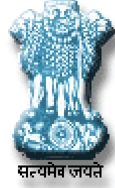

Pandemic Preparedness Beyond Health

Workshop held on 21and 22 April, 2008
India International Centre, New Delhi

Organised by:

National Disaster Management Authority (NDMA), India

United Nations Disaster Management Team (UNDMT), India

Pandemic Influenza Contingency (PIC) Team, Unit, Office for the Coordination of Humanitarian Affairs (OCHA), Geneva

Regional Planning Officer, OCHA Regional Office for Asia Pacific (OCHA ROAP)

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Vice Chairman
National Disaster Management Authority
Government of India

INAUGURAL MESSAGE

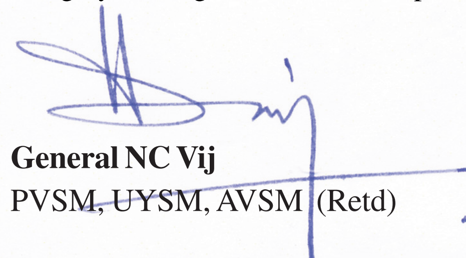
Pandemics are one of the most devastating forms of disasters which can destroy the lives and livelihood of a vast section of the population with global ramifications. The involvement of UN agencies and other international organisations to boost the efforts of various nations is an indication of the gravity of this menace at the international level.

Pandemics are a source of concern not only for the health experts but also for policy makers and the corporate sector. India has already realised the seriousness of this threat and in December 2007, a Vision and Road Map was outlined in the New Delhi Ministerial Conference on Avian and Pandemic Influenza. It highlighted the need for ensuring the commitment of decision makers, development of effective surveillance and response, bio-security aspects and communications. Many incidences of avian flu outbreaks in different parts of the country have established the importance of precise planning and correct assessment of surge capacities which are essential to handle such situations.

Presently, avian flu has not acquired the dimensions of being a major problem for India. However, it has the potential of becoming a severe pandemic, if the virus mutates to affect human beings. The present effort is to look beyond health matters and to define the role of all stakeholders including different nodal/line ministries/departments concerned, state level stakeholders, international agencies like UNDMT, PIC, OCHA, WHO, WHO SEARO, SAARC and various non-UN agencies for the holistic management of pandemics in our region. It will be prudent to identify and train various emergency support functionaries and essential service providers at all levels for pandemic preparedness.

Training and awareness programmes need to be evaluated through mock exercises to ensure the 'business continuity' of all sectors during pandemic situations. Linkages between the various stakeholders will have to be identified and established. Capacity development of the available human resources, proper backup systems and logistics will need to be emphasised. The National Authority has already issued guidelines on Medical Preparedness and Mass Casualty Management, whereas the guidelines on Biological Disasters will follow shortly. These guidelines will form the basis for developing the preparedness plans at all levels to mitigate the probable risks.

It is of utmost importance that we prepare ourselves thoroughly to mitigate the menace of pandemics in our Country.



New Delhi
May 2008

General NC Vij
PVSM, UYSM, AVSM (Retd)

United Nations

OBJECTIVES OF WORKSHOP AND INTENDED OUTCOMES

The Workshop on Pandemic Preparedness beyond Health was jointly organised by the National Disaster Management Authority (NDMA), the United Nations Disaster Management Team (UNDMT) and the Pandemic Influenza Contingency (PIC). The workshop was supported by WHO India.

The UN System Influenza Coordination (UNSIC) in New York has been created within the UN Development Group to help ensure that the UN system responds to national, regional and global challenges in relation to influenza. The Workshop on Pandemic Preparedness beyond Health was facilitated by experts from OCHA's regional office for Asia Pacific (ROAP) in Bangkok and the Pandemic Influenza Contingency in Geneva. They brought with them experience in conducting such workshops in countries in Asia-Pacific, Africa and the Middle East as well as organising table-top exercises to test pandemic preparedness—one such exercise was held on 25 April for the UN team in India. It is hoped that a similar exercise can be planned with representatives from the Indian government at a later stage.

With the ongoing outbreak of bird flu in the third state in India—Tripura—the workshop came at an opportune time. Participants included key stakeholders from government, international agencies, NGOs and disaster management institutions.

It was imperative to involve such a cross-section of participants and understand that a pandemic will affect sectors beyond health and will therefore require a response that goes well beyond health. Moreover, a break-down of services can aggravate the spread of a pandemic, therefore, ensuring the continuity of essential services such as transport, energy, telecommunication, banking and finance, water and so on is paramount in preparing for a pandemic.

'One World One Health'— the theme for the international ministerial conference hosted by the Government of India in December 2007 made evident that a pandemic does not affect just one country, but is of global concern. Many lessons can be learnt from the pandemic preparedness plans of other countries and international frameworks that can be adapted to the particular Indian context.

The UN in India has a UN Disaster Management Team or UNDMT, which is composed of nine UN agencies focusing on disaster response, preparedness and mitigation and co-sponsoring this event with NDMA. The UN in India also works closely with government ministries and institutions through its disaster risk management programmes conducted by several UN Agencies.

The UN in India can and has acted as facilitator between government and civil society; it endeavours to bring in best practices from other countries to India; and it works closely with the government to hold workshops such as this one on issues that are very relevant to the work of the UN.

Through the workshop, we aimed to create greater awareness of the need for pandemic preparedness across sectors. The understanding that a *pandemic is a disaster and not just a health concern* is extremely important and we hope that the NDMA that has shown such keen interest in this issue is able to spear-head it forward—beyond health and beyond this workshop.

Dr. Maxine Olson
United Nations Resident Coordinator

Member
National Disaster Management Authority
Government of India

AVIAN INFLUENZA AND PANDEMIC PREPAREDNESS

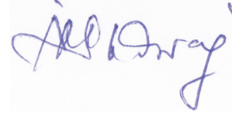
Influenza viruses have threatened the health of animal and human populations for centuries. Their diversity and propensity for mutation have thwarted our efforts to develop both a universal vaccine and effective anti-viral drugs. The recorded medical history suggests that the worst case of a pandemic was the Spanish Flu of 1918–19, which killed about 50 million people worldwide, especially within the working age group of 20–35.

The current concern for pandemics arises from an unprecedented outbreak of H5N1 influenza in birds that began in 1997 and has spread across bird populations in Asia, Europe, the Middle East and Africa. The virus has shown the ability to infect multiple species, including long-range migratory birds, pigs, cats, and possibly humans. According to a WHO assessment, the lethal strain of bird flu poses a greater challenge to the world than any infectious disease, including AIDS, and has cost 300 million farmers over $10 billion in its spread through poultry around the world. If the H5N1 virus acquires human-to-human transmissibility with its present fatality rate of > 50%, the resulting pandemic would be akin to a global tsunami. The volume, speed, and reach of travel today has accelerated the spread of infectious diseases as observed in the case of SARS, which spread to eight countries around the world in just a matter of weeks. The clinical, epidemiologic, and laboratory evidence suggests that a pandemic caused by a novel virus deriving from the current H5N1 strain would be more likely to mimic the 1918 pandemic than those that occurred more recently in 1957 and 1968. If we translate the death rate associated with the 1918 influenza virus to the current population, there could be 180 million to 360 million deaths globally. It will cause significant implications for the economy, national security, and the basic functioning of society leading to disruption of social structures.

The holistic management issues of a pandemic include management of avian flu or pandemics among the bird/animal population to prevent its spread from animals to humans, prevention and management of human cases, multi-sectoral issues to deal with pandemics and to maintain business continuity and essential services. It is essential to give stronger emphasis on hygiene and movement control throughout the animal production and marketing chain. An integrated strategy of surveillance and laboratory capacity building, movement control, and vaccination can avert a disaster of such a nature.

Not merely restricted to health issues, the comprehensive process of preparedness includes identification of various stakeholders across sectors, intra- and inter-departmental communication, coordination with international agencies, creating community awareness, and addressing the special concerns of vulnerable groups in a pandemic. The role of the private sector is of paramount importance

to ensure that the level of essential services is maintained in order to reduce the impact of a pandemic. In brief, it is pertinent to eventually synergise all parallel efforts towards pandemic preparedness at regional, national, state and district levels to develop harmony in preparedness activities, avoid duplication and develop a consensus on all issues of health and beyond health matters.



Lt Gen (Dr.) JR Bhardwaj
PVSM, AVSM, VSM, PHS (Retd)
MD DCP PhD FICP FAMS FRC Path (London)

Abbreviations

AI	Avian Influenza
APSED	Asia Pacific Strategy for Emerging Diseases
ASEAN	Association of Southeast Asian Nations
ASSOCHAM	The Associated Chambers of Commerce and Industry of India
BITS	Birla Institute of Technology & Science
BSL	Bio Safety Level
DAHDF	Department of Animal Husbandry, Dairying and Fisheries
DDMA	District Disaster Management Authority
DM	Disaster Management
DoT	Department of Telecommunications
FAO	Food and Agricultural Organization
FICCI	Federation of Indian Chambers of Commerce and Industry
GDP	Gross Domestic Product
GoI	Government of India
IASC	Inter-Agency Standing Committee
IBM	International Business Machines
ICMR	Indian Council of Medical Research
IDSP	Integrated Disease Surveillance Programme
IFRC	International Federation of Red Cross and Red Crescent Societies
IHBAS	Institute of Human Behavior and Allied Sciences
IHR	International Health Regulations
INMAS	Institute of Nuclear Medicine and Allied Sciences
MEA	Ministry of External Affairs
MHA	Ministry of Home Affairs
MoA	Ministry of Agriculture
MoD	Ministry of Defence
MoH&FW	Ministry of Health and Family Welfare
MoI&B	Ministry of Information and Broadcasting
MoL&J	Ministry of Law and Justice
NASSCOM	National Association of Software and Services Companies
NDMA	National Disaster Management Authority

