

The comparison of Influenza
Pandemic Strategies, 2007-2008

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Abstract

This article describes the formulation and assessment of the Taiwan influenza pandemic strategies for 2007 and 2008, international development in 2007, as well as the revision of the “Strategic plan for influenza pandemic response (strategic plan)”.

“Four major strategies and five lines of defense” have been the main structure for the influenza pandemic response of 2007 and 2008. The main revisions of the 2008 plan are: 1. subsume the role of volunteers; 2. include “border control” as a new chapter; 3. establish the details for vaccine and antiviral use; 5. others: strengthen laboratory detection capability, amend the terms of infectious medical system, enhance communication strategies, adopt the concept of assessment, and recognize the role and responsibility for each ministry.

We will make recommendations in accordance with the review of 2008. The next step is to strengthen communication with target populations and put their comments into consideration. We also will continue to assess the country’s preparedness, and use the assessment as the basis for the annual revision of the strategic plan. The ultimate objective is to minimize the effect and harm of

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influenza pandemic.

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Introduction

According to Dr. Winslow (Yale University, 1920), the purpose of public health was to prevent diseases, to extend life span and to promote physical and mental health. Influenza has the highest potential to cause a pandemic. World Health Organization (WHO) and experts claimed that a pandemic of influenza will occur and the only question is when.

The effect of an influenza pandemic includes not only health issue but also social and economical impacts. Thus, influenza pandemic plan should be classified as a public policy, not just a health policy. According to T. R. Dye, public policy is a behavior, both action and non-action, chosen by the government [1]. Taiwan centers for disease control (CDC) announced all potential policies for influenza pandemic to all target groups through related projects.

Taiwan CDC established the initial issues based on the present situation in Taiwan and the policies proclaimed by WHO. Every issue was investigated and preliminary policy was made, and a “Taiwan influenza pandemic strategies” was finally established [2]. The strategies were confirmed by the “Committee for Avian Influenza Prevention and Control” and presented to the Executive Yuan. The strategies were assessed annually to strengthen the effectiveness and to be revised accordingly. The process for this policy formulation, including planning, establishment and evaluation, was identical with the policy establishment process expounded by Gilbert and Terrell [3].

The establishment of Taiwan influenza pandemic strategies

The authorities began preparedness work for influenza pandemic in 2003. Three major strategies and four main lines of defense were established as the

outline of influenza pandemic preparedness in 2005, which were upgraded to four major strategies and five main lines of defense in 2007. The four major strategies were: early detection, interruption of transmission, antivirals and influenza vaccine. The five main lines of defense were containment abroad, border control, countermeasures at community level, maintaining medical system functions, and individual and family protection. The strategic plan was thus developed under the structure of ‘four major strategies and five main lines of defense’.

Taiwan CDC published the “influenza pandemic strategic plan” on January 3, 2007 (2007 strategic plan), as reference for all authorities and the public. The strategies for each pandemic phase are elaborated and will be employed by all authorities to develop their practical plans. In order to ensure the effectiveness of the strategic plan, in April 2007, Taiwan CDC decided to review and revise the strategies periodically in the beginning of each year. The second edition of the strategic plan was published in February 2008 (2008 strategic plan).

The assessment of Taiwan influenza pandemic response strategies

In order to provide guidance for establishing an influenza pandemic preparedness plan and a standard assess tool, WHO issued the “WHO checklist for influenza pandemic preparedness planning” (WHO checklist) in April 2005 [4]. Taiwan department of health (DOH) assessed the preparedness of Taiwan based on this checklist before the first national security meeting for influenza pandemic in 2005 and 70% of the assessable measures were accomplished by this assessment. The 2007 strategic plan was established based on this assessment.

