सत्यमेव जयते

nidm
Resilient India - Disaster Free India

TIDINGS

NIDM Newsletter – 7/2020
(January – March 2020)

Theme: Pandemic



NATIONAL INSTITUTE OF DISASTER MANAGEMENT
(Ministry of Home Affairs, Govt. of India)

Website: www.nidm.gov.in

/ nidmmhaindia | / nidmindia | / nidmmhaindia | / nidmmhaindia

Content

1.	Activities	02
2.	NIDM Projects	23
3.	Thematic Views	25

Editorial Board

Editor-In–Chief
Maj. Gen. Manoj Kumar Bindal, VSM
Executive Director

Editor
Dr. Ajinder Walia

Editorial Assistant
Karanpreet Kaur Sodhi

Technical Support
S.K. Tiwari



About NIDM

The National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its redesignation as the National Institute of Disaster Management (NIDM) for training and capacity development.

Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

Both as a national Centre and then as the national Institute, NIDM has performed a crucial role in bringing disaster risk reduction to the forefront of the national agenda. The Institute believes that disaster risk reduction is possible only through promotion of a "Culture of Prevention" involving all stakeholders. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies.

NIDM is proud to have a multi-disciplinary core team of professionals working in various aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like class rooms, seminar hall and video-conferencing facilities etc. The Institute has a well-stocked library exclusively on the theme of disaster management and mitigation.

NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.

From the NIDM

Executive Director's Desk



Dear Readers,

It gives me immense pleasure to put forward the first quarterly newsletter of the year 2020. The institute started the year with eventful and relevant training programmes, workshops and consultative meetings. NIDM, along with our country was marching towards the goal of disaster risk reduction. However, towards the last month of the quarter the country was hit by a pandemic 'COVID 19' which created a deep impact on the human fabric. This pandemic did not respect national boundaries and affected almost all countries across the globe. Lockdowns were announced in various developed and developing countries bringing mobility and economy of countries to a standstill. The theme of our newsletter "Pandemic" is very much relevant to the current challenge we are facing.

The pandemic has called upon every individual in the world to contribute in some measure to stop the onward progression of the disease. While citizens of the world are expected to observe simple measures such as maintaining social distancing, governments and authorities have been pushed hard to maintain lockdowns and grapple with the varied ramifications of the pandemic. The world scientific community, at the same time, is racing against time to study and make out the new SARS-CoV-2 virus, develop diagnostics to detect the presence of the COVID-19 disease it causes, develop drugs that can treat COVID-19 and vaccines that could protect the populations from future attacks by the virus.

The pandemic has offered us numerous lessons which have to incorporate in our disaster management systems for building resilient communities and a better future. The world was taken by surprise by the spread of the pandemic. The pandemic highlighted the fact that no country was fully prepared for epidemics or pandemics and every country has important gaps to address. The pandemic showed that most countries did not test their health security capacities or shown that they would be functional in a crisis.

India is currently fighting against the spread of the disease through its health system as well as imposition of lockdown in the country. We plan to take forward the lessons learnt from this crisis and incorporate it in out Disaster Management systems and policies. In this moment of grave health crisis that the country faces, the National Institute of Disaster Management while joining hands with other arms of the government to subjugate this crisis, will also come up by putting together our resources and intensifying our efforts at combating the pandemic through innovative solutions that would go a long way in mitigating such crises in the coming future.



Major General Manoj Kumar Bindal, VSM
Executive Director, NIDM

ACTIVITIES

Training Programme on Incident Response System (IRS): Basic & Intermediate 6-10 January 2020, Hyderabad

NIDM (National Institute of Disaster Management), being the nodal agency for training and institutionalizing Incident Response System (IRS) in India and to develop capacity of the state governments for building a system for disaster response, conducted a training programme for five days on IRS: Basic & Intermediate from 6-10 January 2020 at Dr. Mari Chenna Reddy Human Resources Development Institute Telangana (MCRHRDIT), Hyderabad, Telangana. This programme was attended by 39 officials from departments of Police, Fire Services and Education, State Disaster Management Authorities, representing three states namely Tamil Nadu, Kerala and Telangana.



Training Programme on Museum Management & Disaster Risk Reduction 6-8 January 2020, New Delhi



A three day National Training Programme was organized by National Institute of Disaster Management, Ministry of Home Affairs on Museum Management & Disaster Risk Reduction from 6-8 January 2020 at YMCA, New Delhi. The Hon'ble Member of National Disaster Management Authority, Shri Kamal Kishore also addressed the programme and had an interactive session with the participants. Around 32 participants dealing with museums management and safety from various states and union territories like Chandigarh, Delhi, Jharkhand, Karnataka, Maharashtra, Odisha, Rajasthan, Tripura, Uttar Pradesh and West Bengal attended this training programme.

Training Programme on Coastal Disaster Risk Reduction and Resilience 6-10 January 2020, Daman & Diu

NIDM conducted a five day National level Training Programme on "Coastal Disaster Risk Reduction & Resilience" at Conference Hall, District Panchayat, Moti Daman, Daman & Diu during 6-10 January 2020. The programme was coordinated by Dr Surya Parkash, Head, Geo-Meteorological Risks Management Division, NIDM. The programme involved 108 participants from various relevant departments of Central and State Governments, including SDMAs, ATIs, PWD, NDRF, Fisheries Department, Administration and Revenue Officers, Academicians, DDMAs, and NGO etc., from 6 different states and 4 UTs of India namely Andhra Pradesh, Orissa, Gujarat, Karnataka, Madhya Pradesh, Uttar Pradesh, Delhi, Andaman & Nicobar, Dadra & Nagar Haveli and Daman & Diu. The programme was inaugurated by Dr Rakesh Minhas, IAS, Collector and Chairman, District Disaster Management Authority, Daman & Diu, Shmt Ankita Mishra, IAS Deputy Collector, Daman and Dr Surya Parkash, Head GMR Division, NIDM.

The programme included discussions about the DM Act 2005, conceptual framework of Disaster Management, Disaster scenario in coastal areas, SOPs on Disaster Risk Management, integration of SFDRR, SDG & New Urbanization Agenda, cyclone risk reduction practices, landslides issues and management in coastal states, community based multi risk resilience in coastal area, tsunami risk reduction and resilience, fire risk reduction in coastal areas followed by demonstration. During the programme, a table top exercise on Coastal Disaster Risk Reduction and Resilience was conducted by the participants. The program organized a field visit to Madhuban Dam and Hydro-power project, Dadra & Nagar Haveli. Reputed experts who attended this programme were Shri Dharmaveer Singh, NDRF, Shri Rajendra Nath, Retd. Col. Dr Sanjay Mishra, CEO LCS services of India, Dr V M Patel, Adani Institute of Infrastructure Engineering and Shri A. K. Vala, Additional Director, Fire & Emergency services, Dr Surya Parkash, NIDM and Dr. Harjeet Kaur, Young Professional, NIDM.



Training Programme on Child Centric Disaster Risk Reduction (CCDRR) 6 -10 January 2020, Rajasthan

NIDM, South Campus conducted a training programme on Child Centric Disaster Risk Reduction (CCDRR) in collaboration with Rajasthan Institute of Public Administration (RIPA) Jaipur, Rajasthan during 6-10 January 2020. About 81 participants from various departments attended this programme. The training programme included focussed on understanding and providing an overview of sectoral impacts of disaster on children, children rights and national & international commitments to CCDRR, the process of CCDRR and its steps including mainstreaming approaches, emphasis on Life Cycle Approaches and Risk Informed Programming.



Consultative Workshop on Capacity Building for Animal inclusive Disaster Risk Reduction (AiDRR) 09 January 2020, New Delhi

National Institute of Disaster Management (NIDM) organized a one day Consultative Workshop on Capacity Building in Animal inclusive Disaster Risk Reduction (AiDRR) on 9 January 2020. Prof. V. K. Sharma Vice President, Sikkim Disaster Management Authority chaired the inaugural session of the programme along with dignitaries viz. Shri Upmanyu Basu, Joint Secretary, Department of Animal Husbandry and Dairying (DoAHD), Ms. Bharati, Inspector General, Forests, Ministry of Environment, Forest and Climate Change (MoEF&CC) and Major General Manoj Kumar Bindal, Executive Director, NIDM. Dignitaries from Department of Animal Husbandry and Dairying (DoAH&D), Ministries of Environment Forest and Climate



Change (MoEF&CC), National Disaster Management Authority (NDMA), Delhi Disaster Management Authority (DDMA), Central Zoo Authority (CZA) and delegates from several non-governmental organizations like Gesellschaft fur Internationale Zusammenarbeit (GIZ), Wildlife Trust of India (WTI), World Health Organisation, India and Indian Red Cross Society and many other organizations participated in the workshop.

