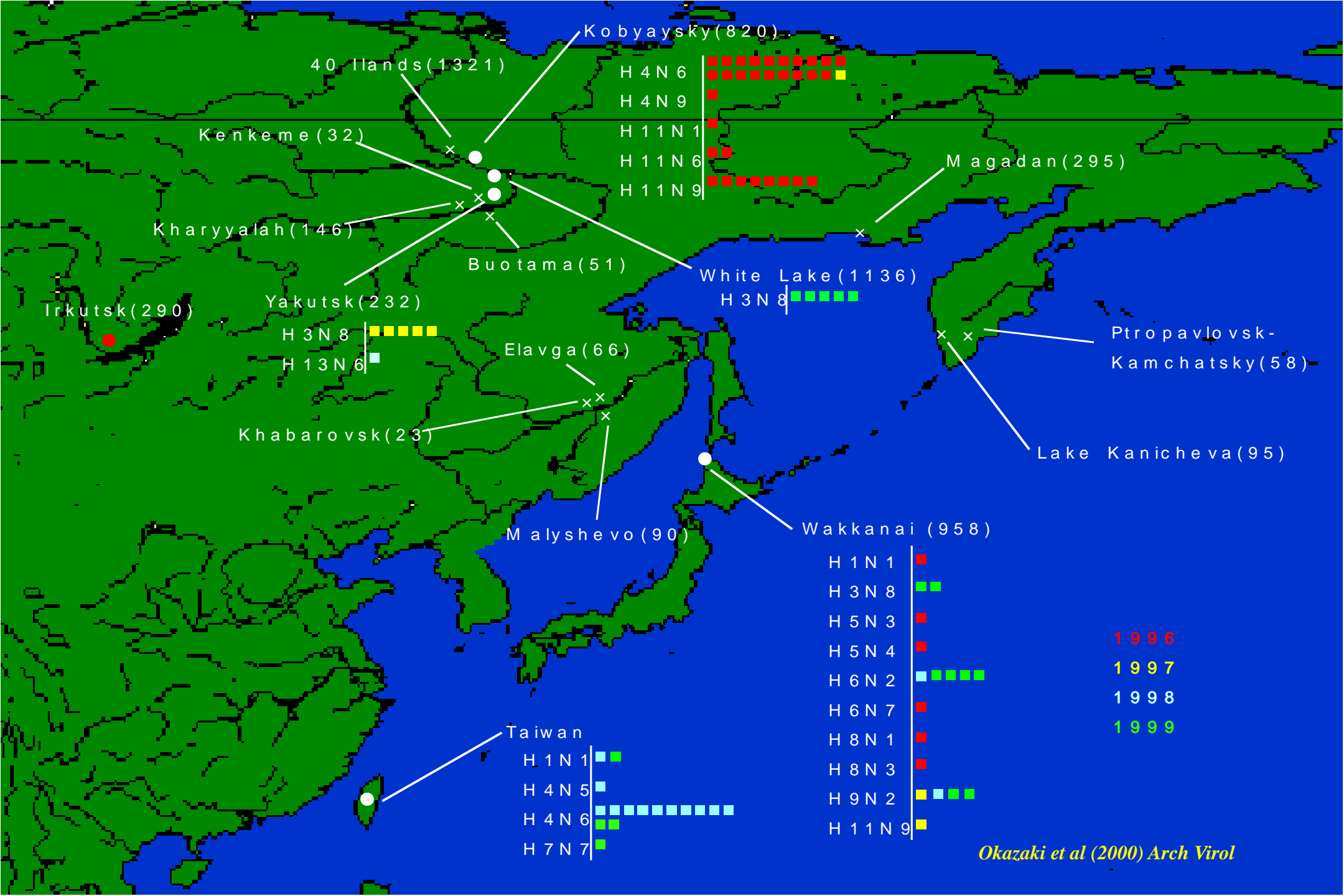
H1N3, H13N2, H13N9

Duck influenza

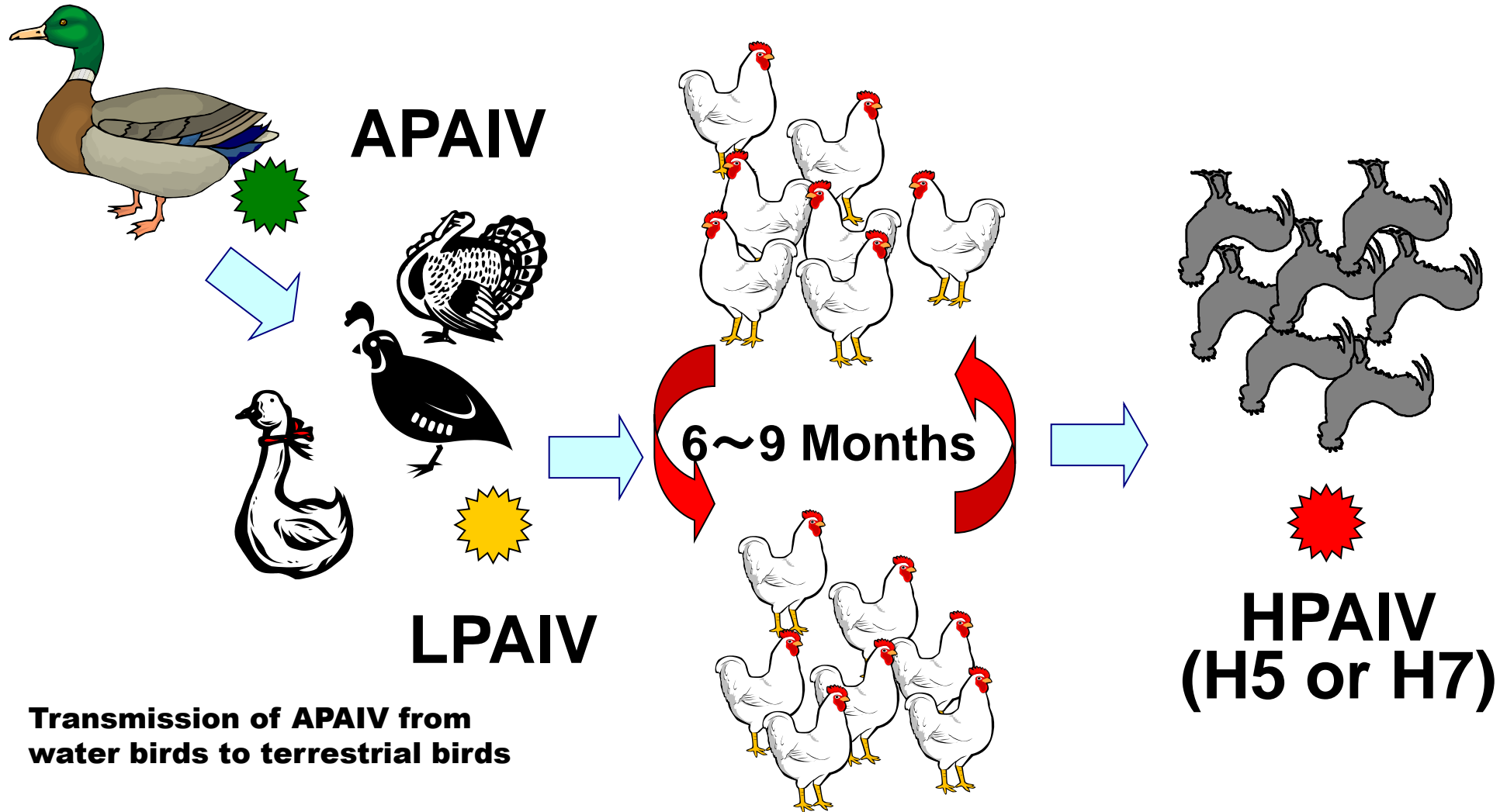
- ◆ **Each of the known subtypes (H1-16, N1-9) of influenza A virus has been isolated from ducks.**
- ◆ **In ducks, viruses replicate in the colon, being shed with feces in a week, and non-pathogenic.**
- ◆ **Water-borne fecal-oral transmission**
- ◆ **Ducks carry and provide viruses during migration and over-wintering.**
- ◆ **Influenza viruses circulating in ducks are highly stasis antigenically and genetically.**

