

NATIONAL
INFLUENZA
PANDEMIC
PREPAREDNESS
PLAN

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Epidemiology Unit
Ministry of Health

FOREWORD

Planning to manage a disaster is about being prepared for events that stretch our ability to cope beyond our normal day-to-day capacity. While such an event is usually devastating in its own right, being optimally prepared will reduce its impact and speed the recovery process. Also, being prepared will often prevent such a situation from turning into a major crisis. With past experiences of major influenza pandemics, isolation of the influenza viral strain A (H5N1) causing large poultry outbreaks in Asia in 2003, alerted global health authorities on a possibility of a next influenza pandemic.

Sri Lanka began its preparedness against this possible event in 2004 when the Ministry of Health coordinated with Ministry of Livestock & Agriculture to establish a joint programme along global guidelines. Coordinated action among government and non-government agencies is one of the fundamentals in mitigating a disaster and the importance of national, regional and global partnerships is paramount to minimize the impact of such an event on health and economy. Collaboration between human health, animal health and other related sectors were achieved at this juncture through formation of the National Steering Committee on Pandemic/Avian Influenza Preparedness chaired by the respective Ministers of Health and Livestock & Agriculture and formation of the National Technical Committee on Pandemic/Avian Influenza Preparedness chaired by the respective heads of health and animal health departments.

One of the important tasks of these committees was to develop a detailed plan to guide the preparedness and response activities. The first such document was compiled in 2005. The level of preparedness achieved over the previous years by the national influenza preparedness programme guided by this plan helped us to face challenges from both waves of this pandemic in 2009 and 2010. This present revision of the National Influenza Pandemic Preparedness Plan, with lessons learnt during the H1N1 pandemic incorporated, would provide guidance to the programme through the coming years.

The information and recommendations contained in this guidance document are based on expert opinion from a selected group of experts who participated in a series of expert sub-committee meetings held between March - May 2011 under headings of Planning & Coordination, Risk Communication, Surveillance & Early Warning and Health System Response. The draft developed was reviewed and consolidated by senior members of the Epidemiology Unit. I wish to thank everyone who was involved in developing this document and hope that it would guide us to be better prepared for a future disaster situation including pandemic events.

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Table of Contents

Introduction	Page 01
Background and Rationale	Page 02
Demographic and social profile	Page 07
Analysis of the country situation	Page 10
Existing surveillance systems of Sri Lanka	Page 11
Revised pandemic phases	Page 15
National Influenza Pandemic Preparedness Plan (NIPP)	Page 17
Strategies	Page 19
Key activities	Page 24
Roles and responsibilities of various agencies & organizations	Page 37
Plan of implementation and management	Page 40
Monitoring and evaluation	Page 41
Conclusion and next steps	Page 42
References	Page 44
Annexures	Page 45
Annex I - List of notifiable diseases	Page 45
Annex II - Composition of National Technical Committee on Pandemic / Avian Influenza Preparedness	Page 46
Annex III – International Health Regulations	Page 47
Annex IV – Organogram of Ministry of Health	Page 49

INTRODUCTION

National Influenza Preparedness and Response Plan of Sri Lanka was previously developed and published in 2005 and a revision of that was carried out in 2006. Since this time there have been advances in many areas of preparedness and response planning globally. For example, stockpiling of antiviral drugs is now feasible, WHO guided pandemic phases have been revised and attempts to stop or delay pandemic influenza at its initial emergence has been accepted as a strategy.

There is clearly an increased comprehension of past pandemics, strengthened outbreak communications, greater awareness and knowledge on disease spread and approaches to control especially Influenza and clearer understanding of the crucial role that International Health Regulations (IHR) play in providing the international community with a framework to address international public health concerns.

Most importantly extensive practical experience had been gained and invaluable lessons have been learnt from responding to outbreaks of highly pathogenic avian influenza A (H5N1) virus infection in poultry and humans since 2003 and from managing outbreaks of pandemic influenza A (H1N1) in many countries in 2009 and 2010. There is greater appreciation that pandemic preparedness and response requires involvement of health sector, as well as the whole society.

In light of these developments, it is essential to update this document that guide the influenza preparedness and response activities in the country, to be better prepared for the next pandemic. This guidance which closely follows that of the WHO serves as the core strategic document and it is supported by the national plan of our main stakeholder, Department of Animal Production and Health (DAPH). These two documents provide detailed information on a broad range of specific recommendations and activities, as well as clear guidance on their implementation.

BACKGROUND AND RATIONALE

GLOBAL AND REGIONAL SCENARIO

Throughout the history, influenza pandemics have occurred approximately every 10-50 years often causing catastrophic loss of life and significant economic and social impact. In the 20th century, there were three pandemics; in 1918 (H1N1), 1957 (H2N2), and 1968 (H3N2). The 1918 pandemic resulted in 20-50 million deaths and the other two 1-4 million deaths each. All incriminated strains of influenza viruses had jumped the species barrier having originated in animals.

Avian influenza caused by H5N1 virus has been widely reported across South East Asia since December 2003 and it is now well established in the region's poultry populations. H5N1 virus which is highly pathogenic has expanded its geographical spread across the globe. These H5N1 outbreaks confirm the spread of the virus beyond their initial focus in South East Asian countries. As of October 2011, the H5N1 virus has resulted in 566 human cases and caused 332 deaths.

Pandemic influenza A (H1N1) was first reported from Mexico in March 2009 and rapidly spread through the globe to over 214 countries and overseas territories by 1st August 2009 resulting in a pandemic with 18,449 reported deaths. It was caused by a strain that had a mix of genetic material from swine, avian and human influenza viruses. On 10th August 2010 WHO officially declared the post pandemic phase of the first wave signaling the end of the pandemic proper.

COUNTRY SCENARIO

The country's location in the South Asian Region among the countries that had reported recent H5N1 Avian Influenza outbreaks among poultry and in some cases in humans, had posed a constant threat of the disease manifesting in the country. Further Sri Lanka has a large poultry industry with a considerable proportion of people engaged in backyard poultry. An equally higher number of people who are involved in meat processing are also at risk of contracting the disease. Being a tropical island the country attracts over a two hundred species of migratory birds fleeing cold winters of temperate regions every year. Another significant risk factor that needs attention is the increased travel and trade associated with areas which are affected by avian influenza. Considering these risk factors OIE had classified Sri Lanka in the moderate risk category.

Animal surveillance studies have shown the prevalence of H3N2, H6 and H9 strains among animals but no cases of H5N1 have been reported to date. Routine animal influenza surveillance by Department of Animal Production and Health (DAPH) had been included within the national pandemic preparedness and response activities along with human influenza surveillance programme. These preparedness and response activities in the country headed jointly by the Ministries of Health and Livestock Development & Agriculture began in 2005 with due guidance and support from the WHO and OIE. In the Ministry of Health its communicable disease centre - the Epidemiology Unit, the national laboratory - Medical Research Institute (MRI) and the communication and health promotion department - Health Education Bureau (HEB) are involved in managing these activities along with the DAPH in the Ministry of Livestock Development and Agriculture.

Before the H1N1 pandemic in 2009, Sri Lanka has experienced outbreaks of human influenza due to following strains.

- 2004 - Influenza B, Hong Kong/330/2001, Shanghai/361/2002
- 2003 - Influenza A /H3N2
- 1998 - Influenza A /H3N2/Sydney strain

In 2009 H1N1 pandemic, 642 laboratory confirmed cases and 48 deaths were reported from the country while in its second wave in 2010 there were 580 laboratory confirmed cases and 29 deaths.

RATIONALE FOR PLANNING

Influenza pandemics are unpredictable events that usually have severe consequences on societies. The impact of such an event is worse on developing countries where resources are usually limited.

An influenza pandemic results in chaotic situations especially in the health sector with rapid spread of the pandemic disease leaving little time to implement mitigation measures, overwhelming medical facilities with a large demand for care and shortages of specific (pandemic influenza vaccines, antivirals and antibiotics) and general medical supplies for treatment. It considerably affects the day-to-day lives of the community with serious shortages of personnel and products which results in disruption of key infrastructure and essential services and impacting negatively on social and economic activities. Health

authorities face intense scrutiny from public, government agencies, and media on the level of national preparedness. They also may counter the challenge of possible limited assistance from international agencies due to demands of the global emergency.