A total of 92 participants who participated in the programme included Government officers from line ministries/departments, scientists, academicians, research scholars, veterinary doctors, wildlife experts, members from NGOs and private organizations. The main objective of this consultative workshop was to brainstorm on the existing negligence of animals during disasters, issues pertaining to look-after and take-care of the animals during disasters, to study the existing policies in this regard, identify gap areas and to arrive at a framework for an effective Disaster Risk Reduction mechanism for animals during disasters, to identify stakeholders who require training and capacity building in this regard and initiate the process of preparing suitable training modules for different target groups and also to identify possible areas of research and policy papers as per the requirement on a project mode etc.

Training Programme on Climate Change, Disaster and Health: Epidemiology and Response Preparedness, 20–24 January 2020, New Delhi

National Institute of Disaster Management (NIDM) conducted one week training programme on "Climate Change, Disaster and Health: Epidemiology and Response Preparedness" at Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, from 20–24 January 2020. There were about 60 participants from diverse backgrounds like government/ semi-government officials, scientists, scholars, doctors, nurses, students, associated with environmental and occupational health, health planning and disaster risk management and health professionals, disaster management experts who plan to broaden their understanding the role of environmental health during disaster & emergencies. This programme was organized with a view to update the knowledge of the participants on epidemiology of climate change



disasters and health problems, and how to plan and prepare for tackling the health issues effectively. Speakers expounded on studies that ranged from climate change, disease outbreak, epidemics, disaster related illnesses, animal inclusive disaster risk reduction (AiDRR), health risk and vulnerability, legal policies etc. During the training programme, a variety of training methods like power point presentations, group discussions, demonstrations, field visit to different departments of the hospital building and disaster drill, were used.

Master Trainers Programme on Child Centric Disaster Risk Reduction 21-23 January 2020, Visakhapatnam



NIDM, South Campus conducted 'Master Trainers Programme on Child Centric Disaster Risk Reduction' in collaboration with Andhra Pradesh Human Resource Development Institute (APHRDI) on 21-23 January 2020 at Regional centre, Visakhapatnam, APHRDI. About 133 trainers, teachers and faculties from seven states participated in this programme. About 40% of the participants were women. The purpose was to develop adequate Master Trainers on CCDRR at state level to enable mainstreaming Child Centric DRR in social sector departments. The aim of the programme was to help the departments for preparation of Risk Informed Programming, Emergency preparedness and sectoral readiness for hazard events there by women and children will not be deprived of the basic services.

Workshop on Early Warning and Communication 22-23 January 2020, Lakshadweep

NIDM conducted a two day National level Training Workshop on "Early Warning and Communication" at ATI, Kavaratti, U. T of Lakshadweep from 22-23 January 2020. The workshop was organized exclusively for the officials of Lakshadweep Islands. It was attended by 72 participants belonging to more than 20 different departments including Rural Development, Doordarshan Regional Centre Kavaratti, Lakshadweep Development Corporation Limited, All India Radio Kavaratti, Government Industrial Training Department Kavaratti, Department of Fisheries, Department of Education, Art & Culture, Bharat Sanchar Nigam Limited, Health Services Kavaratti, Department of Science &



Technology, Printing & Stationery, Legal Metrology, Social Welfare & Tribal Affairs, Wakf Board, Department of Labour, Employment & Training, Public Works Department Kavaratti, Information and Public Relations, Village Defense Organization etc. The workshop was inaugurated by Shri. Vijendra Singh Rawat IAS, Collector & Chairman, District Disaster Management Authority, Lakshadweep and Professor & Head, Dr. Surya Parkash, Geo-Meteorological Risks Management Division, NIDM in the presence of Shri Lekh Raj, DANICS, Additional District Magistrate & Director, Disaster Management and Shri T. Kasim Deputy Collector (HQ).



The programme aimed to understand the basics concept of disaster management, risk reduction and resilience, basics of Early warning and Communication, to understand SOP on DM with focus on early warning and communication, Unfolding issues and challenges of early warning and communication, to discuss nodal agencies involved in Early warning and Communication, in addition, Sustainable Development Goals & Sendai Framework for Disaster Risk, Reduction and Resilience and Climate Change Agreement, to understand early warning and emergency response, to understand Dissemination / Broadcasting related to early warning and communication in Disasters Situations, to understand Inclusive and Ecosystem based approach to disaster risk reduction and resilience, to carry out exercise on island specific Disaster management plan preparation.

In addition to the workshop, a half an hour live broadcast from All India Radio, Kavaratti Station was made on Early Warning and Communication for the people of 11 habited islands in U.T. of Lakshadweep at morning Prime time involving Professor and Head, Dr. Surya Parkash, Geo-Meteorological Risks Management Division, NIDM, Station Director AIR Kavaratti, Shri. T. K. Rafique, Assistant Director, Disaster Management Department, U.T. of Lakshadweep and Mr. Raju Thapa, Young Professional, Early Warning and Communication Centre, GMR Division, NIDM.

Peer-learning and Knowledge Exchange Visit on Disaster Risk Reduction Initiatives in India for Delegation from Government of Ethiopia 27-29 January 2020, Bengaluru

National Institute of Disaster Management (NIDM) in collaboration with Asia Disaster Preparedness Center (ADPC), organized a knowledge exchange visit for the officials of Government of Ethiopia on 27-29 January 2020 in Karnataka to learn good practices on climate and disaster resilient agriculture. The three day programme was coordinated by Karnataka State Natural Disaster Monitoring Centre (KSNDMC). 41 delegates participated in this programme including 6 Ethiopian delegates and delegations from Bihar Government. The programme began with a briefing and introductory session by NIDM and ADPC which included presentations from KSNDMC, Watershed Development Department, Department, Department of Agriculture, Department of Horticulture, Department of Animal Husbandry and Department of E-Governance, GoK. Prof. Anil Kumar Gupta, NIDM, Dr. Srinivasa Reddy, Director, KSNDMC and Joint Secretary of Disaster Management, Department of Bihar chaired the inaugural programme. Dr. Srinivasa Reddy, Director of KSNDMC presented on Disaster Monitoring and Early Warning System in Karnataka; Dr. Anthony, Additional Director, Department of Agriculture, GoK presented on the agriculture scenario of.



The visit was coordinated by Watershed Development Department Team of Government of Karnataka. Different types of water and soil conservation structures like trenching cum bunding, percolation tanks, dug out ponds, Gokata, telemetric weather stations were shown and demonstrated.

On the last day participants visited to Indian Institute Horticulture Research (IIHR) where they were taken to entomology, pathology and molecular lab and also to the experimental fields of the Institute. The programme concluded with experience sharing and debriefing programme in KSNDMC.

Training Programme on Child Centric Disaster Risk Reduction 27-31 January 2020, Agartala



NIDM South Campus conducted a training programme on Child Centric Disaster Risk Reduction (CCDRR) at Agartala, Tripura in collaboration with State Institute of Public Administration and Rural Development (SIPARD) during 27-31 January 2020. The programme was attended by 76 participants who were from departments of Education, Health, Revenue and Civil society organisation.

The aspects covered in the training programme included understanding and providing an overview of sectoral impacts of disaster on children, children rights and national & international commitments to CCDRR, the process of CCDRR and its steps including mainstreaming approaches, emphasis on life cycle approaches and risk informed programming.

Training Programme on Disaster Risk Management
27-31 January 2020, Noida

National Institute of Disaster Management (NIDM) organized a training programme on 'Disaster Risk Management' in collaboration with Vigyan Prasar, Noida from 27-31 January 2020. The target audience of the programme were local level science communicators including teachers and other key persons from various districts of North India. The aim of the programme was to develop skills among science communicators to carry out disaster risk management related activities in their districts and states. The programme was intended to be used by the participants who would further have an interface with the community on the basis of this training. The programme was inaugurated by Shri R.K Bhandari who accentuated on the need to adopt a multi hazard approach towards Disaster Risk Management. A total of 36 participants attended the programme.



Training Program on Integrating Disaster Risk Reduction (DRR) & Climate Change Resilience (CCR) into Rural Development (RD) Policies and Programmes 27-31 January 2020, Assam

National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA) in collaboration with National Institute of Rural Development and Panchayat Raj (NIRDPR) conducted a training programme on Integrating Disaster Risk Reduction (DRR) & Climate Change Resilience (CCR) into Rural Development (RD)



Policies and Programmes from 27-31 January 2020 at Guwahati, Assam. A total of 43 participants participated in this programme.

The objective of the programme was to explain the basic concepts of disaster management, to examine critical linkages cross development, disasters and climate change in the context of rural development, to explain strategies for mainstreaming disaster risk reduction into ongoing schemes and future developmental activities in Panchayati Raj sector, to analyze the current policy perspective and practice to make the development process DRR inclusive.