NDRF	National Disaster Response Force
NEC	National Executive Committee
NGO	Non-Governmental Organisation
NICD	National Institute of Communicable Diseases
NIDM	National Institute of Disaster Management
OCHA	Office for the Coordination of Humanitarian Affairs
OCHA ROAP	OCHA–Regional Office for Asia Pacific
OIE	Office International des Epizooties
PHEIC	Public Health Emergency of International Concern
PIC	Pandemic Influenza Contingency
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
R&D	Research and Development
SAARC	South Asian Association for Regional Cooperation
SARS	Severe Acute Respiratory Syndrome
SDMA	State Disaster Management Authority
SEC	State Executive Committee
SOPs	Standard Operating Procedures
SSB	Seema Suraksha Bal
UN	United Nations
UNDMT	United Nations Disaster Management Team
UNDP	United Nations Development Programme
UNDSS	United Nations Department of Safety and Security
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children’s Fund
UNRC	United Nations Resident Coordinator
UNSIC	United Nations System Influenza Coordination
USAID	United States Agency for International Development
VGO	Voluntary Group Organisation
WHO	World Health Organization
WHO SEARO	World Health Organization Regional Office for South East Asia

Executive Summary

India and other neighbouring countries of the Southeast Asian Region have faced a number of disasters in the last few decades. Whether it is an earthquake in Bhuj or China, a tsunami affecting the Indian subcontinent and Myanamar or Super Cyclone in Orissa, all these mass casualty events have left a trail of destruction behind. All these disasters have led to measures for preparedness in this highly vulnerable region. The emergence and re-emergence of Avian Influenza (AI) in different parts of India and its neighbouring countries have raised concerns regarding the continuous presence of the H5N1 virus in different species. The virus has already caused disease and death among humans beings in some countries but the inability of the virus to spread freely among humans has limited its spread. The possibility of the H5N1 strain, evolving into a pandemic strain with a devastating effect worldwide is highly likely. It is estimated that if the pandemic is not contained, the global impact will be disastrous with millions of deaths and economic consequences in trillions with as much as 5 per cent reduction in Gross Domestic product (GDP). It may not be possible to prevent the pandemic, but adequate preparedness will help to mitigate its consequences.

Pandemic preparedness planning requires a multi-sectoral approach which includes sectors beyond health in all phases of preparedness through a participatory and consultative process. At present, the various health and animal husbandry departments are managing these outbreaks in their respective nations. There is little involvement of the stakeholders/basic essential service providers other than the health sector in pandemic preparedness planning both at the national and regional level. In view of the above, the workshop on Pandemic Preparedness beyond Health was conducted between 21–22 April 2008 at the India International Centre, New Delhi by the collaborative efforts of National Disaster Management Authority (NDMA), United Nations Disaster Management Team (UNDMT), India; Pandemic Influenza Contingency (PIC) Team, Unit, Office for the Coordination of Humanitarian Affairs (OCHA), Geneva; and Regional Planning Officer, OCHA–Regional Office for Asia Pacific (OCHA ROAP). Other international organisations like the World Health Organization (WHO), International Federation of Red Cross and Red Crescent Societies (IFRC) and the United States Agency for International Development (USAID) also participated actively in the workshop.

The workshop was also attended by the representatives of various ministries and departments concerned, including the Department of Health, Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture (MoA), Armed Forces Medical Services, Ministry of Defence (MoD), Ministry of Law and Justice (MoL&J), Railways, Planning Commission, Seema Surakasha Bal (SSB), Ministry of Home Affairs (MHA), Department of Telecommunications (DoT) and various representatives from Maharashtra and West Bengal, the states which have been affected by AI outbreaks. Various academic institutions, research organisations, Non-Governmental Organisations (NGOs), private stakeholders involved in pandemic preparedness also participated in the workshop.

During the two day deliberations, the existing status of AI preparedness at the national and state level was outlined by the Ministry of Health and Family Welfare (MoH&FW), MoA, National Institute of Communicable Diseases (NICD), and representatives of Maharasthra. The role played by the National Disaster Response Force (NDRF) in West Bengal during the response phase of the AI outbreak was also discussed revealing important lessons. The need for business continuity planning across all sectors, developments in pandemic preparedness within the Association of Southeast Asian Nations (ASEAN), and the inter-dependency of sectors were also discussed. The need of 'whole-

of-society' planning approach was also emphasised. The existing regional capacity and progress made by different member countries of WHO SEARO towards pandemic preparedness was also discussed. The role of the Inter-Agency Standing Committee (IASC) and UNDMT in this high priority endeavour was also outlined. In view of the incorporation of various important issues related to pandemic preparedness, four groups were formed who deliberated on: a) Legal and institutional issues; b) Communication and coordination issues; c) Prioritising pandemic planning across sectors and; d) Including vulnerable groups in pandemic preparedness planning.

Two days of intense deliberations followed by panel discussions led to the following recommendations for a future strategy:

a) The various issues of advocacy and guidance will be undertaken by NDMA to coordinate the multi-sector functions of various line ministries/departments at national, state and district level through the Disaster Management (DM) instruments being established as a consequence to the DM Act, 2005.

b) Constitution of the Sub-committee on Pandemic Preparedness by NDMA/National Executive Committee (NEC) to monitor, evaluate and analyse the level of preparedness regularly and the replication of such a model at the State Disaster Management Authority (SDMA)/State Executive Committee (SEC) level.

c) The sub-committee will ensure the compliance of International Health Regulations (IHR), 2005 in the above context.

d) The various stakeholders/service providers from both governmental and private sectors are listed and they will develop multi-sector pandemic preparedness plans.

e) Development of a business continuity model plan and adoption by essential service providers after suitable modifications in their own context.

f) The various plans will be integrated and developed as a part of the 'all hazard' DM plans being prepared by national, state and district level entities identified in the DM Act, 2005.

g) Identification of vulnerable groups in the context of pandemics should be defined in terms of inclusion of socially-marginalised groups and extended to those who will be at high risk due to their occupational profile, though they may not be physically or socially vulnerable. Special attention to these groups should be included in the plans at all levels.

h) Adoption of various global practices for the management of pandemics in the Indian context.

i) Public-Private Partnership (PPP) models in capacity development, creation of emergency reserves and business continuity will be developed and practiced.

j) Regional level collaboration will be enhanced by the following:

- Continuous dialogue of line ministries through the Ministry of External Affairs (MEA) with their counterparts in Southeast Asian countries for sharing resources and maintenance of contingency supplies during a pandemic situation.
- Efforts by the NDMA to develop a consortium of DM agencies of various Southeast Asian countries to deliberate on various preparedness issues.
- Adoption and implementation of global best practices at the regional level in cooperation with the UN and other international agencies.

The process of pandemic preparedness is a continuous endeavour and requires a proactive approach of all the stakeholders/service providers concerned directly or indirectly as well as those who are likely to be affected. It is the responsibility of every stakeholder/service provider to develop suitable contingency plans for maintaining basic essential services during pandemics. These plans will also be an integral part of the overall DM system across the country.

1 Present Status

India is a signatory to the IHR (2005), a legally binding international agreement that seeks to protect , control and provide a mechanism to initiate a public health response to the threat or spread of disease causing Public Health Emergency of International Concern (PHEIC) including that of biological, chemical or radio-nuclear origin. In the context of IHR (2005), NDMA, UNDMT and PIC jointly organised a workshop on Pandemic Preparedness Beyond Health between 21–22 April 2008 at the India International Centre, New Delhi.

The NDMA, headed by the Prime Minister of India, is the apex body for DM in India. The UNDMT is an inter-agency group currently comprising nine UN agencies that have come together to exchange information, jointly prepare and respond to disasters, and coordinate with non-UN agencies working on DM in India. The PIC team is a unit within OCHA, tasked with assisting UN country teams, national governments and humanitarian agencies to be better prepared for the pandemic.

The workshop brought together representatives from key sectors in government, private, non-government, international and regional organisations to deliberate on multi-sector and multi-level pandemic preparedness and linking pandemic preparedness with disaster preparedness.

1.1 Opening Session

The workshop was inaugurated by Gen. N.C. Vij, Vice Chairperson NDMA. Dr. Maxine Olson, United Nations Resident Coordinator (UNRC), defined the interest of UNDMT and outlined the objectives and intended outcomes of the workshop respectively. Lt Gen. (Dr.) J.R. Bhardwaj, Hon'ble Member, NDMA gave a historical background of influenza and pandemics. He called for the urgent need for pandemic preparedness following the recent outbreak of AI in many countries. He set the focus of the workshop as one that looked beyond health issues to business continuity planning that involved various stakeholders. The need for multi-sector pandemic planning was further emphasised by Dr. Ingo Neu, Senior Planning Officer at OCHA ROAP (Bangkok). He explained the different types of influenza virus, the WHO pandemic phases and the impact of lack of preparedness on non-health sectors (Annexure-A).

1.2 The State of Pandemic Preparedness in India

The objective of session 1 of the workshop was to examine the state of pandemic preparedness in India. The session was chaired by Lt Gen. (Dr.) J.R. Bhardwaj, Hon'ble Member, NDMA. During this session, the representatives of MoH&FW and DAHDF provided a national perspective on multi-sector pandemic preparedness. Multi-level perspectives were brought by representatives from the Government of Maharashtra and West Bengal, both states that have witnessed AI outbreaks.

Dr. Shivlal, Additional Director General Health Services, MoH&FW and Director, NICD described the consequences of pandemic influenza and illustrated the roles of various sectors. He gave an overview of the legal, institutional and operational

framework of pandemic preparedness in India highlighting the current status and lessons learnt. He identified critical issues regarding a pandemic plan for India according to two scenarios—one, where India will not be involved as the spread is limited to one or two countries other than India and two,where India will be one of the affected countries. The presentations of all the speakers are included in the CD enclosed as Annexure-A. The review of the existing status revealed that the health sector has been given central responsibility to contain the AI, however, other stakeholders beyond health have not been prepared yet and neither been included in the overall planning process.