➔ **Migratory duck is the natural host of influenza A viruses.**





Acquisition of pathogenicity of avian influenza viruses in chickens



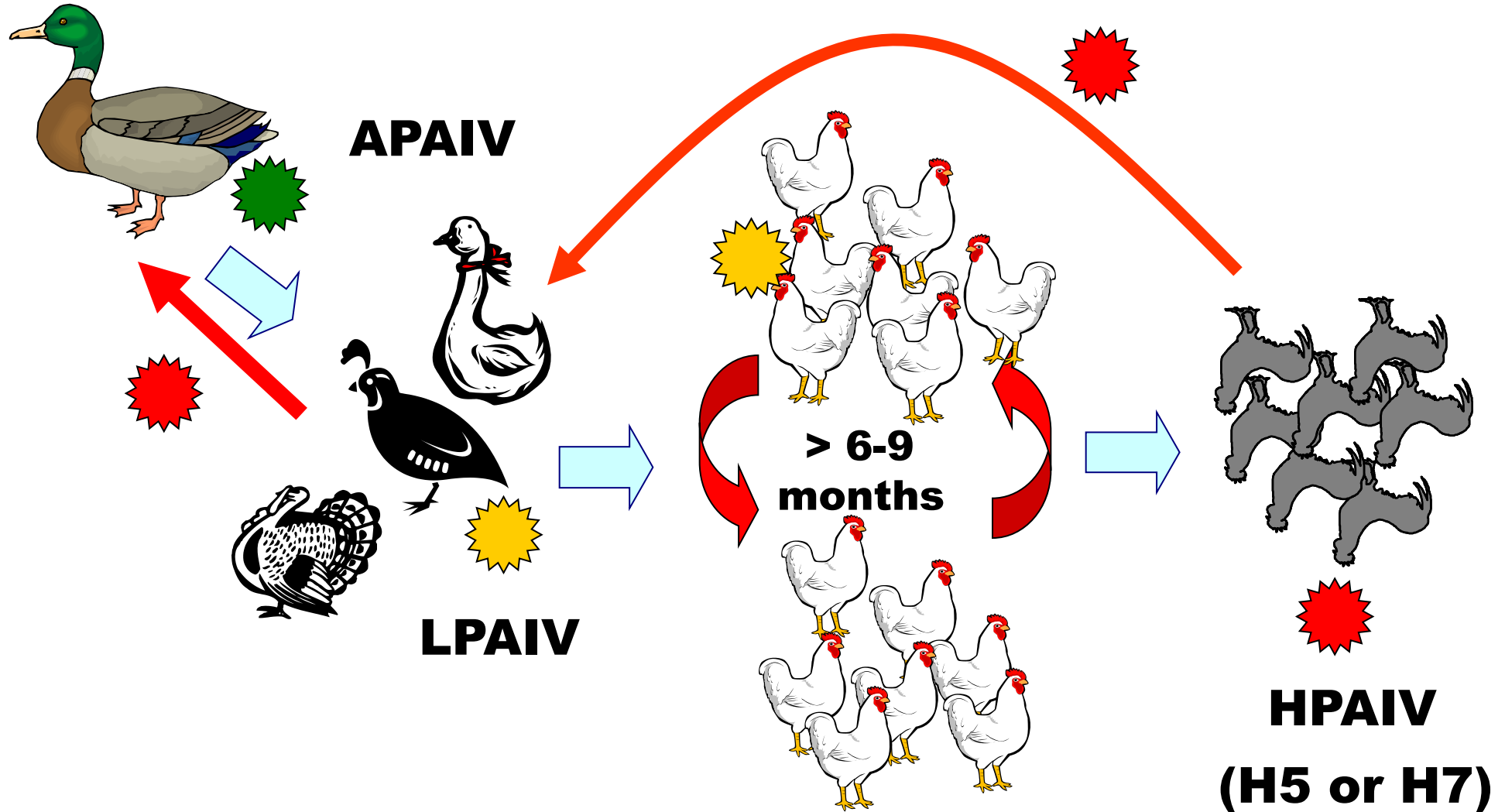


禁捕野生鸟类
PROHIBIT WILD BIRDS

Amino acid sequences at the cleavage site of the HA of influenza A virus

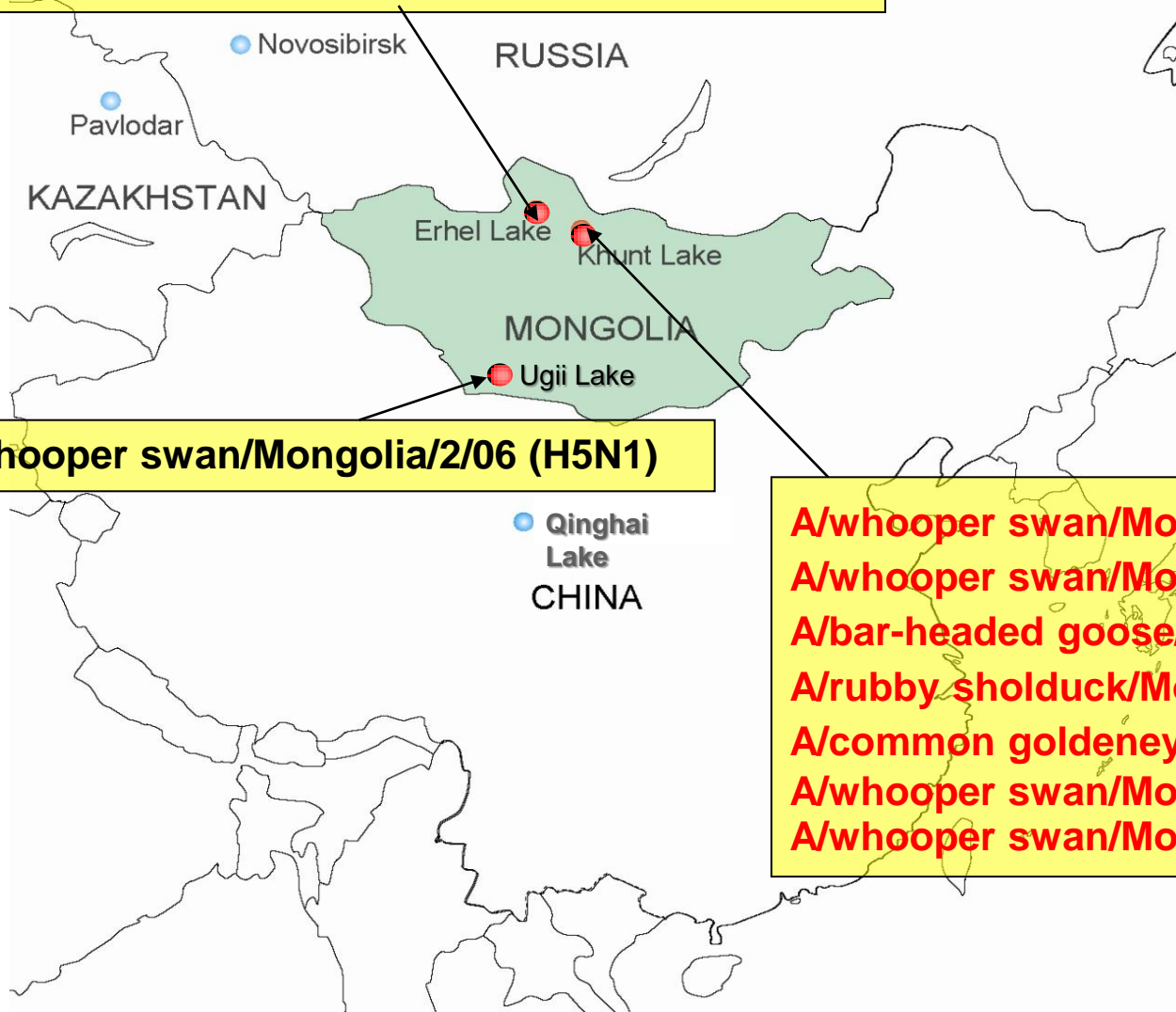
Subtype	Strains	A A sequence
H1	Dk/Alberta/35/76(H1N1) ^b	IQSR GLF
H2	Mal/MT/Y61(H2N2) ^b	IESR GLF
H3	Dk/Menphis/928/74(H3N8) ^b	KQTR GLF
H4	Dk/Czechoslovakia/56(H4N6) ^b	KASR GLF
H5	Ck/Scotland/59(H5N1) ^b	RKKR GLF
H5	Ty/MN/3/92(H5N2) ^a	RETR GLF
H6	Shw/Australia/1/72(H6N5) ^b	IETR GLF
H7	FPV/Rostock/34(H7N1) ^b	KKRKKR GLF
H7	Mal/Alberta/195/89(H7N3) ^a	KKTR GLF
H8	Ty/Ontario/6118/68(H8N4) ^b	VEPR GLF
H9	Ty/Wisconsin/66(H9N2) ^b	RSSR GLF
H10	Ck/Germany/N/49(H10N7) ^b	VQGR GLF
H11	Dk/England/56(H11N6) ^b	IASR GLF
H12	Dk/Alberta/60/76(H12N5) ^b	VQDR GLF
H13	GI/Maryland/704/77(H13N6) ^b	ISNR GLF
H14	Mal/Gurjev/263/82(H14N5) ^b	KQAK GLF
H15	Shw/Australia/2576/79(H15N9) ^b	IRTR GLF

Return of the HPAIV from domestic poultry to migratory water birds



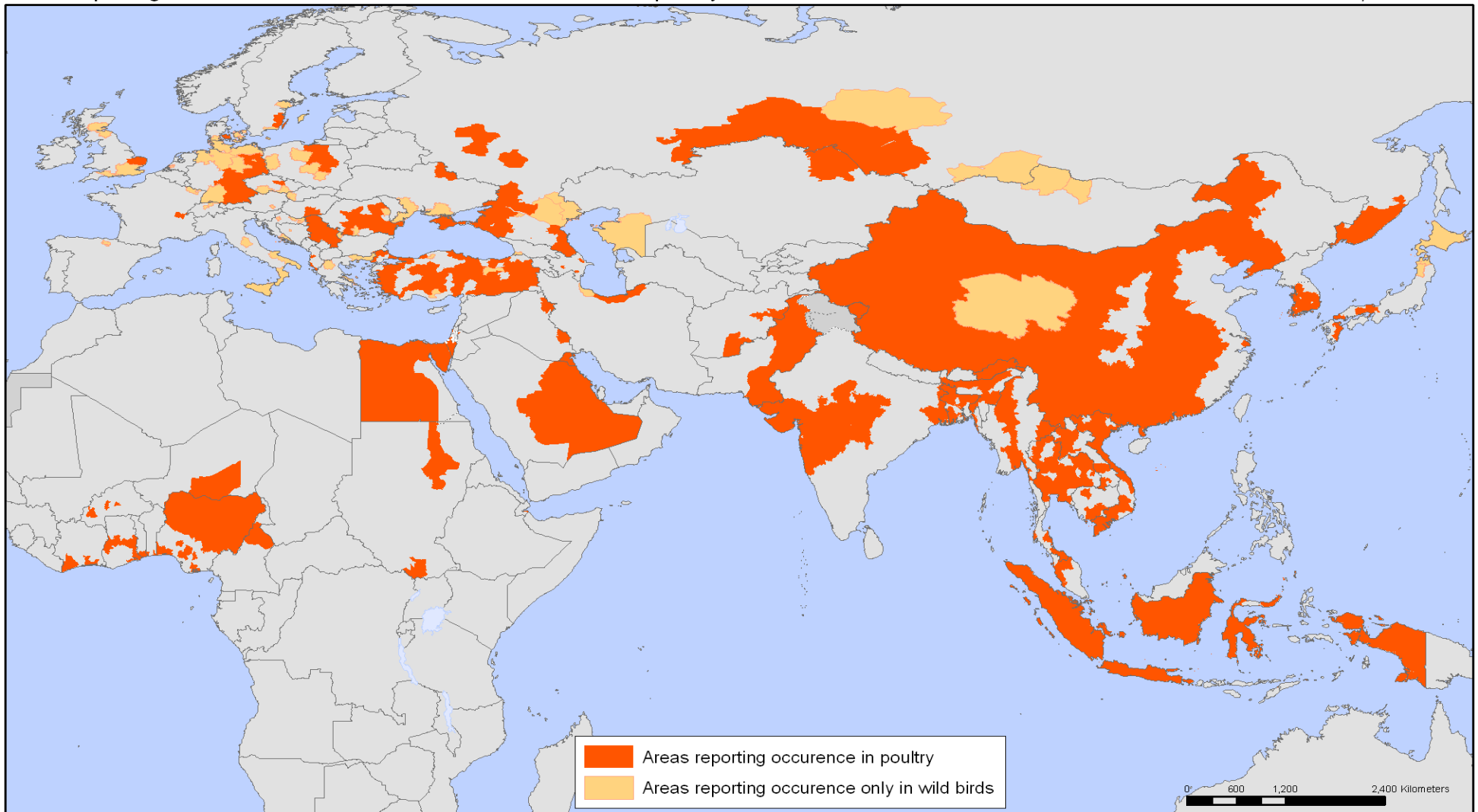
HPAI viruses isolated from wild birds in Mongolia in May

A/whooper swan/Mongolia/3/05 (H5N1)
A/bar-headed goose/Mongolia/1/05 (H5N1)
A/common goldeneye/Mongolia/12/06 (H5N1)



A/whooper swan/Mongolia/2/06 (H5N1)

A/whooper swan/Mongolia/2/09 (H5N1)
A/whooper swan/Mongolia/9/09 (H5N1)
A/bar-headed goose/Mongolia/X53/09 (H5N1)
A/rubby sholduck/Mongolia/X42/2009 (H5N1)
A/common goldeneye/Mongolia/X60/09 (H5N1)
A/whooper swan/Mongolia/1/10 (H5N1)
A/whooper swan/Mongolia/7/10 (H5N1)

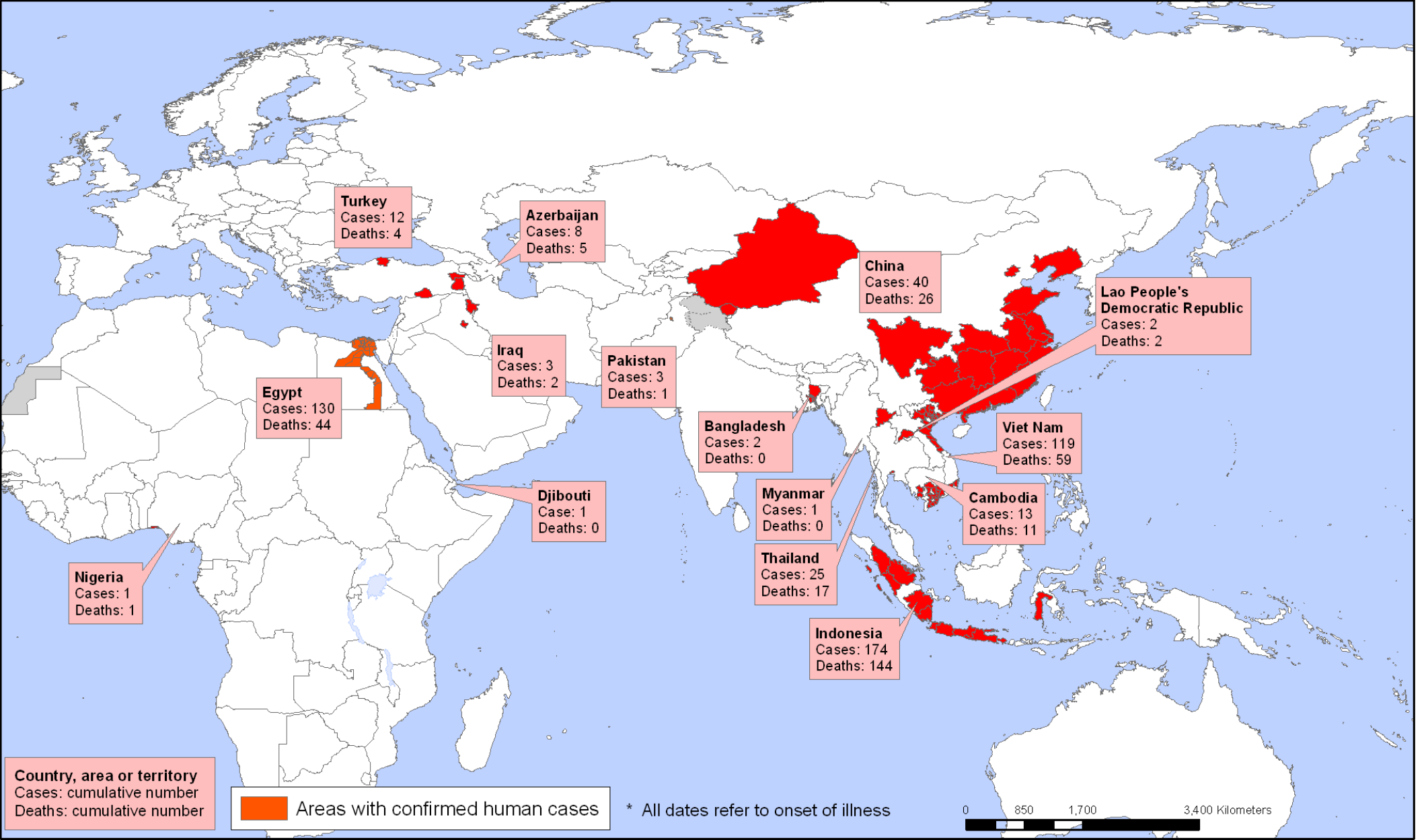


62 Countries where H5N1 HPAIV infections were reported in **wild birds**, **poultry**, and **both**

Japan, Republic of Korea, China, Mongolia, Myanmar, Lao PDR, Thailand, Cambodia, Viet Nam, Malaysia, Indonesia, Bangladesh, India, Pakistan; Afghanistan, Iran, Azerbaijan, Georgia, Iraq, Kuwait, Saudi Arabia, Turkey, Israel; Russian Federation, Kazakhstan, Ukraine, Romania, Bulgaria, Albania, Serbia, Hungary, Slovakia, Czech Republic, Croatia, Poland, Slovenia, Bosnia & Herzegovina; Greece, Switzerland, Austria, France, Italy, Germany, Netherlands, Denmark, Sweden, Spain, England, Ireland; Djibouti, Gaza Strip, Egypt, Sudan, Nigeria, Niger, Cameroon, Burkina Faso, Cote d'Ivoire

Areas with confirmed human cases of H5N1 avian influenza since 2003 *

Status as of 16 March 2011
Latest available update



Confirmed human cases of H5N1 HPAIV infection

Country	Deaths/Cases
---------	--------------

China	28 / 43
-------	---------

Viet Nam	61 / 123
----------	----------

Indonesia	159 / 191
-----------	-----------

Egypt	60 / 168
-------	----------

Cambodia	19 / 21
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Lao PDR	2 / 2
---------	-------

