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**Proposals for Strengthening and Broadening National and International Institutional Efforts
and Existing Mechanisms for the Surveillance, Detection, Diagnosis and Combating of
Infectious Diseases Affecting Humans, Animals and Plants**

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Introduction

1. Surveillance is the process of systematic detection, diagnosis, collection, collation and analysis of data with prompt dissemination to those who need to know, for combating infectious diseases and taking relevant action. Surveillance has an important role for planning, monitoring and evaluation of any prevention and control strategy of infectious diseases.
2. Routine surveillance systems for epidemic-prone and emerging infectious diseases shall enhance the capacity to detect and investigate usual and unusual outbreaks, as the initial epidemiological and laboratory techniques are similar and adequate background data on the natural behavior of infectious diseases facilitate recognition of usual and unusual events.
3. Although the first priority of public health remains the prompt detection and containment of naturally occurring outbreaks, it plays an important role in all other areas of preparedness planning for usual and unusual outbreaks. In most situations, the public health system will be the first to detect cases and raise the alarm. It will also be at the front line throughout the response. Effective communicable disease control relies on effective surveillance and response systems.
4. A well functioning disease surveillance system provides information for priority setting, resource mobilization, prediction, early detection of epidemics and planning, implementation, monitoring and evaluation of public health intervention programs. The objective of the surveillance system and use of the information determines the data collected and the speed of information flow within the system.

Core Activities on Surveillance

5. Surveillance should ideally concentrate on priority diseases within the country. For each priority disease, there are many core and support functions of surveillance and response. The core activities for an effective surveillance for any health event are:

- a) Detection (identifying cases and outbreaks);
- b) Registration;
- c) Confirmation (epidemiological and laboratory confirmation);
- d) Reporting (early warning and routine);
- e) Analysis and interpretation;
- f) Feedback;
- g) Evaluation and monitoring;
- h) Response which includes:
 - i. Control/response: case management, contact tracing, infection control measures (immunization activities, improvement of preventive vector control, environmental control), community information and education, alerting nearby areas and districts;
 - ii. Epidemiological outbreak investigation: case finding, collection and transport of specimens, confirmatory testing and interpretation of results (epidemiological and laboratory);
 - iii. Program adjustment;
 - iv. Changes in policy and planning.

Supporting Functions for Core Activities

6. These activities are made possible by a number of support functions that lead to a better performance of the core activities:

- a) Setting standards (e.g. case definition, standard case management guidelines, and standard procedures for investigation);
- b) Training (surveillance, epidemiology, laboratory);
- c) Supervision;
- d) Communication Systems (e.g. radio, fax, phone, e-mail);
- e) Providing resources (human: appropriate number with adequate skills and competencies, material: vehicles, laboratory equipment, supplies and financial).

Measures to Strengthen Surveillance at National level

7. An appropriate organizational structure should be established and priority needs to be given to allocating the required funds for surveillance and response.
8. Vigilance of physicians and other health care providers are important factors in surveillance and control of infectious diseases and they are in the best possible position to observe and

report usual and unusual illnesses, syndromes and diseases that require regular and continuous training.

9. Specially designated laboratories have an essential role in the disease surveillance and most epidemiological surveillance systems require well equipped laboratories for confirmation. In order to serve both the routine confirmation of clinical syndromes and rapid confirmation of the causative agent in outbreaks, upgrading laboratories and capacity building should be taken into consideration.
10. Lack of systematic exchange of data among laboratories at national levels causes many problems for countries and therefore establishment or promotion of national laboratories networking should be enhanced.
11. Some countries are still using manual systems for data collection, reporting, analyzing, feedback and dissemination. Reporting data through appropriate electronic systems would facilitate the integration of surveillance activities especially if the system is user-friendly and does not use multiple and different data sets that result in extra workload and subsequent abandoning. Each State Party could try to establish computerized system for information management such as Geographic Information System (GIS).
12. Cooperation between public and private sector on implementation of surveillance and reporting of cases of communicable diseases under surveillance has important impacts and should be encouraged. Participation of medical institutions in the surveillance process should also be improved.
13. Public awareness on health program and surveillance should be strengthened in particular in local communities.
14. Priority should be given to the management, availability and access to medicine, drugs, vaccines and rapid diagnostic kits in the emergency cases at the national level for prompt response to the usual and unusual outbreaks of infectious diseases.
- I. States Parties should strengthen the relationship and cooperation between health authorities in charge of human and veterinary disease surveillance.

Measures to Strengthen Surveillance at International level

15. Though national authorities are responsible for infectious disease surveillance and response, it is incumbent upon the international health institutions to provide technical and financial support to States Parties, particularly developing countries, aiming at exchange of experience and capacity building on surveillance and response.
16. States Parties to the Convention are encouraged to share their experiences with each other on infectious disease surveillance.

17. States Parties to the Convention with advanced surveillance system and relevant international institutions should, particularly through providing the training courses, assist other State Parties on strengthening their health manpower capacity and support use of information technology for collection and analysis of data on infectious disease.
18. WHO, FAO and OIE could play a facilitating role in exchange of information on infectious disease surveillance among the State Parties.
19. In dealing with the epidemics of emerging infectious diseases, the States Parties to the Convention could consider the instructions of WHO based on the principles of International Health Regulation (IHR).
20. The regional reference laboratories, with due consideration of the important role of national laboratories involved in surveillance of infectious diseases, should provide them technical support for capacity building.
21. International health institutions should support national efforts on establishing standard bio-safety rules in laboratories and in the transportation of biological materials.
22. Regional cooperation on prevention of illegal trans-boundary transport of domestic animals needs to be enhanced.
23. Deployment of well trained expert teams on Rapid Health Assessments in emergency situations, and epidemiological investigations for rapid and in time response to outbreaks should be supported by relevant international institutions.
24. International health institutions are encouraged to establish stocks of drugs, vaccines and diagnostic kits at the WHO Regional Centers for rapid response to unexpected events in the affected countries as well as the management of emergency cases.

Additional proposals for consideration:

25. The States Parties to the Convention with assistance of relevant international institutions should strengthen the existing global networks for disease surveillance and build up their capabilities including national networks in order to respond to the disease outbreaks in a timely manner particularly in humanitarian assistance to the States Parties affected by disease outbreaks.
26. Relevant International institutions should within their competence assists the States Parties to strengthen national and local infectious disease surveillance programs and improve their early notification, control, protection and response capabilities.

27. Technological exchange of information among States Parties to the Convention for peaceful uses of genetic engineering, prevention, diagnosis and treatment of diseases caused by microbial and other biological agents or toxins, in particular infectious diseases, and for other relevant fields of biosciences and biotechnology for peaceful purposes should be urged.
 28. Application of biotechnology and scientific research and development, for the prevention, surveillance, detection, diagnosis and treatment of diseases caused by microbial and other biological agents or toxin, in particular infectious diseases should be available for States Parties on a non-discriminatory basis.
 29. Information sharing between the domestic health departments and the relevant international institutions through the national health authorities has to be encouraged with minimal administrative implications.
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