The case studies of two states highlighted the role of the state government departments in tackling AI outbreaks. Mr. Ashish Sharma from the Government of Maharashtra spoke on the role of their state government, particularly the animal husbandry and health departments, in tackling AI in Maharashtra during the 2006 outbreak. He explained the success story of containment of AI within the restricted zones due to the high level of coordination between various stakeholders. Synergy between agencies responsible for law and order and health/animal husbandry departments of the state is the key for containment of the disease. The role of the NDRF in countering the AI outbreak in West Bengal was presented by Dr. Joydeep Chattopadhyaya, Chief Medical Officer, NDRF (Annexure-A). The lessons learnt from the response to the avian flu outbreak in West Bengal can be summarised as:

a. Culling programmes should be completed and supported by a direct on-site compensation strategy, reducing the risk of hiding or moving of infected birds from the affected region.
b. Awareness about the need of culling and the mechanism for due compensation (in-built mechanism for on-the-spot payment) should be finalised in the preparedness phase itself.
c. Clean-up actions should be done with proper caution and in-built error checks.
d. The spread of disease from neighbouring countries across porous borders should be checked more effectively.
e. Till date, no human deaths have been reported in India. However, there is still a need for pandemic preparedness at all levels, as a mutation of the AI virus H5N1, can lead to the emergence of a novel virus that can cause a pandemic with significant negative impact on the human population.

The presentation of Dr. S.K. Bandyopadhyay, Commissioner, DAHDF, MoA was about various actions taken by DAHDF in response to AI outbreaks in India. The presentation was delivered by Dr. A.K. Sinha, veterinary officer from SSB (Annexure-A). The important activities undertaken are as follows:

a. An Action Plan for Bird-flu was prepared in October 2005 and updated in November 2006, on the basis of risk assessment.
b. Senior officers of DAHDF, MoA, held meetings with state officers and also at a regional level. Regular alerts were issued.
c. Training (as specified in the Action Plan) was conducted in each state.
d. 43 per cent of total veterinary workforces in India are trained in AI. Training of remaining workforce is continuing.
e. Mass media campaign for safe poultry production, handling and safe eating are regularly carried out.
f. Four regional diagnostic laboratories have been equipped to carry out preliminary surveillance for AI.
g. A strategic reserve of bird-flu vaccine is being maintained.

h. Effective import restrictions are in place since 2004 against import of AI risk material from AI-positive countries.

i. An Inter-Ministerial Task Force with representatives from DAHDF and departments of Health and Environment evaluates the bird flu situation in India.

j. A joint working group of technical experts in livestock health, human health, environment and publicity meet at regular intervals to keep a close watch on bird flu in India and the world and recommend strategies to combat the menace.

However in spite of such efforts, there are some vulnerabilities associated with this sector enhancing the hazard potential. Some of them include backyard poultry (unorganised sector), proximity to endemic or near-endemic countries, porous borders, natural routes of migratory birds for winter nesting, mixed farming system in backyard poultry, poor hygienic conditions of thriving live poultry market, poor biosafety/biosecurity conditions/surveillance, lack of awareness and poor infrastructure to handle such emergencies at the local level. In view of the priority of this sector, an Inter-Ministerial Conference outlined the objectives and vision of the New Delhi Road Map 2008 (www.undg.org/docs/8368/avianroadmap.pdf).

Continuing from the Road Map, Smt. Dr. Shashi Khare, Consultant and Head, Microbiology Department, NICD spoke about the state of progress in delivering on the identified Road Map milestones (Annexure-A). Some of the milestones achieved or under progress include:

a. Draft Public Health Act (replacement for the Epidemic Act) is under process.

b. Legislation under consideration for ensuring biosecurity in farms.

c. Integrated Disease Surveillance Programme (IDSP) being strengthened for influenza surveillance.

d. Active surveillance and response system for detection of early human cases of influenza-like illness ensured by active surveillance across the country.

e. Enhanced compensation for culled poultry.

f. Rehabilitation package for the farmers.

g. Pandemic preparedness plan being revised and re-drafted at the national level.

h. Refresher training for rapid response teams.

i. Training for clinicians initiated.

j. Mock drills for human cluster containment being planned.

k. Sensitisation workshops for media persons planned.

The presentations were followed by active discussions revealing the following outcomes:

a. Pandemic preparedness planning efforts to date do not include stakeholders beyond health and it is strongly felt that pandemic preparedness cannot be effective without the active participation of all stakeholders.

b. Maintenance of essential services to maintain a functioning society and economy as well as to support efforts of the health sector and the government to deal with the problems posed by the spread of a pandemic is an important necessity.

c. It is essential to understand the various phases of the pandemic and prepare accordingly along with planning for a worst case scenario.

d. Some of the important recommendations to be included in district AI preparedness plans:

    - Strong law and order needs to be maintained to function effectively during such outbreaks.
    - Mechanism for regularisation of landfills and burial grounds for culling.

- Mechanism for implementation of non-pharmaceutical interventions like social distancing and prevention of gatherings by exercising the emergency powers of the district collector, if necessary.
- Suitable indicators and checks need to be developed for taking effective decisions during such AI outbreaks e.g., on what basis an area should be quarantined or after the containment of a disaster, on what basis the area should be declared a disease free zone.
- Adoption of community based best practices for identifying/delineating the roles for nodal individuals/groups in management of AI outbreaks.

e. The critical issue of inclusion of stakeholders beyond health is of paramount importance addressing both business continuity planning as well as livelihood problems of the affected sector and also of sectors which are dependent on the affected sector e.g., in AI outbreaks, it is not just the poultry sector which gets affected but also those sectors which are dependent on the poultry sector for their basic livelihood.

The deliberations also revealed that important lessons can be learnt from the response to the AI outbreak in West Bengal. It was felt that the outbreak in West Bengal occurred because the contingency plan was not activated in a timely manner, poultry were moved out from the area overnight, and people moved freely without restriction. The technical experts suggested that chemical disinfectants should be specific and uniform in compliance with Food and Agriculture Organization (FAO), WHO and Office International des Epizooties (OIE) guidelines and in some cases, the use of gamma radiation as a disinfectant was preferable. There is a need to improve the infrastructure as other sectors are based on such improvements. It is important to ensure/enforce quarantine when people can move freely because of existing train connections to neighbouring countries, though the approach should be community-centric.

MHA needs to coordinate the involvement of other sectors in the planning process. The involvement of international agencies in pandemic preparedness work is also pertinent in information sharing, continuous monitoring and regular updates.

In conclusion, session 1 of the workshop discussed AI mainly to emphasise the importance of the subject in the overall preparedness for any pandemic. Whether it is Severe Acute Respiratory Syndrome (SARS) or any other communicable disease affecting large sections of the human population, preparing for a pandemic needs to be considered in the overall DM planning.

1.3 Pandemic Preparedness and Business Continuity

Session 2 focused on the sharing of best practices and lessons learnt from other countries and sectors that have or are working on pandemic preparedness plans, which could have value for India. Dr. Ingo Neu presented the developments within ASEAN during the last year and the recommendations and contents of the workplan that was endorsed in March 2008 in the ASEAN workshop on multi-sector pandemic preparedness planning (Annexure-A) in Kuala Lampur. Main identified gaps in pandemic preparedness among 10 ASEAN member states include:

a. Lack of any appropriate legislation/political commitment.

b. Weak information sharing or risk communication.

c. Limited number of cross border strategies.

d. Non-involvement of non-health sectors.

e. Limited awareness.

f. Need to define response stages, pre- during- and post- pandemic strategies using simulation exercises.

g. Need to document experiences.

The key outcomes of the ASEAN workshops in Vientiane and Bangkok in 2007 and details of an ASEAN work plan for multi-sector pandemic preparedness planning in this region for the next two years were deliberated.

The inter-dependency of one sector with another in the event of a pandemic was brought out by Mr. Vidur Kohli, Head of Technology, International Business Machines (IBM) India. While IBM India has a pandemic preparedness plan in place, it was based on certain assumptions that other sectors would continue to function and also had contingency plans in place ensuring their business continuity.

The primary objectives of the pandemic preparedness strategy of IBM include provisions for the well-being of employees in their work environments, minimising impact and ensuring continuity of operations, thus serving as a model of preparedness and resiliency in society. The private sector emphasised that the support of the GoI like procurement of Personal Protective Equipment (PPE), supply of medications, and to classify the national telecom providers as essential service providers for national infrastructure businesses, etc., will be needed at the time of a pandemic to enable the successful implementation of the pandemic preparedness/contingency plan of IBM. In a nutshell, it is a multi-sectoral issue and there is a need to strengthen the overall ecosystem and inherent functioning of different sectors (Annexure-A).

As 20 per cent of the global workforce of IBM are in India, providing important functions for the global operations, a break down of services of IBM India would have significant impact not only on other important private and public sectors in India, but also in other countries. Pandemic preparedness requires the coordination and cooperation of multiple sectors. Lack of preparedness in any sector can have significant negative consequences for other sectors and lack of preparedness in one country can have negative impact on other countries, regions or even worldwide.

Mr. Liviu Vedrasco, Pandemic Readiness Advisor at PIC, Geneva emphasised that a pandemic required a comprehensive 'whole-of-society' planning that existed in very few countries. The impact assessment revealed that millions of deaths are expected in addition to US $2 trillion of economic consequences and as much as 5 per cent reduction in GDP due to a pandemic situation. Such pandemic situations may occur in the form of waves, though in such a case, there will be no practical time for preparedness activities. He used the example of Hong Kong to show how the SARS outbreak led the government to set up a multi-sectoral plan and system for influenza preparedness. He recommended that in India a number of multi-sectoral pandemic preparedness technical working groups be formed by the government and coordinated by the NDMA to perform specific activities. Such groups should be tasked to identify the support needed by various emergency functionaries, updation of emergency plans, development of contingency plans to clarify the roles to be played by various stakeholders during emergencies (Annexure-A).

The important conclusions drawn from deliberations in session 2 include:

a. Legal instruments to address the issues of involvement of all stakeholders and maintenance of essential services are necessary.

b. Integration of pandemic preparedness through DM preparedness efforts undertaken by the institutional framework established after the enactment of DM Act, 2005.

c. Bottom-up approach is required to develop resilience at the district/local level towards pandemics and necessary capacity development measures should be undertaken.

d. It was found pertinent to prioritise the functioning of various stakeholders and integration of the activities in the overall preparedness efforts at national and regional level.

e. Mechanism to address the needs of marginalised groups, incorporation of PPP mitigation models and international cooperation at regional and global level.

f. Involvement of all the line ministries/ departments concerned in pandemic preparedness planning.