Thailand	17 / 25
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Iraq	2 / 3
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Azerbaijan	5 / 8
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Turkey	4 / 12
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Djibouti	0 / 1
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Nigeria	1 / 1
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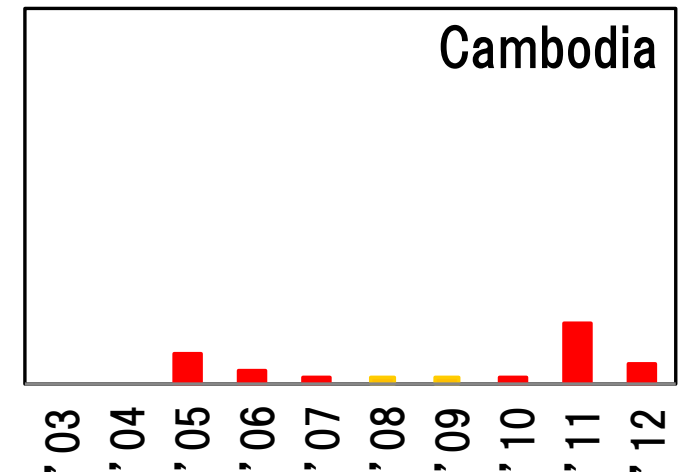
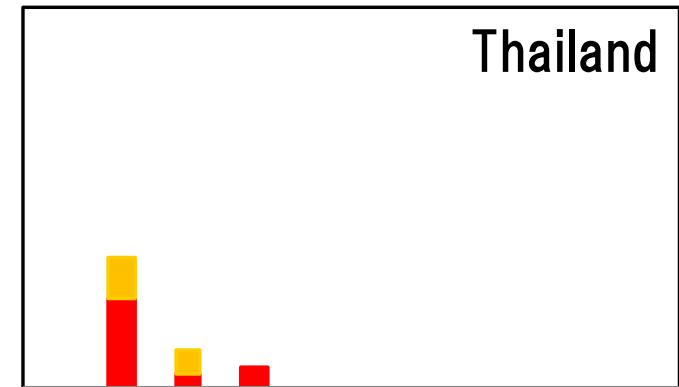
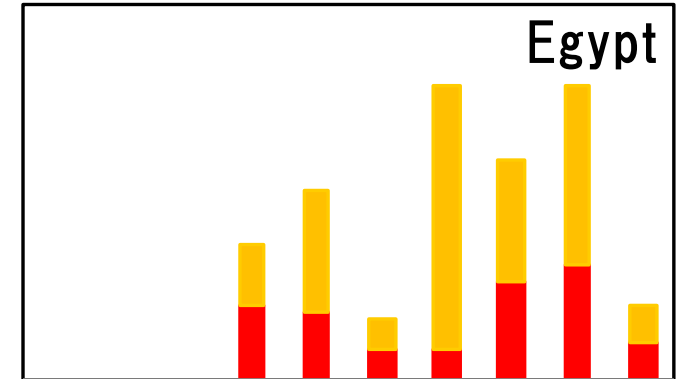
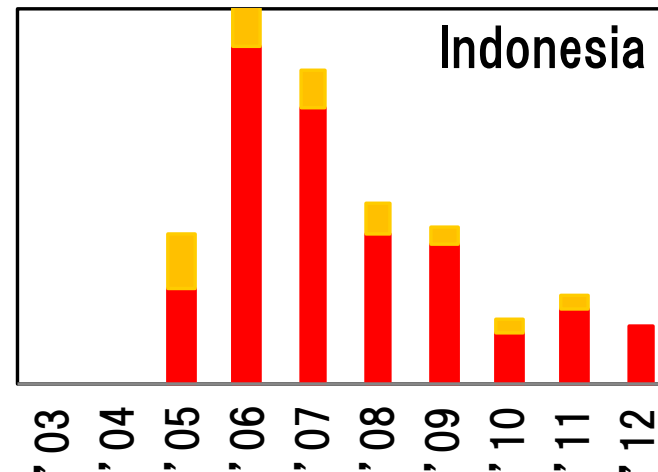
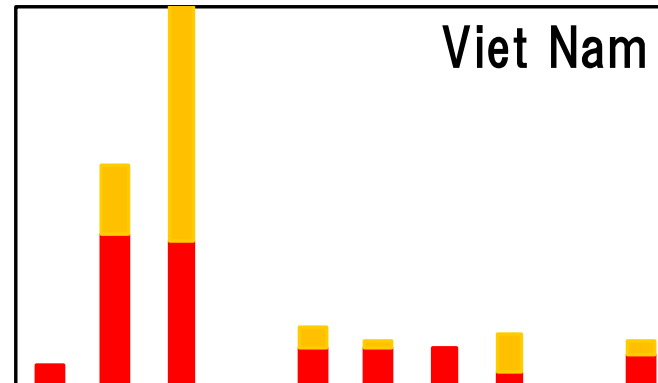
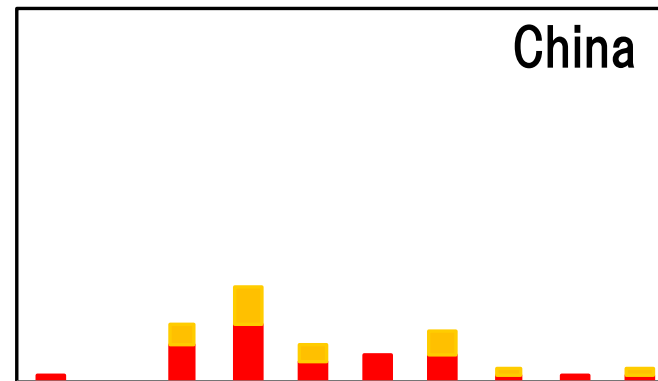
Myanmar	0 / 1
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Pakistan	1 / 3
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Bangladesh	0 / 3
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Total	359 / 608
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As of 10 Augst 2012



Bird flu vaccines

Vietnam:

H5N2 and H5N1
(Adjuvant inactivated vaccines)

China:

H5N1 and recombinant NDV
(Reverse genetics inactivated vaccines)

Indonesia:

H5N1, H5N2, H5N9 and recombinant
H5N1 (inactivated vaccines)

Egypt: since 2006

Thailand:

Officially prohibited vaccination in 2006

As a stockpile,

Singapore:

H5N2
(Inactivated, adjuvanted vaccine)

Japan:

H5N1 and H7N7
(Oil-adjuvanted inactivated
vaccines)

Pakistan:

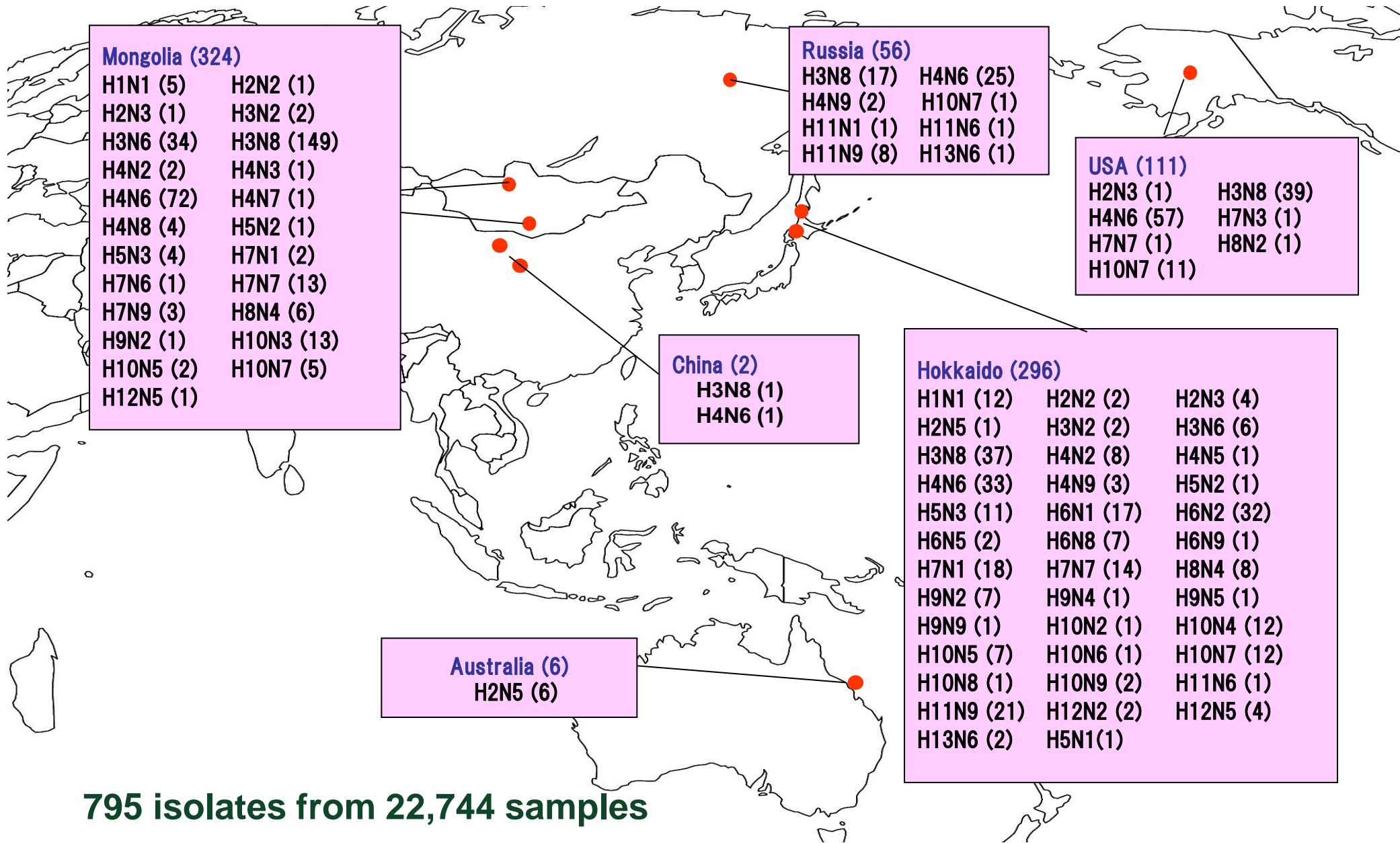
H5N1, H5N2, H5N9, and H5N3
(Water based with alum hydroxide
and oil based with mineral oil)

Influenza Vaccine for bird flu

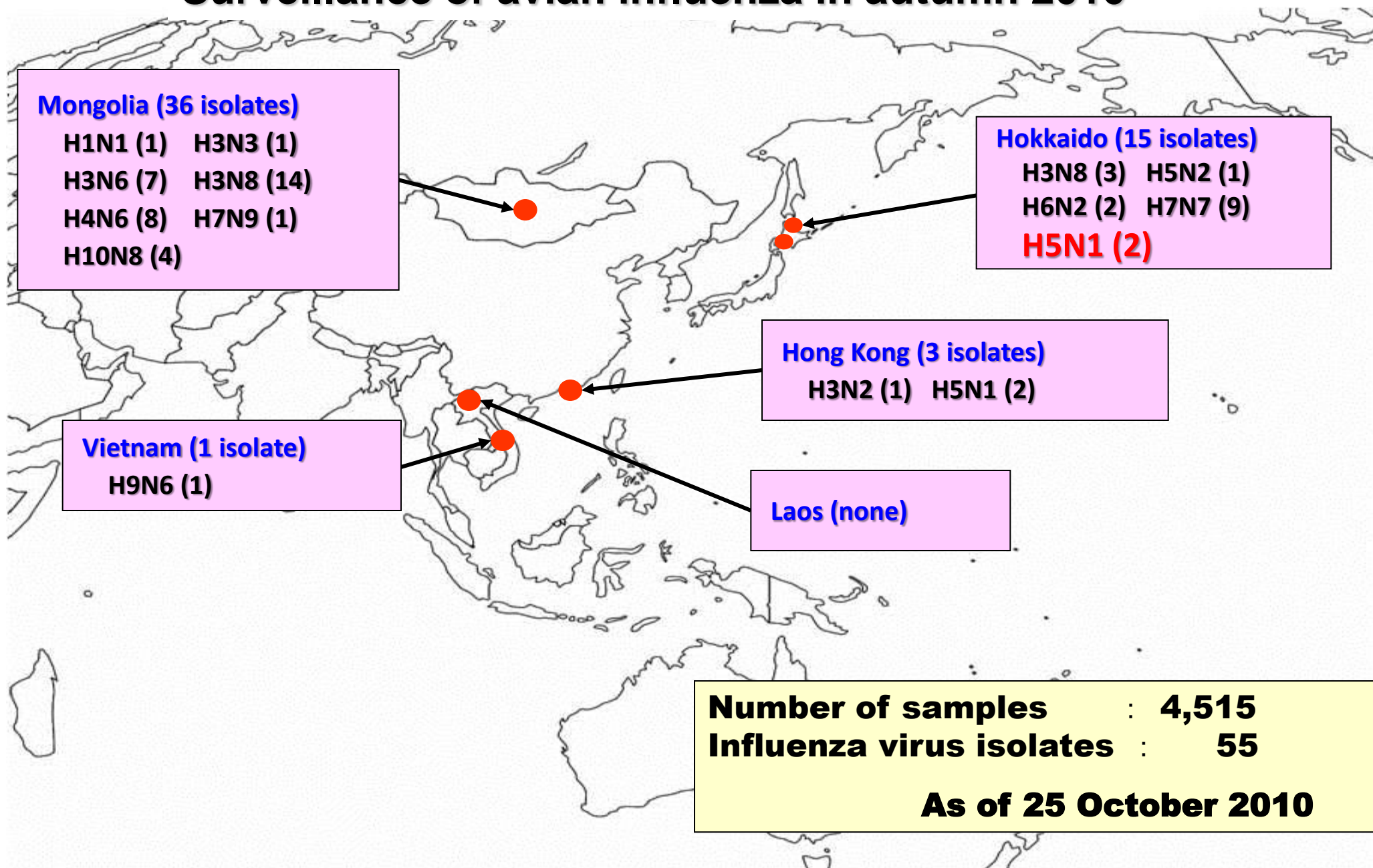
- may prevent manifestation of disease signs and decrease the amount of virus shed, but does not confer protective immunity from infection.
- “Stamping-out policy” including early detection of infection, culling the infected flock, compensation, and monitoring has been recommended for the control of avian influenza.
- Vaccination was not primarily recommended but later approved as one of the options applied as a tool for the control of HPAI.
- Country where vaccine is used is not designated as HPAI-free.