Development of influenza viruses with pandemic potential

Many animal influenza viruses naturally infect and circulate among avian and mammalian species. Most of these animal influenza viruses do not normally infect humans. However, on occasion, certain animal viruses do infect humans. Such infections often occur as sporadic or isolated infections but sometimes they result in small clusters of human infections. An influenza pandemic occurs when an animal influenza virus to which most humans have no immunity acquires the ability to cause sustained human-to-human transmission leading to community-wide outbreaks. Such a virus has the potential to spread worldwide, causing a pandemic. The development of an influenza pandemic can be considered as the result of transformation of an animal influenza virus into a human influenza virus. At the genetic level, this occurs through genetic reassortment which is a process where genes from animal and human influenza viruses mix together to create a human-animal influenza reassortant virus or genetic mutation, a process in which genes in an animal influenza virus change its characteristics allowing the virus to infect humans and transmit easily among them.

Highly pathogenic avian influenza A (H5N1) virus and threat of an influenza pandemic

H5N1 virus was expected to be the most important influenza virus with pandemic potential. In 1997, this avian influenza A virus of subtype H5N1 first demonstrated its capacity to infect humans after causing disease outbreaks in poultry in Hong Kong SAR and China. Since its widespread reemergence in 2003-2004, this virus has resulted in millions of poultry infections and over five hundred human cases. It has been observed that on rare occasions, H5N1 has spread from an infected person to another person with close personal contact. However, none of these events has so far resulted in sustained community-level outbreaks.

Although the virus still remains poorly transmissible to humans the risk for a human to acquire a zoonotic H5N1 infection through direct contact or close exposure to infected poultry remains high. From its widespread emergence and spread, H5N1 virus is now entrenched in domestic birds in several countries. Controlling H5N1 among poultry is essential in reducing the risk of human infection and in preventing or reducing the severe economic burden of poultry outbreaks. Given the persistence of the H5N1 virus,

successfully meeting this challenge requires long-term commitment and strong coordination between animal and human health authorities.

Influenza A (H1N1) 2009 Pandemic

In early 2009 Mexico reported clusters of influenza cases and deaths and this virus strain was identified as influenza A (H1N1) which had acquired the pandemic potential through genetic reassortment. This strain had genetic material from swine, human and avian influenza viruses. This outbreak rapidly spread across the globe within a few months and WHO declared it a pandemic by July 2009. This pandemic affected over 200 countries and caused over 18,000 deaths. Although WHO declared the acute pandemic officially to be over by August 2010 second and third pandemic waves caused by the same virus strain continued to be reported from several countries to date.

Other viruses with pandemic potential

Wild birds act as a reservoir for a large number of other influenza viruses. Influenza viruses are found in other animal species as well. Any one of these other viruses, which normally do not infect people, could transform into a pandemic virus. In addition to H5N1, other examples of animal influenza viruses previously known to infect people include avian H7 and H9 subtypes and swine influenza viruses. The H2 subtype, which was responsible for the 1957 pandemic (but has not circulated for decades), could also have the potential to cause a pandemic should it return. The uncertainty of the next pandemic virus means that planning for pandemic influenza should not exclusively focus on H5N1 or H1N1, but should be based on active and robust surveillance and science-based risk assessment.

The precise timing of a pandemic is difficult to predict and therefore mechanisms within a preparedness package that enables early warning, ensures prompt and adequate responses and allows satisfactory recovery from impact are vital. Social and economic impact of the H1N1 pandemic highlights the need to reinforce national response capacity in such an event. The effects of the pandemic on social infrastructure, economy and national security can be mitigated with sufficient and appropriate multisectoral preparedness planning. The national avian/pandemic influenza preparedness programme that closely followed the global pandemic preparedness initiative had laid down a considerably strong basic pandemic preparedness level within the country that enabled a smoother response drive in facing the pandemic. Progress achieved in areas of surveillance, stock piling of essential supplies, hospital infrastructure, laboratory capacity, health staff training and intersectoral and multisectoral coordination helped negate

much of the damage from the pandemic. The fact that the effects of the H1N1 pandemic were not as devastating as a possible H5N1 pandemic also helped. However inadequacies and gaps identified in responding to the H1N1 pandemic need to be addressed before the next pandemic event. Hence, there is an urgent need for Sri Lanka to revamp its preparedness plan to further fine tune the framework to successfully respond to the next influenza pandemic.

This revised plan will provide a better integrated framework for national preparedness and response to an influenza pandemic. As an agenda for action, it will focus on integrating with other emergency services to facilitate an organized and coordinated response in facing the next pandemic of influenza. Further, it deliberates a stronger collaborative process, which is acceptable and applicable to all stakeholders and clearly defines their roles and responsibilities.

DEMOGRAPHIC AND SOCIAL PROFILE

Sri Lanka is an island off the southern coast of India and covers an area of 65,454 square kilometres. The estimated population for 2007 was approximately 20 million of which around 20% live in urban areas.

For all administrative purposes, Sri Lanka is divided into 9 provinces and 25 Districts. Under a District Secretary, within a district, there are Divisional Secretariat (DS) divisions which are further divided into Grama Niladhari (GN) areas. There are 302 DS divisions, 13,913 GN areas and over 38,000 villages in the country. Of the 51 local Government bodies, 14 are Municipalities.

One of the most clearly visible features in the country is the increasing proportion of older age groups in the composition of the population. The proportion of the 30-59 year group has increased from 29% in 1981 to 37.3% in 2000 while the 60 years and over group has increased from 6.7% to 10.1% during the same period. It is projected that by the year 2020, 20% of Sri Lanka's population would be 60 years of age or over.

Registration of births and deaths was made compulsory by an Act implemented in 1897. All live births have to be registered within 42 days and deaths within 5 days of their occurrence by registrars who carry out these functions within a prescribed area called a "Registrar's Division". Stillbirths are registered only in "Proclaimed Towns" where the registrars are medical personnel (Medical Registrars). In the case of estates, the Superintendent of the estate has to inform the District Registrar of such events within 3 days. Surveys have revealed that the completeness of registration is 98.8% for births and 94.0% for deaths.

While Sri Lanka is a developing country, its health indicators are comparable to a developed country (Crude Birth Rate-18.9 / 1000(2007), Infant Mortality Rate-11.7 / 1000 (2004) Child Mortality Rate – 21 / 1000 children (2006) and Maternal Mortality Rate – 14.3 / 100,000(2002).

Life expectancy at birth in 2006 was 71.7 for males and 76.4 for females while the literacy rate is relatively high (90.7%). Sri Lanka is suffering from a double burden of diseases. While there is still a high prevalence of communicable diseases such as Malaria, Tuberculosis, Dengue Fever / DHF, Japanese encephalitis, Diarrhoea and Acute Respiratory Infections, non-communicable diseases such as cardiovascular diseases, Diabetes and Cancers are now causing increased morbidity and mortality.

Organization of Health Services

Health care is provided by both the public and private sector. While the public sector provides free health care (curative, preventive and rehabilitative), the private sector provides mainly curative care to nearly 50% of the population mainly in the urban and suburban areas. Ninety five percent of inpatient care is provided by the public sector.

The health services function under the Minister of Health who is assisted by a Deputy Minister. The Secretary of Health is administratively supported by an Additional Secretary and Senior Assistant Secretaries. The Director General Health Services (DGHS) heads the Department and has 15 Deputy Director General (DDG) including a DDG who heads the Public Health Services. Under their jurisdiction, there are several Directors who are responsible for various programmes and organizations. With the devolution of power to the Provincial Councils in 1989, certain functions of the Ministry of Health at the national level were handed over to the separate Ministries of Health in each of the nine Provincial Councils.

Provincial Directors of Health Services (PDHS) are assisted by 26 Regional Directors of Health Services (RDHS) who are in charge of an administrative District within the Province. Each District is further subdivided into areas manned by a Medical Officer of Health (MOH).

Preventive and promotional health care within such an area is the responsibility of a MOH. Each MOH area is further divided into smaller areas and assigned to a Public Health Inspector (PHI) who is responsible for sanitation, control of communicable diseases, nutrition and hygiene in his area. A PHI area is further subdivided into areas of the size of approximately 3000-4000 population for carrying out Maternal and Child Health (MCH) activities and looked after by Public Health Midwife (PHM). An MOH area may have one or more Public Health Nursing Sisters (PHNS).

There are three levels of curative care facilities in the country. Primary care facilities comprise of Central dispensaries, Maternity Homes and Rural Hospitals. Secondary care is provided at Peripheral Units, District, Base and General Hospitals while tertiary care is provided at Teaching Hospitals and Special Hospitals (Eye, Cancer, Mental, Paediatric Hospitals etc.). As of 2007, there were 615 medical institutions with inpatient facilities and 441 Central Dispensaries.