2 Sectors Beyond Health

The identification of various stakeholders or service providers beyond health and prioritisation of pandemic planning across these sectors is essential for reducing the impact of a pandemic. During Session 3—Preparing for a Pandemic in India, participants were assigned to groups and provided with a framework to discuss four key issues in preparing for a pandemic in India:

a. Legal and institutional issues.

b. Communication and coordination issues.

c. Prioritising pandemic planning across sectors.

d. Including vulnerable groups in pandemic preparedness planning.

Each group had a facilitator and rapporteur who had been briefed beforehand. An internal facilitator (from NDMA/UNDMT/PIC) was also assigned to each group to ensure that discussions stayed on track. The groups were given additional time on the second day to prepare their presentations which were presented at the last session of the workshop.

2.1 Preliminary Discussion to identify Terms of Reference

On 17 April 2008, representatives from NDMA, UNDMT, UNDP, WHO, United Nations Children's Fund (UNICEF) and OCHA-ROAP met and deliberated on the various terms of reference to be given to the different groups identified above. The terms of reference outlined are as follows:

Group 1 : Legal and Institutional Issues

(A) Issues related to prevention and containment of AI in the poultry/animal sector:

a. Early warning systems, surveillance, disease notification and outbreak investigation.

b. Poultry movement and trade restriction.

c. Culling, compensation for loss of poultry stock and products.

d. Repopulation and stocking.

e. Environmental sanitisation.

f. Vaccination.

g. Biosecurity for AI risk reduction.

h. Risk communication.

i. Media and public information.

j. Mitigation of economic impact for various levels of enterprises.

k. Others.

(B) Issues related to prevention and management of human cases of AI:

a. Surveillance and epidemiological investigation.

b. Quarantine—individual and community.

c. Isolation of patients, personal protection and infection control.

d. Chemoprophylaxis—individual and community.

e. Treatment.

f. Rapid containment measures.

g. Movement restriction to affected zone.

h. Restriction of contact with poultry and poultry products.

i. Risk communication, media and public information.

j. Others.

(C) Issues related to dealing with pandemic influenza:

a. Surveillance, notification and epidemiological investigation.

b. Isolation — home, community, institutional.

c. Quarantine—individuals at home, community.

d. Movement and travel restrictions.

e. Social distancing—closure of business, services, schools, cinema halls etc.; prevention of social/political gatherings, functions, melas, etc.

f. Chemoprophylaxis—individual and community: prioritisation of risk groups, stockpiling, distribution, retailing, etc.

g. Vaccination—prioritisation of risk groups, stockpiling, supply, mass campaigns, availability in private sector, etc.

h. Treatment—home care, triage, transportation and prioritisation at institutional level; treatment availability at government nodal institutions versus private institutions.

i. Risk communication, media and public information.

j. Communication and information sharing with international agencies and other countries.

k. Insurance and reimbursement for prophylaxis and treatment.

l. Surge capacity in health care institutions—gate keeping and referral mechanisms; balancing risks and responsibilities of health care workers.

m. Maintenance of essential services—develop, adapt and implement sector specific and inter-sectoral continuity of operations plans for maintenance of functioning and for meeting surge capacity needed for pandemic response in face of the impact on personnel, supplies, etc.

n. Inter-sectoral coordination for minimising morbidity, mortality, social disruption and economic loss.

o. Mitigating social and economic impact.

p. Pandemic recovery.

q. Operations research and knowledge management for assessment of response and lessons learned for future pandemics.

r. Others.

Group 2: Communication and Coordination Issues

a. Identify linkages between various emergency functionaries.

b. What are the existing coordinating mechanisms?

c. How can coordination between government and non-government groups be planned?

d. How can India coordinate with other countries in pandemic preparedness planning?

The communication strategies that need to be planned in order to support specific activities of the government and the health sector to contain

the spread and/or fight the outbreak are the important terms of reference for this group.

Group 3: Prioritising Pandemic Planning across Sectors

a. Identify what are essential services.

b. How to create awareness in those sectors about the need (and contents) of sectoral pandemic preparedness planning?

c. Who will assure that multi-sectoral pandemic preparedness planning is implemented efficiently at all levels?

d. Who will be responsible to coordinate multi-sectoral pandemic response and multi-sector pandemic preparedness?

e. What are the components and what needs to be covered in sectoral pandemic preparedness plans?

The main focus of this group is multi-sectoral pandemic preparedness and maintaining of essential services and actors responsible for sustaining this continuum.

Group 4: Including Vulnerable Groups in Pandemic Preparedness Planning

a. Define who are the vulnerable groups in case of a pandemic.

b. What are the special concerns of these vulnerable groups?

c. How can these be addressed across sectors?

In general, each group was tasked with identifying the key issues for their group, producing action points and advocating roles and responsibilities for various actors. Each group was to include different perspectives from public and private sectors, national/state/district levels, civil society, etc., in order to develop a holistic approach towards the management of pandemics (Annexure-B).

2.2 Matrix Based Identification of Action Points and Respective Stakeholders

In order to simplify the approach and to harmonise the functioning of the different groups, a matrix template was designed (Annexure-C) and given to all the groups. The matrix outlines the following:

a. Identification of macro and micro issues pertaining to the various terms of reference outlined above.

b. Define the action points, their associated time frame and estimated budget with respect to a particular issue.

c. Identify the stakeholder(s) responsible for a particular issue and strategy for implementation.

d. Outline the overall preparedness to build and strengthen the existing machinery addressing the concerned issue.

The half-day long deliberations outlined a strategy to be adopted to address the vital issues defined under distinct subheads.

2.3 Outcome of the Deliberations

An integral part of the workshop was the group work as it gave participants the opportunity to present their views on the issues identified. In view of the terms of reference assigned to Group I, the gaps identified in the existing legal and institutional framework were:

a. National Influenza Pandemic Committee—the terms of reference are limited to health response. Multi-sectoral preparedness and response are not included.

b. The Inter-Ministerial Task Force was limited largely to AI response and multi-sectoral post influenza preparedness and response were not covered.

Group 1 identified the following action points to address the various issues. According to the group, the responsibility at the national level will be assigned to the nodal/line ministries/departments concerned and NDMA/NEC, while at the state level SDMA/SEC, concerned state departments and at the district level the District Disaster Management Authority (DDMA). Upon further discussion with the rest of the workshop participants, it was concluded that as per the provision of the DM Act, 2005, the NEC can constitute sub-committees and therefore a sub-committee should be formed to address the issue of Pandemic Influenza Preparedness of the country. A similar model will be replicated by the SEC at the state level and under the district collector at the district level.

(A) Expand the terms of reference of the National Influenza Pandemic Committee:

  a. Maintenance of essential services/ continuity of operations:

    i) Explore if legal instruments such as Essential Services Maintenance Act, Epidemic Diseases Act (under enactment) and acts which empower district magistrates to invoke emergency powers during disasters cover pandemic influenza related issues.

    ii) Consider revision of existing acts and/or development of new acts to cover the pandemic influenza scenario.

  b. Promote business continuity planning in both private and public organisations through development of guidelines, awareness strategies, monitoring and regulation mechanisms for compliance.

  c. Inter-State and State-Centre jurisdictional issues related to pandemic response.

    - Overarching legal instruments to ensure consistent public health interventions across states.

  d. Regional cooperation for preparedness and response and mechanisms for using legal frameworks such as the IHR.

(B) Integration of pandemic influenza preparedness, response and recovery with existing multi-hazard preparedness, response and recovery mechanisms at all levels.

(C) Include representation from key infrastructure line ministries: e.g., energy, telecommunication, transportation (surface, rail and air), defence, finance, rural and urban development, education, agriculture and civil supplies.

(D) Sub-committee for handling issues related to civil continuity with working groups for/ within each of the key line ministries and sample issues identified in the expanded terms of reference mentioned above.

(E) Parallel processes at state and district levels.

Group 2 addressed communication and coordination issues. The first issue identified was the need to formulate policies, guidelines and linkages between stakeholders. Being the apex authority for all policy and advocacy issues, it was suggested that NDMA will be responsible to develop mutually acceptable linkages and responsibilities. This would be done through meetings/workshops involving stakeholders, i.e., a participatory and consultative approach should be taken in coordination with nodal and line ministries, concerned departments at state/district levels and other stakeholders beyond health. Activities should include creation of Standard Operating Procedures (SOPs), conducting table top exercises/mock drills etc. It was suggested that the NEC should be the

response agency to a pandemic and it should start operations in phase 4.

The important activities to be undertaken by NEC include:

a. NEC should establish a subcommittee specific to pandemic preparedness and response.

b. In order to respond quickly in phase 4, the NEC would have to be prepared earlier—in phase 3—and be in communication with the concerned SECs from which it should be receiving constant updates of the situation in the state.

c. SECs should be active even during surveillance and constantly monitor the progress to observe any significant change in the basic level of the outbreak.

d. Indicators need to be developed to activate the level of response to mitigate the impact.

e. SOPs should be laid down for exercising emergency powers to activate the pharmaceutical industry. Mechanisms to exercise overriding powers to overcome problems due to intellectual property rights or patents should be in place to ensure production of drugs/vaccines.

The group felt that the NDMA/SDMAs/DDMAs need to develop a mechanism for establishing continuous dialogue and feed back mechanism from district to national level and from the concerned ministries/departments to NDMA. They need to identify specific areas of interaction based on the expertise, capability and community association of the actors; which should be done in coordination with organisations like the Federation of Indian Chambers of Commerce and Industry (FICCI), National Association of Software and Services Companies (NASSCOM), as well as NGOs and Voluntary Group Organisations (VGOs) at all levels. The group also felt that there was a need to improve interaction and best practice sharing with other countries and global private entities. The MEA in coordination with the NDMA, international agencies such as the UN and bilateral agencies, nodal and line ministries, should include the following recommendations in their respective SOPs/plans:

a. Establishing bilateral/multilateral relationships with neighbouring countries. SAARC should include a mechanism in this regard, similar to ASEAN.

b. Linkages with countries in Southeast Asian Region through bilateral and multilateral interactions.

c. Mechanism would involve exchange of response plans, relevant epidemiological data, exchange of expertise and joint responses particularly in border regions, including joint planning and exercises.

d. Ensuring compliance of IHR as formulated by international bodies.