→ leads silent spread of virus.

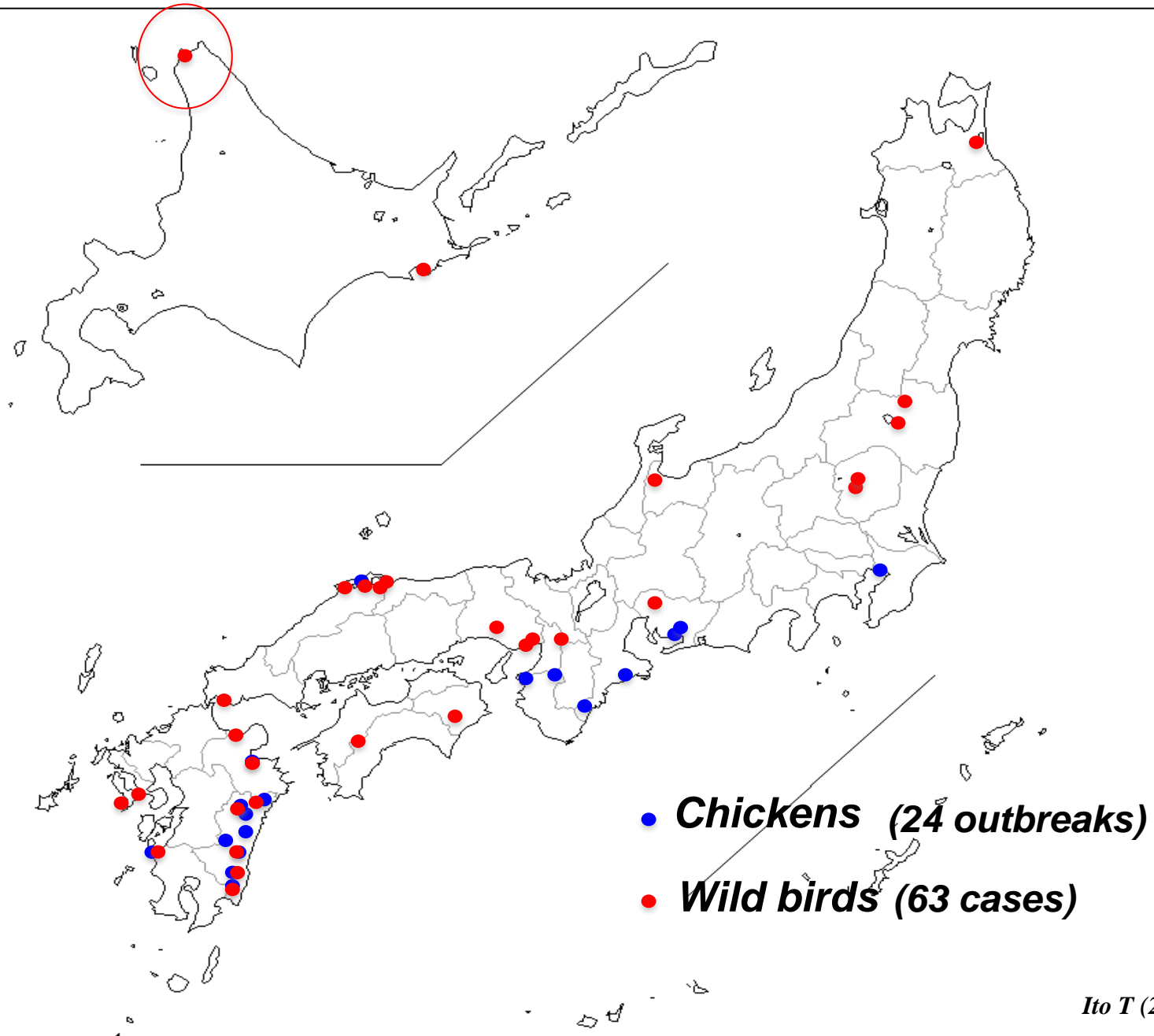
Surveillance of avian influenza in autumn (1991~2009)



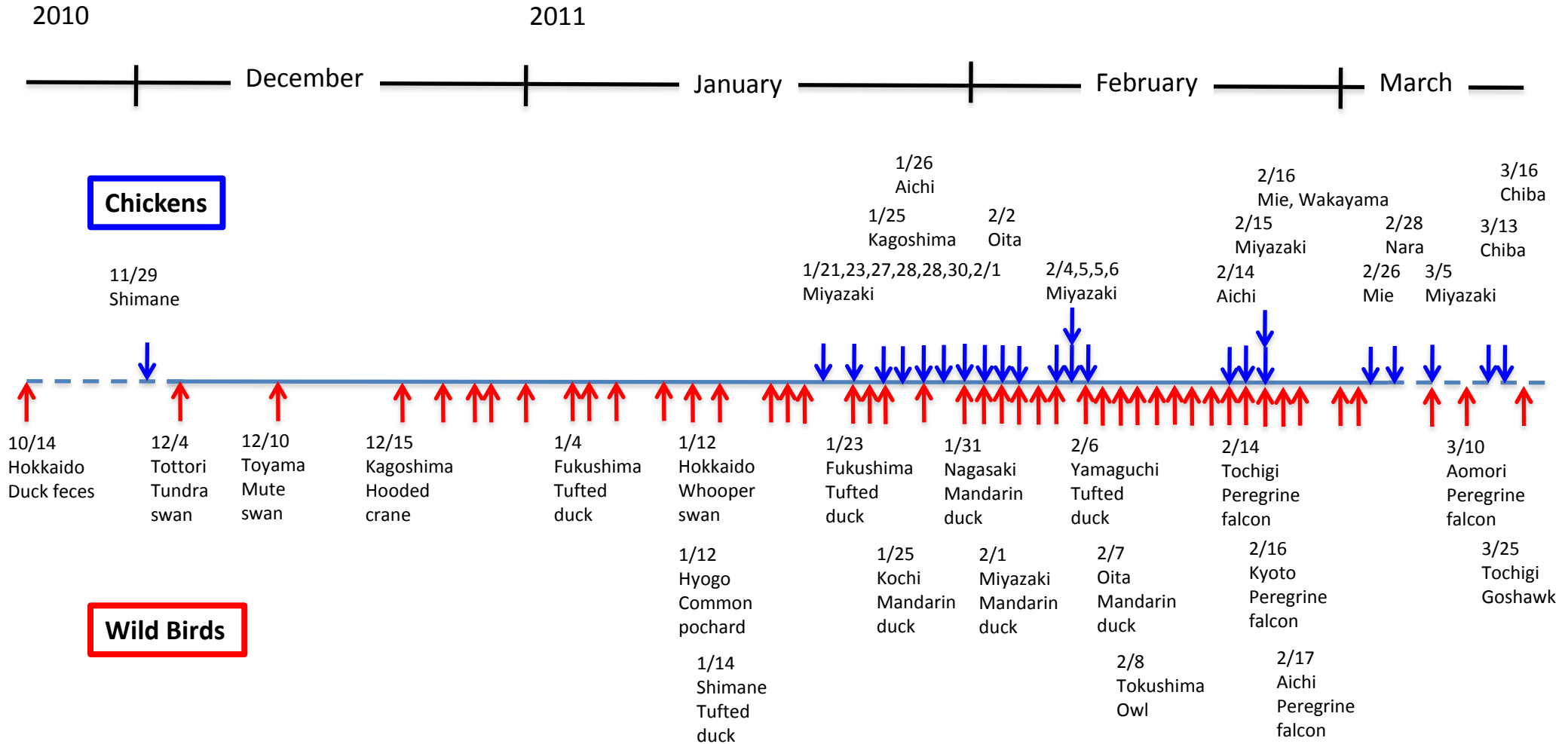
Surveillance of avian influenza in autumn 2010



