NATIONAL STRATEGIC PLAN FOR AVIAN INFLUENZA CONTROL AND PANDEMIC INFLUENZA PREPAREDNESS 2006-2008

REPUBLIC OF INDONESIA

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PREFACE

The Avian Influenza Outbreak (AI) at this time has become a global issue. Serious measures must soon be taken so that the AI outbreak does not mutate and become a flu that spreads from human to human, and becoming Human pandemic influenza (HPAI). The losses that would occur in the event that the avian influenza virus mutates into a virus that spreads from human to human would be enormous, both economic losses from the great number of poultry that must be destroyed as well as social costs from the large number of people who would fall ill and even die in Indonesia.

As a member of the international community, Indonesia is also responsible for making a National Strategic Plan for handling Avian Influenza. The National Strategic Plan is formed comprehensively, from the aspect of animal health care as well as human healthcare. It is for that purpose that the National Strategic Plan for Controlling Avian Influenza and Preparations for Facing Human pandemic influenza is formed.

This National Strategic Plan for Controlling Avian Influenza and Preparations for Facing Human pandemic influenza is formed is a national guide for handling avian influenza in Indonesia for all stakeholders as has been identified by this National Strategic Plan. Furthermore, on a regional and global level, this strategic plan is part of the regional and global strategy. Therefore, Indonesia's strategic plan also is part of the global solution to the avian influenza problem.

Formulation of the National Strategic Plan for Controlling Avian Influenza and Preparations for Facing Human pandemic influenza was done in three stages. The first stage was joint formulation by the Department of Health, the Department of Agriculture and coordinated by the State Ministry for National Development Planning/Bappenas. The second stage was perfecting the plan by involving related authorities, associations, professional bodies and the private sector as well as verification to fulfill international standards from international bodies competent in the field of animal and human health. Therefore all components of society are involved in the formulation as well as the application of this strategic plan, so that the special goal in controlling avian influenza can be achieved and can prevent the emergence of human pandemic influenza which we wish to avoid. In the third stage, all related authorities will formulate more concrete operational plans complete with technical guidelines which refer to this National Strategic Plan.

Remembering that avian influenza develops dynamically and that the situation is always changing, therefore this national strategic plan is a dynamic document and will continually be updated according to existing conditions.

Jakarta, Januari 2006

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PART I. GENERAL POLICIES

1. Background

There are three types of influenza virus, type A, B and C. Even though all three can infect humans, the type-A virus generally attacks low-level types of animals and birds. The type-A influenza virus consists of 16 subtypes, all of which can attack birds. A highly pathogenic avian influenza (HPAI) is caused by type-A influenza virus subtypes H5 and H7.

The avian influenza or bird flu (caused by subtype H5N1 virus) that is currently occurring was first detected in poultry in South Korea in December 2003. This virus developed in stages, first attacking pet birds, wild birds and migratory birds, then attacking other animals - such as pigs, cats and tigers - as well as. It has also spread to other countries. Currently this virus has attacked birds in 12 countries, including Indonesia. Until now, 150 million chickens are recorded as having died from or been destroyed after being infected by the bird flu. The bird flu virus has continued to be detected in 6 countries, which are Vietnam, Indonesia, Thailand, China, Cambodia and Laos.

Actually the AI virus does not easily spread to humans. But this can change because of mutation or genetic re-assortment (mixing of influenza genes in animals and humans) so that in its development AI not only attacks birds, but also attacks humans as well (zoonotic). By August 25 2005, 112 confirmed cases in humans had been recorded worldwide, with 57 cases ending in death.

At this time, the AI outbreak attacking animals in Indonesia is very serious, having spread to 23 provinces, covering 151 districts/cities. The increasingly wide spread of AI is caused by the uncontrolled movement of infected birds, poultry products and wastes, labor and transportation from infected areas to uninfected areas, as well as low animal heath institution capacity and a lack of trained animal healthcare workers.

The emergence of deadly AI in poultry on poultry farms was first reported in August 2003 in several districts in Central Java. The test results in animal health diagnostic laboratories were that the deadly Newcastle Disease virus caused it. Until the months of October - November 2003, the number of cases rose with high mortality and spreading to other locations that was then discovered to be bird flu. The disease then attacked breeding farms as well as egg farms and broiler farms. The other types of poultry attacked are village chickens,

ducks and quails. The areas infected by bird flu in 2003 were 9 provinces, covering 51 districts with poultry deaths numbering 4.7 million.

By December 2004, the cumulative number of cases of AI related poultry deaths exceeded 8 million. The number of provinces with cases of AI infections increased to 16 provinces, covering 100 districts/cities. The greatest number of AI related poultry deaths occurred in the provinces of Central Java, West Java, East Java, and Lampung, each of which had over 1 million poultry deaths.

By November 2005 the area of viral spread had reached 23 provinces, covering 151 districts/cities. The number of dead poultry caused by AI from August 2003 to November 2005 had reached 10.45 million birds, most of them in non-commercial farms.

We must be cautious of the process by which AI infects humans, because it is deadly and has the potential to spread among humans. The first human case in Indonesia was discovered in June 2005 in the District of Tangerang. By December 12 2005 14 confirmed cases of bird flu in humans had been recorded, 9 of them ending in death. From the analysis of bird flu cases in Indonesia there appears to be a tendency toward decreasing pathogenesis and an increasing number of cases.

One thing that worries the world at this time is the emergence of a new influenza virus subtype in humans that comes from an adaptive mutation or genetic reassortment, that is the mixing of influenza viruses in animals and humans. This new viral subtype would be able to quickly and easily spread from human to human.

In relation to that, the problem of bird flu needs integrated handling from the standpoint of managing animal and human healthcare systems by the principles of speed, accuracy, systematic and sustainable. Some specific reasons for the importance of comprehensive handling are the impact on:

1. Livestock industry that involves a large population of animals. Indonesia's poultry population in 2004 was approximately 1,3 billion birds, which consisted of 271,8 million village chickens (ayam buras), 30,6 million layers, 895 million broiler chickens and 35,5 ducks. Of the total population almost 62% is in Java, 18% in Sumatra, 7% in Kalimantan, 6% in Sulawesi, the remaining 7% is in Bali, Nusa Tenggara and other areas.
2. Livestock industry that involves many businessmen and farmers, directly and indirectly both by backwards and forwards linkages. The national poultry industry at

this time includes 15 breeding farms that produce Grand Parent Stock, 95 breeding farms producing parent stock, 2,289 commercial poultry companies that hire 25 thousand labors. The total number of farm households directly involved in poultry raising businesses is 550 households. Total investment in the poultry industry is estimated to reach US$ 3-3.5 billion; the cash flow from these poultry businesses reaches US$ 30 million per year.

3. The impact on food availability and safety. From the poultry industry, Indonesia is capable of producing 1,2 billion tons of poultry meat each year or contributing 56% of total meat supply. Meanwhile the production of eggs reaches 1.164 billion tons, which can fulfill all domestic egg consumption. Because of the occurrence of a bird flu outbreak and the decline of poultry production and consumption, it is estimated that there will be a decline in the poultry population and the domestic production of meat and eggs.
4. The potential for infection in humans and even the development into human pandemic influenza. The effects of the spread of the bird flu outbreak have impacted humans. Right now in Indonesia there have already occurred cases of bird flu infections from animals to humans, which have already claimed many victims. Human victims of bird flu continue to increase and it is feared that it will develop to the stage of infection from human to human (pandemic).

2. Problems and Obstacles.

Problems and obstacles faced by Indonesia in the effort to control bird flu and prepare for human pandemic influenza are, among other things:

1. Lack of inter-sector coordination in planning and controlling bird flu and preparedness for human pandemic influenza.
2. Lack of early warning capacity and nonexistence of integrated network of surveillance systems on animals and humans.
3. Limited ability to provide financial compensation to farmers in the event of selective extermination (depopulation) or total extermination (stamping out).
4. Limited vaccines and vaccination coverage in poultry.
5. Limited stocks of medicine and non-existence of human vaccine.

