



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

REPUBLIC OF INDONESIA

Januari 2006

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* (HPI). 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 and 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 healthcare 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 is also 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, types 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. All *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 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 health 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 towards a 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 re-assortment, 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), 80,6 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 lineages. 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 farming 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 product 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 influenzas 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 animal 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 the 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. 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 of infections in the general public.

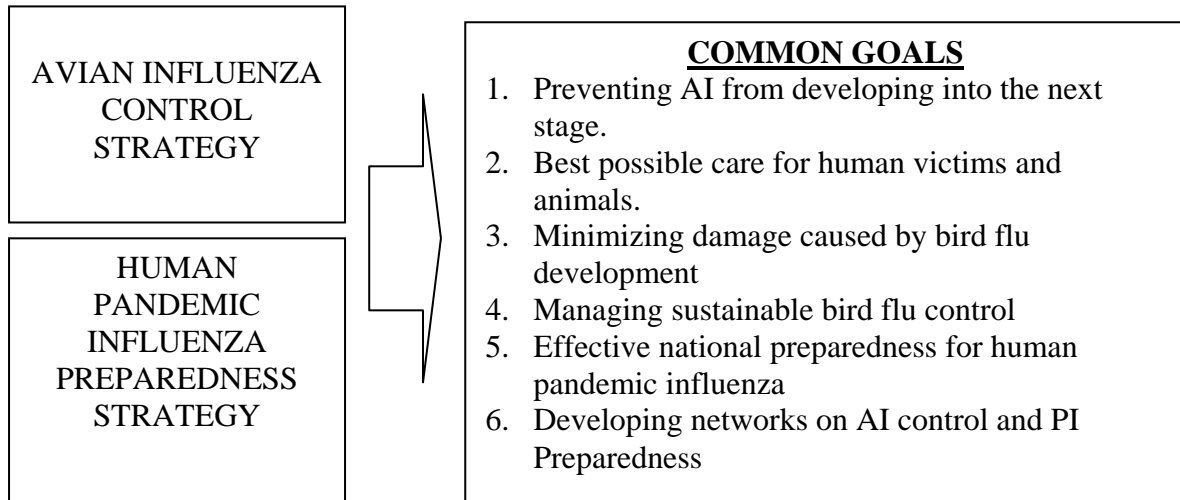
Post-pandemic Period

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 a 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 a 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

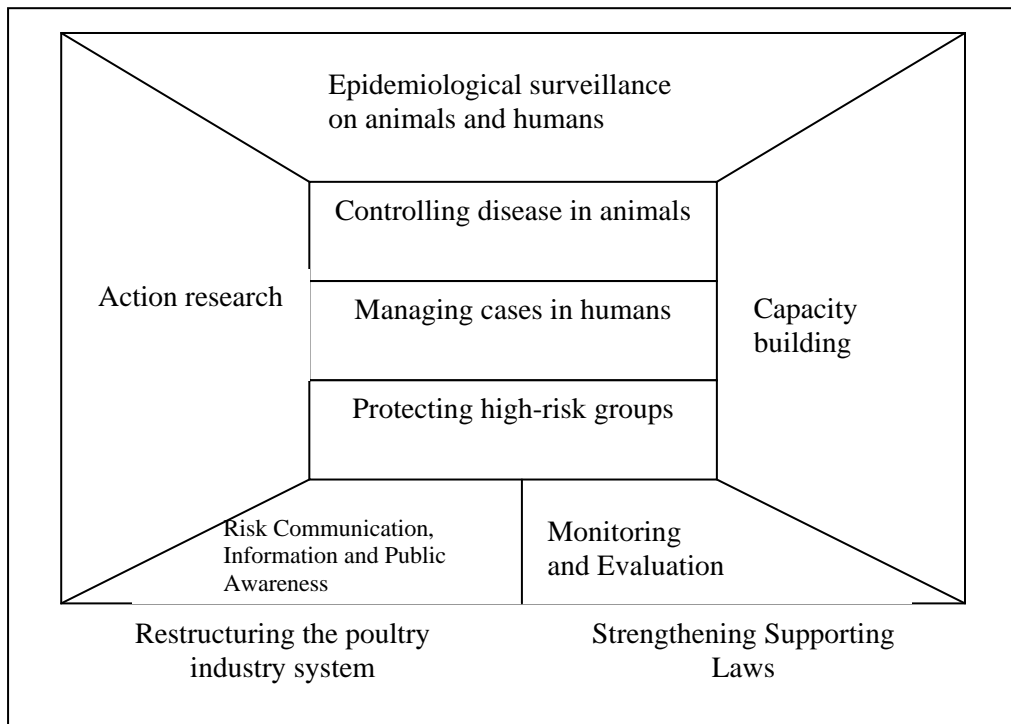
3. Strategy

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 to that 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, poltry 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/ heterogenous 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, *angonan* 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 small- and middle-scale animal farmers
3. Formulating risk communication strategic including advocacy to decision 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 regulation 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 certification 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. Accreditation 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. Identified of AI virus strain for human by the end of 2008
2. Identified 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 the impact and identify 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 is currently and has already been done towards the pandemic.