Outbreaks of H5N1 HPAIV infection in Japan in 2010-2011 winter season

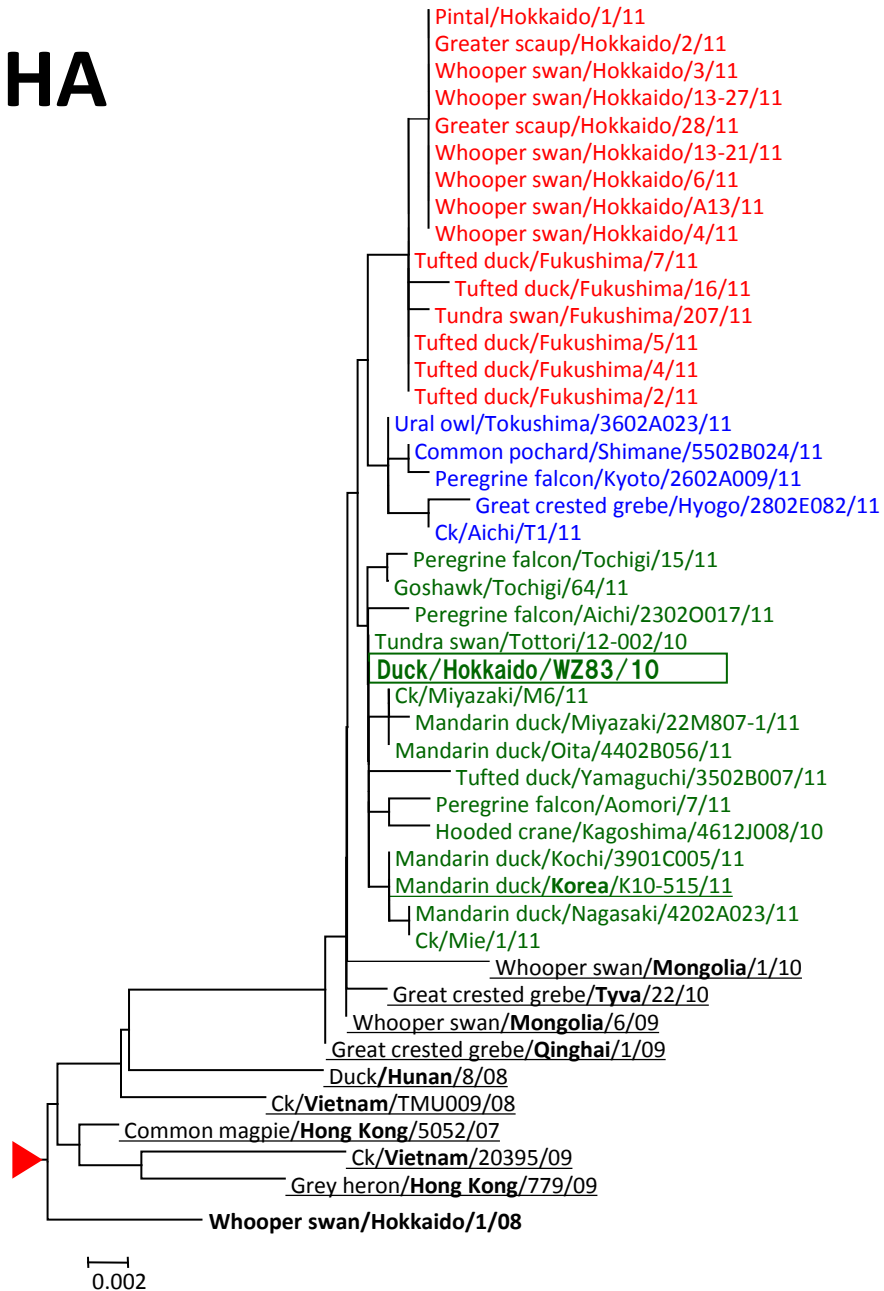


Time line of H5N1 HPAIV infection outbreaks in Japan 2010 - 2011

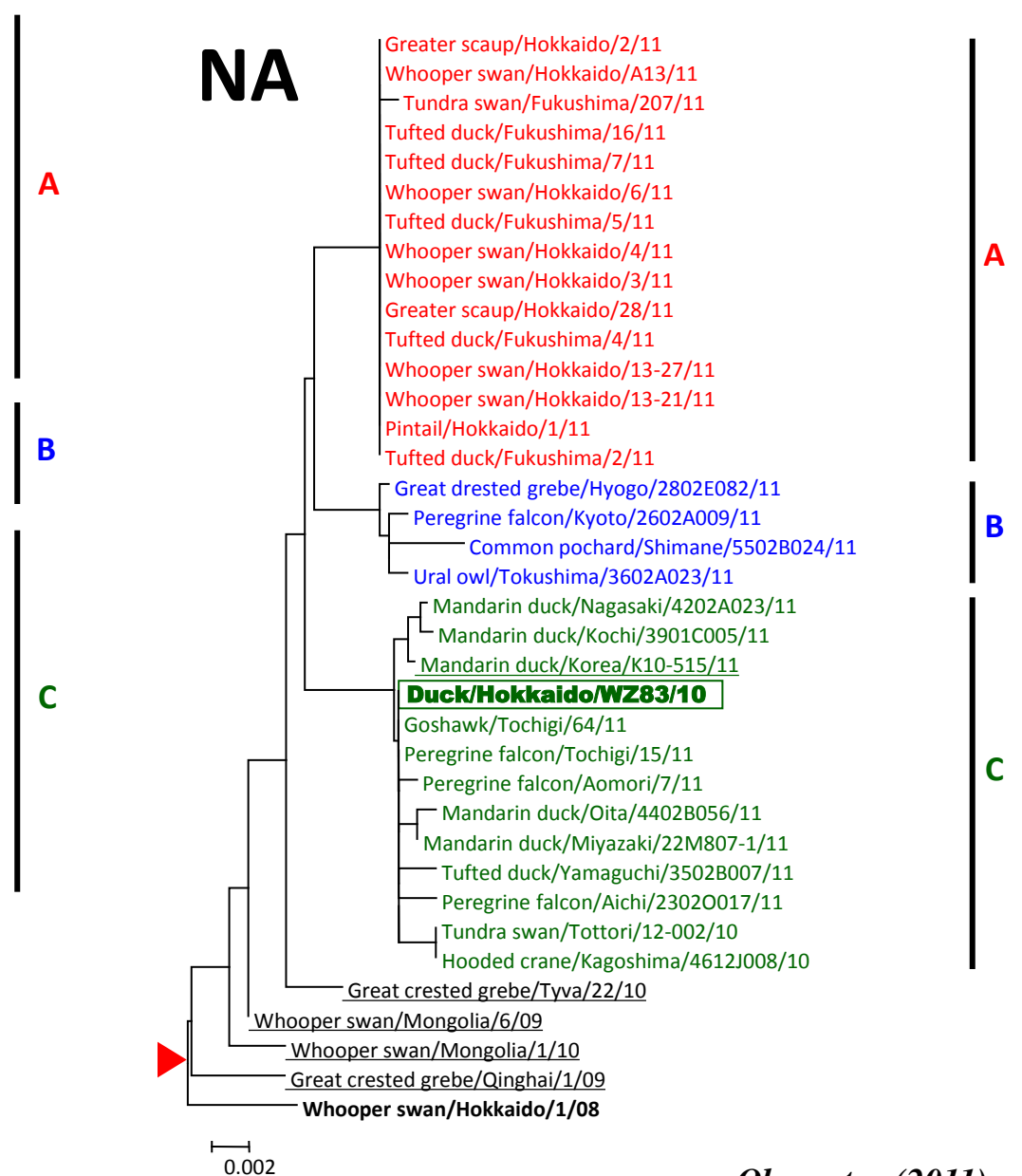


Phylogenetic analysis of the H5N1 HPAIV isolates(clade 2.3.2)

HA

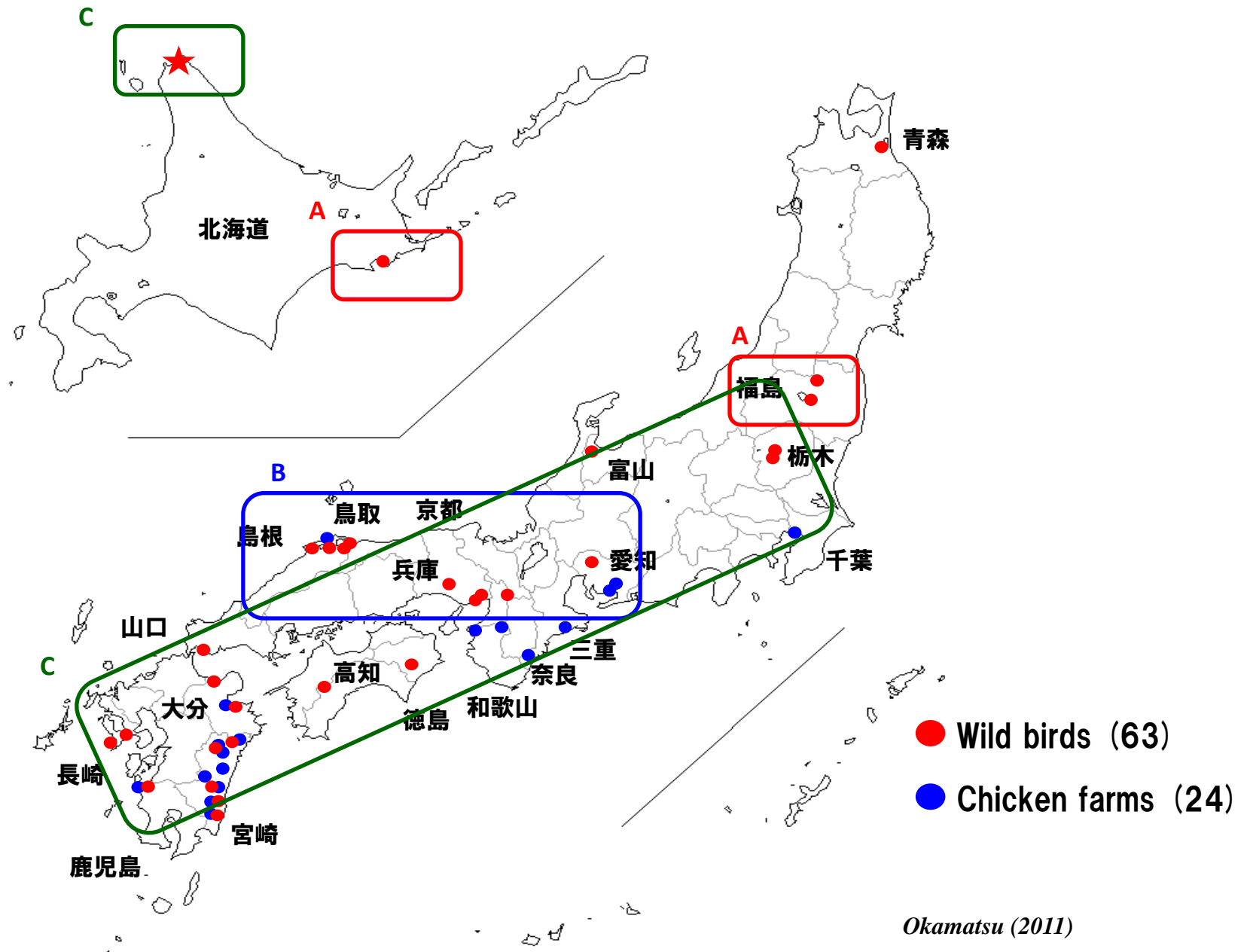


NA

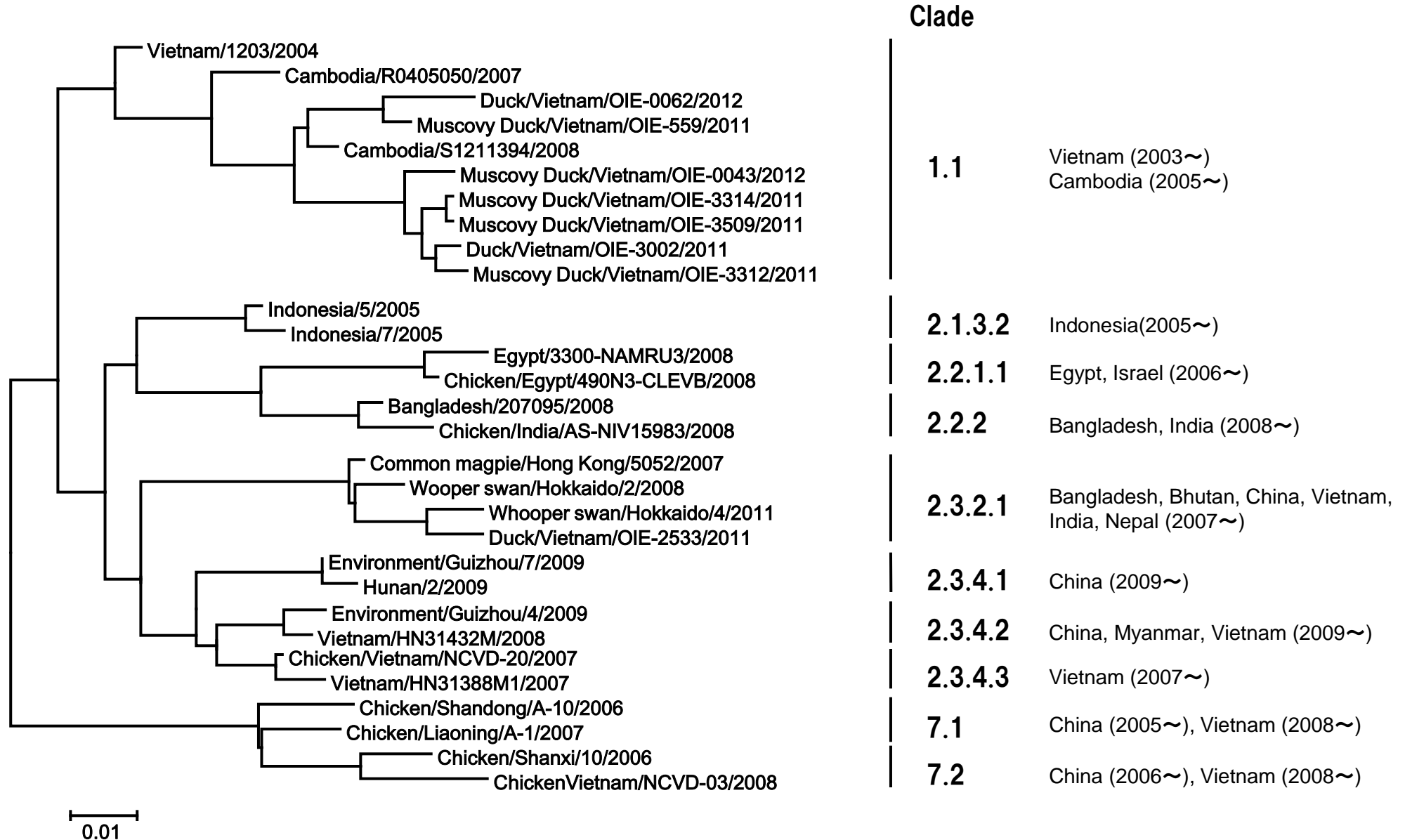


Okamatsu (2011)

Outbreaks of HPAI caused by H5N1 viruses in Japan in 2010-2011 winter



Phylogenetic tree of the HA genes of H5N1 HPAIVs



RECOMMENDATION FOR THE CONTROL OF AVIAN INFLUENZA

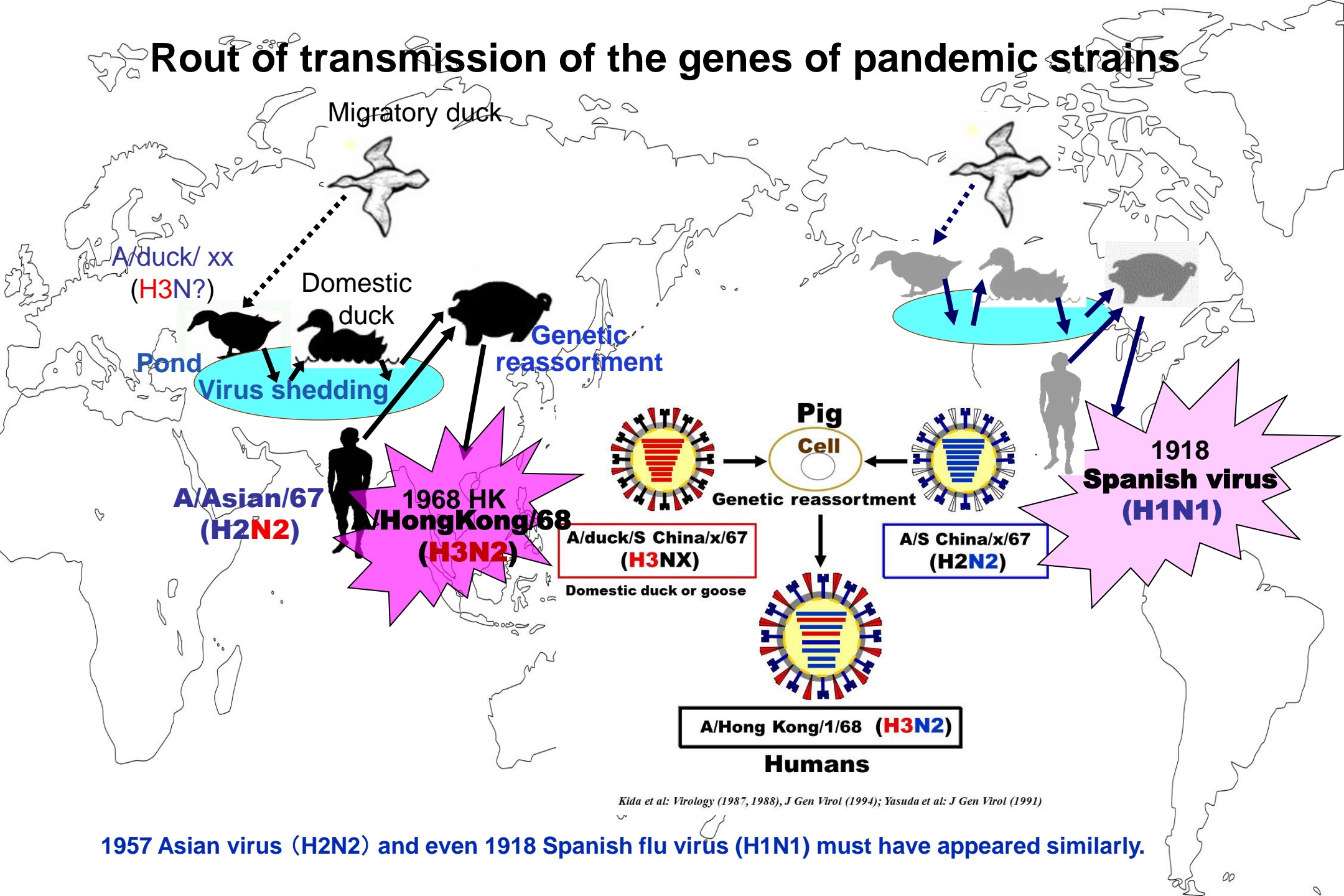
It is considered that;

- Highly pathogenic avian influenza H5N1 virus strains have persisted in domestic poultry for 14 years and antigenic variants have been selected mainly due to the **misuse of vaccine**.
- HPAI has been put under control in several countries.
- Stamping out policy has been the most effective measures for the control HPAI.
- Vaccine is used in 4 countries where HPAI has not been controlled yet.
- Vaccine is used instead of stamping out in 2 countries and in the other 2 countries, basically in addition to stamping out.
- Sentinel birds are put in the vaccinated poultry population in Viet Nam and not in the other 3 countries where vaccine is used.
- Compensation for livestock owners is done in most countries in case of stamping out.