There were 55.1 medical officers and 157.3 nursing officers available per 100,000 populations by 2007. A health manpower study carried out by the WHO in 1973 indicated that a health care facility of some sort was available within 1.4 kilometres from most homes. Additionally, allopathic health care provided by the state free of charge was available within 4.8 kilometres on an average. Conditions have improved considerably since then. During the period spanning from 1973 to 2007, the number of government institutions providing curative care has increased from 753 to 1056. MOH offices giving preventive services had expanded from 98 to 327 from 1973 to 2011. In addition the private sector providing allopathic, ayurvedic and other systems of medicine to the general public have also expanded considerably.

ANALYSIS OF THE COUNTRY SITUATION

The Advisory Committee on Communicable Diseases (ACCD) of the Ministry of Health decided to appoint a Steering Committee, Technical Committee and a Focal Point to organize a preparedness programme with a view of the ongoing threat of Avian Influenza in the region on its meeting held on 12th September 2005. Subsequently, a joint National Steering Committee and a Joint Technical Committee were appointed to guide and facilitate the complete planning process including preparations, logistics and budgeting in collaboration with the Ministry of Livestock Development and other relevant ministries. The Epidemiologist of the Ministry of Health (MoH) and the Director General of the Department of Animal Production and Health (DAPH) have been appointed as the focal points in respective ministries.

Ministry of Health and Department of Animal Production and Health of the Ministry of Livestock Development head the Technical Committee and are jointly responsible for preparedness phase of the programme as well as the active response phase during the pandemic along with many other stakeholders.

EXISTING SURVEILLANCE SYSTEMS IN SRI LANKA

In Sri Lanka, the surveillance of communicable disease is based on the notification of selected diseases of priority. The Quarantine and Prevention of Diseases Ordinance of 1897 and its subsequent amendments provide the necessary legislation for the implementation of this system. The list of diseases to be notified includes the three diseases under the International Health Regulations in Group A and Group B which presently includes 23 diseases. The list is reviewed from time to time by the ACCD of the Ministry of Health and additions and deletions are made according to stipulated legislative procedures which require the amended list to be published in the Government Gazette.

According to the instructions in the above ordinance, every medical practitioner (Government or Private) attending on a patient suffering from a notifiable disease is expected to immediately notify such a case to the MOH of the area where the patient resides. This notification may even be made by the principal of a school (in case of a student) or even the Chief Occupant of a house. The list of present notifiable diseases is given in Annex I.

Cases are notified to the Medical officer of Health (MOH) of the area where the patient resides using a standard notification card (form Health 544). Notifications, usually regarding inpatients, originate mostly from hospitals. Notifications of outpatients seeking care at hospitals in the public sector are limited. Similarly, notifications from the private sector too are minimal, AFP (Polio) and Dengue being exceptions.

On receipt of the notification card, the MOH enters details regarding the patient in his notification register and forwards the card to the relevant range PHI (according to the patient's address) for prompt investigation and confirmation. After investigation, the PHI enters details regarding the patient in his Infections Disease Register (IDR) (H 700), completes the communicable diseases Report (H411) and forwards this report together with form H544 to the MOH within one week of the receipt of the notification. The MOH then enters the patient's details in the IDR.

Every Saturday, the MOH completes the Weekly Return of Communicable Diseases (Form H399) along with the form H411 for each investigated case. The weekly Return is forwarded to the Epidemiologist with copy to the Regional Epidemiologist (RE) by post. These weekly returns have been received by the Epidemiology

Unit from MOHs since 1960. Sending copies of these returns to Regional Epidemiologists began in 1970 when the first two REEs were appointed to Kalutara and Kurunegala districts. This process covers the whole island at present.

A sentinel reporting system has been established for AFP, Dengue, Hepatitis, Leptospirosis and other notifiable vaccine preventable EPI diseases. This gives an indication of the trend of the incidence of these diseases in the geographical area of concern. Several methods are being used by the Epidemiology Unit as early warning reporting systems. In addition to routine reporting and sentinel surveillance, entomological surveillance and event based surveillance that depend on media reports, rumours and e-mail alerts are the methods employed. Since 1960, publications of the Unit; Quarterly Epidemiological Bulletin (QEB) and Weekly Epidemiological Report (WER) have been providing feedback on epidemiological activities to all medical institutions, MOHs, WHO and other international agencies. Information on routine surveillance on occurrence of disease from all health facilities (hospitals at various levels, both from OPD and in-patient departments) and laboratories are collected, registered and transmitted to higher levels.

In case of an outbreak, prompt investigations are undertaken. Such investigations are carried out with formal feedback by the central, provincial or district level. Disease surveillance activities need to be further strengthened to collect data to enable decision makers to respond appropriately and adequately to face challenges during the advancement of the pandemic process.

AREAS TO BE STRENGTHENED

- Laboratory confirmation
- Transport of specimens to laboratories
- Reporting system

PREVENTION AND CONTROL ACTIVITIES RELATED TO AVIAN / PANDEMIC INFLUENZA

Surveillance of Influenza among humans

Human Influenza surveillance comprises of 2 components; Influenza like illness (ILI) surveillance and Severe Acute Respiratory tract Infections (SARI) surveillance.

ILI surveillance has been initiated in 20 hospitals identified as sentinel surveillance sites for Avian / Pandemic Influenza. These institutions have been selected considering their importance in geographical location and also in being a 'hot spot' for bird migration.

Under laboratory component these hospitals are expected to send at least thirty (30) samples per month to the Medical Research Institute (MRI) from patients with influenza like illness (ILI) attending Out Patients' Department (OPD). MRI is the national Influenza Centre (NIC) in Sri Lanka for human influenza surveillance.

SARI surveillance has been established in 3 hospitals in the country; Lady Ridgeway Children's Hospital (LRH), General Hospital Matara and Teaching Hospital Peradeniya. These are expected to send in samples from all inward patients admitted with severe acute respiratory tract infections. For the epidemiology component information on the number of SARI and ILI patients in wards and OPDs are collected.

Following case definitions are used for human influenza surveillance.

ILI : An Acute Respiratory Illness with measured temperature $\geq 38^{\circ}\text{C}$, cough and onset within past 7 days

SARI : An Acute Respiratory Illness with a history of fever or measured temperature $\geq 38^{\circ}\text{C}$, cough, onset within past 7 days and requires hospital admission

Surveillance of Influenza and control of avian influenza among animals

The Ministry of Livestock Development implements avian influenza prevention and control strategies at present.

These strategies include:

1. Strict bio security
2. Control of avian traffic
3. Routine influenza surveillance among poultry and wild birds
4. Surveillance and monitoring of unusual events in poultry flocks
5. Increasing public awareness on avian influenza and safe poultry handling
6. Investigation and reporting of unusual events in the flock

Feedback on these activities are presented and discussed at monthly Technical Committee meetings.

Anti-viral drugs

Anti-viral drugs have been stockpiled at the central Medical Supply Division (MSD) of the Ministry of Health, regional medical store at district level and also at all 20 sentinel hospitals. The use of anti-viral drugs and vaccines is on recommended treatment guidelines issued by the Ministry of Health.

Pandemic vaccine

Pandemic H1N1 vaccine was used as a disease control strategy from mid-2010. High risk approach was used in this immunization campaign.

Health education

Health education materials have been prepared during the preparedness phase and were used during the actual pandemic.

Health systems response

Infectious Disease Hospital, Colombo (IDH) is designated as the focal point of management of cases at the national level. All 20 sentinel hospitals act as the referral points at provincial level. All other General and Base Hospitals have also been prepared to treat patients in a pandemic situation. All these institutions actively managed patients during the 2009 H1N1 pandemic. Preparedness of health services include training of health personnel, stockpiling of essential supplies and building infrastructure capacity to achieve a state of total mobilization of health services whenever a pandemic event occurs in the country.

Risk communication

Communication of information pertaining to risks and prevention of avian/pandemic influenza to the public will be intensified on the national communication strategy that has been developed. Focal points (spokespersons) have already been identified and action will be taken to minimize the negative implications of irresponsible media activities which happened during the H1N1 pandemic. A communication sub-committee has been established.

REVISED PANDEMIC PHASES

The WHO pandemic phases were initially developed in 1999 and revised in 2005. These phases had earlier been adopted as a sound framework to aid countries in pandemic preparedness and response planning. Pandemic phases has been revised again by WHO and in this revision, the use of a six-phased approach has been maintained for easy incorporation of new recommendations and approaches into existing national preparedness and response plans.

The grouping and description of pandemic phases are based upon observable phenomena that make them easier to understand. Phases 1-3 correlate with preparedness, including capacity development and response planning activities, while Phases 4-6 address the need for response and mitigation efforts. Furthermore, periods after the first pandemic wave are elaborated to facilitate post pandemic recovery activities.