6. Lack of understanding and awareness of AI and HPI and its potential risks in all layers of society.
7. Lack of supporting resources (human resources, costs, technology and supporting facilities).
8. Limited research and development capabilities.
9. The distortion of information received by the community.
10. Lack of animal and animal product traffic surveillance.
11. Uncertainty as to when human pandemic influenza might occur.

3. Common Goals

Referring to the cases outlined above, the integrated goal of national bird flu control/management are as follows:

1. Preventing the bird flu from developing into the next stage.

   Preventing the development of bird flu, which must soon be conducted is, controlling bird flu at source so that bird flu cases in poultry do not develop into human pandemic influenza, which can spread from human to human. The development of bird flu into a common flu in humans is extremely dangerous because it can affect many human victims. Cases of human pandemic influenza that occurred in 1918 (Spanish flu), then in 1957 (Asian flu) and 1968 (Hong Kong flu) took the lives of many victims. According to WHO estimates, if the same case occurs now, it could cause the deaths of 2-7 million people and the UN estimates that it could cause the deaths of 5-150 million people. Because of that an integrated national strategy on controlling bird flu is extremely important.

2. Best possible care for human victims of bird flu and animals

   Human patients/victims of bird flu and animals need to be cared for as well as possible - correctly and proportionally - as they cannot be handled separately from each other. That means that caring for human victims is prioritized to guarantee the continuance of human life. Nevertheless simultaneous care of animal cases must also be handled because animals are the source of infections in humans.

3. Minimizing damage caused by the development of bird flu

   Handling bird flu means saving people and their economic activities in order to ensure the continuance of their lives. Because of that, handling bird flu must pay attention to the sustainability of farmers' lives and farming, both upstream and downstream businesses. What is even more important is that poultry products free of bird flu are an element that guarantees food security, which is not only important for domestic food safety but also for the safety of exported animal products. With the above widespread socio-economic impact of bird flu, efforts must be done to minimize damages in various fields.

4. Managing sustainable bird flu control.

   Controlling bird flu must be sustainable as one source of bird flu infections that is difficult to control are wild birds that freely migrate and are capable of spreading the virus between countries. In relation to that other than quick steps to handle the effects of bird flu when they occur, what is needed even more is the strengthening of the human and animal healthcare systems. By strengthening both systems, then the ability to control bird flu sources, prevent infections in humans and care for victims can be continuous. Sustainable control of bird flu hopefully can repress the emergence of cases or outbreaks in the future.

5. Effective national preparedness for human pandemic influenza

   Preparedness for human pandemic influenza is achieved by facilitating and making effective a national response which is coordinated among all administrative levels through prevention and control activities to reduce morbidity, mortality and social-economic impacts.

6. Developing local, national and international networks on AI control and pandemic Influenza Preparedness

4. Basic Principles

Based on the above common goals, then the policy of the national strategic plan for avian influenza control and preparedness for human pandemic influenza is formulated and conducted according to five basic principles, which are:

1. Prioritizing Human Safety.

   The principle of prioritizing human safety is followed as sustaining human life is most important.

2. Considering economic factors.

   Economic factors need to be considered given the socio-economic impact that arises, the various policy choices and steps available and the limited resources available.

3. Emphasizing integrated efforts of all components: government, private sector, community, professional organizations, and international organizations.

   This strategic plan will in the end be applied at the community level, farming and farm product companies as well as human healthcare providers, which are mostly conducted by the private sector. For that, community and private awareness and active participation in the implementation will be the key. In the era of decentralization, the role of local governments as the main actor of this strategic plan is vital. Local government transparency on avian influenza events in their areas is greatly needed and combined efforts of all local governments at all level is a must. The role of professional organizations and international organizations in supporting community and private involvement is also large.

4. Compliance with National and International agreements and standards.

   The strategy chosen was formulated in reference to international standards set by international organizations such as the WHO in human healthcare services, and the FAO and OiE in animal healthcare services.

5. Preparedness and alertness in anticipating human pandemic influenza must be maintained and sustainable and this document will be treated as a living document which at any time can be adjusted according to need.

5. Pandemic Phases

According to the WHO, there are six phases to a global human pandemic influenza based on a number of epidemiological factors in humans before a pandemic is declared. Those six phases are divided into three large time groups: inter-pandemic, pandemic alert, and pandemic.

Inter-pandemic Period

Phase 1: No new influenza virus subtypes are detected in humans. An influenza virus subtype that can cause an infection in humans may exist in animals. If it exists in humans the risk of infection or illness in humans is low. In Indonesia this phase occurred before July 2003.

Phase 2: No new influenza virus subtypes are detected in humans. But, an influenza virus subtype circulating in animals has the risk of infecting humans. In Indonesia this phase began in August 2003 when the virus subtype H5N1 was detected in poultry.

Pandemic alert Period

Phase 3: Infection in humans with a new subtype, but no infection from humans to humans, or in very rare events in close contact. In Indonesia this phase began in July 2005 when infection by subtype H5N1 was confirmed in humans.

Phase 4: Clusters with limited human to human infection but much localized spread, signaling that the virus is not adapting well to humans. In Indonesia as of September 2005, this phase hadn't begun yet.

Phase 5: Larger clusters, but human to human infections are still localized, signaling that the virus has adapted better to humans , but may not fully be able to spread easily (substantive pandemic risk).

Pandemic Period

Phase 6: Pandemic period: increasing and continuity infections in the general public.

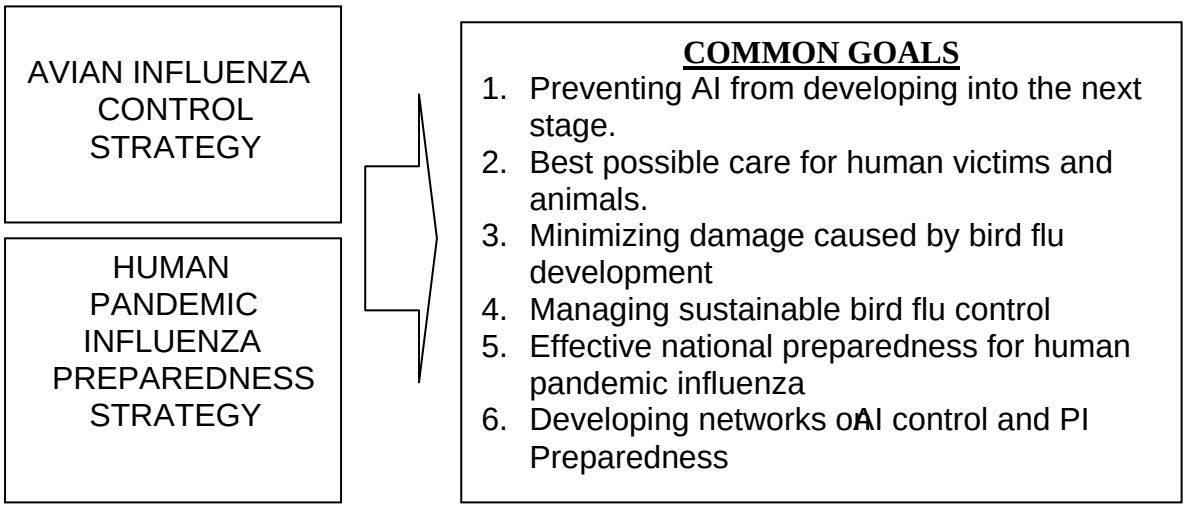
Post-pandemic Period

Return to inter-pandemic period.

6. Strategic Plan Framework

Handling viruses at source is the key to success in controlling, and preventing the emergence of various animal diseases, especially those that can infect humans (zoonosis). Therefore, the strategy that needs to be undertaken is:

1. Avian Influenza Control;
2. Self-preparedness and alertness for possible human pandemic influenza.



Picture 1. Strategic Plan Framework

Controlling bird flu needs to be conducted in accordance with international standards. Compliance to these international regulations/standards is very important so that the impact on animal health, possible infections in humans and its spreading to unaffected areas and countries can be avoided (externalities/trans-boundary). Therefore, this national strategic plan shows the responsibility of the people and nation of Indonesia as a member of Asia and the international world. In accordance to this, steps to control bird flu is a concerted effort that needs to be integrally implemented as a one country program, as well as regional, and international program for controlling avian influenza.