Peer-learning and Knowledge Exchange Visit on Disaster Risk Reduction Initiatives in India for Delegation from Government of Ethiopia 30 January 2020, New Delhi

National Institute of Disaster Management (NIDM) in collaboration with Asia Disaster Preparedness Center (ADPC), organized a Peer Exchange Roundtable on Drought Resilient Agriculture on 30 January 2020, New Delhi as a part of the programme on knowledge exchange visit for the officials of Government of Ethiopia to learn good practices on climate and disaster resilient agriculture. The workshop was inaugurated by Dr. Anil. Kumar Singh, Secretary, National Academy of Agricultural Sceinces, Dr. Shibendu Shankar Ray, Director, Mahalanobis National Crop Forecasting Centre and Lt. Col. Dinesh Chander Vashista, Joint Director, NIDM in the presence of eminent representatives from India Meteorological Department, ICAR-CRIDA, MNCFC, Ministry of Agriculture and Farmers' Welfare and Indian Agricultural Research Institute.



The participants discussed various topics including early warning system, drought declaration, crop insurance programmes, etc. The speakers highlighted India's initiatives for drought resilient agriculture. The valedictory ceremony was attended by Dr. Tizita Murugeta, Ambassador, Embassy of Ethiopia in India, Dr. Neena Malhotra, Additional Secretary (East and Southern Africa), and Ministry of External Affairs and gave their Remarks.

Training Programme on Child Centric Disaster Risk Reduction 3-7 February 2020, Guwahati

NIDM, South Campus conducted a National Level Training Programme on Child Centric Disaster Risk Reduction at Guwahati, Assam in collaboration with National Institute of Rural Development (NIRD) & Panchayat Raj, North East Regional Centre (NERC) during 3-7 February 2020. Around 45 participants from Arunachal Pradesh, Meghalaya and Assam states participated in this programme. Most of the participants were from department of Health, Education and State Disaster Management Authority. During this



programme, the participants visited to a flood affected schools and interacted with the children regarding their challenges and issues in flood.

National Conference on Disability-inclusive Disaster Risk Reduction (DiDRR): Pathways for Inclusion and Action for Resilience, 5 February 2020, New Delhi

National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA) in collaboration with Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment (MoSJE) had organized the National Conference on Disability-inclusive Disaster Risk Reduction (DiDRR): Pathways for Inclusion and Action for Resilience on 5 February 2020 at Ambassador Hotel, New Delhi. The conference was inaugurated by Shri Kamal Kishore, the Hon'ble Member of National Disaster Management Authority (NDMA) and Shri S.N. Pradhan, Director General, National Disaster Response Force (NDRF) graced the occasion.

Three technical sessions were conducted on Disability inclusion in DRR: Need for a Holistic Approach, Mainstreaming Inclusion in Local Level Action and Participation of PwD's in Disaster Risk Reduction Process. More than 100 delegates participated in the conference to deliberate on actions and strategies for mainstreaming disability-inclusion in DRR process. The valedictory session for the conference was



presided by Smt. Shakuntala Gamlin, Secretary, Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment (MoSJE) as the Chief Guest. Shri G.V.V Sarma, the Hon'ble Member Secretary, National Disaster Management Authority (NDMA) also addressed the valedictory session as the Guest of Honour.

National Level Training Programme on Geo-Meteorological Hazards Risk Management 10-14 February 2020, New Delhi

NIDM conducted a five day National Level Training Programme on 'Geo-Meteorological Hazards Risk Management' in collaboration with Delhi Technological University (DTU), New Delhi from 10-14 February 2020. Around 146 participants from 19 different states across the country attended the training programme. The participants in the training programme were senior and middle level officials from various relevant departments of Central and State Governments, including SDMAs, DDMAs, Local Bodies, NDRF, Planning and Development Department, Revenue Department, PWD, Agricultural, Horticulture, Irrigation, Health Sector, Soil Conservation North Zone, District Health and Family Welfare Office, Prasar Bharati, IIT Roorkee, IIT Delhi, IGNOU, JNU KSCST and NGOs. The programme was inaugurated by eminent Geotechnical Scientist and Varnes Medal Awardee Dr. R. K. Bhandari.



The programme aimed to develop better understanding about geo-meteorological hazards and Disaster Risk Reduction and Resilience (DRR&R) strategies; to learn about the relevant Acts, Policies, Plans, Guidelines and SOPs on Disaster Management in the country; to know about the important international agreements and declarations on disaster risks reduction, climate change, urbanization and sustainable development; to develop solutions for development projects and mitigation and management of recurring disasters; to initiate activities on formulation of disaster management plan for their functional and geographical regimes; to discuss the collaboration and strengthening mechanisms for effective implementation of disaster management related activities at national, state as well as local level. An exposure visit to India Meteorological Department was also organized during the programme.

Training Programme on Hospital Disaster Management Plan 10-14 February 2020, New Delhi

NIDM conducted a five day training program on Hospital Disaster Management Plan from 10-14 February 2020 at NIDM/YMCA, New Delhi. Hospitals demand uninterrupted functioning specially during emergencies. Availability of the disaster management plan at hospital level can make a difference in managing the crisis at the time of emergency. The aim of the training program was to create required capacity within the hospital staff to prepare and effectively implement the hospital disaster management plan. The target group for the training programme was primarily doctors and other senior /middle level officers working with hospital administration. A total of 37 participants representing 16 states attended the programme. The group of participants was comprised of senior doctors, hospital administrators, faculty



from reputed medical colleges and other professionals involved in disaster risk management activities for hospitals safety at different levels.

During the interactive sessions, the course participants were exposed to various facets of disaster management in the context of hospital environment. A full day field visit to Jai Prakash Narayan Apex Trauma Center, AIIMS was undertaken to study and understand the various dimensions of emergency management within hospitals. Other aspects covered during the course included HVCR analysis of hospitals, disaster management planning and preparedness for hospitals. There were several exercises conducted with discussions and presentations by the participants. Faculty for the training programme included the in-house NIDM Faculty and external resource persons.

Training Programme on Mainstreaming Disaster Risk Reduction into PRI Sector 10-14 February 2020, Pune



NIDM conducted the training programme on Mainstreaming Disaster Risk Reduction into PRI Sector in collaboration with Yashwantraochavan Academy of Development Administration (YASHADA), Pune Maharashtra during 10-14 February 2020. YASHADA collaborated with District administration, Sangli for conduct of this programme and hence the programme was conducted at District Sangli. 148 panchayat officials from 104 most vulnerable villages of four Talukas of district Sangli attended this programme. The course objective was to enable the participants to explain the concept of Disaster Management and Institutional Framework of Disaster management in the country, to ascertain the strategies for mainstreaming disaster risk reduction into ongoing schemes and future developmental activities, to comprehend basic life saving skills in disasters, to make out the process of preparation of Preparedness and Response Plan for Panchayats.

Workshop on Disaster Risk Financing, Insurance and Risk Transfer 13 February 2020, Mumbai



Disaster Risk Finance is a growing discipline that addresses fiscal impacts and economic losses caused by natural hazards (e.g. cyclones, droughts, earthquakes, floods) and supports countries to increase their financial resilience to natural disasters. In order to bring insurance companies, policy makers and thought leaders to consider potential solutions to the problem, NIDM in collaboration with Insurance Institute of India conducted a one day workshop on "Disaster Risk Financing, Insurance and Risk Transfer" on 13 February 2020 in Mumbai. The workshop aimed at bringing together various insurance organizations and innovative initiatives in a collective effort to address Disaster Risk and build a resilient society. About 176 participants across various Ministries, States and Insurance companies attended the workshop.

Training Programme on Child Centric Disaster Risk Reduction 18-22 February 2020, Guntur, Andhra Pradesh

To enhance the capacity towards disaster management preparedness, a five day training programme on Child Centric Disaster Risk Reduction (CCDRR) was organized from 18-22 February 2020 at Acharya Nagarjuna University, Guntur by National Institute of Disaster Management (NIDM) South Campus in coordination with National Disaster Response Force. The programme was conducted exclusively for NDRF personnel to build their knowledge, skill and perspectives towards child centric disaster risk reduction and



to understand and prepare for risk informed planning, sectoral readiness and preparedness for emergencies so that the children are not deprived of basic amenities, particularly in view of increasing vulnerability of children from climate change and natural disasters. A total of 120 participants from NDRF 10th battalion attended the training programme.

National Level Training Course on Disaster Management for GAIL Officials 19–20 February 2020, Noida

NIDM conducted two day National Level Training Course on "Disaster Management for GAIL Officials" at GAIL (Gas Authority of India Ltd.) Training Institute, Noida in collaboration with GAIL India from 19–20 February 2020. The training course was attended by 23 GAIL officials. The course aimed to develop better understanding about Disaster Risk Reduction and Resilience (DRR&R); to learn about the relevant Act, Policy, Plan, Guidelines and SOPs on Disaster Management in the country; to know about the important international agreements and declarations on disaster risk reduction, climate change, urbanization and sustainable development; to initiate activities on formulation of disaster management plan for their functional and geographical regimes; to discuss the collaboration and strengthening mechanisms for effective implementation of disaster management related activities for hydrocarbon sector.