Definition of pandemic phases

- Phase 1** - No influenza viruses circulating among animals have not been reported to cause infections in humans.
- Phase 2** - An animal influenza virus circulating among domesticated or wild animals is known to have caused infection in humans and is therefore considered as a potential pandemic threat .
- Phase 3** - Limited human-to-human transmission is observed. An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.
- Phase 4** - Confirmed human-to-human transmission of an animal or human-animal influenza reassortant virus is observed causing “community-level outbreaks”. Any country that suspects or has verified such an event should urgently consult with

WHO so that the situation can be jointly assessed and a decision made by the affected country if implementation of a rapid pandemic containment operation is warranted. Phase 4 indicates a significant increase in risk of a pandemic but does not necessarily mean that a pandemic is a reality.

Phase 5 - Characterized by human-to-human spread of the virus into at least two countries in one WHO region. This is a strong signal that a pandemic is imminent.

Phase 6 - This is the pandemic phase which is characterized by community level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in **Phase 5**. Designation of this phase will indicate that a global pandemic is under way.

Post-peak period - Pandemic disease levels in most countries with adequate surveillance will drop below peak observed levels. This period signifies that pandemic activity appears to be decreasing but it is uncertain if additional waves will occur and countries will need to be prepared for a second wave.

Possible new wave - Level of pandemic influenza activity in most countries with adequate surveillance is rising again.

Post-pandemic period - Disease activity will have returned to levels normally seen for seasonal influenza. It is expected that the pandemic virus will behave as a seasonal influenza A virus. At this stage, it is important to maintain surveillance and update pandemic preparedness and response plans accordingly. An intensive phase of recovery and evaluation may be required.

NATIONAL INFLUENZA PANDEMIC PREPAREDNESS PLAN (NIPPP)

The National Influenza Pandemic Preparedness Plan (NIPP) is designed to enable the Ministry of Health of Sri Lanka to prepare for recognizing and managing the response to an influenza pandemic. It describes the strategies and activities to be undertaken by the Ministry of Health in close collaboration with the other key agencies such as Ministry of Livestock Development and other ministries and related stakeholders in preparation for and response to influenza. By outlining the elements of the required response, the NIPP will allow preparations to be made in advance of the emergence of a pandemic influenza virus.

According to latest revisions of WHO pandemic phases, there are six distinct stages of response.

1. Phases 1 – 3
2. Phase 4
3. Phases 5 -6
4. Post peak period
5. Possible new wave
6. Post pandemic period

The Ministry of Health will be involved in each stage in different capacities as outlined in the NIPP. There is recognition at all levels about the need for collaboration within and outside the Ministry of Health in order to enhance and strengthen the plan of response for a future pandemic.

PURPOSE

The aim of a national plan of influenza is to facilitate a coordinated and effective national response in the event of a next influenza pandemic. It will provide specific advice, actions and assist both national and local public health services and other agencies to prepare their own contingency arrangements.

Besides these disease-related effects, pandemic preparedness can be used as a model to utilize strengthened infrastructure and multidisciplinary collaboration in case of major outbreaks of other communicable diseases in general.

GOAL

To be adequately prepared at all levels and in all sectors of the country for an influenza pandemic so that there will be minimal impact on not only the health of the nation but also economy and societal structures.

OBJECTIVES

1. To reduce transmission of a pandemic virus and opportunities for human infection from infected animals
2. To strengthen early warning system of surveillance for early and coordinated response to outbreaks
3. To contain or delay spread of virus at the source
4. To reduce the impact of the pandemic virus on morbidity and mortality and minimize social disruption
5. To monitor and evaluate the evolving response to the pandemic

STRATEGIES

This plan describes the actions in influenza pandemic preparedness and response that Sri Lanka will undertake for each phase under five major strategies outlined below. The National Influenza Pandemic Preparedness Plan (NIPP) will undertake the evaluation and determination of the pandemic phase in effect for the country.

This will be done by assessing the global WHO phase in progress and the current status of outbreaks and human transmission of influenza within the country. Decisions to move from one phase to another will be made by the National Technical Committee on Avian / Pandemic Influenza Preparedness and Response (see ANNEX II, for composition and terms of reference).

Five major strategies are identified under which actions are recommended within NIPP:

- 1. planning and coordination**
- 2. situation monitoring and assessment**
- 3. reducing the spread of disease**
- 4. continuity of health care provision**
- 5. communications**

1. PLANNING AND COORDINATION

The goal of **planning and coordination** efforts is to provide leadership and coordination within the health sector and across other sectors. One important aspect is to integrate pandemic preparedness into national emergency preparedness frameworks and coordinate activities with national agencies / bodies pertinent to this emergency preparedness.

Also, the organizations and individuals involved and the mechanisms for collaboration during each phase are identified under this strategy. The structure and framework for policy and decision-making and for mobilization of national response is given.

Objectives:

1. To advocate responsible authorities, institutions, diagnostic and manufacturing laboratories in the implementation of the pandemic preparedness plan

2. To promote a multi sectoral response to control and contain the impact of the pandemic

2. SITUATION MONITORING AND ASSESSMENT

The goal of **situation monitoring and assessment** is to collect, interpret, and disseminate information on the risk of a pandemic before it occurs, declare onset of an influenza pandemic in Sri Lanka and once under way, to monitor pandemic activity and characteristics. This will be achieved through strengthening surveillance. Further, this process entails monitoring and assessment of the potential transmissibility of animal influenza infections to humans with significant health impacts including pandemic potential.

To assess if the risk of a pandemic is increasing, it will be important to monitor the infectious agent, its capacity to cause disease in humans its capacity for complications and mortality in humans and the patterns of disease spread in communities. It is important to collect data on influenza viruses, the genetic changes taking place and consequent changes in biological characteristics, emerging sensitivity to antiviral medicines and to rapidly investigate and evaluate outbreaks. Once a pandemic influenza virus begins to circulate, it will be vital to assess the effectiveness of the response measures.

In relation to animal influenza outbreaks with agents with zoonotic / pandemic potential, NIPP stresses the need for monitoring influenza activities among animals through the animal influenza surveillance carried out by the DAPH and Event Based Surveillance. In the event of circulation of such an influenza strain among animals, it is important to identify the strain, its capacity to cause disease in humans, its potential impact on human health in terms of complications and mortality and the level of intensity for preventive and control measures.

Human disease surveillance activities suggested in the NIPP to detect influenza infections of zoonotic potential synchronizes with animal influenza surveillance activities spelt out in the Sri Lankan Exotic Disease Emergency Plan (SEDEP).

The disease surveillance system consists of on-going collection, interpretation and dissemination of data to enable the development of evidence-based interventions. Specific activities carried out under surveillance and those conducted within rapid response to alerts will change according to the pandemic phase in effect and the current national epidemiological situation. The National Technical Committee on Avian / Pandemic

Influenza Preparedness and Response will monitor and assess the situation during its regular and extraordinary sessions to determine the direction of national preparedness and response programme.

Objectives:

- To continue strengthening routine surveillance and early warning system, including laboratory roles
- To enhance capacity for epidemiological investigation (outbreak response teams) and contact management
- To continue to improve implementation of ILI surveillance also targeting avian influenza

3. REDUCING THE SPREAD OF DISEASE

Reducing the spread of disease will be achieved through implementation of public health and pharmaceutical interventions. Public health measures will include isolation of cases, quarantine of contacts and social distance between people. Public health measures are implemented at individual, household, institutional and societal-level measures and international travel measures. Pharmaceutical interventions consist of use of antivirals, other pharmaceuticals, and seasonal/pandemic vaccines.

Individual/household level measures include risk communication, individual hygiene and personal protection, home care of the ill and quarantine of contacts.

Institutional level measures: Include triage of suspected influenza patients, their isolation and standard management and infection control measures to prevent transmission of the disease from patients to health staff and hospital visitors.

Societal-level measures are applied to societies or communities rather than individuals or families. These measures require a behavioural change in the population, multiple sector involvement, mobilization of resources, strong communication and media support.

International travel measures aim to delay the entry of pandemic disease into not-yet-affected countries and will have an impact on international traffic and trade. Countries should balance reducing the risks to public health and avoiding unnecessary interference with international traffic and trade.

Pharmaceutical interventions aim to prevent or treat influenza encompass using a range of approaches. Additionally, the successful prevention and treatment of secondary or pre-existing conditions will be a key factor in many settings for reducing the overall burden of illness and death.

Objectives

- To develop a strategy and decision-making scheme for implementing public health measures
- To manage availability and supply and to develop strategy for use of antiviral and vaccine stockpiles

4. CONTINUITY OF HEALTH CARE PROVISION

During an influenza outbreak / pandemic, health systems will need to provide health-care services to minimize complications and deaths while attending to the influx of patients with influenza illness.