PART II

NATIONAL STRATEGY FOR CONTROLLING AVIAN INFLUENZA

1. Goals

The common goals of the national strategy for controlling avian influenza are:

1. Maintaining bird flu-free areas and controlling bird flu in infected areas
2. Lowering morbidity and mortality from bird flu
3. Lowering the socio-economic impact of bird flu
4. Increasing Indonesia's contribution in solving the bird flu problem globally

2. Target

The targets to be achieved in controlling bird flu are:

1. Controlling bird flu in animals:
   a. Maintaining bird flu-free areas
   b. Eliminating bird flu from sector 1 and sector 2 in 2008
   c. Reducing bird flu cases in sector 3 and sector 4 in 2008
   d. Preventing the spread of bird flu from poultry to other domesticated animals in 2008
2. Preventing and controlling extraordinary events/outbreaks in humans:
   a. Preventing the spread of bird flu from animals to humans in 2008
   b. Preparedness for human pandemic influenza by the end of 2008

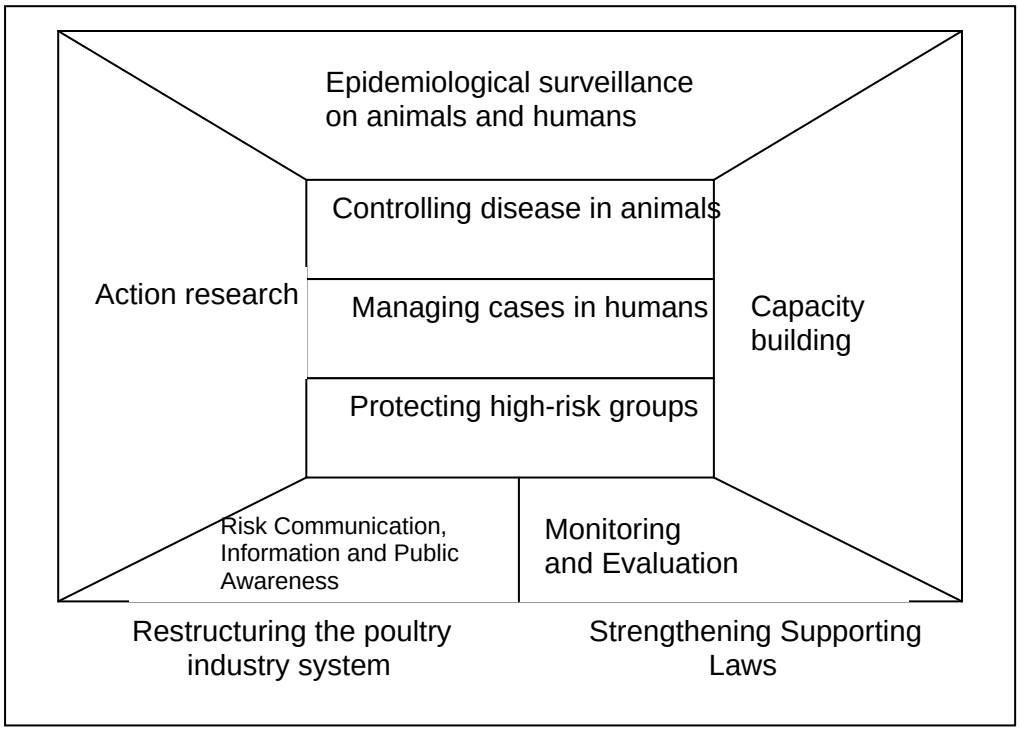
3. Strategy

1. Highly Pathogenic Avian Influenza (HPAI) Control in Animals
2. Management of Human Cases of AI
3. Protection of High-Risk Groups
4. Epidemiological Surveillance on Animals and Humans
5. Restructuring the Poultry Industry System
6. Risk Communication, Information and Public Awareness
7. Strengthening Supporting Laws

8. Capacity Building
9. Action Research
10. Monitoring and Evaluation

4. Interrelationship among Strategies

Bird flu control strategy will be focused on the effort to control disease in animals, managing cases in humans and protecting high-risk groups. This focused strategy is supported by surveillance and epidemiology in animals and humans, increasing capacity, action research, communication information and education, as well as monitoring and evaluation. The continuation and effectiveness of this strategy needs to be supported by the strengthening of laws and the restructuring of the poultry industry system.



Picture 2. Interrelationship between Avian Influenza control strategies

5. Details of Strategy

5.1. Strategy 1 : Highly Pathogenic Avian Influenza (HPAI) Control in Animals

Goal:

Decreasing cases of animal death and preventing the spread of AI to a wider area

Target:

1. Maintaining AI-free areas
2. Freeing AI in sector 1 and 2 of the poultry industry by the end of 2008
3. Reducing AI in sector 3 and 4 of the poultry industry by the end of 2008
4. Preventing the spread of AI to animals other than birds

Main Activities :

1. Stamping out in newly infected areas
2. Increasing bio-security
3. Increasing quarantine control of Highly Pathogenic Avian Influenza
4. (HPAI) medium traffic and tracing back
5. Provision of vaccine and increasing vaccination coverage of animals, especially at sectors 3 and 4

5.2. Strategy 2: Management of Human Cases of AI

Goals:

1. Prompt and accuracy of disease diagnosis
2. Managing cases according to standards

Target:

1. Detection of AI within 3 days at the latest in 9 regional laboratories and 1 national reference laboratory
2. All cases are handled in accordance with service standards
3. Decreasing death from bird flu

Main Activities

1. Provision of antiviral medicine
2. Reference of cases
3. Provision of facilities and infrastructure for case handling in hospitals

4. Formulating Standard Operating Procedures (SOP) for managing cases
5. Training healthcare workers

5.3. Strategy 3: Protection of High-Risk Groups

Goal:
Protecting high-risk groups from AI infection

Target:
The protection of high-risk groups from AI infection, they are:

1. Animal farmers and farm workers, and poultry merchants
2. Animal health care, medical workers, paramedics and animal quarantine personell
3. Medical and paramedical workers in hospitals and labs
4. Owners of pet birds and communities around animal-farms
5. Closed contact person with AI patient

Main Activities:

1. Provision of personal protection equipment (PPE) to workers at animal farms, hospitals and laboratories
2. Improving sanitation in farm areas, poultry market and poultry slaughter house
3. Increasing ways of living healthily with birds

5.4. Strategy 4: Epidemiological Surveillance on Animals and Humans

Goals:

1. Developing an AI surveillance and early warning system for humans and animals
2. Strengthening surveillance capacity at all health service facilities
3. Preparing surveillance in case of a pandemic
4. Knowing disease epidemiology and dynamics
5. Establishing disease zoning

Target:

1. Establishment of an integrated AI surveillance system for humans and animals by the end of 2006 at the latest

2. Identification of pandemic risk factors and the quick dissemination of information
3. Availability of sufficient resources (labor, facilities, infrastructure, funds) to conduct surveillance at all levels by the end of 2008
4. Development of a pandemic surveillance system by the end of 2007
5. Availability of an AI disease map and virus mutation data

Main Activities:

1. Formulation and implementation of an integrated surveillance system including surveillance of high-risk groups
2. Formulation and implementation of an early warning system (EWS)
3. Provision of surveillance facilities and infrastructure
4. Increasing quantity and quality of surveillance human resources
5. Formulating a pandemic surveillance system
6. Post-vaccination monitoring
7. Surveillance on potential AI reservoir
8. Conducting molecular epidemiological surveillance on animals and humans
9. Monitoring homologous/ heterogous vaccine effectiveness on farm animals by using the sentinel birds/ DIVA method
10. Formulation and implementation of an AI control and HPI preparedness system with an integrated database using Geographical Information System Technology
11. Developing intergrated information system for animal health surveillance