The course was organized for imparting the basic concepts of HVCR and cognizance of disaster management interventions in the country as well as at the international platform. During the course, various discussions were organized on the topics of hazards, vulnerabilities, capacities and risk management besides relevant acts, policies and plans, international agreements on Disaster Management and Prime Minister's 10 Points Agenda on DRR&R.

Training Programme on Entrepreneurship and Skill Development of Women from Disaster Affected Areas, 24–28 February 2020, Noida

National Institute of Disaster Management, New Delhi organized a training programme on "Entrepreneurship and Skill Development of Women from Disaster Affected Areas" during 24-28 February 2020 in collaboration with National Institute for Entrepreneurship and Small Business Development (NIESBUD), Ministry of Skill Development and Entreprenuership, Gautam Budh Nagar, Noida, Uttar Pradesh to create awareness and develop skills of Self Help Groups of disaster affected areas for developing



entrepreneurship skills. The programme was inaugurated by the Director, NIESBUD, Dr. Poonam Sinha. A total of 47 participants of various Self help Groups attended this training programme.

Training Programme on Child Centric Disaster Risk Reduction 24–28 February 2020, Chandigarh

This training programme was intended for middle level civil servants from government as well as non-government organizations to help build their knowledge, skills and perspectives towards child centric disaster risk reduction. This programme was attended by 119 officials from various departments of Government of Punjab, Haryana and UT Chandigarh namely Department of Home Affairs, Defense Services Welfare, Local Government, Education, Revenue, Health & Family Welfare, PWD (B&R), Municipal Corporation, Police and various districts of state of Punjab and Haryana were also engaged in management of disasters.



The training programme focused on understanding and providing an overview of sectoral impacts of disaster on children, children rights and national & international commitments to CCDRR, the process of CCDRR and its steps including mainstreaming approaches, emphasis on life cycle approaches, risk informed programming and building knowledge on school safety.

Training Course on Regional H.E.L.P. (Health Emergencies in Large Population) 24 February–6 March, 2020, New Delhi



The fourth Regional H.E.L.P. (Health Emergencies in Large Populations) course was jointly organized by the International Committee of the Red Cross (ICRC), International Institute of Health Management Research (IIHMR), National Institute of Disaster Management (NIDM), World Health Organization (WHO) and the Indian Red Cross Society (IRCS) from 24 February–6 March, 2020 in New Delhi. The two week multi-disciplinary training used the public health approach and participants learnt about prevention and control of infectious diseases, practical epidemiology in the field, international humanitarian law, security and stress of professionals. It aimed to enhance professionalism in health emergency response with an emphasis on decision-making.

This programme involved 25 international and local experts as the resource persons to facilitate various thematic sessions through presentations, discussions, table top exercises etc. It used the public health approach, fostering multidisciplinary responses and bringing out challenges, dilemmas, norms, standards and principles. A total of 24 participants from different professional backgrounds (health, disaster management, water, sanitation, food and economic security, and logistics) participated in the course. Of the 24 participants, 12 were Indian citizens while the rest were from other countries like Lebanon, Myanmar, Nepal, Maldives, Egypt, Phillipines and Thailand. These people were directly involved in the provision of humanitarian relief in the time of emergencies. In the current COVID-19 crisis, too, it had been inspiring to see many of them lead from the front. From contact tracing, distribution of essential relief, conducting awareness campaigns on preventive measures and training rescuers in safe transportation of patients to patient management and dignified management of the dead, these specialists — belonging to diverse fields, are responsible for decision-making in critical areas of the COVID-19 response.

National Conference on Coastal Disaster Risk Reduction and Resilience (CDRR&R)-2020 25 February 2020, New Delhi

The National Conference on Coastal Disaster Risk Reduction and Resilience was organized by National Institute of Disaster Management, Ministry of Home Affairs at The Hotel Ashok, New Delhi on 25 February 2020. Hon'ble Minister of State, Home Affairs, Sh. Nityanand Rai, presided over the valedictory session of the national conference. The inaugural session was honoured by the presence of Member Secretary, NDMA, Shri G.V.V. Sarma; DG IMD, Dr M Mohapatra; Eminent expert Dr R K Bhandari along with Executive Director, NIDM, Major General Manoj Kumar Bindal, VSM; Prof. Surya Parkash (Head GMR Division, NIDM) and other dignitaries from various national organizations/ institutes/ universities.

The one day conference focused on enhancing human capacity in terms of better understanding about coastal disaster risks and effective collaborative actions, by implementing Prime Minister's 10-point agenda and Sendai Framework for Disaster Risk Reduction, for reducing the risk and enhancing the resilience amongst the affected stakeholders. The national conference convoyed about 200 participants



from various prestigious National organizations/institutes/universities working in the field of Coastal Disaster mitigation and management.

National Level Training Programme on "Disaster Management" 27–29 February 2020, Arunachal Pradesh

NIDM conducted National Level Training Programme on "Disaster Management" at NERIST in collaboration with North Eastern Regional Institute of Science and Technology, Nirjuli, Itanagar, Arunachal Pradesh from 27-29 February 2020. 206 participants (including 60 female participants) having varying academic background (Civil, Forestry, Mechanical, Agricultural, Chemistry, Mathematics, Physics, and Electrical) attended the training programme. The participants were affiliated with organisations/institutes such as ASDMA, PWD, Rajiv Gandhi Government Polytechnic, Malda Medical College and Hospital, Public Health Engineering Department, Fire & Emergency Service, Rajiv Gandhi University and North Eastern Regional Institute of Science and Technology. The programme was inaugurated by Prof. H. S. Yadav, Director, NERIST.

The programme aimed to develop better understanding about Disaster Risk Reduction and Resilience (DRR&R); to learn about the relevant Act, Policy, Plan, Guidelines and SOPs on Disaster Management in the country; to know about the important international agreements and declarations on disaster risk



reduction, climate change, urbanization and sustainable development; to initiate activities on formulation of disaster management plan for their functional and geographical regimes; to discuss the collaboration and strengthening mechanisms for effective implementation of disaster management related activities.

Training Workshop for the officials of CONCOR on Disaster Management 28 February 2020, New Delhi

CONCOR is the Container Corporation of India Ltd, primarily responsible for prime objective of developing multimodal transport and logistics infrastructure for handling marine containers in the country. The main objectives of this workshop were to understand the conceptual and legal framework of Disaster Management (DM), to mitigate risk at the pre disaster scenarios, to examine the onsite and off-site emergency plans, to sensitize the participants with necessary inputs on Disaster Management (DM) keeping in view the activities and infrastructure of CONCOR terminals, to engage in brainstorming sessions which helped to gather further inputs from the participants so as to make future plan towards capacity building/enhancement on DM. About 27 officials of CONCOR (Asst Manager/Manager and above, Asst Officers and above, Sr Executives, etc) participated in this workshop.



National Training Cum Faculty Development Program (FDP) on Environment, Biodiversity and Disaster Risk Management 2–6 March 2020, Lucknow

A five day Training cum Faculty Development Programme on "Environment, Biodiversity and Disaster Risk Management" was organized by NIDM in collaboration with the Babasaheb Bhimrao Ambedkar (Central) University, Lucknow during 2-6 March 2020. The inaugural session was graced by Prof. Sanjay Singh,



Vice Chancellor, Babasaheb Bhimrao Ambedkar University, Dr. A. D. Pathak, Director, Indian Institute of Sugarcane Research (ICAR-IISR), Lucknow, Prof. Rana Pratap Singh, Dean, Academic Affairs, Prof. D P Singh, Director, Internal Quality Assurance Cell, Professor Anil K. Gupta, NIDM and Prof. Naveen Arora, Head of Department, School of Environmental Sciences. The eventful programme was attended by 105 numbers of academicians, researchers, faculties, officials from stakeholder Government Departments across the country. 23 learned experts of diverse thematic subject areas delivered lectures/presentations on the topics of forestry and biodiversity, disaster management: challenges and issues, agroecosystem management: key issues, disaster risk management: policy issues, rural & agriculture environment: waste segregation and utilization, energy, water & health issues in urban and rural areas and climate change & water related challenges etc. A field visit to the Chandra Shekhar Azad Bird Sanctuary, Nawabganj, Unnav, Uttar Pradesh was also organized in the programme.

Training Programme on Child Centric Disaster Risk Reduction (CCDRR) 2-6 March 2020, Tirunelveli

A training programme on CCDRR was conducted collaboration with Manonmaniyam Sundaranar University, Tirunelveli, Tamil Nadu during 2-6 March 2020. About 70 participants participated from various departments. Dr. Balu coordinated the programme. This training programme was intended for the officials of State level sectoral departments, Administrative Training Institutions and civil society practitioners to help build their knowledge, skills and perspectives towards child centric disaster risk reduction. Dr. K. Pitchumani, Vice Chancellor, M. S. University delivered a presidential address during inauguration. Mr. Sathish Kumar, Assistant Commissioner of Police, Law & Order, Tirunelveli town was a guest of honour and delivered a key note address.