The group concluded with a note that considering the geographical and economic factors and past experience, India should take leadership in leveraging best practices across countries/ corporations in this region.

Group 3 had the responsibility of prioritising pandemic preparedness planning across sectors beyond health. It was observed that pandemic preparedness did not figure in emergency planning across sectors beyond health. The impact of such a crisis could lead to a worst case scenario where resources are limited to manage mass casualties, and absenteeism of essential service providers due to panic and fear of being affected could further aggravate the situation. The group felt that there is an urgent need for pandemic preparedness plans in all critical sectors. Preparing for a plan should include:

a. Identifying the critical functions, personnel, supplies and equipment vital to maintain essential functions.

b. Consider how to deal with the anticipated level of staff absenteeism and minimise its impact on activities.

c. Provide clear command structures, delegation of authority and orders of succession for workers.

d. Assess the need to stockpile strategic reserves of supplies, material and equipment.

e. Mutual agreement on a system of communication with suppliers and customers.

f. Mechanism to develop ability to work without telephones, computers, power or water.

g. Assigning and training for alternative critical posts.

h. Establishing guidelines for priority and access to essential services.

i. Planning for security risks to operations and supply chains.

j. Alternative methods of working, e.g., changes to shift patterns, working from home.

k. Implications of travel restrictions and develop procedures to follow for such restrictions.

l. Train staff on infection control and communicate essential safety messages.

m. Consider whether there are ways of reducing social mixing e.g., working from home, reducing meetings, etc.

n. Need for family and childcare support for essential workers.

o. Need for psychosocial support services to help workers to remain effective.

p. Planning for the recovery phase.

To address these vital issues, focused studies should be commissioned which will be based on how a pandemic is going to affect individual sectors. Detailed guidelines for preparation of pandemic preparedness plans across sectors are required and can be augmented by awareness campaigns for different sectors through workshops, seminars, capsule training programmes, sustained public awareness campaigns, sponsoring study programmes and simulation exercises. The various components of the institutionalised DM framework at all levels will carry out these functions. The group identified components of a multi-sectoral pandemic plan that would encompass pandemic preparedness planning across sectors.

Components of Multi-Sectoral Pandemic Preparedness Plan:

a. Impact assessment.

b. Identification of critical operations.

c. Identification of critical personnel/staff.

d. Emergency manpower planning.

e. Emergency/alternative command and control.

f. Identification of inter sectoral inter-dependencies.

g. Evaluation of back up plans.

h. Evaluation of outsourcing options.

i. Evaluation of emergency supply/delivery alternatives.

j. Secondary/alternative working location.

k. Emergency communication plan.

l. Business recovery plan.

Group 4 was assigned the responsibility to identify vulnerable groups in a pandemic and to address their concerned issues. At the end of a discussion following a free listing exercise of vulnerable groups, the group agreed that during an influenza pandemic, everybody is vulnerable; some more than others. The influenza pandemic may be considered as quite distinct because the incriminator is a novel, mutant virus, the behaviour of which may be beyond all

current scientific assumptions and predictions. Against this backdrop, the group felt the need to expand the internationally accepted definition of vulnerability and include more perspectives/ dimensions.

The vulnerability of socio-economically disadvantaged groups is unquestionable. Mainstreaming the already neglected, disempowered, groups should be accorded a major priority in the planning phase of the pandemic itself.

The group felt that the issue of vulnerability may also be seen in a medical perspective taking into account the type of the virus and the evolution of the pandemic (scenarios such as rapid onset, slow onset and static). The medical perspective cannot be ignored because in a scenario of rapid onset, the first responders and health care workers may be exposed to a virus causing high levels of morbidity and mortality.

The current understanding on treatment and prophylaxis with anti-virals and vaccines may or may not work against the mutant virus and may not benefit them. Moreover, it may take weeks/months before the pandemic is actually detected/declared leaving the volunteers and care providers defenseless against a highly pathogenic virus. The group deliberated on terms such as 'at high risk' for volunteers and care providers as they are highly likely to be exposed to the virus due to their occupational profile. Finally, the group came to a consensus that they have to be included as a special group within the vulnerable population itself and the preparedness plan has to address their concerns too.

Thus vulnerability has been approached through two perspectives: a) medical and b) socio-economic perspectives. In terms of the medical perspective, the important groups are health care workers, volunteers (first responders), close contacts of sick persons, essential service providers, and immuno-compromised groups. The vulnerable groups based on the socio-economic perspective include the homeless, migrants, institutionalised population, mentally/physically challenged, children/ adolescents, women (especially pregnant women), urban poor, marginalised groups, and tribal population. Such groups are already carrying the burden of marginalisation on various counts including lack of information and access to health care. Thus, the context is socio-economic-political. Some of the factors of vulnerability in the medical perspective are about contact/exposure, flight reaction/escape, and the medically compromised. So the context while predominantly medical, does have socio-economic angles. Some overlap in these two perspectives is but expected, and unavoidable. The local authorities and the coordinating mechanisms will need to contextualise the above, and identify the vulnerable groups for each pandemic/disaster in the preparedness phase itself.

The nature of a pandemic viz., the agent and transmission dynamic, the social milieu (urban/ rural), and geographical pattern will also determine the context of vulnerability. Information/ awareness, transport and other infrastructure, density of population, access to health care are the other major factors affecting vulnerability. As such in the socio-economic perspective, one of the most vulnerable groups may be considered to be the urban poor in slums and the institutionalised population. On the other hand, in terms of the medical perspective, the most vulnerable group or those at risk are the first responders due to the nature of their work. The various concerns/issues in each of the category are given below:

Concerns in the Socio-Economic Perspective:

- Long-term neglect.
- Disempowerment.

- Issues of equity—access to information, health care, essential needs, livelihoods.
- Lack of regulatory frameworks.

Concerns in the Medical Perspective (considered as groups at high risk)

- Level of risk to exposure, awareness and information.
- Lack of information.
- Logistic issues.
- Supplies of anti-virals, PPE and vaccines.
- Capacity building.
- Insurance.

The group pointed out that the various activities to mitigate the impact on vulnerable groups in terms of the medical perspective include information management, training and capacity building, care for the care providers, provisions of PPE, vaccines and anti-virals, insurance, psychosocial support and care. In terms of giving specific attention to socio-economic vulnerable groups, participatory planning process, mapping of vulnerable groups in urban and rural settings, targeted communication strategies for awareness generation and behaviour change, capacity building of community, active and passive surveillance, provision of anti-virals, PPE, provision of essential supplies and livelihood schemes are some of the important activities to be undertaken.

The group identified that the NDMA in coordination with the NEC, nodal/line ministries, concerned state level departments, SDMAs/ DDMAs and in partnership with the IFRC, civil society agencies, UN agencies, corporate/private sector, community based organisations/institutions as important actors for these activities. The intensive deliberations recommended that the concerns of vulnerable groups must be addressed in the immediate preparedness phase across all the sectors and at all levels.

3 Regional and International Perspectives

The IHR, (2005) adopted by the World Health Assembly on 23 May 2005 came into force on 15 June 2007. The purpose and scope of the IHR, (2005) is to prevent, protect, control and provide a public health response to the international spread of disease and to avoid unnecessary interference with international traffic and trade. India, being a member state complies with these regulations and works in close cooperation with International agencies on these matters.

3.1 Regional and International Perspectives on Disaster and Pandemic Preparedness

Session 4 on Day 2 of the workshop focused on linking pandemic preparedness with disaster preparedness. A regional perspective was presented by Dr. Khanchit from WHO SEARO who described WHO's strategy in the Southeast Asia region in preparing for a pandemic, in particular the support to governments. He outlined the dynamics of a plausible worst-case scenario of any pandemic. The five point strategy of WHO is: a) Reduce human exposure to H5N1; b) Strengthen the early warning system; c) Intensify rapid containment operations; d) Build capacity to cope with a pandemic; and e) Coordinate global scientific research and development.

In view of the above-mentioned considerations, the countries of Southeast Asian Region:

a. Need to continue implementing national level pandemic preparedness plans.

b. Should test their plans through simulation exercises/drills.

c. Need to revise national level pandemic preparedness plans as experience accumulates.

d. Are required to be committed to compliance with IHR.

WHO SEARO will implement IHR by utilising the Asia Pacific Strategy for Emerging Diseases (APSED) as a road map for regional-level resource mobilisation while considering reprogramming activities at the country level itself. The process has to be continuously driven by the various mutual cooperative forces.

The role of the IASC in integrating pandemic preparedness in their contingency planning was explained by Ms. Eliane Provo-Kluit from OCHA ROAP who forged links between pandemics and natural hazards. A four pillar approach for humanitarian efforts includes partnership, humanitarian coordination/financing agencies and adoption of cluster approach based upon the need assessment analysis. It was mentioned that pandemic scenarios were considered as part of IASC contingency planning, in particular the non-health humanitarian aspects.

The role of the UNDMT in India was explained by Mr. Jerome Sauvage, Convenor UNDMT and Deputy Country Director (Operations) UNDP. On the issue of pandemic preparedness, UNDMT positioned itself as the link between NDMA and PIC for the current workshop and the ongoing link between NDMA and international bodies on pandemic preparedness planning. UNDMT is a valuable resource for information/experience

sharing, capacity building and enhancing global partnerships.