5.5. Strategy 5: Restructuring the Poultry Industry System

Goal:

Improving the poultry industry structure and system

Target:

Improving the structure and system for raising local poultry, angon and ducks, and pet birds, by the end of 2008

Main Activities:

1. Evaluation of the poultry farming system
2. Formulate regulation reorganizing the poultry farming system including poultry laughter houses and poultry markets
3. Implementating formulated poultry farming system

5.6. Strategy 6: Risk Communication, Information and Public Awareness

Goals:

1. Disseminating knowledge about AI to the community and health personell
2. Empowering communities to actively participate in surveillance and network development in AI control, especially by small- and middle-scale animal farmers
3. Formulating risk comunnication stretegic including advocation to dicision marker on AI control
4. Advocating policy-makers to control AI
5. Developing Indonesia's image in the international community on the efforts that have been done

Target:

1. Increased community knowledge and awareness on AI
2. Establishment of a community network for conducting disease surveillance and prevention in every village, sub-district, and district
3. Establishment of small- and medium-scale farmers organization in each province
4. Increasing publication and communication on AI through printed and electronic media during ordinary and extraordinary events

Main Activities:

1. Establishment of an organization for small- and mid-scale animal farmers
2. Development of public communication to disseminate methods of bird flu prevention and control
3. Counseling and training the community on the surveillance and prevention of bird flu
4. Public awareness campaign, training, and education for health personell
5. Maintaining a positive environment for special groups (legislators, students, educators, NGOs, poultry community, community leaders, medical/veterinary, merchant and animal farmer communities)

5.7. Strategy 7: Strengthening Supporting Laws

Goals:

1. Strengthening laws on AI control
2. Developing Veterinary Authorities in related institutions
3. Strengthening institutions in the field of animal farming and animal health in every province and district/city

4. Strengthening institutional health service in protecting against AI

Target:

1. Revision of Law 6/1967 on Animal Farming and Health by the end of 2006
2. Establishment of Government Regulations on Zoological Disease Control, including AI, by the end of 2007
3. Establishment of departmental relationship system between the center and areas, including the private sector and the community, in AI control
4. Establishment of animal farming and health agencies/sub agencies in certain districts/cities

Main Activities:

1. Finalization of Law no 6/1967
2. Formulating Government Regulations on Zoonotic disease Control, including AI
3. Developing standard and accreditation for hospitals and referral labs
4. Formulating rules and rugulation on local livestock services

5.8. Strategy 8: Capacity Building

Goals:

1. Improving national system for AI control
2. Institutional strengthening on veterinary and animal quarantine services
3. Strengthening riset institutes
4. Increasing AI diagnosis laboratory capacity
5. Increasing hospital capacity
6. Increasing field veterinary services capacity
7. Strengthening of biological products assay and sertification institutions

Target:

1. Establishment and functioning of an AI control system by 2006
2. Establishment and functioning of a quick response team at the center and areas in 2006
3. Establishment of a Bio Safety Level 3 (BSL-3) laboratory for animals and humans in 2006
4. Functioning of 8 regional laboratories for humans and 7 animal health labs, and the addition of 2 new type A animal health labs and 33 animal labs type B

5. Functioning of animal quarantine laboratories in 40 technical execution units (TEUs) in 2008
6. Increasing promotion of biological product and sertification animal drugs
7. Establishment of laboratory network for animals and humans in 2006
8. Phased establishment and functioning of animal health posts in AI infected areas by 2008
9. Functioning of 44 reference hospitals in 2006
10. Placement of 1500 veterinary field workers by a contract system in 2008

Main Activities:

1. Establishment of expert panel and institution for integrated AI control
2. Increasing capacity of veterinary authority
3. Establishment of an integrated surveillance team at the center and areas
4. Establishment and functioning of a BSL 3 lab for animals and humans
5. Provision of equipment of regional and national reference laboratories, including human resources
6. Building 2 animal health laboratories of type-A
7. Provision of equipment of existing 7 type-A animal health laboratories
8. Provision of equipment of existing 33 type-B animal health laboratories
9. Improving facilities and infrastructure of the Research Institute
10. Improving facilities and infrastructure of Pusetma
11. Improving facilities and infrastructure of BBMSOH
12. Provision of facilities and infrastructure, including human resources of animal quarantine laboratories
13. Regular meeting and intensive communication among laboratories
14. Development of animal health posts and provision of equipment and human resource at animal health post and type-C laboratories
15. Recruitment of veterinary field workers
16. Training for veterinarian, quarantine personnel and researcher
17. Acreditation of veterinary laboratories
18. Strengthening the function of Community Health Centers (Puskesmas) in surveillance, socialization, case discovery and AI reference system

5.9. Strategy 9: Action Research

Goals:

1. Increase the effectivity of AI vaccine and vaccination
2. Conducting AI vaccine research and development
3. Developing specific and sensitive diagnostic kits
4. Recognizing epidemiology of AI virus
5. Developing diagnostic method and AI reagents

Target:

1. Indentified of AI virus strain for human by the end of 2008
2. Indentified of AI virus strain for animal by the end of 2008
3. Availability of accurate diagnostic criteria by 2006
4. Fast and accurate diagnostic kits by the end of 2007
5. Identification of AI vaccine candidates by the end of 2008

Main Activities:

1. Conducting epidemiological research, genotyping, and diagnose
2. Development and testing of human vaccine
3. Antigen development
4. Development of bird flu research lab network model
5. Conducting research on effectiveness of vaccine and vaccination program
6. Research and development of diagnostic reagents and kits
7. Research and development of bird vaccine

5.10. Monitoring and Evaluation

Goal:

Monitor and evaluate the progress and impact and indentify problems

Target:

Formulation of regular AI monitoring and evaluation reports (monthly, quarterly, biannually, and annually) and the existence of functional feedback for the improvement of the system/implementation

Main Activities:

1. Formulation of AI protection monitoring and evaluation plan
2. Monitoring, evaluation and regular reporting on AI control development
3. Coordination and feedback

Avian Influenza Control Strategy Matrix (See Appendix 1)

PART III

NATIONAL HUMAN PANDEMIC INFLUENZA PREPAREDNESS STRATEGY

1. Goals

1.1 General Goal

The Human pandemic influenza Preparedness Strategy is a coordinated national response, effective at all administration levels, to face human pandemic influenza, through prevention and control activities to reduce pain, death, and socio-economic impacts.

1.2 Specific Goals

1. Reducing viral infections and the possibility of infection in humans.
2. Strengthening early warning surveillance for an early coordinated response to extraordinary events.
3. Breaking the influenza virus's chain of infection and spread.
4. Reducing the impact of a pandemic on pain and death, as well as minimizing the socio-economic impact (social chaos).
5. Monitoring and evaluating response that currently and has already been done towards the pandemic.

This plan covers:

1. Ensuring quick, timely, and coordinated responses to a pandemic, including the latest information from authorities for professional health workers, the general public and the media at all stages.
2. Specializing the roles and responsibilities of the Health Department and other sectors, local health workers, community health providers and community organizations, professionals etc.
3. Reducing pain and death from influenza, both during pandemics and inter-pandemic periods.
4. Ensuring essential services function well during a pandemic.
5. Minimizing possible social chaos and economic loss from human pandemic influenza.
6. Providing counseling for local health authorities to firm up local human pandemic influenza plans.

7. Strengthening facilities for surveillance, case management, lab capacity and response to influenza and other infectious diseases.
8. Strengthening multidiscipline response to manage extraordinary events that cause social chaos.
9. Helping the response to the media and other communication requests.
10. Strengthening communication systems including networks and perfecting community communication and alertness services.
11. Increase improvement fundraising and resource mobilization.
12. Investigating all laws and regulations needed in each phase.
13. Strengthening regional and international cooperation.
14. Modernizing scientific and technological capacity related to human pandemic influenza.
15. Building medical company capabilities and capacities to produce medicines and vaccines to fight pandemic “strains”.
16. Strengthening supply logistics and capacity.