Orientation Programme for the Faculty and Students on Disaster Management 4-5 March 2020, Bihar

NIDM in the ever-changing context of disaster management organized a two day training programme on Disaster Management; Engagement of Youth and Educational Institutions. It aimed at highlighting the contextual framework- the Sendai Framework, P.M 10-point agenda for DRR, institutional arrangements, public policy Act, challenges of governance in disaster management, role of DM in educational institutions and mainstreaming DM in educational institutions. The target group was mostly graduate and post graduate



students of all the departments, NCC and NSS, faculty members and government officials from Veer Kunwar Singh University, Ara, Bihar. About 315 participants attended the workshop.

Training Programme on 'Disaster Management' for Trainee Officers of Indian Telecom Services 4-5 March 2020, New Delhi

NIDM conducted a two days training program on Disaster Management on March 4-5, 2020 at NIDM/YMCA, New Delhi for the trainee officers of the Indian Telecommunication Services (ITS) 2018 batch. The ITS induction training was conducted by National Telecommunication Institute for Policy Research, Innovation and Training (NTIPRIT), Ghaziabad. The orientation programme on disaster management was aimed at providing basic understanding on different aspects of disaster management in connection with the telecommunication sector. After attending the training/orientation programme, participants were expected to be able to prepare, modify and implement a disaster management plan of telecommunication sector.

There were 15 participants and 2 instructors, all engineers, who attended the programme. During the interactive sessions, the course participants were exposed to various facets of disaster management in



context of telecommunication sector. During the course, participants were oriented to hazard, vulnerability, risk, capacity analysis techniques for infrastructure facilities like buildings, communication towers, transmission facilities etc. Aspects of disaster management planning and preparedness for telecommunication sector were discussed in detail. There were two group exercises on different aspects of risk prevention, mitigation, preparedness and post disaster response to meet any eventuality in case of a disaster. The group exercises were presented and discussed thoroughly by the participants and faculty involved.

Training Programme on Urban Risk Mitigation: Making Cities Resilient 5-7 March 2020, Hyderabad



A three day training programme on "Urban Risk Mitigation: Making Cities Resilient" was being conducted by National Institute of Disaster Management in collaboration with Regional Centre for Urban and Environmental Studies-Hyderabad during 5-7 March 2020. Around 26 engineers and officials from urban local bodies of Andhra Pradesh attended this programme. The major sessions of the programme was focused on Mainstreaming of Disaster Risk Reduction (DRR) in Urban Development, Climate Change impacts on urban areas, Socio-economic Aspects of Urban Resilience, Preparation of Disaster Risk Management Plan for Urban Local Bodies (ULBs).

*****

Crisis Management Plan for Dealing with Contamination of Water Bodies (CMP-WB) Project

NIDM in collaboration with Central Pollution Control Board (CPCB) has implemented the project "CMP-WB". During the period Jan-March 2020, review of literature and historical perspectives of incidences of water contamination have been complied. For the next quarter, working group formation and HRVCA workshop has been planned to be conducted on 27 May, 2020 to understand and recognize region specific issues for water crisis emergencies in water bodies. Further in the coming months, training modules will be developed.

Climate Adaptive Planning for Resilience and Sustainability Development in Multi-Hazard Environment (CAP-RES) Project

CAP-RES project running in NIDM is supported by Department of Science & Technology (DST). Under this project, a training workshop on "Climate Change, Disaster and Health: Epidemiology and Response Preparedness" has been conducted. Proceedings of the international symposium on 'Disaster Resilience and Green Growth for Sustainable Development' has been prepared. Book Chapters on 'Nature Based Solutions Entry Points through Sectoral Policies, Strategic Instruments and Business Continuity' and 'New Pathways for NBS to realize and achieve SDGs and post 2015 targets: Transformative approaches in resilient building' have been submitted. Health Policy brief 2020 and Directory of the Resource Persons and Institutions for Health Resilience and Capacity Building has been prepared. Draft of Training Need and Gap Assessment for Green Growth, Climate Proofing During Disaster Relief and Recovery, Resilient Agriculture, Public Health Resilience and Training Brief on Green Growth have also been prepared. Interim reports have been submitted for case studies. In the coming months, Compendium of Case Studies on Green Growth and Climate Change and Disaster Risk Management (Book) will be prepared.

National Agriculture Disaster Management Plan (NADMP) Project

ECDRM division of NIDM has been preparing a "NADMP" for Ministry of Agriculture & Farmers Welfare. During January-March, a meeting with Secretary, MoAFW was conducted and Draft 3 version of the plan was also presented. Accordingly, NADMP was restructured and suggestions from the Secretary was incorporated and Draft 4 was shared with the Ministry. After incorporating few comments from JS, DM, MoAFW, final NADMP has been submitted for review comments and approval from NDMA. Preparation of training modules has been started and is in process.

Health Adaptation and Resilience: Advancing Strategic Knowledge and Capacities (HER-CAP) Project

NIDM in collaboration with World Health Organization (WHO) has implemented the project "HER-CAP" having six deliverables:

(i) National Health Adaptation Plan (NHAP),

(ii) Training module,

(iii) Two thematic papers,

(iv) Compendium of case studies,

(v) Directory of experts, institutions and other stakeholders and

(vi) Report of the region specific workshops.

Four regional consultation workshops have been organized to understand and recognize region specific issues for health adaptation and disaster resilience. NHAP, directory, region specific reports, thematic papers and training modules have been developed. Compendium of case studies and four other regional policy papers are under process.

******

Integration as Mantra for Sustainable and Disaster-Safe Survival: Covid-19 Pandemic key Lesson

Prof. Anil Kumar Gupta

Today, more than ever before, life must be characterized by a sense of Universal responsibility, not only nation to nation and human to human, but also human to other forms of life.

'Pandemics' are not new to the world, nor are the 'disasters'. Natural hazards as ecological-geological processes or events as environmental realities of this living world are gradually overwhelmed by human-induced and technological mishaps that may also include intentional or accidental triggers. Earth is unique in the universe due to known existence of life. One of the most interesting aspects of life is 'ecosystem'. Ecosystems are among the most indispensable yet most under-rated phenomena in our universe. An ecosystem is a community of organisms, it's environment and the interactions and intra-actions that sustain the organisms' existence and interrelationships within that environment - it is the interaction of biotic and abiotic components through a cyclic flow of energy and nutrients (water, forces, mass, minerals, chemical elements, molecular compounds, weather, climate, temperature, atmosphere, ...) propelled by photosynthetic, mechanical and electromagnetic processes in nature. Ecosystems can be natural or man-made (anthropogenic), or both – as in a city. An environmental emergency is defined as a "sudden-onset disaster or accident resulting from natural, technological or human-induced factors, or a combination of these, that causes or threatens to cause severe environmental damage as well as loss of human lives and property" (UNEP/GC.22/INF/5, 13 November 2002).

Like ecosystems, disasters also have diverse forms, size, categories but, however, environmental and health emergencies have rarely been considered as central to disaster management. Urban flooding which are combination of developmental and environmental issues, is recognized as disaster only after a series of devastating scenarios starting Mumbai 2005. Similar has been for heatwave, forest fire and drinking water crisis of 2015. Giant locust storms is another impending disaster for the region as well as for India. Soil nematodes are already a slow disaster like drought but remains unnoticed. India being an agriculture dependent society and public health at stake, environmental quality and natural resources are among the key building blocks for sustainable development and disaster resilience through the means of vulnerability reduction. 'Poverty' or 'marginalization' are known vulnerability contributors but, however, their underlying causes as environmental migration or climate refugees and demystifying the push vs. pull from rural-urban transits remained unrecognized.