3.2 Outcome of the Deliberations

This session outlined the regional and international perspectives on pandemic preparedness and also linked pandemic preparedness to disaster preparedness. Key recommendations were:

a. Compliance of IHR, (2005) at each level needs to be ensured and suitable mechanism needs to be developed by the nodal/line ministries/departments concerned

b. Cooperation at the regional level on pandemic preparedness planning should be enhanced through:

   i. SAARC, a possible regional platform for pandemic preparedness in the South Asian region.

   ii. Line ministries (particularly those looking after essential services as listed in Chapter 4) should cooperate with their counterpart ministries in the countries of the Southeast Asian region via the MEA.

   iii. NDMA will ensure that cooperation should be extended to DM agencies in the South-Southeast Asian region in order to integrate pandemic preparedness with disaster preparedness.

c. In terms of international cooperation, the integration of strategies and functioning of the UN (particularly through PIC, OCHA ROAP, UNSIC and WHO SEARO) and international agencies; with national strategies is important since a pandemic is of global concern and countries are inter-dependent for various functions

d. Adoption of single window approach system of interaction with NDMA at the central level to optimise the sharing of regional resources, adoption of international best practices and implementation of lessons learnt from various global incidences/simulation exercises in the Indian context

A consensus among the various experts has been developed during this session and it has been decided to develop an in-built mechanism among different agencies to continually work on the process of pandemic preparedness both in advisory and capacity building mode.

4 Key Recommendations and Future Strategy

India and other neighbouring countries of the Southeast Asian Region have faced a number of disasters in the last few decades. Some of these were highly destructive such as the Indian Ocean tsunami of December 2004 and Super cyclone in Orissa etc. Among the biological disasters, the emergence and re-emergence of AI in different parts of the country emphasised the need for planning at each level. Presently, in most of the member countries of WHO SEARO including India, the ministries looking after the health sector and animal husbandry departments are the nodal agencies responding to AI outbreaks. The transmission of AI outbreaks is spreading from one region to another and causing great panic among those who are directly or indirectly getting affected due to large-scale culling of birds/animals. The probability of mutation of the H5N1 virus into a virus that can affect humans cannot be ignored. The possibility of a pandemic therefore must be taken into account since a pandemic is likely to have a high level of devastating potential. Therefore, pandemic preparedness planning requires a multi-sectoral approach that includes sectors beyond health in all phases of preparedness. Moreover, the process of preparing for a pandemic should be participatory and consultative. With this purpose, the workshop on 'Pandemic Preparedness beyond Health' was convened with the following objectives:

a. To review the existing preparedness and to lay down the milestones to be achieved by concerned ministries/departments and other stakeholders in a time-bound manner.

b. To broaden the scope of preparedness at all levels to include continuity of essential services and business enterprises involving community at large, private entities, civil society and humanitarian organisations.

c. To incorporate preparedness measures into national DM structures with an in-built process to review the roles and responsibilities of various stakeholders.

The two day deliberation began with an understanding of the existing spread of AI in different parts of India and national level preparedness particularly of the nodal health and agricultural ministries. India first faced an AI outbreak in Maharashtra in 2006. Two outbreaks in 2008—in West Bengal in January and Tripura in March-April indicates how serious the spread of AI is for India, and also its bordering neighbours. Containment of AI in India is particularly hindered by:

a. Backyard poultry in the rural sector.

b. Lack of community awareness.

c. Porous borders with neighbouring countries.

The international experts from UN, OCHA, WHO, PIC presented their views and one of the common problems that has emerged from these deliberations is the non-involvement of stakeholders beyond health in the planning process. The proposed agenda and work groups has addressed this issue critically (Annexure-D) with two major considerations:

a. Role of stakeholders beyond health in management of pandemics.

b. Maintenance of essential services by all stakeholders during pandemic situations.

The deliberations at the workshop on Pandemic Preparedness beyond Health clearly revealed the need for planning for the probability that a pandemic may occur, the devastating impact of which is inevitable. While WHO pandemic phases are a useful way to prepare for a pandemic, the deliberations at the workshop noted that in the worst case scenario, there may be no time for effective response since in reality there may be a jump from phase 3 to phase 5 or 6 which leaves no time for phase-wise preparedness activities. In view of this, it was recommended that SOPs should be developed for:

a. Business continuity planning.

b. Damage control measures.

c. Specific response protocols for a pandemic or such an emergency situation.

d. Plans to be practiced regularly through mock exercises.

It is advisable to encourage the Research and Development (R&D) programme and capacity building in terms of:

a. Development of infrastructure (BSL laboratories and facilities to develop vaccine for newly evolved virus able to affect human population).

b. Trained manpower (both responders and researchers) to contain the pandemic situation as promptly as possible.

Keeping the urgency of this issue, the experts decided to continue brainstorming processes like:

a. Table-top exercises for decision makers.

b. Sensitisation mock exercises for responders at the ground level.

c. A sustained awareness programme to support the national/regional planning process.

These deliberations will be valued in terms of deriving important lessons for each of the stakeholders to develop/improve their emergency preparedness plans as a part of overall pandemic preparedness and planning process.

Listing of Essential Services

The important outcome of the workshop includes listing of all basic essential services required for management of such a disaster situation. The whole society will be severely affected because of limited essential services due to large scale mortality and absenteeism caused by panic and fear among the community and service providers itself. The essential services include:

a. Agriculture.

b. Health.

c. Food.

d. Water resources (drinking water, as well as water as an energy resource: dams).

e. Transportation: land (rail and road-roadways/highways); water (rivers and sea). and air.

f. Public order.

g. Finance (inclusive of banking and financial institutions).

h. Information technology.

i. Telecommunication (core linkage between all important emergency or daily services).

j. Power (backups for all emergency operations).

k. Civil aviation (air routes vulnerable to fast spread of pandemic virus across the borders).

l. Defence (strategic response and contingency plans).

m. Commerce and industry (basic operations need business continuity planning).

n. Law and order (extreme absenteeism may affect civil structure).

o. Rural sector; marginalised or vulnerable groups require society based interventions.

The list of essential services indicates that a pandemic is likely to affect everyone and therefore there is a need for a 'society-wide approach' to prepare for such an eventuality. Multi-district and state level cooperation, as well as coordination with national and international agencies is required to maintain running of these essential sectors. In comparison with the outbreak of Spanish flu in 1918, severe economic losses are expected. Pandemic preparedness requires the in-built mechanism in the development process as a part of DM planning to deal with the possible severity of such pandemics.

Future Strategy

On the basis of a comprehensive review of the existing status of pandemic preparedness at national and regional levels, the group observed that there were a number of shortfalls. It was felt that isolated episodes of AI are managed differently and the possibility of human transmission further adds the need of enhanced state of pandemic preparedness. It is the need of the hour to have a standardised pandemic preparedness plan integrating all concerned stakeholders. A multi-pronged future strategy is needed to dovetail pandemic preparedness planning with DM planning in India. The key recommendations include:

(A) National level:

a. Advocacy and Guidance—NDMA/NEC needs to sensitise all line ministries dealing with essential services (as identified above) to prepare their pandemic preparedness plans. The major considerations while reviewing the pandemic preparedness plans:

i. Implementation of IHR, (2005) at all levels.

ii. Command and control function protocols.

iii. Emergency powers to be delegated to maintain social distancing, quarantine, isolation, maintenance of essential services by making special provisions under the national, state and district level pandemic preparedness plans.

iv. Roles and responsibilities of various stakeholders including health/ agriculture and beyond health.

v. Legal framework to develop contingency plans by every stakeholder/essential service provider.

vi. Finance provisions in both development and mitigation plans at all levels.

vii. Special provisions for vulnerable groups.

viii. Security plans of the country to be revisited in view of such emergencies.

ix. Restrictions on international movement, border control measures, movement of migrants from affected regions and contingency measures to reduce the impact on trade and commerce.

x. Prioritising the various sectors based on the need assessment analysis and integrated approach to reduce the overall impact needs to be undertaken in the national guidelines.

b. Planning—The all hazard DM plans developing at district/state/national levels should address the issues of pandemic preparedness and contingency planning for maintenance of essential services. These plans will be developed based on the guidelines going to be issued by NDMA

on Biological Disaster Management as per the mandate in the DM Act, 2005. These plans should consider the following recommendations:

i) Pandemic influenza preparedness is not restricted to the plausible mutation of AI virus affecting human population while it is a preparedness to combat any such biological agent which may lead to a mass casualty event.

ii) The pro-active role of every stakeholder is an important part of the integrated grid resistant enough to manage the impact. The role to be played will be integrated into these plans.

c. Linkages—NDMA/NEC will use the existing mechanism to bring synergy between the various ministries by developing adequate linkages.

d. Coordination—Multi-sectoral coordination and plans should be tested through table-top, simulation/mock exercises. The important activities to be undertaken include:

i. To outline various measures that are required to increase the local capacities to manage such mass casualty events.

ii. State/district plans should contain provisions of coordination and linkages between various service providers.

iii. These plans need to be tested during sensitisation mock exercise facilitated by NDMA/SDMAs/DDMAs and other related agencies periodically.

iv. Development of an advanced business continuity model plan.

v. Every essential service provider (ministry/department concerned) should develop their own business continuity plan as a part of overall planning. These plans should be tested with respect to different plausible worst case scenarios of pandemics using table top exercises to improve them with time.

e. Community Awareness Programme:

i) Development of pandemic severity index in multiple situations based on the local hazards and other factors at district/state level.

ii) On-line public information database about the status of pandemics and emergency communication programmes as a part of the surveillance system being developed by the nodal ministry—MoH&FW.

iii) Community based best practices of the districts could be utilised for awareness programmes and local capacity development.

iv) Develop community awareness programmes in vernacular languages.

f. Capacity Building:

i. Concerned authorities/service providers shall indicate number, variety and range of training required in the time-bound action plan for getting prepared for such a worst case scenario.

ii. Imparting education and training about the pandemic preparedness at all levels to enhance the number of trained personnel.

iii. Provisions of PPE, medical and other logistics at strategic locations and training in their use is necessary and such provisions will be developed as a part of DM plans.

iv. Resource Inventory: Provisions of food reserves with the national/state level responding agencies are important to develop in the developmental process itself.

g. Public-Private Partnership: PPP models for various preparedness activities in terms of capacity building, development of emergency reserves, business continuity, etc., should be developed and practiced.

h. Special attention to the vulnerable population of care providers who have a high risk of getting affected in the pandemic preparedness plans. Special attention to these groups should be included in the plans at all levels.