Managing influenza patients during the season remains an integral part of the routine care of health institutions while planning for surge capacity in health-care facilities will help determine the extent to which the existing health system can expand to manage the additional patient load during an outbreak / pandemic.

Health-care facilities will need to maintain adequate triage and infection control measures to protect health-care workers, patients, and visitors. Planning will involve all sectors of the health system including delineating resources and capacity required for responding to the health care needs during the emerging situation.

Objectives

- To prepare national and sub-national health care systems to respond to crucial pandemic phases
- To train personnel and equip identified referral hospitals and other health care facilities in provision of health care for influenza patients.

5. COMMUNICATIONS

The goal of **communications** before and during an influenza epidemic / pandemic is to provide and exchange relevant information with the public, partners, and stakeholders to allow them to make well

informed decisions and take appropriate actions to protect health and safety in response. It is a fundamental part of effective risk management.

Communications will be based on the five principles outlined by WHO; planning, trust, transparency, announcing early and listening. Given the complex risks and perceptions associated with an influenza pandemic, communication strategies that simply disseminate outbreak information and recommendations will be insufficient. The scope and complexity of the task will demand frequent, transparent, and proactive communication and information exchange with the public, partners, and other stakeholders about decision making, health recommendations, and related information.

The communication sub-committee which includes senior technical and communication staff with expertise in risk communication will advise senior management on all relevant issues of communication. Surveillance of public and media concerns will be conducted to allow for the development of more targeted key messages.

Objectives

- To ensure availability of an integrated communication strategy responsive to public concerns related to influenza outbreaks and pandemics
- To develop pilot testing and ensure availability of communication materials for timely communication of key messages pertinent to influenza outbreaks / pandemics
- To ensure coordination among technical and communication staff regarding dissemination of key messages
- To ensure media training for key technical and communications spokespersons
- To establish mechanisms for appraisal of effectiveness of communication strategies used during an influenza epidemic / pandemic with a view to revising the communication strategy for an effective response to public concerns

KEY ACTIVITIES

Key activities under the 5 major strategies will depend on phases of the pandemic.

Phases 1 - 3				
Planning & coordination	Situation monitoring & assessment	Reducing spread of disease	Continuity of healthcare provision	Communications
Establish and activate a cross-governmental, multi-agency national pandemic preparedness committee that meets regularly.	Develop national surveillance systems to collect up-to-date clinical, virological, and epidemiological information on trends in human infection with seasonal influenza viruses, which will also help to estimate additional needs during a pandemic	Identify, regularly brief, and train key personnel to be mobilized as part of a multi-sectoral expert response team (Rapid Response Team – RRT) for animal or human influenza outbreaks of pandemic potential	Identify priorities and response strategies for public and private health care systems for triage, surge capacity, and human and material resource management	Establish a communications sub-committee with all necessary standard operating procedures to ensure a streamlined, expedited dissemination of communications products Updating the current integrated communication strategy on avian/pandemic influenza based on lessons learnt during the H1N1 pandemic 2009
Assess capacities and identify priorities for pandemic preparedness planning and response at national level and regional level	Detect animal and human infections with animal influenza viruses, identify potential animal sources of human infection, assess the risk of transmission to humans, and communicate this information to WHO and relevant partners	PREVENTING HUMAN INFLUENZA INFECTION FROM ANIMALS Reduce infection risk in those involved in responding to animal outbreaks by education and training regarding the potential risk of transmission; correct use of personal protective equipment by high risk groups based on the profile of risk ; making antivirals available for high risk groups if indicated by the risk assessment	Review and update continuity of health care provision strategies at national and regional levels	Update (advocate-advocacy) leadership and other relevant sectors regarding global and national pandemic influenza risk status

Develop, exercise, and periodically revise national influenza pandemic preparedness and response plan in close collaboration with human and animal health sectors and other relevant public and private partners with reference to current WHO guidance	Detect and investigate unusual clusters of influenza-like respiratory illness or deaths and assess levels of possible human-to-human transmission	Recommend measures to reduce human contact with potentially infected animals	Develop strategies, plans, and training to enable all health care workers including community level workers to respond during animal outbreaks and a pandemic	<p>Conducting baseline surveys among target audiences for determining communication needs for planning Identify effective modes of communication and effective channels of communication</p> <p>Build effective relations with key journalists and other communications channels to familiarize them with influenza and pandemic related issues</p>
Advocate to establish legislative and ethical framework for all proposed interventions	Characterize and share both animal and human influenza virus isolates and associated information with relevant international agencies, such as WHO, FAO and OIE, to determine the degree of risk for humans, develop diagnostic reagents, candidate vaccine viruses, and monitor antiviral resistance	<p>INDIVIDUAL / HOUSEHOLD LEVEL MEASURES</p> <p>Promote hand and respiratory hygiene</p> <p>Develop guidelines for home based monitoring of contacts (quarantine)</p>	Develop, update and widely disseminate case-finding, treatment and management protocols and algorithms on triaging, initial assessment and clinical management of cases, hospital admission policies, collection, transportation & examination of specimens and infection control	Develop effective communication strategies and messages to inform, educate and communicate with individuals and families to enable them to take appropriate actions before, during, and after a pandemic
Anticipate and address the resources required to implement proposed interventions at national and regional levels including working with non-governmental organizations	Strengthen the national and regional laboratories in influenza diagnostic capabilities	Develop infection control guidance for household settings	Develop national infection control guidance	Initiate public health education campaigns in coordination with other relevant authorities on individual-level infection control measures

Integrate pandemic preparedness and response plan into existing national emergency preparedness and response programmes	Activate, verification and confirmation of event based surveillance	Develop plans to provide necessary support for ill persons isolated at home and their household contacts	Estimate and plan for procurement and distribution of personal protective equipment for protection of workers	Increase public awareness of measures that may be available to reduce the spread of pandemic influenza
Provide to public and private sectors the key assumptions, guidance and relevant information to facilitate their pandemic business continuity planning	Develop business continuity plans for surge capacity for human and other resources for surveillance including laboratory personnel	SOCIETAL LEVEL MEASURES Establish protocols to suspend classes, especially in the event of a severe pandemic or if there is disproportionate or severe disease in children	Develop and implement routine laboratory bio safety and safe specimen-handling and shipping policies and procedures	Update communications strategies on analysed feedback information from the general public and stakeholder organizations
Participate, when possible, in regional and international pandemic preparedness planning initiatives and exercises	Establish an indicator based review system for surveillance including laboratory surveillance and review by the National Technical Expertise Committee	Promote development of mitigation strategies for public and private sector workplaces (such as adjusting working patterns and practices)	Develop the capacity for the rapid deployment of diagnostic tests once available	
	Development/ revise/update and disseminate laboratory and epidemiological surveillance guidelines among relevant staff	Promote reduction of unnecessary travel and overcrowding of mass transport systems	Assess health system capacity to detect and contain outbreaks of human influenza disease in hospital settings and preventive settings	
		Develop a framework to facilitate decision-making for cancellation/restriction of mass gatherings at a time of a pandemic	Build up capacity in health-care providers at all levels to strengthen practice of appropriate infection control and bio safety measures	
		INSTITUTIONAL MEASURES		

		<p>Identifying and establishment of triage areas, isolation areas/units</p> <p>Establishing protocols for infection control measures</p> <p>Capacity building training programs for the staff on reducing transmission</p>		
		<p>INTERNATIONAL TRAVEL MEASURES</p> <p>Develop capacities for emergency public health actions at designated points of entry in accordance with IHR (2005)</p> <p>Establishing infrastructure facilities for implementing measures to reduce transmission at designated points of entry</p> <p>Development /revise/update protocols for reducing transmission at designated points of entry</p>	Design a business continuity plan for healthcare settings	
		<p>ANTIVIRALS AND OTHER PHARMACEUTICALS</p> <p>Estimate and prioritize antiviral requirements for treatment and prophylaxis during a pandemic</p>	Review and ensure readiness of sentinel and referral hospitals by developing a regular monitoring mechanism using a set of indicators	

		Develop mechanisms and procedures to select, procure, stockpile, distribute, and deliver antivirals based on national requirements and resources		
		Prepare rapid distribution plans including logistic and operational mechanisms, minimum stock levels for all relevant levels, tight dispensing plans, guidelines for appropriate use for hospital settings, quality assurance plans for stockpiled material at different levels and consumable utilization audits for hospital settings	Develop a set of indicators to monitor the delivery of healthcare during the pandemic	
		Plan for the increased need for antibiotics, antipyretics, hydration, oxygen, and ventilation support within the context of national clinical management strategies		
		VACCINES Establish goals and priorities for the use of pandemic influenza vaccines		
		Develop a deployment plan to deliver pandemic influenza vaccines to national distribution points within seven days from when the vaccine is available to the national government		