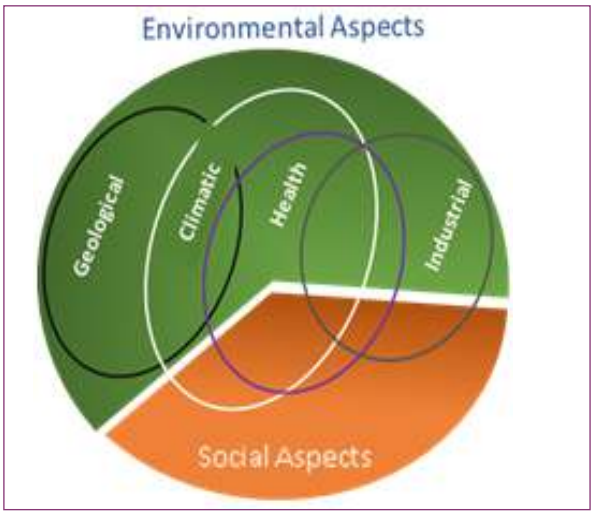


Figure . Coverage of environmental aspects in present disaster risk scenarios

Figure . Coverage of environmental aspects in present disaster risk scenarios Current pandemic Covid-19, a global health emergency, trigger of which is connected with disruption of wild(life) integrity or in other words 'molestation of the gene-bank of the nature'. Disruption of ecosystems and nature resulting in catastrophic disasters include Chennai, Kashmir, Malingaon, Uttarakhand, and so on. Known blurred boundaries of natural vs man-made disasters are kept alive often by high profile professionals and media

saying 'Kudratkakahar' (Act of God) despite of UN-IDNDR clarified globally during 1990s itself. Probably this is the reason 'Understanding disaster risk' still remains priority number 1 despite of over three decades of rigorously claimed expertise. This is an introspection point. While destructive potential earthquakes, urban and rural fires, nuclear – radiological and cyber accidents, etc. continue to occupy the risk regime, now environmental and health emergencies are claiming equal or even more of risk share in recent times. New Delhi, in analogy of other cities in the world, had to declare health emergency due to air pollution in 2019. Other environmental emergencies including heat, cold, frost, hails, heavy rainfall – cloudburst, cyclones, storms, landslides, forest fire, infectious and pest outbreaks are becoming all the more alarming, uncertain and complex. A number of industrial-chemical disasters during this pandemic recently, due to toxic gas release, fire, etc. presented lateral extremes of 'complex emergencies' to deal under lockdown situations. Humanitarian disaster face, in form of (reverse but distress) migration of labourers from cities and industrial towns, again has threefold environmental-repercussions, i.e. on the carrying capacity of village resources and infrastructure; on city peri-urbs and supplies of local services and on industrial-commercial activities and supply-chains.

India's concept of 'VasudhaivKutumbkam (Earth as a family)' where we have respected rights of all life forms and populations of the world, also made us realize the repercussions of disrespect of pristine habitats time and again. The Covid-pandemic, alike other great counterparts of the past, also presented 'blurred boundaries' for diseases and disasters, if not prevented and prepared prudently in advance. India's traditional wisdom of co-existence with integrity, respect for the nature and balanced exploitation, i.e. only the '(Earth has enough to) satisfy human need but not the human greed' (M. K. Gandhi), flows from ancient knowledge as well:

असंबाधं बध्यतो मानवानां यस्या उद्वतः प्रवतः समं बहु ।
नानावीर्या ओषधीर्या बिभर्ति पृथिवी नः प्रथतां राध्यतां नः ॥1॥

AsambaadhamBadhyatoMaanavaanaamYasyaaUdvatahPravatahSamamBahu |
Naanaa-ViiryaaOssadhiiryaaBibhartiPrthivii Nah PrathataamRaadhyataam Nah ||2||

Meaning:1.1: (Salutations to Mother Earth) Who extends Unimpeded Freedom (both outer and inner) to Human Beings through Her Mountains, Slopes and Plains,1.2: She bears many Plants and Medicinal Herbs of various Potencies; May She extend Her Riches to us (and make us healthy).

यस्यां समुद्र उत सिन्धुरापो यस्यामन्नं कृष्टयः संबभूवुः ।
यस्यामिदं जिन्वति प्राणदेजत्सा नो भूमिः पूर्वपेये दधातु ॥2॥

YasyaamSamudraUtaSindhur-AapoYasyaam-Annam KrssttayahSambabhuuvuh |
Yasyaam-IdamJinvatiPraannad-Ejat-Saa No BhuumihPuurva-PeyeDadhaatu ||2||

Meaning:2.1: (Salutations to Mother Earth) In Her is woven together Ocean and River Waters; in Her is contained Food which She manifests when ploughed, 2.2: In Her indeed is alive all Lives; May She bestow us with that Life.

Prime Minister's 10 Point Agenda for Disaster Risk Management (2016; 7th AMCDRR Inaugural, interpreted by Gupta et. al 2016, and NPDRR-2 recommendations MHA-GOI), as integrated approach to sustainability and risk management together with climate justice tuned the principles of SFDRR, Paris Climate Agreement and SDGs, offer significant potential for supporting the purpose of 'ease of living' by 2024 and the 5 trillion economy targets. However, integration most often remained limited to top –level policy discourse, as witnessed by evident lack of emphasis on health system resilience and adaptation under the 30 years strides of DRR. National Action Plan on Climate Change took over 10 years to include 'health' as National Mission Theme. The present environmental emergency Covid-19 pandemic presented diverse and uncertain shocks to businesses as most remained unprepared to disasters. Business continuity and BIA rarely included environmental emergencies as key disruptions especially in developing nations like in South Asia. While economic recovery and future resilience is important, equally important fact remains the sustainability (and ability to long term recovery) of business systems that would continue to depend on

environmental supply/support systems and nature's carrying capacity. The current time with lessons from recent major disasters of the past 10 years coupled with Covid-19 call for integrated intuitional framework comprising of environment, health, climate, disaster, industry and social resilience in a systematic blend (figure 1).



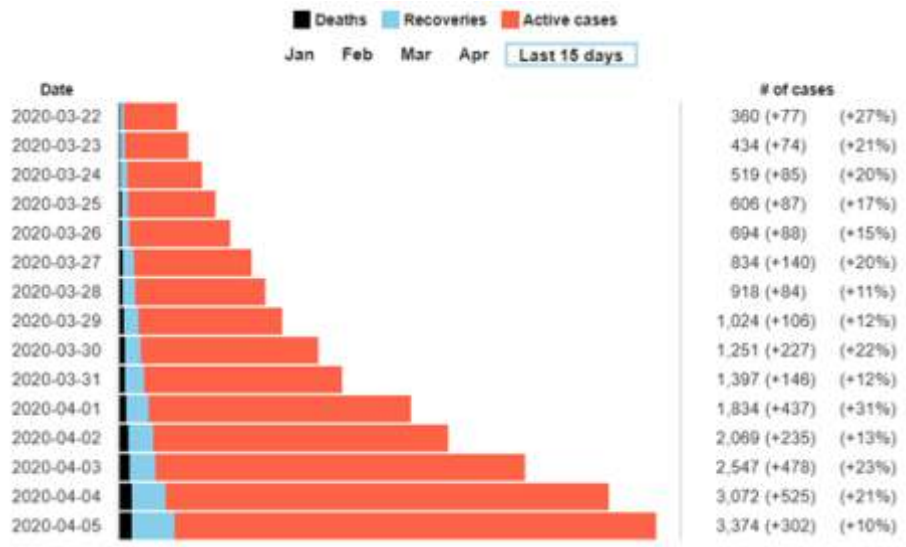
Figure . Consortium themes for institutional integration

Looking to recently experienced and anticipated disaster risk scenarios for over next two decades, integrated institutional framework for policy, research, higher learning and capacity building need to be integrated under a systemic umbrella organization, i.e. may be an Indian Institution (on lines of IIM/IIT) or NITI Aayog, to work in close synergy. This is pertinent that most professional disciplines like medical, engineering, law, etc have dedicated specialized universities but there is no such National University or Umbrella Institution to comprehend on environment, disaster, health, safety, sustainability and community resilience studies in integrated approach. Government of India had, in 2011 announced a national institution of this stature to be established at Bhopal, which remains a concept and is yet to see the light of the day. However, an institutional reform may be effected through a consortium approach by integrated key institutions under the key domains (figure 2) of environment, health, climate, disaster, safety and sustainable development, as a key driver towards achieving 'ease of living of citizen' by 2024 and achieving SDGs along SFDRR and Paris Climate commitments by 2030.Call of the National Human Resource Plan on DRR as per the DM Act 2005, is equally pertinent in this context for state and district level institutional grouping.

A Perspective on COVID 19: Pandemic of 2020

Prof. Surya Parkash

In the concluding month of year 2019, few cases of pneumonia like illness with unknown causes were identified in Wuhan City, Hubei Province of China. Later, the scientific community discovered a new strain of corona virus responsible for infection and termed it as Novel Corona Virus as it was not previously identified in the humans. Corona viruses are zoonatic viruses that are capable to spread from animals to humans and resultant in severe respiratory illness in people. Once in a blue moon, such transmission of animal corona viruses to human population have been witnessed in past. For example, in year 2003 Severe Acute Respiratory Syndrome Corona Virus-1 (SARS-CoV-1) was passed on by a variety of cats to the humans and Middle East Respiratory Syndrome Corona Virus (MERS-CoV) through dromedary camels in 2012.



The Novel Corona virus was quoted as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) and its outbreak was declared a Public Health Emergency of International Concern on 30th January 2020 and the disease was named COVID-19 on 11th February

2020. Due to the mushrooming COVID-19 cases across the world, World Health Organisation declared it pandemic on 11th March 2020. As on 4th April 2020, the pandemic covered 208 countries of the world affecting more than one million populations and killed nearly sixty thousands of people. USA, Spain, Italy, France and China are the severely affected countries from the pandemic. COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes.