It is recommended that;

1. Since stamping out is the best and ultimate measure for the control of HPAI, vaccine should be used **in addition to, not instead of stamping out**.
2. The OIE should continue and develop standards on animal influenza surveillance, prevention and control.
3. Surveillance of swine flu is crucial in the countries where avian flu has not been controlled.

Route of transmission of the genes of pandemic strains



Candidates of future pandemic strains

- ◆ **H1 to H16 and N1 to N9 subtypes of influenza A viruses perpetuate in the lakes where ducks nest in nature.**
 - ◆ **1957 H2N2, 1968 H3N2, 1918 H1N1 and 2009 H1N1 viruses are the reassortants between avian influenza viruses and the preceding human strains.**
 - ◆ **Pigs are susceptible to each of avian and mammalian influenza viruses, generating reassortants.**
- **Avian influenza viruses of any subtype can contribute genes for reassortants : None of the 16 HA and 9 NA subtype can be ruled out as potential candidates for future pandemic strains.**
- **Global surveillance of swine flu as well as avian flu is important.**

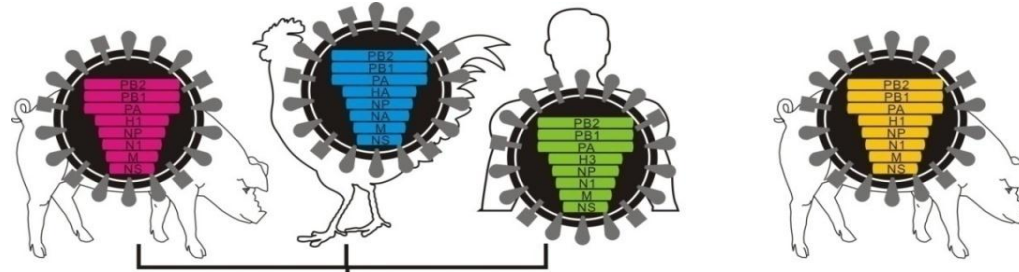
Gene derivation of the swine-origin influenza A (H1N1) virus

Classical swine
(derived from the
1918 virus)

North
American
avian

Human
(H3N2)

Eurasian avian-like
swine



PB2 - North American avian

PB1 - Human H3N2

PA - North American avian

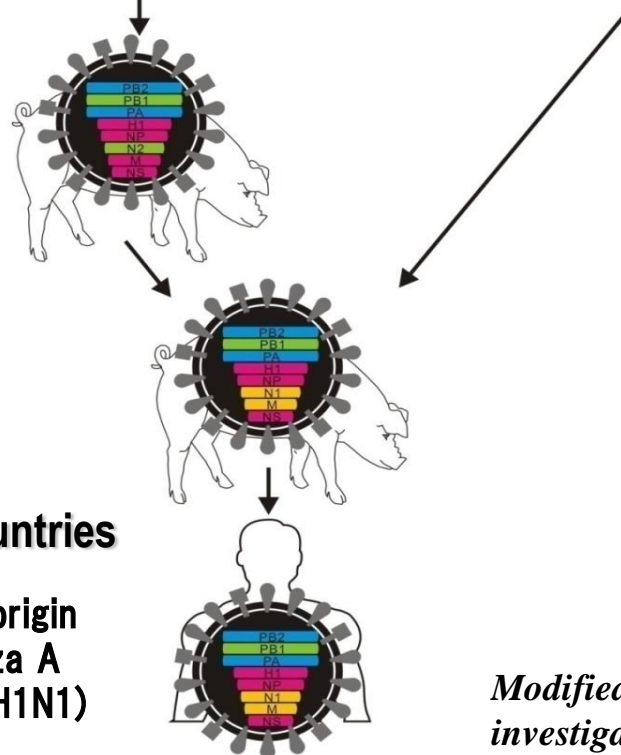
H1 - Classical swine

NP - Classical swine

N1 - Eurasian avian-like swine

M - Eurasian avian-like swine

NS - Classical swine



- Each of the pandemic strains has been generated in pigs.

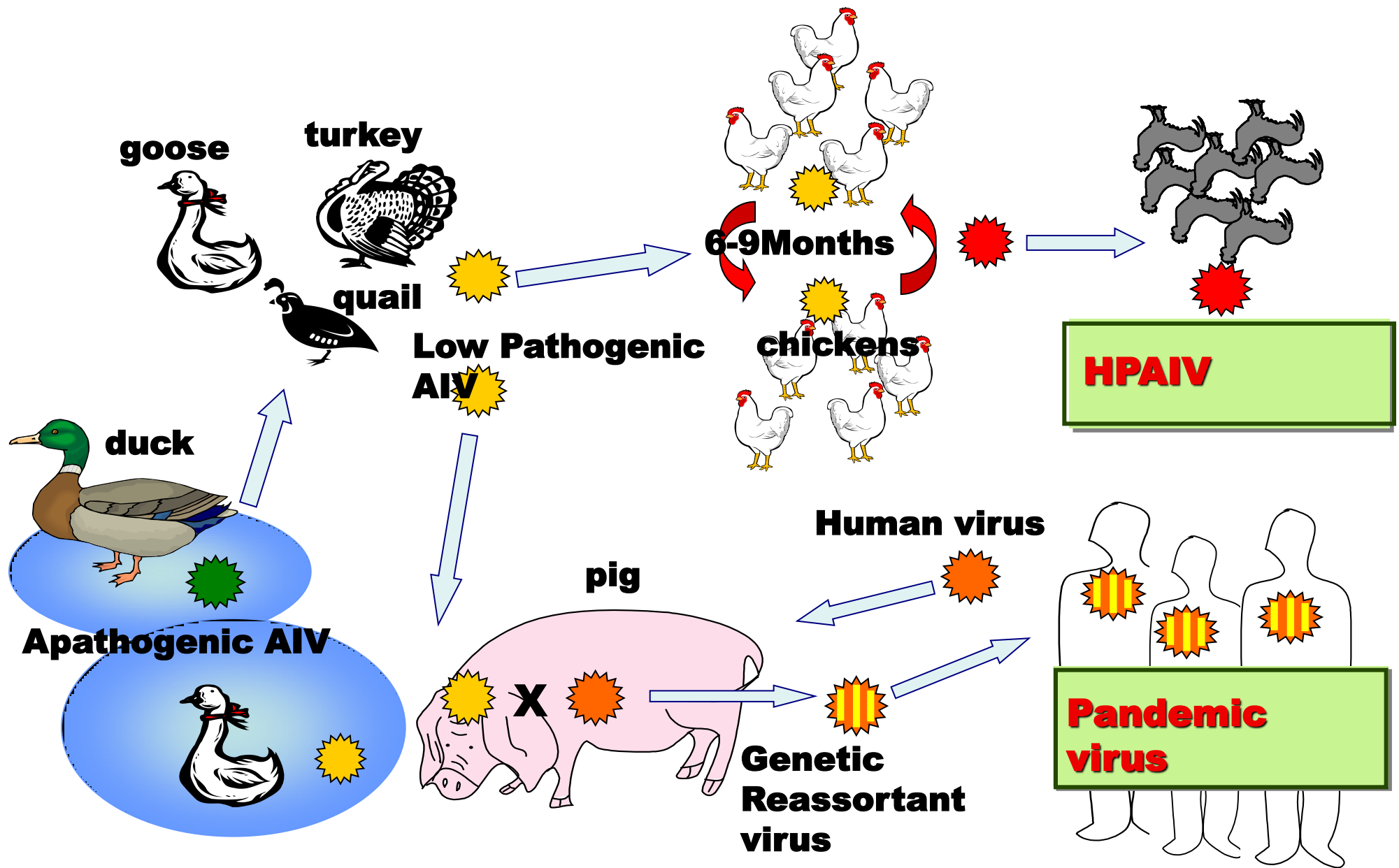
- Genetic reassortment often occurs in birds and pigs.

➔ The H1N1 strain is a genuine swine influenza virus.

At least 18,366 deaths in 214 countries
as of 18 July 2010

















































































































































Swine-origin
Influenza A
virus (H1N1)


*Modified from Novel Swine-Origin Influenza A (H1N1) Virus
investigation Team, N Eng J Med, 2009*




HPAI virus and human pandemic virus strains

Library of vaccine strain candidates

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16
N1																
N2																
N3																
N4																
N5																
N6																
N7																
N8																
N9																



Isolates from water birds (69 combinations)



Reassortants generated in the lab (75 combinations)

Influenza viruses of 69 combinations of the HA and NA subtypes have been isolated from fecal samples of ducks in Alaska, Siberia, Mongolia, Taiwan, China, and Japan (black).

75 other combinations have been generated by genetic reassortment procedure in the lab (red).

Thus, 246 avian influenza viruses of 144 combinations of HA and NA subtypes have been stocked as vaccine strain candidates. Their pathogenicity, antigenicity, genetic information and yield in chicken embryo have been analyzed, databased, and opened for Web site (<http://virusdb.czc.hokudai.ac.jp/vdbportal/view/index.jsp>).

How should we control HPAI and prepare for pandemic flu?

- 1. Why have the H5N1 HPAIVs persisted in poultry for 16 years and antigenic variants been selected ?**
Misuse of Vaccine.
- 2. Will the HPAIVs returned to migratory birds persist in nature ?**
Started contamination of HPAIVs in the nesting lakes of migratory ducks. Eradication of the H5N1 HPAIVs from poultry throughout the world is urgently needed.
- 3. How should avian influenza be controlled just in poultry ?**
Enhanced surveillance, early detection, culling the flock, movement restriction, and strengthening hygienic measures without misuse of vaccine, monitoring, and contain just in domestic poultry.
- 4. What are the advantage and disadvantage of the use of vaccines ?**
Vaccine should be carefully used in addition to, not instead of stamping out.
- 5. Will H5N1 HPAIV cause pandemic influenza?**
It is unlikely to occur that direct transmission of AIV from birds to humans, but may occur via pigs. H5N1 alone is not a candidate of pandemic strain.
- 6. Are the measures for the control of seasonal flu satisfactory ?**
How to control pandemic influenza should be based on the measures for the control of seasonal influenza. Mix not transmissibility up with pathogenicity.
- ★ **Global surveillance of avian, swine and human influenza, and seasonal flu control measure-based strategy by international collaboration under the concept of “One World, One Health”**





Organisation
Mondiale
de la Santé
Animale

World
Organisation
for Animal
Health

Organización
Mundial
de Sanidad
Animal

Surveillance and Monitoring of Influenza virus in Poultry and Wild birds

*The 5th OIE Regional Expert Group Meeting for Implementation of
the Programme on Surveillance of Wild and Domestic birds along
Migratory Flyways*

*Tokyo, Japan
December 13-14, 2012*

Gounalan Pavade
Scientific and Technical Department



Surveillance: The systematic ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information to those who need to know so that action can be taken

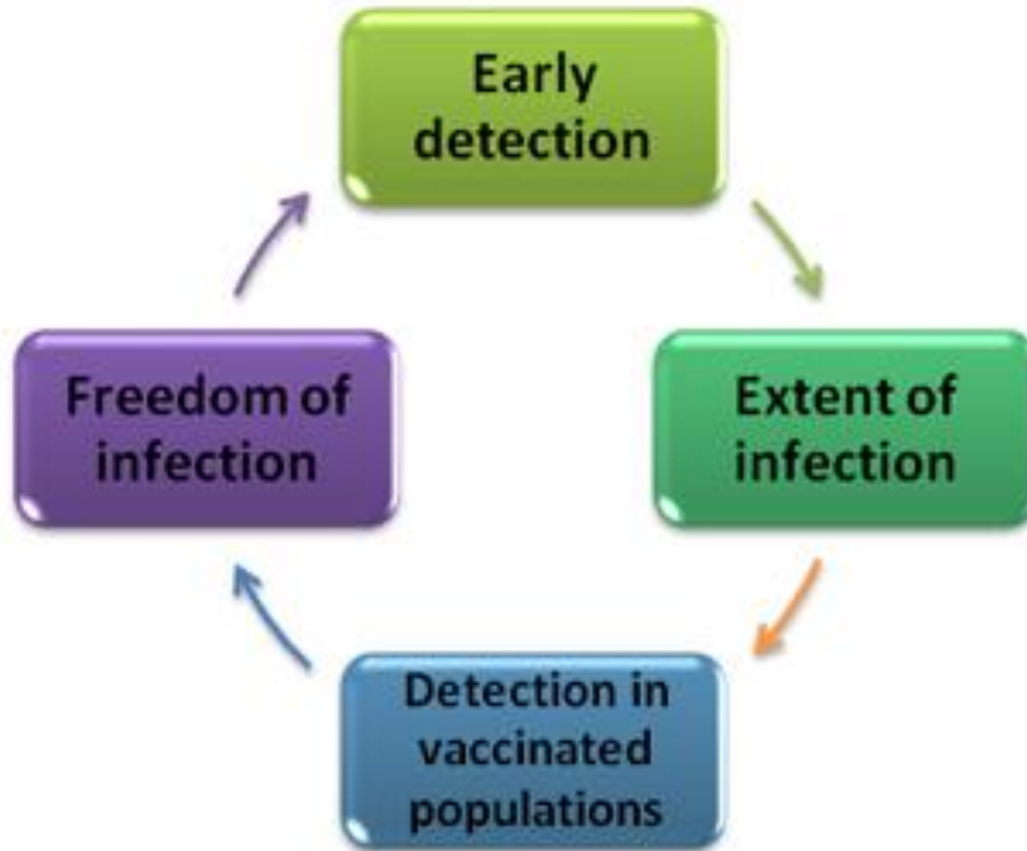
Monitoring: The intermittent performance and analysis of routine measurements and observations, aimed at detecting changes in the environment or health status of a population