Taiwan DOH conducted the second assessment, based on the WHO checklist in March 2007, to review and revise the 2007 strategic plan, and the completeness progressed from 70% to 82.5%. In general, the management and supervise system were established in Taiwan and the standard operation procedure (SOP) were

written based on the severe acute respiratory syndrome (SARS) experience. Over 85% of the assessable measures were completed in respect to preparedness, surveillance, case investigation and treatment, and prevention of disease transmission in communities. Maintaining essential services was the aspect which needed to be enhanced.

Taiwan CDC commissioned Dr. Richard Coker, London School of Hygiene and Tropical Medicine, to assess Taiwan's preparedness by evaluating the 2007 strategic plan. Overall, the Taiwan strategic plan is a high quality document, and 70% of the measures were completed. The assessment of Taiwan's preparedness showed that the country performed well above the median of 28 countries (the median was 57%) previously evaluated. Moreover, a number of innovative approaches were described from which other countries could learn. Several recommendations were provided by Dr. Coker, including setting clear schedule and mechanism for review and assessment, listing important related departments and institutes, cooperating with non-government organizations (NGOs) and volunteer groups, detailed planning for vaccine and antivirals use, and maintaining critical social infrastructures.

According to the self-assessment and Dr. Coker's recommendations, Taiwan DOH not only identified the annual revise mechanism, but also reviewed the overall planning of strategies.

Global influenza pandemic strategies development

The animal and human cases of H5N1 influenza were found in 2007, and the risk of influenza pandemic remained high. The risk assessment for influenza pandemic and some main associated preparedness work are now in progress. These include:

1. Development and increase production of influenza vaccine: during 2007, WHO urged sharing of H5N1 virus strains to member countries to develop the

influenza vaccine. WHO also promised to increase the production capacity for influenza vaccine and to establish a stockpile of vaccines for developing countries. At the same time, the vaccination technology and clinical tests were progressing.

2. Maintenance of critical infrastructure and business continuity: maintaining critical infrastructure and business continuity planning (BCP) were the focus for pandemic response for developed countries. The U. S. government published several pandemic checklists for different industries, so these industries may prepare and maintain social and economic functions.
3. Drills and assessment of the pandemic response strategies: in April 2007, the “Panstop 2007” exercise was conducted by WHO western pacific regional office (WHO WPRO) in association with 10 Asian countries. The U. S. government even conducted an exercise for financial institutes. Furthermore, the assessment for influenza pandemic was highly respected worldwide. The assessment reports at several administrative levels were addressed by the U. S. Government Accountability Office in 2007.
4. Early detection and rapid containment: the spirit of the International Health Regulations 2005 (IHR 2005) implemented in June 2007, is to strengthen early warning for public health emergency and to contain disease outbreaks effectively through international cooperation. Moreover, WHO published several guidelines for disease investigation, rapid containment, and the role of a national influenza center (NIC) aimed to strengthen the disease surveillance capacity of each country.

Revision of the pandemic strategies

Based on the global development and the assessment in Taiwan in 2007, Taiwan CDC revised the 2008 strategic plan which may be divided into five categories:

1. Subsume the role of volunteer groups: the effectiveness of control measures depends on the level of community involvement. Thus, utilizing community and volunteer resources are important. They may enhance self-care capability of the community, maintain basic social function, order and community safety during a pandemic. This concept, which was absent in the past, was first included in the influenza pandemic strategies in 2008. This is also the international trend.
2. Add border control strategy: the 2007 strategic plan were written based on four major strategies, and each major strategy included five main lines of defense. We do not make each main lines of defense to be an individual chapter. According to the review, some unique strategies of ‘border control’, the second line of defense, were difficult to be explained by the four major strategies. Although ‘containment abroad’ is the major objective presently, ‘border control’ is critical because it is the final defense of ‘stage 0 + phase 3’. Therefore, a new chapter on border control was added.
3. Details for vaccine and antivirals use: vaccine and antivirals use were the two main pharmaceutical interventions during influenza pandemic. The 2007 strategic plan had established the standards for vaccine and antivirals procurement, distribution and use based on vaccine production and the cost of antivirals storage and efficacy. More detailed plans, such as the ethics for distribution of limited stockpile of vaccines and antivirals, were included in the 2008 strategic plan.
4. Strengthen the maintenance of social functions: in addition to transmission interruption and proper medical care for patients, maintenance for important social functions was also part of the preparedness for influenza pandemic. After the “guidelines for business continuity planning” was formulated by Taiwan CDC in March 2007, “continuity of social functions and economic Activities” was re-arranged into an individual chapter in the 2008 strategic

plan.