2. Target

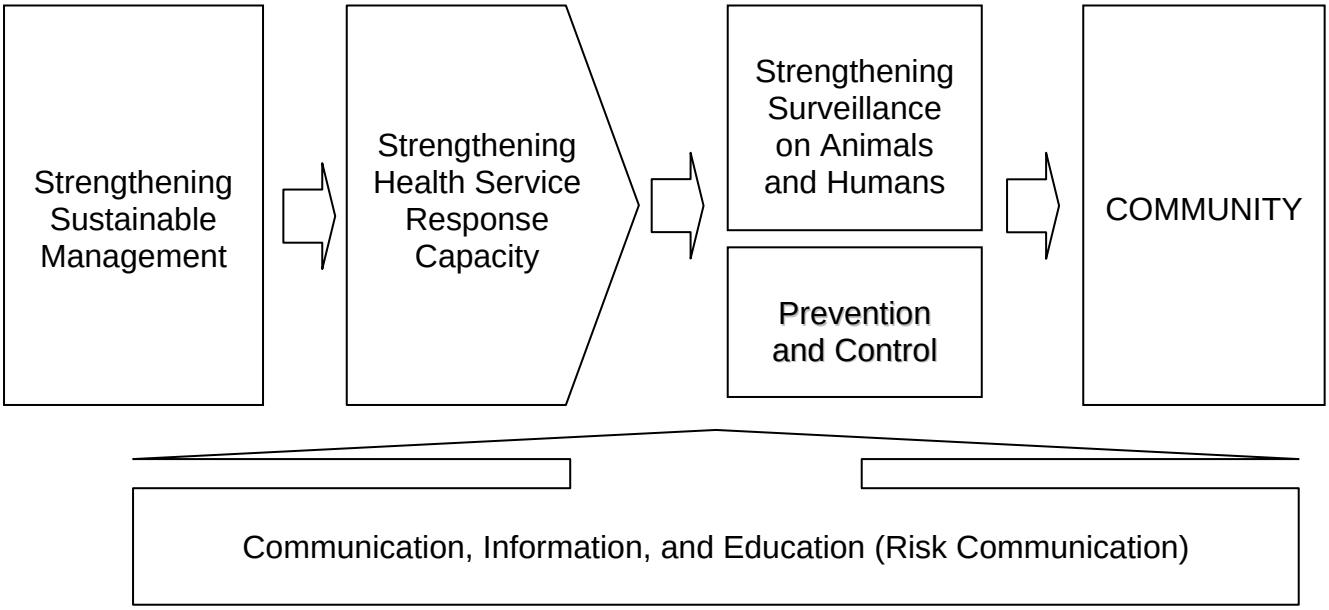
1. Maintaining bird flu-free areas and free regions infected areas as well as preventing transmission to other livestock.
2. Strengthening integrated surveillance, including early warning on a community basis in every village, on a lab-basis by developing one national reference lab and 8 or 10 regional labs around Indonesia.
3. Strengthening and developing capacity from 44 to 100 reference hospitals.
4. Preparing the availability of trained workers in controlling human pandemic influenzas.
5. Developing anti-viral medicine and vaccine stockpiling or production capacity.
6. Conducting a national bird flu prevention and control campaign and preparing the community to face human pandemic influenza to avoid panic.

3. Strategy

1. Strengthening sustainable management (planning, activating, organizing, coordinating, monitoring and evaluating).
2. Strengthening surveillance on animals and humans (including early warning, investigation and control actions).
3. Prevention and Control (high-risk protection, vaccination, bio-security, etc).

4. Strengthening health service response capacity (availability of medicines, medical tools, vaccines, labs, human resources, case management, etc).
5. Communication, Information and Education (Risk communication).

4. Interrelationship among Strategies



Picture 3.Relationship between Human pandemic influenza Preparedness Strategies

5. Strategy Details

5.1. Strengthening Sustainable Management

Goals:

1. Developing integrated bird flu control and human pandemic influenza preparedness management systems and mechanisms.
2. Mobilization of resources from various domestic and international sources.

Target:

Establishment of an integrated, effective, and efficient management for bird flu control and human pandemic influenza preparedness

Main Activities:

1. Formulation of a framework for conducting bird flu control and human pandemic influenza preparedness, including preparing guidelines and policies.

2. Assessment of preparedness status and identification of necessary actions ASAP.
3. Establishment of a National Human pandemic influenza Committee (NIPC) and Command Post (CP) along with their mechanisms.
4. Monitoring and evaluation of national contingency plan implementation.
5. Coordination with neighboring countries, the region and international bodies for information sharing and emergency response net working.
6. Planning post-pandemic reconstruction in the event of a pandemic.

5.2. Strengthening Surveillance on Animals and Humans

Goals:

1. Strengthening comprehensive surveillance and early warning systems including the role of laboratories.
2. Firming up epidemiological investigation (extraordinary events response team) and contact management.
3. Increasing surveillance of Influenza Like Illnesses (ILI) with a focus on bird flu and during influenza pandemics

Target

1. Strengthening integrated surveillance, including community based early warning in every village, and laboratory based surveillance by developing one national reference laboratories (BSL-3) and 8-10 regional laboratories around Indonesia.
2. Strengthening animal health institutions such as labs at the center and areas to support surveillance and early warning.

Main Activities

1. Implementing clinical surveillance system of Influenza like Illnesses (ILI) and AI, covering: a) Surveillance guidelines; b) Sentinel-hospital based surveillance; c) Laboratory based surveillance; d) Rumor verification surveillance; e) Community based surveillance; f) Animal Influenza surveillance.
2. Conducting epidemiological and viral (molecular) studies on new influenza virus subtypes with pandemic potential.
3. Establishing a national and international reference lab network.

4. Conduction investigation and response to bird flu control and human pandemic influenzas.
5. Monitoring the development of resistance to anti-viral medicine.
6. Disseminating information to leaders and related sectors including the WHO and other international institutions for decision-making and action.

5.3. Prevention and Control

Goals:

1. Preventing infection and breaking the chain of AI and HPI transmission as soon as possible (ASAP).
2. Conduction AI and HPI control actions in infected areas.
3. Providing and developing the production of antiviral medicines and vaccines from Indonesian virus seeds

Target:

1. Maintaining AI-free areas and freeing infected areas as well as preventing the infection of other livestock.
2. Developing anti-viral medicine and vaccine stockpiling and production capacity.

Main Activities:

1. Protection of high-risk groups.
2. Increasing bio-security in areas with a high risk of AI infection and/or influenza pandemic.
3. Strengthening the monitoring of poultry and poultry product traffic as well as human traffic.
4. Providing antiviral medicine and bird flu vaccines for AI and HPI (new subtype strains)
5. Developing the capacity to domestically produce antiviral medicines and vaccines for AI and HPI (new influenza viral-subtypes)
6. Action research on the management of animal AI cases and human pandemic influenza.

5.4. Strengthening Health Service Response Capacity

Goals:

1. Improved human and animal health service systems at the center and areas in protecting against AI and HPI.
2. Increased capacity (HR, tools and methods) of appointed reference hospitals and other health facilities.

Target:

1. Strengthening and developing capacity from 44 to 100 reference hospitals.
2. Preparing trained worker capacity in controlling AI and HPI.
3. Equipping facilities and infrastructure including human resources at animal quarantine laboratories.

Main Activities:

1. Improving capacity of animal health services
2. Development of AI and HPI case management, including the prevention of nosocomial infection.
3. Provision of reagents, diagnostic tests, tools, isolation/ICU rooms, and other medical and diagnostic supports.
4. Health Services and References in Hospitals
5. Training Healthcare and Animal Healthcare workers.