Surveillance is aimed at demonstrating the **absence of disease** or infection, determining the presence or **distribution of disease** or infection or detecting as early as possible **exotic or emerging diseases**

Animal health surveillance is also a tool to monitor **disease trends**, to facilitate the **control of disease** or infection, to provide data for use in **risk analysis**, for animal or public **health purposes**, and to substantiate the rationale for **sanitary measures**

A surveillance plan should be ready to be applied before, during and after an outbreak

Surveillance objectives



OIE resolution

All OIE members signed up to an OIE resolution ‘sharing of avian influenza viral material and information in support of global avian influenza and control’

Adopted by the International Committee of the OIE on 29 May 2008 at 76th OIE General Session

Reporting animal influenzas as OIE listed diseases

Legal obligation to report:

Poultry – subtypes H5 and H7 and highly pathogenic viruses (based on IVPI or HA cleavage site)

Wild birds – HPAI (LPAI in annual reports)

Horses – equine influenza

Influenza viruses in any species that qualify as a new and emerging disease e.g. pandemic H1N1 2009

Avian influenza surveillance

Terrestrial code: Articles 10.4.27 to 10.4.33 define the principles and provide a guide on the surveillance

Surveillance for NAI should be in the form of a continuing programme designed to establish free from infection

The impact and epidemiology of NAI differ widely in different regions of the world

Impossible to provide specific recommendations for all situations

Member Countries to provide scientific data that explains the epidemiology of NAI in their region and prove absence at an acceptable level of confidence

General conditions and methods of AI surveillance

1. A surveillance system in accordance with Chapter 1.1. under the responsibility of Veterinary Authority. In particular
 - a. a formal and ongoing system for detecting NAI infection should be in place
 - b. a procedure should be in place for the rapid collection and transport of samples from suspect cases of NAI to a laboratory for NAI diagnosis as described in OIE Terrestrial manual
 - c. a system for recording, managing and analysing diagnostic and surveillance data should be in place

General conditions and methods of AI surveillance

2. The NAI surveillance programme should:

- a. include an **early warning system** throughout the production, marketing and processing chain for reporting suspicious cases. Samples should be taken and submitted to a **laboratory for appropriate tests**. Sampling kits and other equipments should be made available for those responsible for surveillance
- b. implement, when relevant, regular and frequent clinical inspection, serological and virological testing of high-risk groups of animals (adjacent to NAI infected area; live bird markets etc)

Surveillance strategies

- Should cover all the susceptible poultry species
- Active and Passive surveillance
- Molecular, virological, serological and clinical methods
- Random and targeted approaches
- Principles involved in surveillance are technically well defined
- Design of the surveillance programme should avoid producing unreliable results, or costly and logistically complicated
- Requires input from competent professionals and field experienced personnels

Clinical surveillance

- Aims at detection of clinical signs of NAI at flock level
- Signs vary depending upon pathogenicity
- HPAI likely show mass mortality and morbidity in poultry
- LPAI may show milder signs
- Clinical surveillance and laboratory testing complements each other



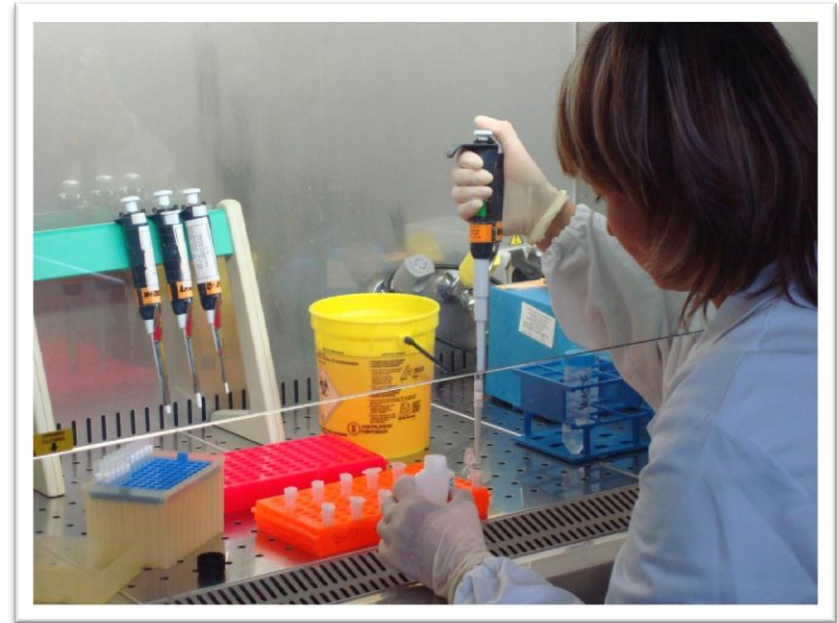
Virological surveillance

- Using OIE Terrestrial Manual
- To monitor at risk populations
- To confirm clinically suspect cases
- To follow up positive serological cases
- To test normal daily mortality
- Virus isolation determine NAI
- Genetic sequencing and analyses



Serological surveillance

- Detection of Abs against NAIV
- Natural infection with NAIV
- Vaccination against NAI
- Maternal Abs derived from a vaccinated or infected parent flock
- False positive results due to lack of specificity of the test



Notifiable avian influenza (NAI)

- NAI is defined as an infection of poultry caused by any influenza A virus of the H5 or H7 subtypes or by any AI virus with an IVPI greater than 1.2
- NAI viruses divided into HPNAI and LPNAI
- HPNAI include H5 or H7 subtypes; IVPI>1.2
- LPNAI include influenza A viruses of H5 and H7 subtype that are not HPNAI
- HPNAI and LPNAI in poultry should be notified to OIE in accordance with the Terrestrial Code
- NAI free status means an establishment in which the poultry have shown no evidence of NAI infection based on surveillance as defined in the Terrestrial Code

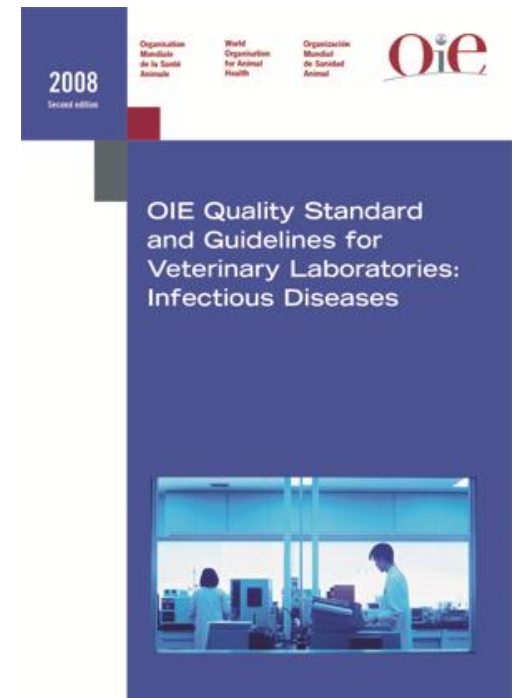
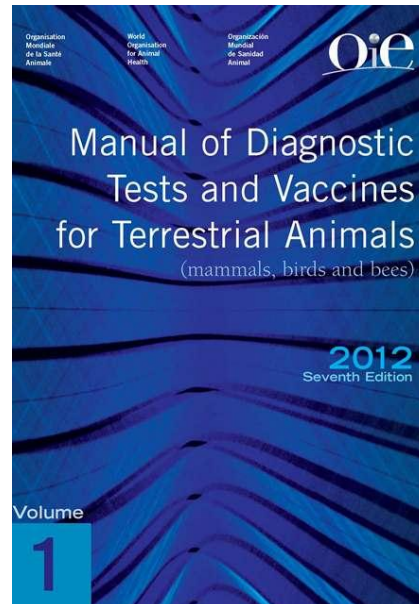
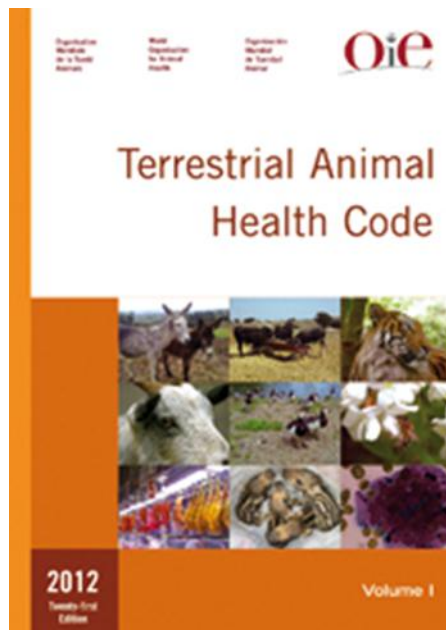
Determination of the NAI status of a Country/Zone/Compartment

- NAI is notifiable in the whole country
- An on-going NAI awareness programme is in place
- Suspect cases are subjected to investigations
- Appropriate surveillance is in place (Articles 10.4.27 to 10.4.33)
- Consideration of all epidemiological factors for NAI occurrence and their historical perspective

NAI and HPNAI free status

- A country, zone or compartment may be considered free from NAI when it has been shown that neither HPNAI nor LPNAI infection in poultry has been present for the past 12 months
- Likewise only for HPNAI when it has been shown that HPNAI is absent for the past 12 months, although LPNAI status may be unknown
- If an infection has occurred NAI/HPNAI free status can be regained three months after a stamping out policy and surveillance during that three months

OIE Codes and manual



Avian influenza chapters and documents

OIE Code

- Volume 2, Chapter 10.4: Avian Influenza (NAI, HPNAI, LPNAI, importation, surveillance strategies, free status)

OIE Manual

- Chapter 2.3.4. Avian influenza (Diagnostic techniques and vaccine requirements)

- OIE – FAO network of expertise on animal influenza (OFFLU)
- OFFLU applied epidemiology group
- OFFLU experts of poultry, wild birds, swine and equine contributed
- Document provide an overview of the objectives and various options for surveillance in different animal species



OFFLU Strategy document for surveillance and monitoring of influenzas in animals



Background	3
MOD 1 - Surveillance for influenza virus in pigs.....	5
MOD 2 - Surveillance for influenza virus in domestic poultry.....	10
MOD 3 - Surveillance for avian influenza virus in wild birds.....	18
MOD 4 - Surveillance for influenza virus in horses	22
MOD 5 - New and emerging influenza viruses – Pandemic H1N1 2009 (pH1N1)	27

Objectives of animal influenza surveillance

- Early detection of mutations or reassortments that may alter risks for animal or public health, and inform preparedness and control strategies
- To gather information to develop a better understanding of influenza viral characteristics, epidemiology, and risk factors, including virus reservoirs
- To assess the genetic basis of important viral characteristics such as antiviral resistance, transmissibility, and pathogenicity in different species
- To monitor the performance of diagnostic tools that aim to detect new influenza viruses

Specific objectives of surveillance

- Early detection of animal disease, allowing rapid containment and/or control in affected population
- To gather antigenic information and biological material for early preparation of animal vaccines; to contribute to preparing vaccines against potential emerging human pandemic viruses
- To assess animal population immune response when vaccination is being implemented
- To detect infected animals in vaccinated populations

Surveillance for influenza virus in domestic poultry

Animal health

- Early detection of NAI followed by reporting to the international community through OIE
- Early detection of NAI – to facilitate rapid and effective control
- Detection of subclinical infections with NAI in poultry populations
- To demonstrate disease freedom from a country, zone or compartment to self declare freedom from NAI viruses
- To monitor the effectiveness of vaccination campaigns

Surveillance for influenza virus in domestic poultry

Surveillance of the influenza virus genome in poultry include:

- Monitoring for genetic and antigenic evolution of AI
- Selection of isolates for the development of diagnostic reagent and vaccine seed stock products
- Documentation of endemic and emerging influenza virus ecology in poultry
- Detection of new and emerging influenza viruses in the poultry populations
- Describe spatial patterns of molecular subtypes to inform understanding of regional transmission patterns

Surveillance for influenza virus in domestic poultry

Public health

- Provide information to inform pandemic preparedness
- Early detection of strains with zoonotic risk followed by control in the poultry source
- Timely identification of new and emerging influenza viruses in poultry for animal and human population risk assessment
- Assessment of viral mutations or reassortment events in poultry that may signal a public health concern
- Monitoring of important molecular markers for resistance to antiviral drugs or for increased pathogenicity
- Facilitate procurement of reagent and vaccine seed stock products for pandemic preparedness