Phase 4

Planning & coordination	Situation monitoring & assessment	Reducing spread of disease	Continuity of healthcare provision	Communications
Direct and coordinate rapid pandemic containment activities to limit the spread of human infection	Enhance surveillance to rapidly detect, investigate, and report new cases and clusters	Reassess the capacity to implement mitigation measures to reduce the spread of pandemic influenza	Activate pandemic contingency planning arrangements for the health sector	Activate communications mechanisms to ensure widest possible dissemination of information
Activate national emergency and disaster management and national command, control, and coordination mechanisms for emergency operations	Collect specimens for testing and virological characterization using protocols and procedures	Distribute stockpiles of pharmaceuticals and other materials according to national plans	Advise health-care workers to consider the possibility of influenza infection in patients with respiratory illness, especially those with travel or other contact with persons in the affected countries	Update spokespersons on “Talking Points” so that they convey consistent information
Activate procedures to access and mobilize additional human and material resources	Share specimens and/or strains to develop diagnostic reagents and prototype vaccines and for antiviral susceptibility with international agencies	Use appropriate individual/household/institutional disease control measures for suspect cases and their contacts	Provide guidance to health-care workers to consider influenza infection in patients with respiratory illness and to report suspect cases	Conduct frequent and pre-announced public briefings through popular media outlets such as the web, television, radio, and press conferences to counter panic and dispel rumours
Deploy operational and logistics response teams	Collect more detailed epidemiological and clinical data as time and resources permit	Undertake rapid pandemic containment operations in collaboration with the international community	Implement appropriate infection control measures and issue personal protective equipment as needed	Regularly communicate via established mechanisms on what is known and not known about the virus, the state of the outbreak, use and effectiveness of measures and likely next steps such as the importance of limiting all non-essential movement of persons and relevant screening procedures at transit points, the importance

				of compliance with recommended measures to stop further spread of the disease and how to obtain medicines, essential services and supplies
Identify needs for international assistance	Monitor compliance, safety and effectiveness of mitigation measures and share findings with the international community	Obtain and distribute antivirals from the WHO global stockpile stockpiles for treatment of cases and prophylaxis of all persons in the designated areas	Activate contingency plans for responding to the possible overload of health and laboratory facilities to deal with potential staff shortages	Gather feedback from the general public and at-risk groups on attitudes towards the recommended measures and barriers affecting their willingness or ability to comply and incorporate the findings into communication and health education campaigns targeted to specific groups
Provide regular updates on the evolving situation to WHO as required under IHR (2005) and to other partners to facilitate coordination of response		Consider deploying pandemic vaccines if available	Activate alternative strategies for case isolation and management as needed	Collaborate with surrounding countries on information sharing/communication
Encourage cross-border collaboration with surrounding countries through information sharing and coordination of responses		Implement individual/household/institutional and societal-level disease control measures		
Activate pandemic contingency plans for all sectors as deemed critical for the provision of essential services		Limit all non-essential movement of persons in and out of the designated containment area(s) and implement screening procedures at transit points		

Finalize preparations for a possible pandemic including procurement plans for essential pharmaceuticals		INTERNATIONAL TRAVEL MEASURES Consider implementing exit screening as part of the early global response Provide advice to travellers		
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Phases 5 - 6

Planning & coordination	Situation monitoring & assessment	Reducing spread of disease	Continuity of healthcare provision	Communications
Finalize preparations for an imminent pandemic, including activation of crisis committees and national command and control systems	PANDEMIC DISEASE SURVEILLANCE Undertake a comprehensive assessment of the earliest cases of pandemic influenza	Be prepared to implement planned interventions to reduce the spread of pandemic disease	Implement pandemic contingency plans for full mobilization of health systems, facilities	Regularly update the public on what is known and unknown about the pandemic disease, including transmission patterns, clinical severity, treatment, and prophylaxis options
Update national guidance and recommendations on information obtained from affected countries	Analyze and document the evolving pandemic including geographical spread, trends and impact	Update recommendations on the use of planned interventions based on experience and information from affected countries	Implement and adjust the triage system as necessary	Provide regular communications to address societal concerns, such as the disruption to travel, schools, or the economy or society in general
Responding to the imminent pandemic in a way so as to maintain trust across all agencies, organizations and with the public through a commitment to transparency	Document and assessment of the potential impact of any changes in epidemiological and clinical features of the pandemic virus	Implement distribution and deployment plans for pharmaceuticals, and other resources as required	Enhance infection control practices in healthcare and laboratory settings and distribute personal protective equipment in accordance with the national plan	Regularly update the public on sources of emergency medical care, resources for dealing with urgent non-pandemic health care needs, and resources for self-care of medical conditions

Provide leadership and coordination to multisectoral resources to mitigate the societal and economic impact of a pandemic	Maintain adequate virological surveillance to detect antigenic and genetic changes, as well as changes in antiviral susceptibility and pathogenicity in order to take appropriate actions	Consider implementing entry screening at ports of entry	Provide medical and non-medical support for patients and their contacts in households and alternative facilities if needed	
Assess if external assistance is required to meet humanitarian needs	Modify national case definitions and update clinical and laboratory algorithms for diagnosis, as necessary	<p>INTERNATIONAL TRAVEL MEASURES</p> <p>Issue international travel advisories and health alerts considering WHO guidance and IHR information (Annex III) when needed</p> <p>Consider implementing exit screening as part of the early global response</p> <p>Provide advice to travellers</p>	Provide social and psychological support for health-care workers, patients, and communities	
	<p>MONITORING AND ASSESSMENT OF THE IMPACT OF THE PANDEMIC</p> <p>Monitor essential health-related resources such as medical supplies (antivirals, vaccines and other pharmaceuticals), health care worker availability, hospital occupancy/availability, use of alternative health facilities, laboratory material stocks and mortuary capacity</p> <p>Monitor and assess national impact using criteria such as</p>	<p>INDIVIDUAL / HOUSEHOLD LEVEL MEASURES</p> <p>Advise people with acute respiratory illness to stay at home and to minimize their contact with household members and others</p> <p>Advise household contacts to minimize their level of interaction outside the home and to isolate themselves at the first sign of any symptoms of influenza</p> <p>Provide infection control guidance for household caregivers</p>	Implement corpse management procedures as necessary	

	<p>workplace and school absenteeism, regions affected, groups most affected, and essential worker availability</p> <p>Assess the uptake and impact of implemented mitigation measures</p> <p>Forecast economic impact of the pandemic, if possible with a view to introducing counter measures to control the damage</p>			
	<p>Assessing the need for adjusting laboratory and epidemiological surveillance criteria and system to suit demands of evolving pandemic</p>	<p>SOCIETAL LEVEL MEASURES</p> <p>Implement public health measures through the MOOH network</p> <p>Consider implementing social distancing measures such as class suspensions and adjusting working patterns</p> <p>Encourage reduction in travel and crowding of public</p> <p>Assess and determine if cancellation, restriction, or modification of mass gatherings is indicated</p>		
		<p>PHARMACEUTICAL MEASURES</p> <p>Distribute antivirals, and other medical supplies in accordance with national plan</p> <p>Implement vaccine</p>		

		<p>procurement and deployment plan</p> <p>Plan for vaccine distribution and accelerate preparations for mass vaccination campaigns</p> <p>Modify/adapt antiviral and vaccine strategies based on monitoring and surveillance information</p> <p>Monitor safety and efficacy of pharmaceutical interventions and monitor supply</p>		
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Post Peak Period

Planning & coordination	Situation monitoring & assessment	Reducing spread of disease	Continuity of healthcare provision	Communications
Determine the need for additional resources and capacities during possible future pandemic waves	Activate the surveillance activities required to detect subsequent pandemic waves	Evaluate the effectiveness of the measures used and update guidelines, protocols, and algorithms accordingly	Restock medications and supplies and service and renew essential equipment	Regularly update the public and other stakeholders on any changes to the status of the pandemic
Begin rebuilding of essential services	Evaluate the resources needed to monitor subsequent waves		Review and if necessary, revise pandemic preparedness and response plan incorporating lessons learnt and in anticipation of possible future pandemic waves	Communicate to the public the on-going need for vigilance and disease-prevention efforts to prevent any upswing in disease levels
Address the psychological impact of the pandemic, especially on the health workforce			Revise case definitions, treatment protocols, and algorithms as required	Continue to update the health sector on new information or other changes that affect disease status, signs and symptoms, or case definitions, protocols and algorithms