5.5 Communication, Information and Education

Goals:

1. Provision of risk information, education, and communication to all layers of the community so that they are alert and they don't panic when dealing with extraordinary bird flu events and the possibility of human pandemic influenza occurring.
2. Raised risk communication capabilities of PR technician, councilors, mass and electronic media.

Target:

1. Raised community knowledge in anticipating extraordinary bird flu events and the preparedness for the possibility of human pandemic influenza occurring.
2. A national campaign on the prevention and control of bird flu and preparing for the possibility of human pandemic influenza.

Main Activities:

1. Formulation of risk communication strategy.
2. Establishment of a National Information Center (NIC).
3. Establishment of communication, information and education (CIE) media: print and electronic.
4. Establishment of a communication network among all partners and international institutions (WHO, FAO, OIE, etc.).
5. Mass public communication (general public).
6. Communication and Information to high-risk and strategic groups.

5. 6. Human pandemic influenza Contingency Plan

Basis for consideration:

There are still many unknowns pertaining to possible human pandemic influenza but such a pandemic must be anticipated in order to reduce its impact. Indonesia may be hit by a pandemic, weather in a limited or wide area.

Goals:

1. To maintain preparedness

2. To conduct responses according to the size of the human pandemic influenza challenge.

Strategy:

1. Maintaining preparedness (If Indonesia is not hit)
2. Establishing the size of the affected area (If Indonesia is hit):

   Scenario 1 : limited to the village/kelurahan level in a limited number of provinces

Scenario 2 : limited to the sub-district level in a limited number of provinces

Scenario 3 : limited to the district level in a limited number of provinces

Scenario 4 : epidemic/outbreak on a national scale

3. Response to:

Scenario 1 : Especially by isolation under (Outbreak Law), if there are antiviral medicines (tamiflu) 80 % of the population is treated.

Scenario 2 : Conduct an investigation and extraordinary event response

Scenario 3 : Declare an outbreak/epidemic and establish law enforcement (Outbreak Law). Central government mobilizes funds and forces to prevent spread of outbreak and reduce its impact.

Scenario 4 : National Scale Epidemic. Mobilization of national forces and resources including funds and reserve forces (volunteers, etc.) as and if ordered by the President as the Commander-in-Chief so long as the emergency lasts in Indonesia.

4. Analyzing the epidemiological situation and responding according to continually changing situations.

Human pandemic influenza Preparedness Strategy Matrix (See Appendix 2)

Human pandemic influenza Contingency Plan (See Appendix 3)

PART IV ORGANIZATION

By nature, AI is a disease that can easily cross national borders. It can easily spread from island to island, and spread even more easily within a single island. Consequently, all stakeholders in the fields of health and animal farming, under the coordination of the local governments must: a). Establish transparency in their respective areas, and b). Quickly act in accordance to the National Strategic Plan, by mobilizing all elements in their respective areas as well as by seeking support from other sources. The isolation of one area only is not sufficient for prevention of AI spread. Instead, it results in uncontrolled development that will eventually create financial and socio-economic impacts on greater numbers of human victims. Therefore the concerted effort of all stakeholders in all areas under the coordination of the local government is a necessity.

In relation to that, with the current momentum for AI control, veterinary services and human health system must be revitalized and strengthened concertedly and comprehensively. In this regard the Department of Agriculture and the Department of Health are technically responsible for the management and implementation, and - together with the Heads local of Governments - make functional both of these systems in all areas of the Republic of Indonesia. With the functioning of these two systems, monitoring the community, early detection and response can be done. Moreover, with the support of various institutions and related parties as spelled out in detail in strategies, control of the bird flu problem can be conducted.

The challenge faced in the implementation of the National Strategic Plan in this decentralization era is that the role of Local Government Heads in the application of this Strategic Plan in each autonomous areaves is very big. Responsibility, cooperation and togetherness in the implementation in each area and territory are the key to success in achieving the goals of this Strategic Plan. For that, Local Government Heads are the ones mainly responsible for the implementation of the Strategic Plan in their respective areas and territories. Because of the numbers of stakeholders/parties involved, there needs to be a clear chain of command, especially in urgent and emergency situations. A command system such as this is already arranged in Law no. 4/1984 on Outbreaks and Law no. 40/1991 on Infectious Diseases Control. In local level, a command system is arranged at the Governor and District Head levels.

In responding and containing Avian Influenza planned in the National Strategy, two committees are needed to be established:

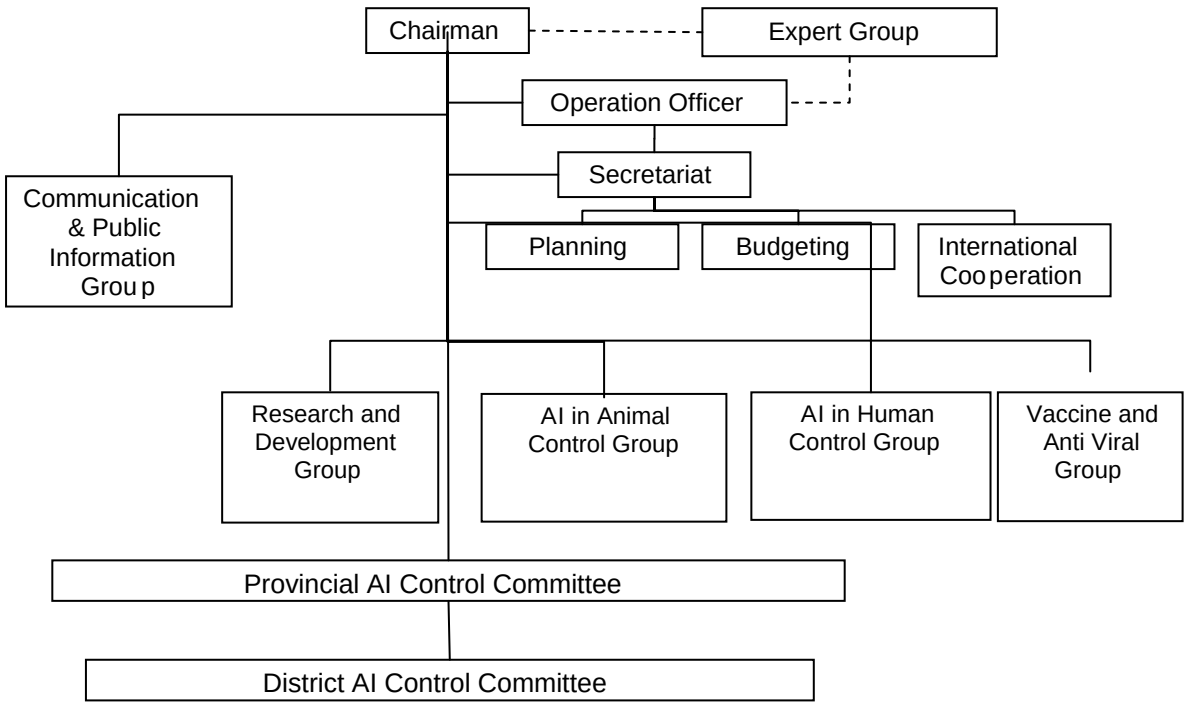
- National Committee on Avian Influenza Control. This committee is responsible for coordinating the implementation of National Strategic Plan on AI Control and Influenza Pandemic Preparedness at national and local level. The committee is responsible directly to the President. The committee also serves as the country's focal point for effort of AI control at national, regional and global level.
- National Task Force or Committee for Influenza Pandemic Control. This committee is responsible for coordination of implementation of Pandemic Influenza Contingency Plan. This committee will be established provided the AI phase has moved to pandemic influenza (Phase 6 referring to WHO pandemic staging).

Both these two committee will not be established concurrently, since the second committee will be functional only if the pandemic influenza phase occurs.