The first case of COVID-19 in India was reported on 30th January 2020 in Kerala when a student returned from Wuhan, China. Initially, the tempo of its diffusion was low but gradually the numbers of cases were augmented with more number of people returning to the country from COVID-19 affected countries. As per the Ministry of Health and Family Welfare, Government of India, 3072 cases including 213 recoveries and 75 deaths were reported till 4th April 2020. Out of the total cases, 42 percent of the patients aged between 21-40 years. The most of the people succumbed to the COVID-19 were elderly people or people having co-morbidities such as diabetes, hypertension, kidney/ cardiac issues etc.

Initiatives taken by India

India has taken a number of proactive, pre-emptive and timely preventive measures for the confinement, containment and control of COVID-19. The measures include, closure of mass gathering places (schools, institutes, universities, malls, cine complex, religious places and so on), travel restrictions and advisories, universal screening of passengers at airports and seaports, suspension of visas, Janta curfew, quarantine facilities, development of isolation wards, training of health workers & doctors, ensuring adequate equipments, Personal Protective Equipment (PPE), medicines, masks etc. Considering the severity of the COVID-19 pandemic, the Government of India declared it as a "Notified Disaster" so that the states can utilize the required funds from the State Disaster Response Fund (SDRF). In view to prevent transmission of COVID-19, the hon'ble Prime Minister of India announced nationwide lockdown for 21 days on 24th March 2020 allowing only essential services to operate during the period till 14th April 2020. Further, in exercise of the powers conferred under the section 10 (2)(h) and (i) of the Disaster Management Act, 2005, eleven Empowered Groups were constituted to identify problem areas and provide effective solutions.

- Travel Advisories: Owing to the possible adverse consequences of COVID-19, the government of India issued a number of travel advisories as per the circumstances on different dates for foreigners and Indian citizens. From 17th January 2020 to 20th March 2020, 21 travel advisories were promulgated.

- Hospitals: Since 24th January 2020, a number of initiatives were taken in the sector of healthcare viz. Guidance for sample Collection, Packaging and Transportation for Novel Corona virus; Guidelines for Infection Prevention and Control, Guidelines on Dead Body Management; SOP for Mock Drill for Hospital Preparedness; Guidelines for notifying COVID-19 affected persons by Private Institutions; Advisory for Hospitals and Medical Institutions; Guidelines on rational use of Personal Protective Equipment; Doorstep Delivery of Drugs to Consumers; National Clinical Management Guidelines for COVID-19; Guidelines for Dialysis of COVID – 19 patients and many others.

- Behavioural Health: To aid individual sections of the communities to combat the psychosocial issues, various strategies were disseminated for children, elderly, migrants and so on.

- Training Material: Webinars were organised for various healthcare personnel for the containment the disease. Advisory for Human Resource Management of COVID-19 was also issued.

- States/Departments/Ministries: Several advisories were issued for the ministries and departments of the Central and State governments regarding the containment of the COVID-19.

- Employees: Preventive measures advisories were promulgated for the employees to contain the spread of COVID-19.

- Citizens: The advisories/guidelines/manuals on different facets such as social distancing, home quarantine, mass gathering, use of mask and others were circulated.

Awareness Material: Numerous IEC materials (Posters, Leaflets, TV & Radio Spots, Comic Book, Videos) were developed and circulated/broadcasted to sensitize the communities. The themes of the IEC materials include, Do's and Don't; When to wear mask; KIDS, VAAYU & CORONA: Comic book for children to provide correct information about COVID-19; Safety measures against COVID-19; Role of Frontline Workers; Stay home stay safe; Know what the meaning of Lockdown is for them and Aarogya Setu App.

Indisputably, the COVID-19 has wrecked havoc all across the globe causing enormous lives and monetary losses but it also provide opportunity to learn from the current situation, gaps in preventive strategies as well as loopholes in their implementations and be prepared for any future crisis.

References

Ministry of Health and Family Welfare, Government of India, https://www.mohfw.gov.in/Ministry of Health and Family Welfare, Government of India, Containment Plan, Novel Coronavirus Disease 2019 (COVID 19)

https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Press Information Bureau, Government of India,

https://pib.gov.in/newsite/pmreleases.aspx?mincode=31

Lessons Learnt from the Pandemic COVID-19

Dr. Amir Ali Khan

A pandemic is defined as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people". Pandemics generally cause substantial socio-economic disruptions. History is full of many of such events which not only caused socio-economic disruptions but also caused tremendous economic losses. Few of the well known pandemics include fifth cholera pandemic (1818), Spanish flu influenza pandemic (1918), Asian flu influenza pandemic (1957), Hong Kong flu influenza pandemic (1968), HIV/AIDS pandemic (1981), SARS pandemic (2003), swine flu influenza pandemic (2009), MERS epidemic (2012), West Africa Ebola virus epidemic (2013), Zika virus pandemic (2015), COVID -19 (2020).

The Covid-19 was first detected in China towards the end of December 2019. It is considered of zoonotic origin and is spreading human to human, which has already spread to 212 countries/ territories/ areas. There are about 2,726,770 confirmed cases and 191,086 deaths (at the rate of 24.5 deaths per 1M persons) throughout the world. Governments around the world are struggling to cope up with the spread of the Covid-19 virus. However, few of the national governments have already overcome and are able to control the spread of virus. Based on the performance in controlling the spread of covid-19 virus following lessons may be summarised.

1. Lessons hard learnt by countries like Taiwan, Hong Kong and South Korea during the SARS-2003 and MERS-2015 have helped them in establishing infrastructure facilities which came very handy in managing the Covid-19 spread despite their proximity and stronger links to China.

2. In 2004, the year after the SARS-2003 outbreak, the Taiwan government established the National Health Command Center (NHCC), a unified central command system that includes the Central Epidemic Command Center (CECC) that responds to epidemics, biological pathogens, bioterrorism, and medical emergencies. As news of the Covid-19 began to emerge Taiwanese officials were quick to recognize the

crisis and activated emergency management structures including NHCC to counter the potential threat, which ultimately helped keeping the Covid-19 related cases under control.

3. Hong Kong was also impacted with the SARS-2003. In the aftermath, Hong Kong was able to establish Centre for Health Protection, whose mission is "to achieve effective prevention and control of diseases". In addition supplies, facilities and staff training for infection control were enhanced, isolation rooms and wards were upgraded and increased. When COVID-19 emerged, there was already an epidemic management plan in place that just had to be activated in Hong Kong.

4. South Korea was impacted by the outbreak of MERS-2015. The experiences gained that time made officials more aggressive and people more willing to accept interfering measures in responding to COVID-19,. This time around, South Korea just followed the policy of investigate and isolate every possible infection. South Korea was also able to develop virus testing kit even before it had a significant number of cases around mid-January. Early testing leads to early detection and minimizing its further spread.

5. Act fast attitude in Germany paid great dividend. Germany was able to develop a Covid-19 test in mid January, long before it had impacted Germany. By the time Germany started receiving Covid-19 cases in February, laboratories across the country had built up a stock of test kits. Early and widespread testing has allowed the authorities to slow the spread of the pandemic by isolating known cases while they are infectious. At the same time, Germany had started increasing it ICU capacity from mid January onwards by increasing the number of ventilators by 50% by mid March.

The techniques adopted by countries to early detect, aggressive testing, and isolating the infected persons has paid dividends. Following Table 1 indicates the performance of countries which had adopted such techniques.

Table 1: Performance of countries with high testing and low death rates

Country	Total Cases	Total Deaths	Total Cases / 1M pop	Deaths/ 1M pop	Total Tests	Tests/ 1M pop
S. Korea	10,708	240	209	5	589,520	11,499
Hong Kong	1,036	4	138	0.5	131,786	17,579
Taiwan	428	6	18	0.3	59,026	2,478
Vietnam	268		3		206,253	2,119
Source: Worldometer COVID-19, Coronavirus Pandemic[10]						

Prevention is better than cure is an old adage which has come true once again during the Covid-19 pandemic. The countries which started preparations early are able to control the spread of pandemic substantially. The countries which had similar experiences are able to perform better than many other courtiers in curtailment of the spread of the virus. There is a need for applying the lessons learned from such countries to combat the battle against the Covid-19. This pandemic is an opportunity to improve the health care systems at national level.

References

1. Last JM, editor. A dictionary of epidemiology, 4th edition. New York: Oxford University Press; 2001.

2 Patel, V., D. Chisholm., T. Dua, R. Laxminarayan, and M. E. Medina-Mora, editors. 2015. Mental, Neurological, and Substance Use Disorders. Disease Control Priorities, third edition, volume 4. Washington, DC: World Bank

3. Ongoing till April 24, 2020 based on Worldometer for Covid-19 available at https://www.worldometers.info/coronavirus/#countries accessed on April 24, 2020

4. https://www.worldometers.info/coronavirus/#countries accessed on April 24, 2020

5. Barron L. What We Can Learn From Singapore, Taiwan and Hong Kong About Handling Coronavirus. Time. 2020, Available from https://time.com/5802293/coronavirus-covid19-singapore-hong-kong-taiwan/ (Accessed April 15, 2020).