This plan covers:

1. Ensuring quick, timely, and coordinated response 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 main 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

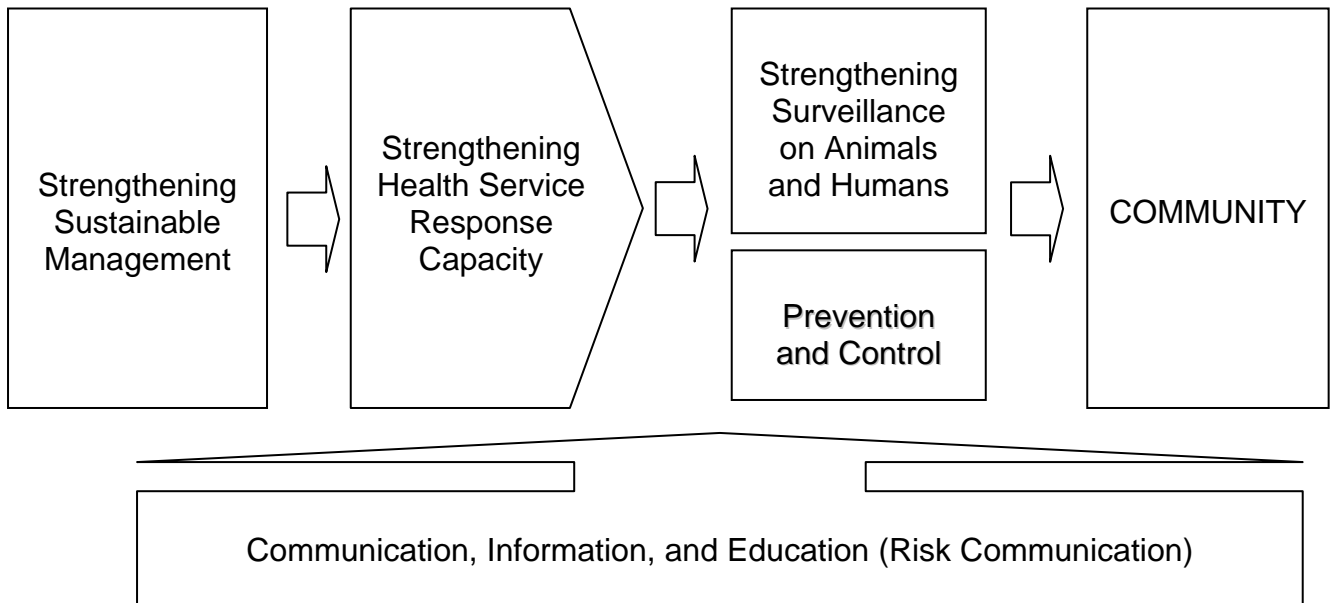
1. Maintaining bird flu-free areas and freeing infected areas as well as preventing transmission to other livestock.
2. Strengthening integrated surveillance, including early warning on a community basis in every village, on a lab-basis by developing one national reference lab and 8 or 10 regional labs 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 or 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 systems 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 a possible human pandemic influenza but such a pandemic must be anticipated in order to reduce its impact. Indonesia may be hit by a pandemic, whether 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 infected 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 (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 a 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 completely 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 area 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 number 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.