Review the status of and replenish national and regional stockpiles and other supplies and make arrangements to replenish them				
Review and revise national plan				

Post pandemic period

Planning & coordination	Situation monitoring & assessment	Reducing spread of disease	Continuity of healthcare provision	Communications
Evaluate the effectiveness of specific responses and interventions and share findings with the international community	Collect and analyze available data to evaluate the epidemiological, clinical, and virological characteristics of the pandemic	Conduct a thorough evaluation of individual, household, institutional and societal interventions implemented	Collect and analyse available data to evaluate the response of the health system to the pandemic	Publicly acknowledge the contributions of all communities and sectors
Review the lessons learned and apply to national emergency preparedness and response programmes	Review and revise surveillance tools for the next pandemic and other public health emergencies	Conduct a thorough evaluation of all the pharmaceutical interventions used including antiviral effectiveness, safety, and resistance and vaccine coverage, effectiveness, and safety	Review the lessons learned and share experiences with the international community	Communicate to the public and other stakeholders the lessons learned about the effectiveness of responses during the pandemic and how the gaps that were discovered will be addressed
Revise the national pandemic preparedness and response plan	Resume seasonal influenza surveillance incorporating the pandemic virus subtype as part of routine surveillance	Review and update relevant guidelines as necessary	Amend plans and procedures to include lessons learned	Encourage stakeholders across all sectors, public and private, to revise their pandemic and emergency plans based upon the lessons learned
		Continue with vaccination programmes in accordance with national plan, priorities, and vaccine availability	If indicated, provide psychosocial services to facilitate individual and community-level recovery	Extend communications planning and activities to cover other epidemic diseases and use the principles of risk communications

				<p>to build the capacity to dialogue with the public on all health matters of potential concern to them</p> <p>Improve and adjust communications plan in readiness for the next major public health event</p>
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ROLES AND RESPONSIBILITIES OF VARIOUS AGENCIES / ORGANIZATIONS

Since many sectors in Sri Lanka including health have been decentralized, the roles, responsibilities and authorities of the decentralized areas are very crucial for implementing guidelines for the pandemic phases. They will work in close collaboration with each other. Full mobilization of health services during pandemic will only be successful on the basis of full participation of decentralized levels (districts, municipalities and lower level local authorities).

The programme on influenza will be collectively managed by participation of the stakeholders. The primary agency for response will change over the course of the stages of pandemic and this will depend on the phase in effect in Sri Lanka.

During the pandemic phase, Ministry of Health will be the lead agency, other stakeholders will include: Ministry of Livestock Development, civil societies, military police, private sectors, etc. as needed. They will work in close collaboration with one another.

ROLES AND RESPONSIBILITIES OF THE MINISTRY OF HEALTH

Ministry of Health will be responsible for following:

- **Monitoring of the response to the pandemic of influenza at national level** - Ministry of Health will establish a national "Operation Room" to support operational activities of all health services. Further, it will act as a focal point for links and coordination of health services, vaccine distribution and prioritization and distribution of antiviral drugs.
- **Provincial health services**- These will maintain a 24 hour capability to support district health services including that of the private sector and where necessary to coordinate all responses to public health emergencies.
- **All hospitals including sentinel hospitals for influenza surveillance and ambulance services** - These are responsible for deploying the health care resources for those affected by pandemic influenza. Each service must be able to mobilize local resources flexibly and to the maximum and to

be consistent for maintaining essential care. Each service must also plan to offer effective support to any neighbouring service which is substantially affected and in return shall be able to rely on such mutual support if needed.

- **All Primary Care services** - All Primary Care services must be able to mobilise and direct health resources to local hospitals at short notice to support them and to sustain patient services. They must also plan to effectively utilize primary care resources where support is needed. They must also have agreed systems in place to enable them to work as "lead" primary health care services with others or, as appropriate, in support of primary health care activities.
- **National Technical Committee on Avian/Pandemic Influenza** - The Committee is the technical and advisory body for the Ministry of Health and oversees the development and implementation of the NIPP. It is responsible for developing strategies appropriate to the country's needs and situations drawing expertise from the WHO, international and local multidisciplinary experts. In the event of a pandemic, the Ministry of Health will be the lead agency for the country with technical inputs from the Committee.
- **Laboratories under Ministry of Health** – These, including NIC are responsible for monitoring of specimen collection, processing/examining them, reporting of results, sending specimens to WHO collaborating centres based on WHO recommendations.

ROLES AND RESPONSIBILITIES OF THE MINISTRY LIVESTOCK DEVELOPMENT

Ministry of Livestock Development works in harmonized coordination with the Ministry of Health and other related ministries. The role of this Ministry is crucial especially during the early phases (1-3) of the pandemic when the disease is primarily in animal and livestock populations. They have a primary role in averting or delaying influenza in human beings by controlling the disease in the animal reservoirs.

An avian influenza control plan had been developed by the Ministry and it consists of the following strategies which are FAO and OIE recommendations on the prevention, control and eradication of HPAI (Highly Pathogenic Avian Influenza):

- Effective disease surveillance for early detection and reporting of outbreaks
- Enhanced bio security of poultry farms and associated premises
- Control of movement of birds and products that may contain virus, including controls at the interface of infected and uninfected areas
- Changes to industry practices to reduce risk
- Rapid, humane destruction of infected poultry at high risk of infection
- Disposal of carcasses and potentially infective material in a bio secure and environmentally acceptable manner
- The proper use of vaccination

ROLES AND RESPONSIBILITIES OF THE PROVINCIAL AND DISTRICT HEALTH AUTHORITIES, PRIVATE SECTOR AND OTHER STAKEHOLDERS

Roles, responsibilities and authorities of the decentralized services including health are very crucial for implementing guidelines for the pandemic phases. Full mobilization of health services during pandemic will be successful only on the basis of the full participation at decentralized levels (districts, municipalities down to the grass root level) with coordination from the central level.

Private sector has an important role to play in providing specific health protection for private workers, hospitals, community groups, etc. The private health sector will be important as a partner for the Ministry of Health in all phases of the pandemic.

Non-governmental organizations (NGOs) will play specific roles according to their respective ability and capacity. They will be the key for supporting the response to the pandemic.

Religious and other social organizations play important roles in all disasters. An influenza pandemic would often result in disaster situations leaving corpses, orphans, widows, displaced persons in its aftermath and psychosocial support will be a main concern of these organizations.

PLAN OF IMPLEMENTATION AND MANAGEMENT

The structure for implementing and managing the NIPP for Ministry of Health is described below. As pandemic influenza is unpredictable in terms of timing and impact, the activities are centred on preparation and readiness for response.

Thus the plan is a “living document” whereby the specific activities that are outlined will be further elucidated and developed by the technical committees and possibly revised and updated on the basis of new evidence and lessons learnt. The contents of this plan need to be updated regularly. The implementation is a process rather than a programme.

The programme management structure at national level is chaired by the President or the Prime Minister and it oversees intersectoral committees at all administration levels. The sectoral committee within the Ministry of Health consists of three elements as shown below:

- Sectoral National Steering Committee to provide broad policy and strategic direction.
- Expert Committee, giving specific advice as requested by Technical Committee or own initiative based on specific urgencies.
- Programme Secretariat which would be responsible for planning and implementation of the national preparedness response plan.

(Please see ANNEX IV for the organogram)

MONITORING AND EVALUATION

Monitoring and evaluation is based on system approach which consists of inputs, processes, outputs and outcomes. All inputs, processes, outputs and outcomes will be monitored carefully based on the assessment of key indicators during the advancement of the pandemic from one phase to the other.

Among others, key milestones will include:

- Preparation of the updated work plan for the next 5 years based on identified core activities and capacity strengthening needs in each strategic area – **IMMEDIATE**
- Socialization, advocacy and training at all levels of administration, on aspects of the NIPP and current status – **IMMEDIATE**
- Identification of Key responsible agencies and individuals for the implementation of the NIPP – **IMMEDIATE**
- Identification of the focal point of communication for coordinating and initiating risk communication and public health education activities – **IMMEDIATE**
- Sharing the pandemic preparedness plan with all stakeholders within and outside the Ministry of Health – **IMMEDIATE**
- Review of issues in respective areas and provision of recommendations to MoH by National Technical Committee – **INTERMEDIATE**
- Addressing legal and regulatory issues – **INTERMEDIATE**
- Identification of government resources for influenza preparedness and remaining gaps in order to undertake resource mobilization – **IMMEDIATE**
- Implementation of the pandemic preparedness plan to suit the appropriate phase – **IMMEDIATE**
- Identification of appropriate “table top “ exercises to test NIPP, prepare for subsequent phase with all related partners in order to build capacity , improve coordination and response – **INTERMEDIATE**

CONCLUSION AND NEXT STEPS

After the experience with the H1N1 pandemic the next influenza pandemic is closer than ever before. But there is no way of knowing how close it is and it could happen tomorrow, next year or in 10 years. Because of this unpredictability and the grave consequences expected from such an event on all aspects of social and economic life, there is an imperative to move forward in putting preparations in place to mitigate the eventual impact. For the Ministry of Health, this imperative is the mitigation of morbidity and mortality. The NIPP is therefore also a process. Financial and technical constraints are the main constraints of implementing the programme on influenza. The programme cannot be fully financed by the Government of Sri Lanka. For instance, although stockpiles of adequate quantities of necessary antiviral drugs are available in the country, procurement of pandemic vaccine would not be an easy task. In addition necessary laboratory equipment and hospital materials are still not adequate. Therefore, gaps in resources must be identified in order to implement the plan and prepare the country. The best possible time to raise funds is when the country is still in this post-pandemic phase following the H1N1 pandemic during which donor agencies are keen to assist.