5. Others:

- (1) NIC was established by Taiwan CDC on July 5, 2006. Based on the WHO guidelines for NIC and IHR 2005, the 2008 strategic plan strengthened the description for laboratory diagnosis strategies, including the role and operation of NIC.
- (2) The Communicable Disease Control Act was revised on July 18, 2007. Response by the associated medical system, including isolation and responding hospitals, was also revised in the 2008 strategic plan.
- (3) Risk communication was critical in disease control because any information given during an influenza pandemic may cause widespread panic. The risk communication principles in the 2008 strategic plan were revised based on the WHO outbreak communication guidelines [5] edited in 2005.
- (4) WHO considered the goal of exercises was to rehearse the existing guidance or to form a new plan [6]. The chapter of “evaluation and exercise” was edited to include the strategy of the assessment of central and local government in the 2008 strategic plan.

Table 1 is the list of the 2008 strategic plan revisions.

The future prospect

The influenza pandemic strategy is a top-down “public policy” and the principles are practicable, assessable, and conform to national condition, latest knowledge and international trend. Thus, strengthening the operation system is key for policy implementation. A centralized emergency response system should be put into practice and the work of related departments and institutes should be listed based on this system. The commander of each medical network should make decisions based on this system after receiving technical information,

eliminating doubts in making policy decisions.

Despite the ‘top-down’ strategy, the role of citizens, which may promote or impede the implementation of policy, should not be neglected during policy making. Thus, strengthening communication with target groups and considering their opinion are becoming more and more important. In addition, strengthen the role of volunteer groups is also important.

Several policies have existing gaps between planning and implement such as the development, storage and production of vaccines and antivirals. These should be further strengthened to maximize the efficacy of the policy.

Furthermore, the “influenza pandemic preparedness strategy” might seem similar to the “influenza pandemic strategic plan”. Actually, “policy” and “plan” are similar but not the same. A policy is expected to be sustainable, while a plan is specific to a limited period [7]. Plans should be revised periodically or as needed to conform to a sustained policy; we can call that a ‘live’ plan.

We will continue to conduct preparedness assessments based on the WHO checklist as well as the latest international indicators. The results of these assessments are the basis for annual revisions, making the strategic plan a ‘live’ plan, a plan that conforms to a sustainable policy and minimizes disastrous effects caused by an influenza pandemic.

Table 1. The list of the 2008 strategic plan revisions

Chapter	Revision for the 2008 edition
Framework	Update and text modification
Surveillance	Strengthened the explanation for laboratory diagnosis strategies and the function of the NIC
The methods for interruption of transmission	Subsuming the concept of volunteer groups
Transmission Interruption	Detailed planning for antivirals and ethics of distribution
Vaccine Strategy	Set priorities for vaccine distribution if vaccine availability were limited
Border Control	New chapter
Personal Protective Equipment Preparedness	Update and text modification

Chapter	Revision for the 2008 edition
Healthcare Preparedness	Revised the name of related medical institutes and the function of the quarantine institutes
Risk Communication	Revise strategies and methods of communication and deleted detailed contents
Continuity of Social Functions and Economic Activities	Separated as a new chapter
Response and Execution	Revised based on-all revises in each chapter
Evaluation and Exercise	Included the strategy of central and local government preparedness assessment
Appendix	Added list of related ministries and institutes

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