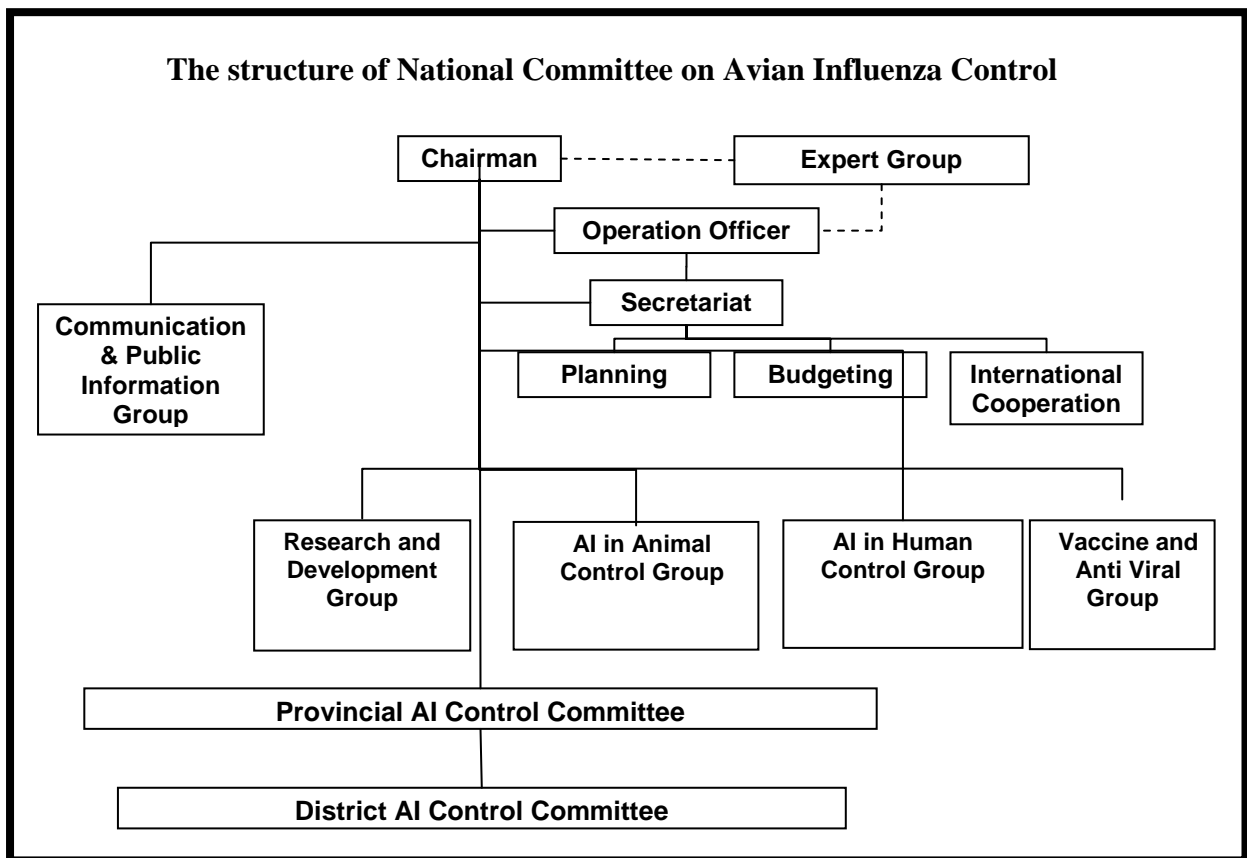
In responding and containing Avian Influenza planned in the National Strategy, two committees are needed to be established:

- 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

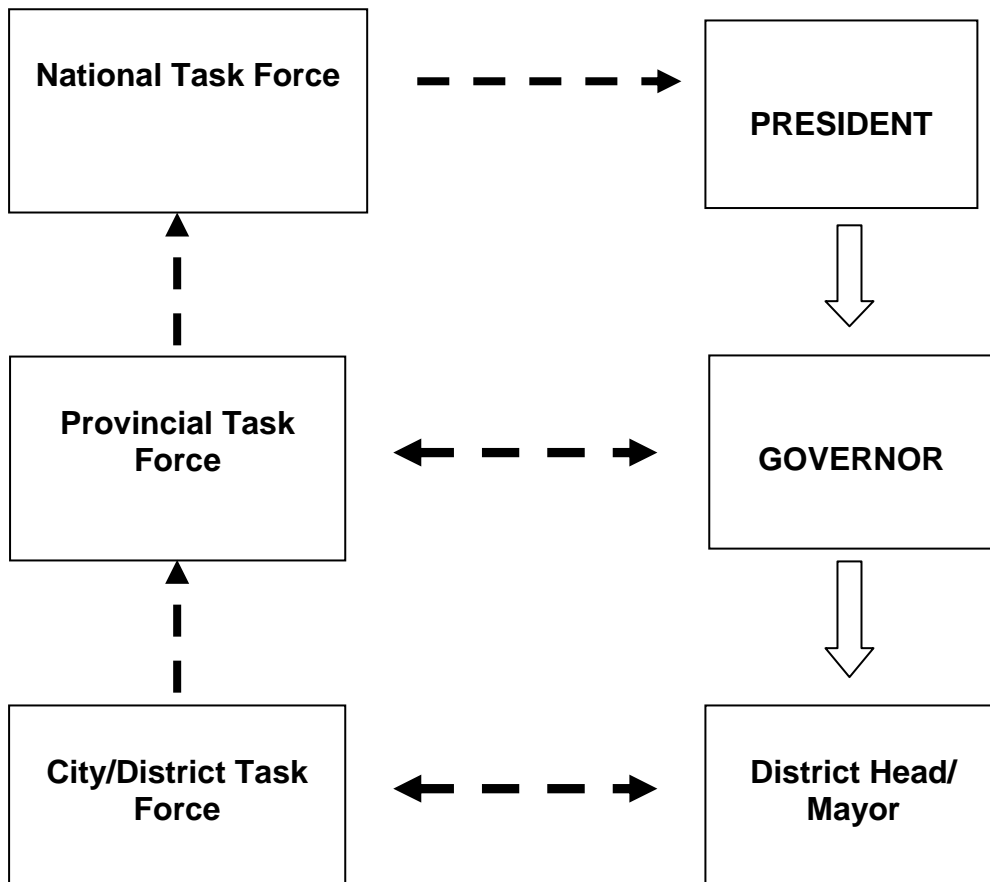
The committee is chaired by Coordinating Minister of Social Welfare who has direct administrative responsibility to the President of republic of Indonesia. In his activities, the chairman will be assisted by Chief Operational Officer and a Committee of Communication and Public Information. For administration, 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 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.