A. National Committee on Avian Influenza Control

The committee is chaired by Coordinating Minister of Social Welfare who has direct administrative responsibility to the President of republic of Indonesia. In his activities, the chairman will be assisted by Chief Operation Officer and a Committee of Communication and Public Information. For administration, the chairman will be assisted by a Secretariat and Divisions of Planning, Budgeting and International Cooperation. There are also 4 groups that are focus on Research and development, AI in Animal Control in, AI in Human Control, and Vaccine and Anti Viral. A group of experts from academics and professional association will also assist the chairman.

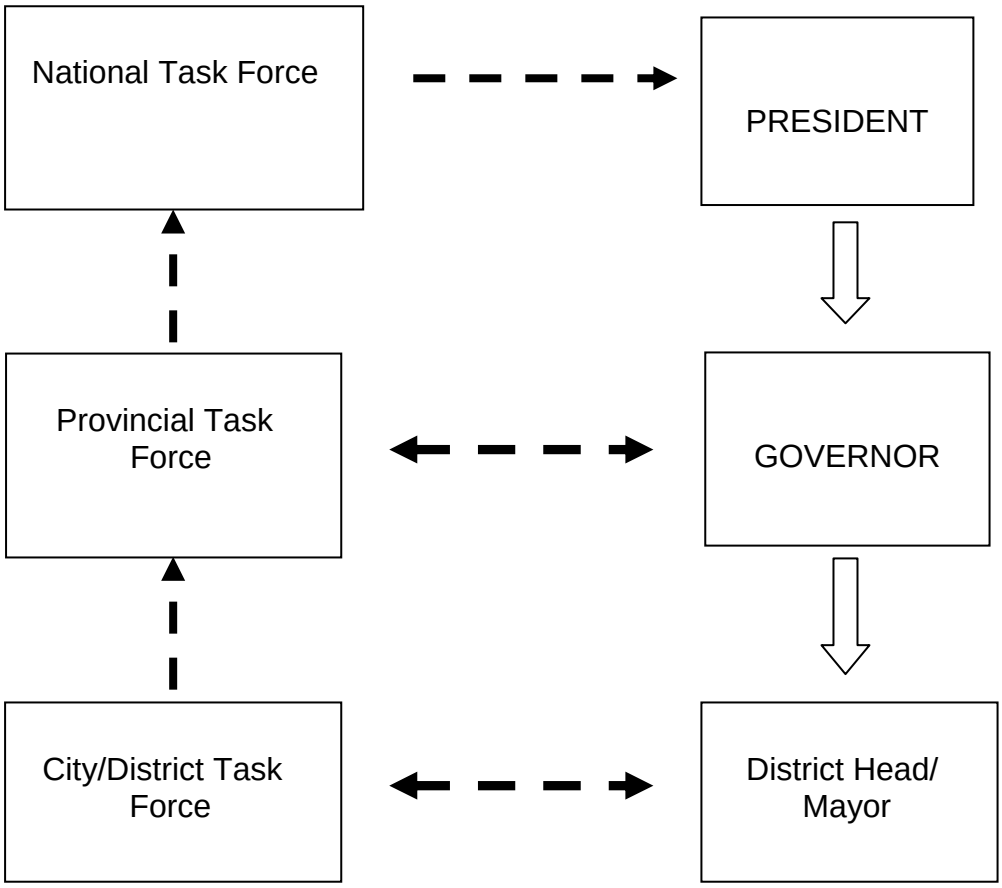
The structure of National Committee on Avian Influenza Control



B. National Task Force or Committee for Influenza Pandemic Control

In the case of emergency, that is if the pandemic influenza taking place, the mechanism of command is coming directly from the President of Republic of Indonesia, and subsequently from the Governors and Bupatis/Mayors at Provincial and District Level, respectively. At national level, the Committee will be chaired by the Coordinating Minister of Social Welfare and involving related ministries especially Minister of health and Minister of Agriculture. In the meanwhile, respected ministerial roles have been prescribed in the Contingency Plan.

The Structure of National Task Force / Committee on Influenza Pandemic Control



PART V. CLOSING

This National Strategic Plan is formulated comprehensively by integrating simultaneous and sustainable animal and human healthcare aspects. The National Strategic Plan covers 2 things: (1) National Avian Influenza Control Strategy, and (2) National Human pandemic influenza Preparedness Strategy. The Control Strategy is aimed at eliminating bird flu at its source - that is in animals - and increasing healthcare in humans, especially those at high risk. The National Human pandemic influenza Preparedness Strategy is aimed at preparing mechanisms, actors, instruments and resources to prevent and anticipate human pandemic influenza, and therefore the formulated national policies and plans are for anticipating readiness of an event that hopefully will never happen.

Participation and togetherness of all components of society in controlling bird flu and preparing for human pandemic influenza need to be increased. The government is clearly not the only one responsible for controlling bird flu, because all components of society have roles and function which are equally important. In the decentralization era, the role of local governments as the main implementers of this national strategy in their respective areas is the key to success.

In accordance with the complexity of the problem faced, the success of this National Strategic Plan needs comprehensive technical and operational cooperation, both horizontally at all levels of government and other stakeholders, as well as vertically with the active participation of the whole society as explained in Part IV Coordination. With the cooperation and responsibility of all parties and the firmness of local government decision-makers, this Strategic Plan can be conducted to protect the Republic of Indonesia from the bird flu as well as preventing human pandemic influenza.

GLOSSARY

Avian Influenza : Shortened to AI, often called avian flu, bird flu or flu burung, can infect quickly, and can cause mortality in poultry of up to 100%. This disease is caused by influenza type-A virus,sub type H5 and H7. All poultry such as chickens, ducks, turkeys, pigeons and wild birds can be infected although AI often attacks chickens and turkeys.

Bio-safety Level (BSL 3): A level considered sufficient to prevent the transmission of an agent through the respiratory system, causing a serious infection. BSL-3 Laboratories are laboratories that fulfill international requirements in laboratory safety measures for examining live bacteria or viruses to ensure the safety of humans and the environment

Bio-security : All actions that form a first line of defense against outbreaks and are done to prevent the possibility of contact/infection from infected entities and the spread of disease.

Confirmed case : Someone showing the symptoms of bird flu, that is someone with respiratory difficulties, fever (>38°C), cough and/or sore throat or runny nose, supported by a laboratory check: positive H5N1 influenza virus culture, positive influenza (H5) PCR, or an increase in H5 antibodies of 4 times normal

Culling : The extermination of animals infected with AI virus by butchering or burning.

Depopulation : Or selective extermination, is acting to reduce the poultry population, which is the source of infections. This step is done at all infected farms which are established through clinical and pathological anatomic diagnosis on all poultry infected as well as on healthy poultry which share their living space.

Epidemiology : The study of distribution, determinants and frequency of disease (including other events related to health) in populations

FAO : Food and Agriculture Organization

Bird Flu/Flu Burung : Term often used for Avian Influenza (see Avian Influenza definition)

H5N1 : A type-A influenza virus subtype/strain that in 1997 jumped from chickens to humans.

ILI : Influenza like illnesses are diseases that have symptoms similar to influenza that is fever, cough, cold, sore throat, headaches and muscle pains.

Nosocomial Infection : Infection from bacteria or virus in hospitals, disease infection from patients treated in hospitals to other patients or hospital employees.

Extraordinary Event : The appearance or increase of occurrences cases/death that means that affects an area or group of society during a certain time, and is an event that could lead to the occurrence of an outbreak.

High-Risk Group : Group of citizens defined according to their collective exposure which epidemiologically indicated an increasing risk of infection of a disease. In the case of bird flu, high-risk groups are animal farmers, animal-farm workers, poultry merchants, medical staffs and paramedics of animal healthcare, hospitals, labs and other medical facilities; owners of pet birds and communities near poultry farms.

Risk Communication : Communication activities specialized for socializing various risks associated with Bird Flu and the possibility of human pandemic influenza in the future so that communities will be alert and won't panic.

Type-A Health Laboratories: Regional animal laboratories whose function is conducting investigations on animal diseases, which at this time are named Balai Penyidikan Penyakit Veteriner Regional (BPPVR) (Regional Veterinary Disease Investigation Hall). The number of BPPVR at this time is 7 labs, located in Medan, West Sumatera, Lampung, Yogyakarta, Sulawesi Selatan, Denpasar, and South Kalimantan.