(B) Regional level: Identification of regional level planning issues including human movement, shipping and pipelines which are some important components of economic infrastructure is of paramount importance. Regarding health issues, WHO SEARO is actively working in the Southeast Asian region and acting as a common platform for dealing with all such cases. However, the deliberations revealed that a continuous monitoring platform is not available for regional cooperation on such a high priority issue. This has led to the difference in adoption of different mitigation practices in the different countries of the region, which can compound the regional problems. To address such important issues:

a. The line ministries in respect to their mandate of essential service provision needs to extend their partnership to the neighbouring countries as a part of regional business continuity planning through MEA.

b. NDMA needs to engage the other national DM authorities of different countries of this region to develop a common platform to thrash out all such issues and develop coherence in regional preparedness/ mitigation activities.

c. Mechanisms for international cooperation in advocacy, adoption of best global practices and implementation at regional level needs to be developed in partnership with UN and other international agencies operating in this region.

The process of pandemic preparedness is a continuous endeavour and requires the proactive approach of all the stakeholders/service providers concerned directly or indirectly as well as those who are likely to be affected. A step has been taken towards the development of a state of preparedness to maintain essential services and to reduce the economic and social impact of a pandemic, though concerted efforts are required in this direction to implement the identified goals at the ground level.

5 Participants of the Workshop

National Disaster Management Authority

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
NDMA	Gen N.C. Vij, PVSM, UYSM, AVSM (Retd)	Inaugural Address	Vice Chairman, NDMA
NDMA	Lt. Gen (Dr) J.R. Bhardwaj, PVSM, AVSM, VSM, PHS (Retd)	Speaker– Introductory Address, Chairman, Core Group (Workshop Preparedness) and Chairman, Session1 : Reviewing Existing Preparedness and Member Group-1	Hon'ble Member, NDMA
NDMA	Maj Gen J.K. Bansal, VSM	Member of Group-1	CBRN Coordinator
NDMA	Dr. Rakesh Kumar Sharma	Member of Group-2	Head, Department of CBRN Defence, DRDO and Coordinator–National Core Groups –CDM & CTD (NDMA)
NDMA	Dr. Raman Chawla	Coordinator (NDMA-UNDMT Workshop),Member of Group-2	Senior Research Officer, Medical Preparedness and Man-made Disasters
NDMA	Mr. Deepak Sharma	Participant	Officer, NDMA
NDMA-NDRF	Dr. Joydeep Chattopadhyaya	Speaker (Session 1) and Member Group-3	Chief Medical Officer, NDRF Bn, Calcutta, W.B.
NIDM*	Mr. P.G. Dhar Chakrabarty	Facilitator of Group-3	Executive Director, NIDM

United Nations Agencies

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
UNRC*	Dr. Maxine Olson	Address: Objectives and Intended Outcomes	UN Resident Coordinator
UNDP	Ms. Deirdre Boyd	Participant	Country Director
UNDMT/ UNDP	Mr. Jerome Sauvage	Speaker and Coordinator of Workshop (UNDMT)	Deputy Country Director
UNDMT	Ms. Shairi Mathur	Coordinator (NDMA-UNDMT Workshop)	UN Disaster Management Team Associate
UNDP	Mr. G. Padmanabhan	Participant	Emergency Analyst & Officer in Charge, DRM
UNDP	Dr. Deepa Prasad	Member of Group-4	Programme Associate, Health
UNDSS*	Dr. Preetha G.S.	Super Facilitator and Member of Group-4	Pandemic Influenza Preparedness Trainer & Coordinator
UNDSS	Mr. Terry Davis	Member of Group-1	Chief Security Advisor for India and Bhutan
UNDSS	Mr. Jens Larsen	Member of Group-2	Deputy Security Advisor for India and Bhutan
UNRC/ UNFPA*	Ms. Shachi Grover	Member of Group-4	Programme Officer (UNFPA) Population and Development
UNHCR*	Ms. Nayana Bose	Member of Group-4	External Relation Officer
UNICEF	Mr. Claude Dunn	Member of Group-1	-
UNICEF	Mr. Mukesh Puri	Super Facilitator and Member of Group-3	Emergency Programme Officer
UNICEF	Ms. Anu Puri	Participant	Programme Communication Officer

Pandemic Influenza Team, a unit within OCHA

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
PIC	Mr. Liviu Vedrasco	Speaker and Member of Group-1	Pandemic Readiness Advisor
OCHA ROAP	Eliane Provo-Kluit	Speaker and Member of Group-2	Representative of OCHA ROAP
OCHA ROAP	Dr. Ingo Neu	Speaker and Member of Group-3	Senior Planning Officer
OCHA ROAP	Achara Jantarasaenga	Member, Coordination Team of Workshop and Rapporteur of Session 1	Humanitarian Affairs Analyst (Avian and Human Influenza)

World Health Organization and other International Agencies

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
WHO India	Dr. Reuben Samuel	Super facilitator and Member of Group-1	National Professional Officer, Epidemiology
WHO India	Dr. Ritu Chauhan	Member of Group-4	National Consultant – Microbiology
WHO SEARO	Dr. Khanchit	Speaker : South East Asian Region Preparedness	Regional Adviser, Communicable Diseases Surveillance & Response
USAID*	Mr. Sanjiv Upadhyaya	Member of Group-2	Advisor, Urban Health and Infectious Diseases
USAID	Ms. Manju Ranjan	Member of Group-3	Project Management Associate
IFRC*	Mr. Mohammed Babiker	Participant	Head, India Office
IFRC	Mr. Rajeev Sadana	Member of Group-4	Health and Programme Support Manager

Ministries/Departments of the Government of India

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
MoH&FW	Dr. Shivlal	Speaker : Present Status of AI Preparedness and Member of Group-2	Additional Director General Health Services (Addl DGHS), Ministry of Health and Family Welfare (MoH&FW) and Director National Institute of Communicable Diseases (NICD)
MoH&FW	Dr. Shashi Khare	Facilitator and Member of Group-1	Consultant and Head, Department of Microbiology, NICD
Dept of Animal Husbandry, MoA	Dr. S.K. Bandyopadhyay	Speaker–Session-1	Commissioner, Department of Animal Health, MoA
Dept of Animal Husbandry, MoA	Dr. A. Bambal	Member of Group-2	Asst Commissioner, Animal Health
MHA	Mr. Raman Khandwal	Member of Group-1	-
Armed Forces Medical Services	Wg. Cdr. Rajesh Vaidya	Member of Group-2	Reader, Department of Community Medicine, AFMC, Pune
MoI&B*	Mr. Sanjay Aggarwal	Member of Group-2	Director, I&B
Ministry of Law	Mr. N.L. Meena	Member of Group-1	Additional Secretary
Ministry of Railways	Dr. Rajiv Kumar Jain	Member of Group-3	Director, Health and Family Welfare, MoR
Public Sevice Commission	Dr. Archana Saxena	Member of Group-2	-
SSB	Dr. A.K. Sinha	Speaker (Session 1) and Rapporteur of Group-3	Veterinary Officer
Dept of Telecomm	Mr. P.K. Saha	Member of Group-2	DDG (DS) Dept of Telecom
Consultant to FAO	Mr. H.S. Sharma	Member of Group-4	Consultant
Aashray Adhikar Abhiyan	Ms. Paramjeet Kaur	Member of Group-4	Director

State Representatives

Govt. of Maharashtra	Mr. Ashish Sharma	Speaker (Session 1) & Member of Group-2	Representative, Department of Relief
Govt. of Maharashtra	Dr. B.P. Gaikwad	Member of Group-3	Joint Director, Health Services
Govt. of Maharashtra	Dr. Ravi Mare	Member of Group-1	Representative, Department of Health
Govt. of NCT of Delhi	Dr. C. Bhattacharya	Participation of the follow-up group deliberations	Veterinarian, Animal Husbandry Department, Govt. of NCT of Delhi

Academic Institutions, Research Organisations, NGOs, Private Stakeholders

Organisation	Name	Speaker/Coordinator/Facilitator/ Member of Group/Participant	Designation
Tata Institute of Tropical Diseases	Lt Gen Dr. D. Raghunath PVSM, AVSM (Retd)	Member of Group-2	Principal Executive
BITS*	Prof. Dr. Suman Kapoor	Member of Group-4	Prof., Center for Biotechnology Biological Sciences Group Coordinator, Public Health and Administration, BITS, Pilani
IHBAS*	Dr. N.G. Desai	Facilitator and Member of Group-4	Professor & Head of Department of Psychiatry and Medical Superintendent
ICMR*	Dr. Dipali Mukherjee	Member of Group-1	Scientist 'F'
ICMR	Dr. Harpreet Kaur	Member of Group-3	Scientist 'D'
Indian Red Cross	Dr. T.S. Jayalaxmi	Member of Group-4	Advisor, Health
Indian Red Cross	Mrs. Giridhar Mukta	Member of Group-4	Faculty, Course–Disaster Preparedness
INMAS*, DRDO	Ms. Dipali Madan	Member of Group-3	Researcher–Biotechnology
P.K. Management Consultants	Mr. Praveen Kumar Amar	Member of Group-3	Consultant, DM–Natural and Man-made Disasters
IBM Asia Pacific	Dr. Kim Margaret Hobbs	Member of Group-1	Global Well-being Services and Health Benefits, Director, IBM Asia Pacific