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 AI 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 ($>38^{\circ}\text{C}$), 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 illness* 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 of pain/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 placed 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 <i>Highly Pathogenic Avian Influenza</i> (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 <i>Standard Operating Procedures</i> (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 referral 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) Human 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 (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	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

Strategy 4: Epidemiological Surveillance on Animals and Humans... (Continued)

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2008	2009
Provision of surveillance facilities and infrastructure	Availability of surveillance facilities and infrastructure	Deptan, depkes	29.6	31.1	35.4
Increasing quantity and quality of surveillance human resources	Availability of a minimum of 1 surveillance worker each for humans and animals in every sub-district	Deptan, Depkes	26.9	27.7	27
Formulating a pandemic surveillance system	The formulation a pandemic surveillance system	Deptan, Depkes	6.64	6.56	6.54
Post-vaccination monitoring	Knowing vaccine protectiveness	Deptan	2.8	3.3	3.8
Surveillance on potential AI <i>reservoir</i>	Knowing AI reservoir animals	Deptan	1.0	1.2	1.3
Conducting molecular epidemiological surveillance on animals and humans	Knowing AI virus serotypes and genotypes	Deptan, Depkes	12.0	8.9	9.9
Monitoring homologous/ heterogenous vaccine effectiveness on farm animals by using the sentinel birds/ DIVA method	Knowing the existence of the AI virus in the area	Deptan	0.1	0.1	0.1
Formulation and implementation of an AI control and HPI preparedness system with an integrated database using Geographical Information System Technology	Availability of a Geographical information system that can monitor the spread of AI and the possibility of HPI to overcome AI and HPI	Bakosurtana 1	15	10	10
Developing intergrated information system for animal health surveillance	Function comprehensive information system of animal health surveillance	Deptan	5.6	2.2	2.5
TOTAL			353.58	204.78	147.16

Strategy 5: Restructuring the Poultry Industry System

Goal:

Improving the poultry industry and management

Target:

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

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2008	2009
Evaluation of the poultry farming system	Formulation of evaluation results of the poultry farming system reformation	Deptan	0.2	0.2	0.2
Formulate regulation reorganizing the poultry farming system including poultry laughter houses and poultry markets	Establishment and socialization of laws on the poultry farming system	Deptan	0.2	0.2	0.3
Implementating formulated poultry farming system	Establishment of farm animal development areas	Deptan	0.7	0.8	0.9
TOTAL			1.1	1.2	1.4

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 small- and middle-scale animal farmers
3. Formulating risk comunication 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	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Establishment of an organization for small- and mid-scale animal farmers	The number of organizations for small- and mid-scale animal farmers	Deptan	1.3	1.4	1.7
Development of public communication to disseminate methods of bird flu prevention and control	Frequency of communications undertaken	Kominfo, Deptan, Depkes	78.6	79.3	77.7
Counseling and training the community on the surveillance and prevention of bird flu	The number of AI cases discovered by the community and number of people trained	Deptan, Depkes, Kominfo	0.5	0.2	0.3

Public awareness campaign, training, and education for health personell	The number of trained health personell	Deptan, Depkes, Depdiknas	47,46	50,55	50,81
Maintaining a positive environment for special groups (legislators, students, educators, NGOs, poultry community, community leaders, medical/veterinary, merchant and animal farmer communities)	Number of special groups counseled	Deptan, Depkes, Kominfo	0.3	0.4	0.4
TOTAL			128.16	131.85	130.91

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	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Finalization of Law no 6/1967	Revised Law No.6/1967	Deptan	10	-	-
Formulating Government Regulations on Zoonotic disease Control, including AI	Formulation of Government Regulations on Zoonotic disease Control, including bird flu by the end of 2007	Depkes, Deptan	0.2	-	-
Developing standard and accreditation for hospitals and referral labs	The number of accredited hospitals and labs	Depkes	0.5	0.5	-
Formulating rules and rugulation on local livestock services	Formulation of local laws on animal farming and animal health agencies/sub agencies	Deptan, Pemda	0.3	-	-
Total			11	0.5	-