Next steps

- The pandemic preparedness plan must be implemented according to the phases as outlined although the timing and emergence of the pandemic virus is unpredictable.
- A work plan and budget for each activity must be outlined with responsible persons, timeline and indicators for evaluating progress.
- The process should be described in terms of key responsible agencies, individuals, and provide benchmarks and timelines for measuring progress.
- Technical sub-committees must review the issues in their areas and forward recommendations to NIPP as early as possible. If external technical assistance is required, this may be identified and requested.
- The Plan should be shared with all stakeholders within and outside the Ministry of Health for cohesiveness
- Socialization, advocacy and training at all levels of administration on all aspects of the Plan and current status must be discussed with appropriate stake holders

- Risk communication should be coordinated and public education should be initiated
- Government resources that can be made available for influenza preparedness and the gaps that remain must be identified so that resource mobilization can be undertaken
- Appropriate “table top” exercises to prepare must be undertaken with all related partners in order to build capacity and improve coordination and response. These scenario simulations will allow identification of gaps and weaknesses as well as means to improve elements of the plan.

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ANNEXURES

ANNEX I - List of Notifiable Diseases

Group A

- Cholera
- Plague
- Yellow Fever

Group B

- Acute Poliomyelitis / Acute Flaccid Paralysis
- Chicken pox
- Dengue Fever / Dengue Haemorrhagic Fever
- Diphtheria
- Dysentery
- Encephalitis
- Enteric Fever
- Food poisoning
- Human Rabies
- Leptospirosis
- Malaria
- Measles
- Meningitis
- Mumps
- Rubella / Congenital Rubella Syndrome
- Simple Continued Fever of over 7days or more
- Tetanus
- Neonatal Tetanus
- Typhus Fever
- Viral Hepatitis
- Whooping Cough
- Tuberculosis

(Approved by the Advisory Committee on Communicable Diseases on 11th February 2005)

ANNEX II

National Technical Committee on Avian / Pandemic Influenza

Composition:

1. Deputy Director General Public Health Services
2. Chief Epidemiologist
3. Director Environment & Occupational Health
4. Director Private Health Sector Development
5. Director Quarantine
6. Director Public health Veterinary Services
7. Director Medical Supplies Division
8. Director Health Education & Publicity
9. Director National Hospital Sri Lanka
10. Deputy Epidemiologist
11. Assistant / Consultant Epidemiologist I
12. Assistant / Consultant Epidemiologist II
13. Consultant Physician, Infectious Diseases Hospital
14. Consultant Virologist, national Reference Laboratory
15. Consultant Clinical Bacteriologist / Advisor Ministry of Health
16. Director / Head Virology, Medical Research Institute
17. Chief MOH / MC Colombo
18. Consultant Physician / Senior Lecturer, Department of Medicine, Faculty of Medicine, Colombo
19. Senior Lecturer, Molecular Biology laboratory, University of Kelaniya
20. Director General Animal Production & Health
21. Director Animal Health
22. Director Veterinary Research Institute
23. Veterinary Epidemiologist
24. Chief Quarantine Officer, Department of Animal Production & Health

ANNEX III

International Health Regulations

The International Health Regulations (2005) also referred to as IHR (2005),¹¹ are an international legal instrument adopted by the World Health Assembly in 2005.¹² They are legally binding upon 194 States Parties around the world and provide a global legal framework to prevent, control, or respond to public health risks that may spread between countries.

Under the IHR (2005), a number of reporting requirements obligate States Parties to promptly inform WHO of cases or events involving a range of diseases and public health risks. These include the obligation to notify WHO of all cases of “human influenza caused by a new subtype” in their territories within 24 hours of assessment in accordance with the case definition established by WHO for this specific purpose.

These requirements, with related guidance on their application, are provided in Annex 2 of the IHR (2005). Notification must be followed by ongoing communication of detailed public health information on the event, including, where possible, case definitions, laboratory results, source and type of risk, number of cases and deaths, conditions affecting the spread of the disease, and the public health interventions employed.

Even if there are no notifiable cases or events involving an influenza virus of pandemic potential occurring within a State, States Parties have additional obligations to report to WHO evidence of serious public health risks in other States, to the extent that they have evidence of related imported or exported human cases. Finally, WHO has the mandate under the IHR (2005) to collect reports (including from unofficial sources) of potentially serious international public health risks and, after preliminary assessment, to obtain verification of such reports from States. If verification is sought, including in the context of potential pandemic influenza, States are required to respond to WHO within a prescribed time period and include available relevant public health information.

All cases of human influenza of a new subtype, as further defined by WHO are notifiable to WHO under the IHR (2005). In addition, all public health events, including those which may involve an influenza virus of pandemic potential (even if not yet confirmed) are notifiable under the IHR (2005) if they fulfill at least two of the contextual risk assessment criteria in the Regulations:

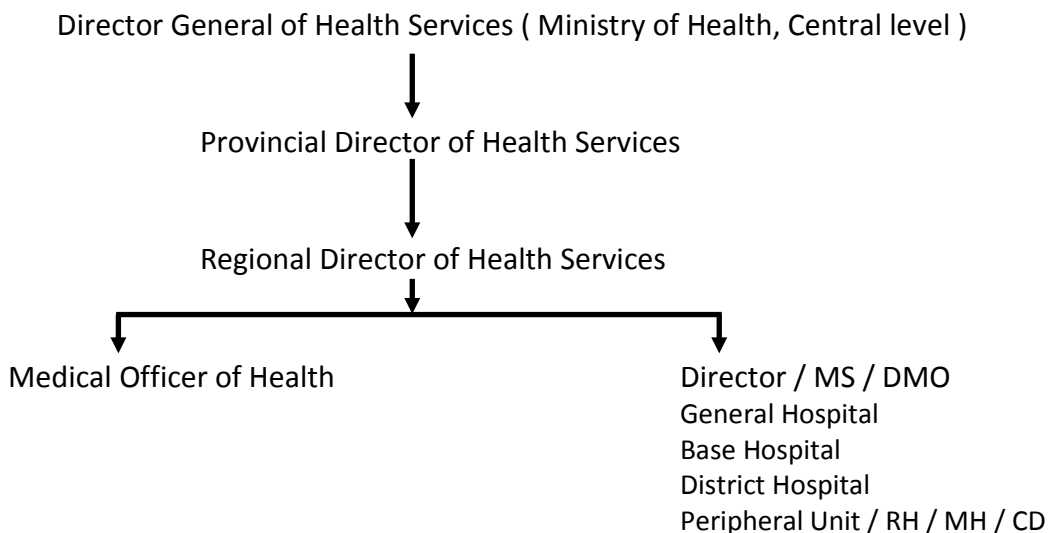
- if the public health impact is serious;
- if the event is unusual or unexpected;
- if there is a significant risk of international spread; or
- if there is a significant risk of international travel or trade restrictions.

NOTE: It is important to note that WHO will recognize that individual country considerations will affect national decisions, but, in general, does not encourage:

- pandemic-related international border closures for people and / or cargo
- general disinfection of the environment during a pandemic
- the use of masks in the community by well persons
- the restriction of travel within national borders during a pandemic, with the exception of a globally led rapid response and containment operation, or in rare instances where clear geographical and other barriers exist;

ANNEX IV

Organogram and Structure of Ministry of Health



Political structure		Health Structure	
Level	Position	Level	Position
Central	Govt of Sri Lanka	Ministry of Health	Minister of Health
Provincial	Governor/Chief Minister	Provincial Health Office	Provincial Director of Health services
District		Regional Directors Office	Regional Directors office
Divisional		MOH office	Medical Officer of Health