OIE : Office International des Epizooties (World Animal Health Organization) is an intergovernmental body on animal health that was established in 1924 and whose members now number 167 countries

Human pandemic influenza (HPI) : A condition where influenza is prevalent in several countries in the world.

PPE : Personnel Protection Equipment, equipment that must be worn by high-risk groups such as health workers, laboratory staff, those who regularly contact poultry/birds and animal-farm workers to prevent bird flu infection.

Poskeswan : Pos Kesehatan Hewan (Animal Health Post) is an animal healthcare service institution at the field level located in sub-districts. This institution's function is to provide animal health services and artificial insemination.

Genetic Re-assortment : An event whereby there occurs a mixing of influenza genes in animal and humans which creates a new virus subtype

Reservoir animals : Non-poultry animals which can be a source of AI virus development.

Poultry Industry System Sector 1, 2, 3 and 4 : The poultry farming system is divided into 4 sector categories based on type of business and bio-security level. Sector 1 is a comprehensive poultry system. This poultry industry group implements high-level bio-security and its products are commercially sold in urban areas or exported. Sector 2 is poultry business groups that enter the commercial poultry production system and implements mid- to high-level bio-security systems. Products are sold in urban and rural areas. Sector 3 is the group of poultry farm businesses which are almost identical to sector 2 but with low-level bio-security systems. Sector 4 is the group of poultry farms which still use the backyard system and lack bio-security systems. This type of poultry business is centered in rural village areas and is often a side-business for extra income or self consumption.

Single farm system : System of farm business that raises one type of livestock (un-mixed farming), for example poultry that is not mixed with a pig farm in one farming location/area.

Stamping out : Extermination of all poultry animals suspected of (potentially) being infected by AI in newly AI-infected areas

Strain : A group in one species or type. For example the influenza strain that has been circulating lately are type-A (H1N1), type-A (H3N2), and type B (H3N2)

Stockpiling : Provision of medicine in large numbers to anticipate the possibility of a pandemic occurring

Surveillance : Activities to establish the source of infection in a newly-infected area, its spread, disease zoning and virus behavior dynamics

Epidemiological Surveillance: Systematic and continuous analysis of a disease or health problem and conditions that affect the occurrence, increase and spread of said disease or health problem, so that effective and efficient actions for handling it can be undertaken, through the process of collecting data, processing and spreading epidemiological information to health providers.

Sentinel Poultry : Healthy poultry that are not AI-vaccinated and kept in a vaccinated group/flock/stable/village of poultry in infected areas

Outbreak : The spread of an infectious disease that occurs in relatively large numbers with the number of victims increasing at a rate greater than normal in a certain time and place that can also cause disaster

WHO : World Health Organization

Disease Zoning : Classifying areas into free areas, threatened areas and infected areas. Free areas are provinces or island areas that have not been infected by or areas where the existence of avian influenza has not been reported. Threatened areas are areas without reported cases, but with a direct land border with infected areas without natural barriers in between and which also import poultry production facilities from those infected areas. Infected areas are areas with avian influenza cases that have been diagnosed clinically, anatomical pathologically, epidemiologically and confirmed by laboratories.

APPENDIX 1

NATIONAL AVIAN INFLUENZA CONTROL STRATEGY MATRIX

Strategy 1: Highly Pathogenic Avian Influenza **(HPAI) Control in Animals**

Goal:

Decreasing cases of animal death and preventing the spread of AI to a wider area

Target:

1. Maintaining AI-free areas
2. Freeing AI in sector 1 and 2 of the poultry industry by the end of 2008
3. Reducing AI in sector 3 and 4 of the poultry industry by the end of 2008
4. Preventing the spread of AI to animals other than birds

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Conducting selective depopulation of infected areas and emergency vaccination	Proportion of animals depopulated	Deptan	255	516.7	802.2
Stamping out in newly infected areas	Number of animals stamped out	Deptan	135.5	191.6	304.4
Increasing bio-security	Implementation of bio-security SOP	Deptan	5.0	6.4	7.8
Increasing quarantine control of Highly Pathogenic Avian Influenza (HPAI) medium traffic and tracing back	Monitoring of HPAI carrier medium	Deptan	25.6	30	35
Provision of vaccine and increasing vaccination coverage of animals, especially at sectors 3 and 4	Protection of the population at risk	Deptan	225.6	355.1	438.8
TOTAL			646.7	1099.8	1588.2

Strategy 2: Management of Human Cases of AI

Goals:

1. Prompt and accuracy of disease diagnosis
2. Managing cases according to standards

Target:

1. Detection of AI within 3 days at the latest in 9 regional laboratories and 1 national reference laboratory
2. All cases are handled in accordance with service standards
3. Decreasing death from bird flu

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp billion)		
			2006	2007	2008
Provision of antiviral medicine	Availability of antiviral medicine	Depkes	40	40	40
Reference of cases	Carrying out of reference	Depkes	6.75	9	11.25
Provision of facilities and infrastructure for case handling in hospitals	44 AI infectious disease reference hospitals	Depkes	221.15	280.82	0.82
Formulating Standard Operating Procedures (SOP) for managing cases	Availability of case management SOP in all hospitals and community health centers (puskesmas)	Depkes	5	-	-
Training healthcare workers	The training of medical workers and paramedics at 44 regional and refererral hospitals and labs	Depkes	86.39	0.315	82.915
TOTAL			359.29	330.135	134.985

Notes 9 regional laboratory : (1) North Sumatera University; (2) Provincial Health Laboratory Palembang, Surabaya, Bandung; (3) Lab Virology and Cancer Biology Institute, University of Indonesia; (4) Micorbiology Laboratory University of Diponegoro; (5) Microbiology Laboratory University of Hasanuddin, Makasar, South Sulawesi and ; (6) Microbiology Laboratory University of Udayana, Bali

Strategy 3: Protection of High-Risk Groups

Goal:

Protecting high-risk groups from AI infection

Target:

The protection of high-risk groups from AI infection, they are:

1. Animal farmers and farm workers, and poultry merchants
2. Animal health care, medical workers, paramedics and animal quarantine personell
3. Medical and paramedical workers in hospitals and labs
4. Owners of pet birds and communities around animal-farms
5. Closed contact person with AI patient

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Provision of personal protection equipment (PPE) to workers at animal farms, hospitals and laboratories	Use of personal protection equipment by all workers	Depkes, Deptan	0.7	0.8	0.8
Improving sanitation in farm areas, poltry market and poultry slaughter house	Maintenance of sanitation facilities at farms	Depkes, Deptan, Pemda	5.6	6.5	7.5
Increasing ways of living healthily with birds	Increase of clean living behavior	Depkes, Deptan	15.6	15.1	20.7
TOTAL			21.9	22.4	29.1

Strategy 4: Epidemiological Surveillance on Animals and Humans

Goals:

1. Developing an AI surveillance and early warning system for humans and animals
2. Strengthening surveillance capacity at all health service facilities
3. Preparing surveillance in case of a pandemic
4. Knowing disease epidemiology and dynamics
5. Establishing disease zoning

Target:

1. Establishment of an integrated AI surveillance system for humans and animals by the end of 2006 at the latest
2. Identification of pandemic risk factors and the quick dissemination of information
3. Availability of sufficient resources (labs, facilities, infrastructure, funds) to conduct surveillance at all levels by the end of 2008
4. Development of a pandemic surveillance system by the end of 2007
5. Availability of an AI disease map and virus mutation data

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp billion)		
			2006	2008	2009
Formulation and implementation of an integrated surveillance system including surveillance of high-risk groups	Availability and implementation of an integrated surveillance system	Deptan, depkes	184.08	48.96	19.21
Formulation and implementation of an early warning system (EWS)	Availability and implementation of an EWS	Deptan, depkes	69.86	64.76	31.41