Strategy 8: Capacity Building

Goals:

1. Improving national system for AI control
2. Institutional strengthening on veterinary and animal quarantine services
3. Strengthening research institutes
4. Increasing AI diagnosis laboratory capacity
5. Increasing hospital capacity
6. Increasing field veterinary services capacity
7. Strengthening of biological products, assay and certification 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 certification 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	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Establishment of expert panel and institution for integrated AI control	Functioning expert panel and integrated institution of AI control	Deptan	2.2	2.5	2.9
Increasing capacity of veterinary authority	Capacity and function of veterinary authorized institution	Deptan	0.5	0.6	0.7
Establishment of an integrated surveillance team at the center and areas	Functional integrated surveillance	Depkes, Deptan	1	1	1
Establishment and functioning of a BSL 3 lab for animals and humans	Functioning BSL 3 labs for animals and humans	Depkes, Deptan	136.9	118.9	27.0
Provision of equipment of regional and national reference laboratories, including human resources	Functioning regional and national reference laboratories	Depkes	1.69	1.44	1.44
Building 2 animal health laboratories of type-A	Establishment of 2 new animal health laboratories of type-A	Deptan	100	0	-
Provision of equipment of existing 7 type-A animal health laboratories	Functioning of 7 type-A animal health laboratories	Deptan	32.0	36.8	42.3
Provision of equipment of existing 33 type-B animal health laboratories	Functioning of 33 type-B animal health laboratories	Deptan, Pemda	9	10,4	11,9
Improving facilities and infrastructue of the Research Institute	Functioning of Research Institute	Deptan	4.6	5.3	6.1

Improving facilities and infrastructure of Pusetma	Improved facilities of Pusetma	Deptan	7.0	8.0	9.2
Improving facilities and infrastructure of BBMSOH	Improved facilities of BBMSOH	Deptan	3.1	3.6	4.1
Equipping facilities and infrastructure, including human resources of animal quarantine laboratories	Functioning animal quarantine laboratories	Deptan	9.8	11.2	12.9
Regular meeting and intensive communication among laboratories	Frequency of regular meetings	Depkes, Deptan	0.5	0.5	0.5
Development of animal health posts and provision of equipment and human resource at animal health post and type-C laboratories	Functioning animal health posts (poskeswan)	Deptan	8.1	294,4	173,2
Recruitment of veterinary field workers	Placement of contract system veterinary workers	Deptan	3.0	3.0	3.4
Training for veterinarian, quarantine personnel and researcher	Improved capacity of quarantine personnel	Deptan	5	5.8	6.6
Accreditation of veterinary laboratories	Number of veterinary lab accredited	Deptan	0.3	0.4	0.4
Strengthening the function of Community Health Centers (Puskesmas) in surveillance, socialization, case discovery and AI reference system	Functioning community health centers in case discovery and AI reference system	Depkes	10	10	10
Total			334.69	209.04	128.54

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. Identified of AI virus strain for human by the end of 2008
2. Identified 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	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Conducting epidemiological research, genotyping, and diagnose	Completion of 20 research projects	Depkes, Deptan	23.8	22.7	24.9
Development and testing of human vaccine	Indonesian vaccine candidate	Depkes	45	18,7	10,7
Antigen development	Availability of serological check antigen	Depkes	2	2	2
Development of bird flu research lab network model	Development of 8 lab network nodes	Depkes	10	10	10
Conducting research on effectiveness of vaccine and vaccination program	Increased vaccine quality and safety	Deptan	0.5	0.2	0.2

Research and development of diagnostic reagents and kits	Production of diagnostic reagents and kits	Deptan	0.2	0.2	0.2
Research and development of bird vaccine	Identification of bird vaccine	Deptan	0.2	0.2	0.2
TOTAL			81.7	35.3	37.5

Strategy 10: Monitoring and Evaluation

Goal:

Monitor and evaluate the progress and the 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	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
Formulation of AI protection monitoring and evaluation plan	Availability of plan documents	Depkes, Deptan	1.6	1.7	1.8
Monitoring, evaluation and regular reporting on AI control development	Monitoring, evaluation and report	Depkes, Deptan	2.7	2.4	2.7
Coordination and feedback	Frequency of coordination and feedback	Depkes, Deptan	3	3	3
TOTAL			7.3	7.1	7.5

SUMMARY OF STRATEGY AND BUDGETING REQUIRED FOR AI CONTROL (in million rupiah)