Surveillance for AIV in wild birds

- Wild birds play important roles in the circulation of AI viruses
- Reservoirs particularly to LPAI
- To assess the genetic basis of important viral characteristics such as antiviral resistance, transmissibility, and pathogenicity in different species
- Risk of HPAIV introduction through migratory birds is high



Objectives for surveillance of AIV in wild birds

- To detect virus strains highly pathogenic to wild and domestic animals, and to people
- To detect virus strains of low pathogenicity of any subtype that may pose risks to human and animal health
- To detect infection of wild birds with virus subtypes derived from poultry
- To gain a more comprehensive understanding of the epidemiology and ecology of avian influenza viruses

Surveillance approaches in wild birds

General Surveillance (Passive surveillance)

- As part of general disease surveillance program
- Mortality and morbidity cases under investigation
- Done on wild birds found dead
- Effective form of surveillance to detect highly pathogenic strains

Surveillance approaches in wild birds

Targeted Surveillance (Active or risk-based surveillance)

- Sampling focused on criteria like species, sex, age, geographic location and time of year
- More efficient method
- Results in collection of influenza viruses for characterisation in terms of genetic and pathogenic properties
- Assess the infection status of specific wild bird populations
- Efficient way to focus surveillance on birds species which use aquatic habitats
- Healthy live wild birds targeted, but survey could include sick/dead birds

Surveillance approaches

Sampling materials

- Oro-pharyngeal fluid
- Cloacal content
- Blood samples

Attention:

- Possession of necessary legal permits
- Training and competency required
- Ability to identify species, sex, age of bird sampled

Laboratory testing:

- Antigen testing (presence of virus using PCR or virus isolation)
- Antibody testing (testing of sera using blocking ELISA and virus neutralisation procedures)
- Using OIE manual of diagnostic tests

Reporting and Response

- OIE should be notified of any infection with HPAI H5 or H7 virus subtypes
- Additional findings from surveillance should be shared with wildlife, animal and public health authorities
- Results of LPAI information in wild birds should be included in the annual report through WAHIS-wild reporting system of OIE
- Occurrence of AIV in wild birds (including H5/H7) does not justify the imposition of trade restrictions
- When wild bird mortality noticed, local poultry farmers should be advised to implement biosecurity measures

WORLD ANIMAL HEALTH INFORMATION SYSTEM (WAHIS) AND ITS INTERFACE WAHID.



World Animal Health Information System (WAHIS)

OIE Home Page

OIE Secure Access

Veterinary Services

Welcome to the

Access to this system is restricted to report animal disease administrators and OIE Delegates.

The secure access is available to:

- The World Animal Health Delegates or the OIE Delegates
- The OIE Delegates

User Feedback Email the support team if you have a comment on the World Animal Health Information System (WAHIS). Copyright (c) World Organisation for Animal Health (OIE) 2012. Release date: August 2012.

WAHID Interface

Animal Health Information
Information zoosanitaire
Información Zoonositaria

OIE Home Page
[English](#) | [Français](#) | [Español](#)


[WAHID home page](#) | [Country information](#) | [Disease information](#) | [Disease control measures](#) | [Countries sanitary situation comparison](#) | [Data between 1996 and 2004](#)

World Animal Health Information Database (WAHID) Interface

The WAHID Interface provides access to all data held within OIE's new World Animal Health Information System (WAHIS). It replaces and significantly extends the former web interface named Handistatus II System.


A comprehensive range of information is available from

- immediate notifications and follow-up reports submitted by Country / Territory Members notifying exceptional epidemiological events current in their territory
- six-monthly reports stating the health status of OIE-listed diseases in each Country / Territory.
- annual reports providing health information and information on the veterinary staff, laboratories and vaccines, etc. ...




+ Info by Country/Territory

Information about a specified country, including exceptional disease event reports, animal health status, veterinary services, population, vaccination, etc




+ Disease information

Information about a particular disease, including global disease distribution maps, outbreaks maps, lists of countries indicating their sanitary statuses, etc.




+ Control measures

Lists and maps of the prophylactic and control measures used by countries and by disease.



+ Sanitary information comparison between Countries/Territories

Compare the animal health situation of two countries for trade purposes. This identifies which diseases may pose a hazard for countries importing animals or animal products from another country

 World Animal Health Information Database (WAHID) - Version: 2
Copyright © World Organisation for Animal Health (OIE) 2012
Release date: August 2012

AI disease information

OIE World Animal Health Information System - Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils ?

http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/diseasehome

Les plus visités Débuter avec Firefox À la une

Home: OIE - World Organisation for... OIE World Animal Health Informa... (Sans titre)

WAHID Interface Animal Health Information
Information zoosanitaire
Información Zoonositaria

OIE Home Page
English | Français | Español

WAHID home page Country information **Disease information** Disease control measures Countries sanitary situation comparison Data between 1996 and 2004

> Info by Country/Territory Choose by: Single country Region: Entire World Country:

Disease information

This section provides information about specific diseases. Use the select box above to select the disease of interest, then click on any of the menu options on the left to view different types of information about that disease.

In OIE keeps an archive of all immediate notifications and weekly reports in PDF format available for download. This section gives you access to: immediate notifications; weekly reports; and OIE special reports containing information not normally contained within the other types of reports.

Report + Immediate notifications and Follow-ups

This report provides a list of all reported disease events, and allows you to progressively find more detail about a particular event - lists of all outbreaks associated with the event, and detailed information about a particular outbreak. It also provides a link to the full immediate notification or follow-up reports for that event.

Weekly Disease Information

The weekly reports provide a summary of all immediate notifications and follow-up reports for any unusual disease events submitted by reporting Member Countries, by week. This is a good place to check what has been happening around the world.

Report archive

OIE keeps an archive of all immediate notifications and weekly reports in PDF format available for download. This section gives you access to: immediate notifications; weekly reports; and OIE special reports containing information not normally contained within the other types of reports.

Disease outbreak maps

These maps indicate the location of disease outbreaks reported in immediate notifications or follow-up reports. As with the previous maps, you can zoom in to examine an area of outbreaks in more detail. You can also all the available details about a given outbreak by clicking on the map.

Disease distribution maps

Dynamic maps showing the presence or absence of disease at the national and sub-national level. Information is based on six-monthly reports. These maps are interactive so you can see the global situation, then zoom in on a specific region, country or locality.

Detailed country (ies) disease incidence

This page displays the detailed data on disease outbreaks (by month and first administrative division, when this information is provided by the country). It provides a detailed insight into the disease situation within the country. For countries that have not reported the presence of disease during the six-month period (s) or for which the disease has never been reported NIL incidence will be displayed.

Lists of countries by sanitary situation

This page lists all countries, having notified to the OIE, according to the animal health situation for a specified disease. This information is based on their most recent six-monthly report. This is where to find, for instance, a quick list of countries that are free from a specified disease (according to their most recent disease situation report).

Disease timelines

The disease situation is constantly changing. This graphical report shows, for a specified disease, how the status of each OIE reporting country has changed. Colour coded blocks indicate disease status in six-month intervals over multiple years.

General Disease Information

This page provides access to a range of background information about OIE-listed diseases, including access to information not based on country reports. This includes the OIE disease cards, as well as links to the various disease-specific chapters of the Codes and Manuals.

http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/general

FR

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25/09/2012

GENERAL OBJECTIVES OF THE SYSTEM



OIE's early warning system

International alert messages → Rapid response



OIE's monitoring system

To monitor OIE Listed diseases (presence or absence) over time

TYPES OF REPORTS

OIE's early warning system

International alert messages

Rapid response

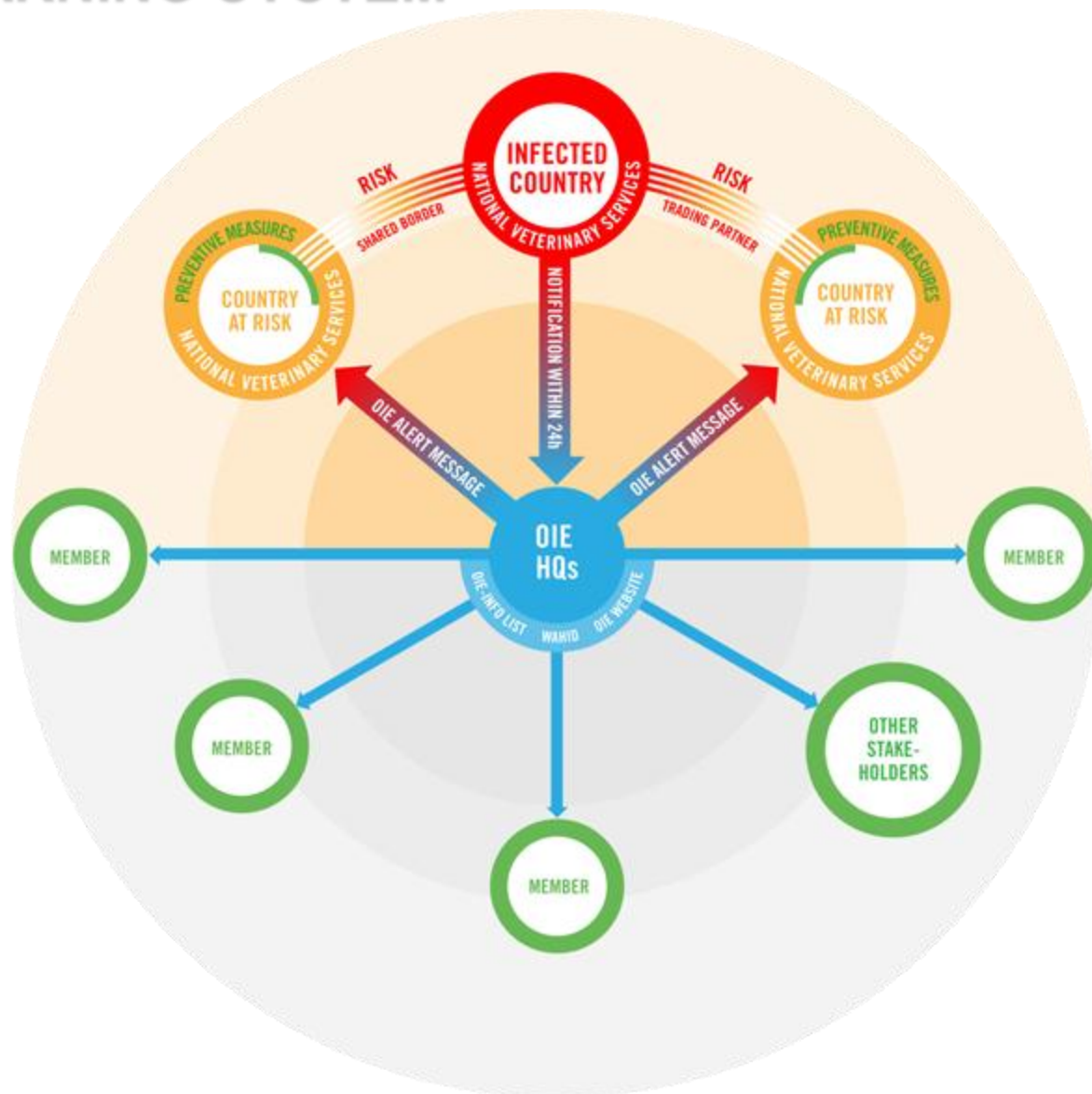
- **Immediate notification**
of disease, infection or unusual epidemiological events
- **Weekly reports**
Follow-ups to the immediate notification
- **Final report**
 - if the outbreaks have ended
 - if the situation becomes endemic

OIE's monitoring system

To monitor OIE Listed diseases
(presence or absence) over time

- **Six-monthly report**
- **Annual report**

EARLY WARNING SYSTEM



OIE'S MONITORING SYSTEM

Six-monthly report

on the absence or presence of OIE listed diseases



Part 1: Qualitative information

- disease occurrence;
- control, prophylaxis and prevention measures;
- indication of the type of template to use to notify diseases or infections/infestations present in the country (=> part 2).

OIE'S MONITORING SYSTEM

Six-monthly report

on the absence or presence of OIE listed diseases



Part 2: Quantitative information

- **Template 1:** By first administrative division and by month;
- **Template 2:** For the whole country by month;
- **Template 3:** By first administrative division for the six months period;
- **Template 4:** For the whole country for the six-months period.

OIE'S MONITORING SYSTEM



Annual report

For OIE-listed diseases: the sum of information of the two six-monthly reports of a given year

and:

- Non OIE-listed diseases;
- Human resources in Veterinary Services;
- National Reference Laboratories;
- Livestock census (by first administrative division);
- Zoonoses (human cases and deaths);
- Production of vaccines.

WILDLIFE INFORMATION COLLECTION AND DISPLAY

Annual wildlife report: *WAHIS-Wild*

OIE listed diseases
(such as HPAI in domestic
and wild animals)

Non OIE listed wildlife diseases
(such as LPAI in wild animals)

WAHID Interface





> Info by Country/Territory

Choose by:

Region:

Country:

> Choose Disease:

☒ Non OIE-listed disease
affecting wild:

☐ Reptiles:

☐ Non-infectious diseases:

OK

Start Year :

End Year :

OK

Disease timelines

Key to colours

There is no information available on this disease



Never reported



Disease not reported during this period



Disease suspected but not confirmed



Confirmed infection but no clinical disease



Disease presence



Disease limited to one or more zones



Infection/Infestation in one or more zones



Disease suspected but not confirmed limited to one or more zones

N

Note

Thank you for your attention



Organisation mondiale
de la santé animale

World Organisation
for Animal Health

Organización Mundial
de Sanidad Animal

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