IBM India	Mr. Vidur Kohli	Rapporteur and Member of Group-2	Vice President &Technology Head, Global Delivery India IBM India
ASSOCHAM*	Mr. R. Sundaram	Rapporteur and Member of Group-1	Advisor, ASSOCHAM
Innovative Technologies & Projects	Mr. Ravinder Singh	Participant	Consultant
Medicins Sans Frontiers	Dr. Jean Francois Saint Sauveur	Member of Group-1	Medical Coordinator
Symphony - Wellness	Mr. Indrajit Bhattacharya	Participant	Principal – Business Operations
Glaxo SmithKline	Mr. S. Deb	Participant	General Manager, Government Affairs & Institutional Business Development
Gyan Lakshya (NGO)	Mr. Brij Mohan Singh	Member of Group-4	Consultant
CSTV (NGO)	Mr. H Kumar	Participant and Member of Group-1	TV Reporter/Project Coordinator
DFID	Dr. Jenny Amery	Participant	Senior Health Advisor, India and South Asia
ENCARE (NGO)	Col. J.C. Kapur (Retd)	Member of Group-4	President, ENCARE (NGO)

* *The full forms of these abbreviations are given in the list of abbreviations*

Annexures

Annexure-A: E-Copy of the Presentations by Speakers and Deliberations of the Various Groups (enclosed)

Annexure-B: Composition of the Various Groups

Group 1: Legal and Institutional Framework
Facilitator — Smt. Shashi Khare
Rapporteur — Mr. R. Sundaram

Members — Lt Gen (Dr.) J.R. Bhardwaj, Dr. Reuben Samuel, Mr. Jean Francois Sauveur, Mr. N.L. Meena, Mr. Terry Davis, Mr. H. Kumar, Dr. Dipali, Mr. Claude Dunn, Mr. P.N. Anand, Mr. Raman Khandwal and Mr. Liviu Vedrasco

Group 2: Communication and Coordination Issues
Facilitator — Lt Gen Dr. D. Raghunath
Rapporteur — Mr. Vidur Kohli
Members — Ms. Eliane Provo Kluit, Mr. Jens Larsen, Mr. P.K. Saha, Maj Gen J.K. Bansal, Ms. Achara Jantarasaenga, Dr. Raman Chawla and Dr. Rakesh Kumar Sharma

Group 3: Prioritizing Pandemic Planning Across Sectors
Facilitator — Mr. P.G. Dhar Chakrabarti
Rapporteur — Dr. A.K. Sinha
Members — Mr. Mukesh Puri, Dr. Ingo Neu, Mr. Praveen Kumar Amar, Dr. Rajiv Kumar Jain, Dr. B.P. Gaikwad, Dr. Joydeep Chattopadhayaya, Ms. Deepali Madaan, Dr. Harpreet Kaur, Mr. Indrajit Bhattacharya, Dr. Ashok Narayan and Dr. Jorge G. Caravotta

Group 4: Including Vulnerable Groups in Pandemic Preparedness Planning
Facilitator — Dr. N. G Desai
Rapporteur — Dr. Mukta Girdhar
Members — Dr. Preetha G.S., Dr. Deepa Prasad, Dr. Suman Kapoor, Wg Cdr Dr. Rajeev Sadana, Dr. Ritu Chauhan, Dr. T.S. Jayalakshmi, Ms. Shachi Grover, Mr. Sanjay Kumar, Mr. Brij Mohan, Mr. Sanjay Kumar, Mr. H. S. Sharma and Col J.C. Kapur

Annexure-C: Matrix Template for Group Activity

Issues identified	Action point to address the issue	Main responsible actor who could take this forward	Other actors who might be involved as partners	Possible timeline	Estimated resource requirements

Annexure-D: Action Points of Group Work

LEGAL AND INSTITUTIONAL ISSUES

Issues identified	Action points to address the issue	Main responsible actor who could take this forward	Other actors who might be involved as partners
• National Influenza Pandemic Committee - ToR limited to Health Response, multi-sectoral preparedness and response not included • Inter Ministerial Task Force - limited largely to AI response - Multi-sectoral PI preparedness and Response not covered	1. Expand ToR: • Maintenance of Essential Services / Continuity of Operations o Explore if legal instruments such as Essential Services Maintenance Act, Epidemic Diseases Act (under enactment) and Acts which empower District Magistrates to invoke Emergency Powers during disasters cover PI related issues o Consider revision of existing acts and/or development of new acts to cover the PI scenario • Promote Business Continuity Planning in both private and public organizations through development of guidelines, awareness strategies, monitoring and regulation mechanisms for compliance • State-State and State-Centre jurisdictional issues related to pandemic response o Overarching legal instruments to ensure consistent public health interventions across states • Regional Cooperation for preparedness and Response and Mechanisms for using legal frameworks such as IHR	NDMA / NEC	Central Line Ministries State Govt. Representatives Relevant: UN Agencies Private Sector Associations / Entities Civil Society Organizations - International and National
	• Integration of PI preparedness, response and recovery with existing multi-hazard preparedness, response and recovery mechanisms at all levels 2. Include representation from key infrastructure - line ministries: e.g. energy, telecommunication, transportation (surface, rail & air), defence, finance, rural & urban development, education, agriculture & civil supplies 3. Sub-committee for handling issues related to civil continuity with working groups for/within each of the key line ministries and sample issues identified in the expanded ToR above 4. Parallel processes at State and District levels	NDMA / NEC	• Central Line Ministries • State Govt. Representatives • Relevant: UN Agencies • Private Sector Associations / Entities • Civil Society Organizations - International and National

COMMUNICATION AND COORDINATION ISSUES

Issues identified	Action points to address the issue	Main responsible actor who could take this forward	Other actors who might be involved as partners
Formulations of policies, guidelines and linkages between stakeholders	Mutually acceptable linkages and responsibilities to be identified with specific contact points and actions directives through meetings / workshops involving stakeholders (i.e. creating SOPs, table top testing exercise, mock drills)	NDMA	• Nodal Ministries • Health authorities at various levels (including hospitals at public and private level) • Disaster Management Authority (DMA) at various levels • International, National, State agencies on Disaster Management • Local Civic Body (Zila, Panchayat, Municipal - Dist. & State) • Law Enforcement Agencies (Police, Defense, BSF, Ports of entry - air / sea / borders) • Communications (media, print, electronic, telecom) • Infrastructure (Transport, electricity, etc) • Essential supplies (water, food, fuel, etc) • Financial institutions
National Executive committee chairman to own the response to the pandemic	National executive committee will start operation when a communicable disease crosses phase 4	NEC	NDMA through the NEC, Inter-national agencies
Coordination between Govt. and non Govt. entities including NGOs and private	A mechanism for establishing continuous dialog and identification of specific areas of interaction based upon the expertise capability and community association of the entities	NDMA, SDMA, DDMA	Sphere, FICCI, NASCOM etc. NGO, VGO at state level

Need to improve interaction and best practice sharing with other countries and global private entities	1. By establishing bilateral / multilateral relationships with neighboring countries. The SAARC should include a mechanism in this regard, similar to ASEAN. (SAARC needs to create a health agenda) 2. Linkage with countries in South East Asian Region through bilateral and multilateral interactions. In some instances bilateral relationships will be more useful i.e. Myanmar 3. Mechanisms would involve exchange of response plans, relevant epidemiological data. Exchange of expertise and joint responses particularly in border regions, including joint planning and exercises 4. Ensure compliance of international health regulations (IHR) as formulated by international bodies (WHO, FAO, IATA etc.) India to take leadership in leveraging best practices across countries / corporations	Ministry of External Affairs	Health, Food Agriculture, Civil Aviation, Home, Finance and Commerce, transport, labor, defense

PRIORITISING PANDEMIC PREPAREDNESS PLANNING ACROSS SECTORS

Issues identified	Action points to address the issue	Main responsible actor who could take this forward	Other actors who might be involved as partners
There is an urgent need for preparation of Pandemic Preparedness Plans in all critical sectors: • Identify the critical functions, personnel, supplies and equipment vital to maintain essential functions • Consider how to deal with a the anticipated level of staff absenteeism and minimise its impact on activities • Provide clear command structures, delegations of authority and orders of succession for workers • Assess the need to stockpile strategic reserves of supplies, material and equipment • Agree on a system of communication with suppliers and customers	• Focused studies should be commissioned on how pandemic situation are going to affect individual sectors • National Disaster Management Authority (NDMA) should lay down detailed guidelines for preparation of pandemic preparedness plans cross sectors • Creating awareness for different sectors through Workshops, Seminars, Capsule Training Programmes, Sustained Public Awareness Campaigns, Sponsoring Study Programmes and Simulation Exercises	Overall planning and coordination at National, provincial and local levels should be done by the structures of NDMA, SDMA and DDMAs created under the Disaster Management Act	

INCLUDING VULNERABLE GROUPS IN PANDEMIC PREPAREDNESS PLANNING

Issues identified	Action points to address the issue	Main responsible actor who could take this forward	Other actors who might be involved as partners
Need to identify vulnerable groups in case of a pandemic - 1) medical perspective 2) socio-economic perspective Concerns in the medical perspective: • Level of risk to exposure, awareness & information • Lack of information • Logistic issues - supplies of antivirals, PPE & vaccines • Capacity Building • Insurance Concerns in the socio-economical perspective: • Long term neglect • Disempowerment • Issues of equity - Access to information, health care, essential needs, livelihoods. captive/ restrictive nature of Institutions & Lack of regulatory frameworks in institution	Medical perspective: • Information • Training and Capacity building • Care for the care providers • Provision of • PPE • Vaccines and anti-virals • Insurance • Psychosocial support & care Soci-economic perspective: • Participatory planning process • Mapping of Vulnerable groups in Urban and Rural settings • Targeted communication strategies for awareness generation and behaviour change • Capacity building of community • Active and Passive Surveillance • Provision of -Anti-virals, PPE • Provision of essential supplies • Livelihood schemes	• National Disaster Management Authority/ NEC • Ministries of ○ Health and Family Welfare ○ Agriculture ○ Social Welfare/Women and Child Development ○ Information and Broadcasting ○ Home Affairs ○ Urban Development ○ Defence ○ Railways and Surface transport ○ Civil Aviation ○ Panchayati Raj ○ Power • Concerned departments at State levels • State and District Disaster Management Authorities	• Indian Red Cross Society • Civil Society Agencies • UN agencies • Corporates/Private Sector • Community Based Organisations • Religious Institutions and faith Based organization

Contact Us

For more information on *Pandemic Preparedness Beyond Health:*

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