STRATEGY	2006	2007	2008
<i>Highly Pathogenic Avian Influenza (HPAI) Control in Animals</i>	646.7	1099.8	1588.2
Management of Human Cases of AI	359.29	330.135	134.985
Protection of High-Risk Groups	21.9	22.4	29.1
Epidemiological Surveillance on Animals and Humans	353.58	204.78	147.16
Restructuring the Poultry Industry System	1.1	1.2	1.4
Risk Communication, Information and Public Awareness	128.16	131.85	130.91
Strengthening Supporting Laws	11	0.5	-
Capacity Building	334.69	209.04	128.54
Action Research	81.7	35.3	37.5
Monitoring and Evaluation	7.3	7.1	7.5
	1,945.42	2,042.11	2,205.30

APPENDIX 2
NATIONAL HUMAN PANDEMIC INFLUENZA PREPAREDNESS
POLICY MATRIX

Strategy 1: Strengthening Sustainable Management

Goals:

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

Target:

Formulating integrated and effective management to control bird flu and prepare for human pandemic influenza.

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
1. Formulating a framework for conducting bird flu control and human pandemic influenza preparedness including preparing guidelines and policies on animal extermination compensation (<i>stamping out, culling</i>).	Availability of guideline books on bird flu control and human pandemic influenza preparedness	Depkes, Deptan and Depdagri	1	0	0
2. Assessment of preparedness status identification of necessary actions ASAP.	Availability of the latest and most accurate data	Depkes, Deptan	0.3	0.3	0.3
3. Establishing a National Human pandemic influenza Committee (NIPC) and Command Post as well as its mechanisms.	Establishment of NIPCs at all government administration levels (Presidential Decision)	MenkoKesra, MenkoPerekonomian	1	0	0
4. Monitoring and evaluation of national contingency plan implementation.	Availability of monitoring and	Depkes, Deptan	1	1	1

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
5. Coordination with neighboring and regional countries and international bodies for information sharing and emergency response networking.	evaluation results data The existence of a written commitment	Deplu, Menkokesra, Bappenas, Depkes, Deptan	1	1	1
6. Planning post pandemic reconstruction, in the event of a pandemic.	The existence of a post pandemic reconstruction master plan	Depkes, Deptan, Bappenas	20	20	20
TOTAL			24.3	22.3	22.3

Strategy 2: Strengthening Surveillance on Animals and Humans

Goals :

1. Strengthening comprehensive surveillance and early warning systems including the role of laboratories.
2. Strengthening epidemiological research (extraordinary event response team) and contact management.
3. Increasing surveillance of influenza like illnesses (ILI) focusing on bird flu and during human pandemic influenzas

Target

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

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
1. Conducting clinical surveillance of Influenza Like Illnesses (ILI) and bird flu, covering: <ol style="list-style-type: none"> a. Surveillance Guidelines. b. Sentinel hospital based surveillance. c. Laboratory based surveillance. d. Rumor verification surveillance. e. Community based surveillance. f. Animal influenza surveillance. 	AI and HPI surveillance database	Deptan – Depkes	17.8	27.8	82.8
2. Conducting a study on epidemiological and viral (molecular) surveillance on new influenza viral subtypes with pandemic potential.	Information on the development of new influenza viral subtypes	Deptan – Depkes	1	1	1
3. Developing national and international reference laboratory networking.	Establishment to refer specimen of human and animal to exchange information	Depkes- Deptan	1	1	1

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
4. Conducting investigations and responses to AI and HPI countermeasures.	Quick response investigation & reporting	Deptan - Depkes	35	70	105
5. Monitoring the development of resistance to antiviral medicine.	Database on resistance to antiviral medicine	Deptan – Depkes	1	1	1
6. Disseminating information to leaders and related sectors including the WHO and other international institutions for decision making and action.	Recommendation	Deptan – Depkes	0.5	0.5	0.5
TOTAL			56.3	101.3	191.3

Strategy 3: Prevention and Control

Goals:

1. Preventing infection and breaking the chain of AI and HPI transmission as soon as possible (ASAP).
2. Conducting AI and HPI control actions in infected areas.
3. Developing and providing antiviral medicine and vaccine production from Indonesian virus *seeds*.

Target:

1. Maintaining bird flu-free areas, freeing bird flu infected areas and preventing the infection of other animals
2. Developing capacity for stockpiling and producing antiviral medicine and vaccines.

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
1. Protecting high-risk groups.	80% protection coverage	Deptan, Depkes, Depdagri	5.3	5.3	5.3
2. Increasing bio-security in areas with a high-risk of AI infection and human pandemic influenza.	80% bio-security coverage	Deptan, Depkes, Depdagri	2	2	2
3. Strengthening the monitoring of poultry and poultry product traffic as well as human traffic.	Health Certification	Deptan – Depkes	35	35	35
4. Providing antiviral medicine and vaccines for bird flu and human pandemic influenza (new subtype strains)	- Human antiviral medicine: 0,5% -1 % of total population - Human vaccine	Deptan – Depkes	112	112	112

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
5. Developing capacity to domestically produce antiviral medicine and vaccines for bird flu and human pandemic influenza (new subtype strains)	Domestic capability to produce antiviral medicines and vaccines	Deptan, Depkes, Deperindag	100	150	175
6. Action research on animal cases of bird flu and human pandemic influenza.	Applicable research results	Deptan, LIPI, Depkes, Menristek, Universitas/ Depdiknas	12	12	12
TOTAL			266.3	316.3	341.3

Strategy 4: Strengthening Health Service Response Capacity

Goals:

1. Continuously increasing the animal health service system.
2. Increasing the health service system at the center and areas in protecting against bird flu and human pandemic influenza.
3. Increasing the capacity (HR, equipment 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 managing bird flu and human pandemic influenzas.

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
1. Improving capacity of animal health services	Number of animal health post personnel trained	Deptan, Depdagri	6	6	6
2. Developing AI and HPI management including the prevention of nosocomial infection.	Availability of management guidelines	Deptan, Depkes	5	1	1
3. Providing reagents, diagnostic tests, isolation rooms/ICUs and other medical and diagnostic supports.	Availability of materials, tools and medical and diagnostic supports at 100 reference hospitals	Deptan, Depkes	200	200	200
4. Health services and references in hospitals	Fulfillment of services to patients	Depkes	1.2	1.6	2.0
5. Training healthcare and animal healthcare workers	Certification of skilled workers	Deptan, Depkes, PT/ Diknas,	87.5	52.5	52.5
TOTAL			299.7	261.1	261.5

Strategy 5: Risk Communication, Information and Public Awareness

Goals:

1. Providing risk information, education and communication to all layers of society to be alert and not panic in dealing with AI extraordinary events and the possibility of human pandemic influenza.
2. Increasing the risk communication capabilities of PR technical workers, councilors, public relation personell and journalist and community leaders.

Target:

1. Increasing community knowledge in anticipating AI extraordinary events and preparedness for the possibility of human pandemic influenza.
2. A national campaigned on the prevention and control of bird flu preparedness for the possibility of human pandemic influenza.

Main Activities	Indicators of Accomplishment	Institution Responsible	Cost (Rp. billion)		
			2006	2007	2008
1. Formulation of risk communication strategy	A national risk communication strategy	Depkominfo,	1	1	1
2. Establishing a National Information Center (NIC)	Existence of NIC		1	1	1
3. Establishing CIE media: printed and electronic.	Availability of CIE media	Depkominfo,	26	26	26
4. Establishment of communication network among all partners and international institutions (WHO, FAO, OIE, etc.).	Existence communication cooperation network		2	2	2
5. Mass public communication (general public)	CIE Mass & Electronic media	Depkominfo, Depked,	11	11	11
6. Communication and information to high-risk and strategic groups.	CIE in high-risk and strategic groups	Deptan, Menko Kesra, Bappenas	50	50	50
TOTAL			91	91	91

SUMMARY OF STATEGY AND BUDGET REQUIRED FOR PI PREPAREDNESS (in million rupiah)

STRATEGY	2006	2007	2008
Strengthening Sustainable Management	24.3	22.3	22.3
Strengthening Surveillance on Animals and Humans	56.3	101.3	191.3
Prevention and Control	266.3	316.3	341.3
Strengthening Health Service Response Capacity	299.7	261.1	261.5
Risk Communication, Information and Public Awareness	91	91	91
TOTAL	738	792	907

APPENDIX 3
HUMAN PANDEMIC INFLUENZA CONTINGENCY
PLAN

Strategy 6: Contingency Work Plan

SCENARIO 1: Limited to the village level in limited Provinces Village isolation conducted based on outbreak laws.						
Activity	Timeframe	Main Responsibility	Additional Responsibility	“Output” Indicator	Cost (Rp. million)	Unfunded
	Pandemic Phase 6	Department of Health	Local Gov. and all related sectors, NGOs, religious organizations and community members	Reduction in the impact of pandemic		All
Treating patients in reference hospitals and other hospitals.	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH: Nearest Reference Hospital.	Local governments with local health services	Patients treated and infections minimized	10,- per patient	All
Isolation of infected villages	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services and local pamongpraja police	Infections Limited	100	All
Increasing extraordinary event investigation activities in nearby villages	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50	All
Treating near contact with Tamiflu (if available)	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50	All

Conducting communication risk	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50	All
Monitoring and evaluation	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50	All
Maintaining international communication and cooperation especially with ASEAN members and the WHO	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	100	All

SCENARIO 2:						
Limited to the Sub-District Level in limited Provinces						
Perform epidemiological investigation and respond to extraordinary events						
Activity	Timeframe	Main Responsibility	Additional Responsibility	“Output” Indicator	Cost (Rp. million)	Unfund ed
	Pandemic Phase 6	DEPARTMEN T OF HEALTH	Local Gov. and all related sectors, NGOs, religious organizations and community members	Reduction in the impact of pandemic		All
Treating patients in reference hospitals and other hospitals	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Patients treated and infections minimized	10 per patient	All
Increasing extraordinary event investigation activities in nearby villages	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Infections Limited	5.000.	All
Treating near contact with Tamiflu (if available)	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Infections Limited	500	All
Conducting risk communication	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Infections Limited	500	All
Monitoring and evaluation	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Infections Limited	50	All
Maintaining international communication and cooperation especially with ASEAN members and the WHO	At Very early period of Pandemic Phase 6	Department of Health	Local governments with local health services	Infections Limited	100	All

SCENARIO 3:						
Limited to District/City Level in limited Provinces.						
Central Government mobilizes funds and forces to limit outbreak.						
Activity	Timeframe	Main Responsibility	Additional Responsibility	“Output” Indicator	Cost (Rp. million)	Unfunded
	Pandemic Phase 6	DEPARTMENT OF HEALTH	Local Gov. and all related sectors, NGOs, religious organizations and community members	Reduction in the impact of pandemic		All
Treating patients in reference hospitals (run “ <i>triage</i> ” system) and other hospitals.	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH: Nearest Reference Hospital.	Local governments with local health services	Patients treated and infections minimized	10 per patient	All
Treating other patients as off-site patients with symptomatic medicines.	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Patients treated and infections minimized	0.05 per patient	All
Increasing extraordinary event investigation activities in nearby villages	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	5.000	All
Conducting risk communication	At Very early period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	5.000	All
Mobilizing village and religious groups.	At Later Period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services and local pamongpraja police	Suffering of the people is reduced; chaos minimized.	50.000	All
Monitoring and evaluation	At Later Period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50	All

Maintaining international communication and cooperation especially with ASEAN members and the WHO	At Later Period of Pandemic Phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	100	All
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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 Commander-in-Chief for as long as the Country is in a State of Emergency.						
Activity	Timeframe	Main Responsibility	Additional Responsibility	“Output” Indicator	Cost (Rp. million)	Unfunded
	Pandemic Phase 6	President	Local Gov. and all related sectors, NGOs, FBOs and community members	Reduction in the impact of pandemic		All
Treating patients in reference hospitals (run “ <i>triage</i> ” system) and other hospitals.	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH: Nearest Reference Hospital.	Local governments with local health services	Patients treated and infections minimized	10 per patient *)	All
Treating other patients as off-site patients with symptomatic medicines.	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Patients treated and infections minimized	0.05 per patient *)	All
Increasing extraordinary event investigation activities in nearby villages	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50.000	All

Conducting risk communication	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	50.000	All
Mobilizing village volunteers and religious groups.	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services		50.000	All
Mobilizing national forces and resources including funds and reserve forces.	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH and all related sectors, police, military under the command of the President	Local governments with local health services	Suffering of the people is reduced; chaos and other negative implications are minimized.	500.000	All
Monitoring and evaluation	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	100	All
Maintaining international communication and cooperation especially with ASEAN members and the WHO	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH	Local governments with local health services	Infections Limited	100	All

Implement Outbreak and Quarantine Laws and additional regulations (distance, border closings, restrictions on gathering, etc.)	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH and all related sectors, police, military under the command of the President	Local governments with local health services	Infections Limited	500	All
Burying bodies	At peak period of pandemic phase 6	DEPARTMENT OF HEALTH and all related sectors, police, military under the command of the President	Local governments with local health services and local pamongpraja police	Areas are cleared of bodies	0.25 per body*)	All

Notes:

- *) Based on incident rate: 11% (NAMRU-2 research results), Mortality rate (WHO): 50% and Total Population of Indonesia: 220,000,000
 US \$ 1000 per overnight patient
 US \$ 5 per off-site patient with symptomatic medicines
 US \$ 25 cost per body buried
 Cost of off-site treatment = 11% x 220,000,000 x US \$ 5 = US \$ 121.000.000
 Cost of hospitalization = 44 hospitals x 10 patients x 6 months x 4 turns per patient x US \$ 1.000 = US \$ 10.560.000
 Cost of burying bodies = 50% x 11 % x 220,000,000 x US \$ 25 = US \$ 302,500,000
 Other Costs = US \$ 65,070,000
 Total Costs during peak of pandemic = US \$ 499,130,000