6. Wang CJ, Ng CY, Brook RH. Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing. JAMA 2020. doi:10.1001/ jama.2020.3151. [Epub ahead of print]

7. "What We Can Learn From Singapore, Taiwan and Hong Kong About Handling Coronavirus". Time. Retrieved 15 April 2020.

8. How South Korea Put Into Place the World's Most Aggressive Coronavirus Test Program Archived retireved 15 April 2020.

9. AFP (12 March 2020). "Can South Korea be a model for virus-hit countries?". The Times of Israel. Retrieved 15 April 2020.

10. https://www.worldometers.info/coronavirus/#countries accessed on April 24, 2020

Pandemics in Cities: A Historical Perspective

Dr. Chandrani Bandyopadhyay

The epidemiological definition of a pandemic is "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people." Etymologically, the word pandemic can be traced to the Greek pandēmos meaning "of all the people" (pan meaning all and demos meaning people). Generally caused by an infectious or contagious disease, pandemics take a huge toll on lives and livelihoods across nations and communities.

In many parts of the world, urban habitats are characterized by high density living, fast paced mobility corridors and informal settlements facilitate the spread of infectious diseases. Globally, 4.2 billion people live in urban areas, comprising of 55% of people living in towns and cities. Mega-cities like Manila, Mumbai, Dhaka are also densely populated, with densities to the tune of 41515, 28508, 28410 p/sq. Km respectively. Recent global estimates also suggest that 1in 3 urban households are slum dwellers. In India, 13.8 million or 17.4% of all urban households comprising of 64 million people live in slums. Rapid urban growth creates densely packed tenements, slums and other informal housing, characterised by lack of adequate infrastructure and services. Health, nutrition, education and secure livelihoods are severely compromised in such areas. These scenarios create conditions of vulnerability where infectious diseases become difficult to contain and turn to epidemics. It was estimated that in the Democratic Republic of Congo, 83% of the people suffering from tuberculosis lived in urban areas (World Economic Forum, 2015). The 2009 cholera epidemic in Zimbabwe affected the capital city of Harare.

Historically it has been seen that human mobility helps in easy transmission of pathogens across great distances across the world. The complexity of human society and its mobility patterns increase the transmissibility of the pathogens leading to a pandemic. An analysis on human mobility patterns through airline transportation systems shows a very high degree of predictability of global spread of pandemics (Merler & Ajelli, 2010).

Urban areas across the globe have witnessed epidemics and pandemics over time, ranging from cholera, plague, influenza, Ebola, H1N1influenza, to the currently raging Covid 19 that has already taken a toll of more than 30,000 lives. The earliest recorded evidence of an epidemic was from 3000 BC, of a prehistoric village in north- eastern China, the site known as Hamin Mangha. Over centuries, epidemics and pandemics have affected huge populations and changed the course of history and civilizations. Epidemics have also led to innovations in city planning and design. Many of the critical urban infrastructure was introduced to prevent epidemics and pandemics, plumbing and sewer systems were designed to fight the recurrent cholera epidemics during the 1800s (Peters, 2020). The Great Plague of London in 1665-66 and the London Fire (1666) wiped out 15-20% of the city's population and burned down about a quarter of the city respectively. Few pandemics that have changed the course of history of human civilization were:

i) Antonine Plague (AD 165-180) – Transmitted by soldiers returning to Rome from campaigning, this small pox pandemic laid to waste the Roman army and contributed to the end of Pax Romana (Roman Peace) when Rome was at the height of its power. About 5 million people were killed.

ii) Plague of the Justinian (AD 541-542) – The Byzantine Empire was brought down by the bubonic plague, which killed an estimated 10% of the world's population.

iii) Black Death (AD 1346-1353) – The plague travelled from Asia to Europe and killed half of Europe's population. It changed the course of Europe's history and put an end to its system of serfdom.

iv) The American Plagues – Brought by the colonists, it decimated the Aztec and Inca civilizations.

v) The London Plague (1665-66) – The plague, transmitted by fleas on rodents, devastated London and killed 100,000 residents, about 15% of the city's population. It also brought about sweeping changes in town planning and urban design.

vi) Spanish Flu (1918-20) – One of the worst pandemics of all times, 500 million is estimated to have lost their lives in the pandemic that raged from South Seas to the North Pole. The pandemic also impacted indigenous communities, bringing them to the brink of extinction.

vii) Asian Flu (1957-58) – With roots in China, this influenza killed more than 1 million people.

viii) HIV/AIDS Pandemic – It has killed more than 35 million people across the world.

ix) H1N1 Swine flu pandemic (2009) – This pandemic has infected 1.4 billion people and killed over 500,000.

x) Ebola pandemic 2014-16 – Originating from Africa, the pandemic has taken nearly 12000 lives.

There have been other occasions where epidemics and pandemics have wreaked havoc on human civilization. Time and again, it has been seen that habitat density and mobility are the two primary causes for transmission of pandemics. In the context of the current pandemic, there is need to learn from history and re-examine urban planning and design. There is need for a relook at urban infrastructure and services, especially mobility services, for prevention as well as response to epidemics and pandemics. Design of transit lines, terminus and transport modes need to take into account the risk of pandemics. Additionally, design of health infrastructure, public space, building footprint needs to be considered for building resilient health systems.

References:

1. Migiro, Geoffrey: (2018, November 15). The World's Most Densely Populated Cities. Retrieved from https://www.worldatlas.com/articles/the-world-s-most-densely-populated- cities.html

2. Merler, S., & Ajelli, M. (2010). The role of population heterogeneity and human mobility in the spread of

pandemic influenza. Proceedings. Biological sciences, 277(1681), 557–565. https://doi.org/10.1098/rspb.2009.1605

3. Peters, Adele (2020): How we can redesign cities to fight future pandemics, Retrieved from https://www.fastcompany.com/90479665/how-we-can-redesign-cities-to-fight-future pandemics.html

4. World Economic Forum (2015): The Pandemic Risks in Today's Cities retrieved from weforum.orghttps://ourworldindata.org/urbanization#urban-slum-populations.

Social Implications of Corona virus Pandemic

Dr. Ajinder Walia

Enormous progress has been made in responding to public health emergencies of communicable disease and in coordinating action at an international level. However, the latest outbreak of corona virus in Wuhan and has been exported to various countries. The international community follows anxiously as the number of cases is rising. Novel corona virus, 2019 is a stark reminder of our permanent exposure to risk of pandemic outbreak.

Amidst the mortality caused by the pandemic, it is very convenient to overlook the disease's wider social and economic impact. Not only does the pandemic impose huge infrastructure demands on health care systems, but it has caused substantial economic costs in terms of sickness-related absenteeism, disrupted work schedules and lost productivity to society at large. However, we also need to be done to understand the social repercussions and implications of the pandemic in our country. Understanding social repercussions and implications will help us to draw lessons which can improve our future planning to respond to such exigencies in societies. While the world is struggling to bring out a vaccine against Covid-19, the social effect of isolation and quarantine on affected patients and citizens cannot be overlooked. A recent review of research, published in The Lancet, found that quarantine is linked with post-traumatic stress disorder (PTSD) symptoms, confusion, and anger, with some research suggesting these effects are long-lasting. Given that the corona virus crisis is likely to be with us for some time, the mental health implications can't be dismissed. Planning for future can include counselling of the infected survivors prior to their isolation. This can also lead to reduction in the number of cases of infected people running away from hospitals as was reported in Kerala and Punjab in the current scenario.

Recent suggestions by health agencies that people should stay at home if they're feeling unwell in response to the coronavirus outbreak may be well-intentioned guidance, but it may also fail to take into account the most vulnerable groups of society. Workers in the informal economy may not have the luxury of staying at home without paid sick leave. A mechanism needs to be developed for the people working in the informal sector to compensate for their daily income when they are not able to work during quarantine days or in the event of a lockdown. In the event of a possible lockdown, people living in or near poverty often lack disposable cash and cannot easily stockpile necessary items for sustenance. Apart from the impact on global economy, the economic impact on the poor can deepen their impoverishment. The package of distribution of essential relief items before announcing lockdown of cities should be announced so that the needy and poor may not panic and fear.

Our country has a rich culture of social life. The concept of 'social distancing' advocated for safeguarding oneself from corona virus will take time to seep into the Indian psyche. Moreover, it is the elderly population who is more vulnerable than the rest of the population. Loneliness is a serious health risk to older people who are vulnerable to corona virus and are compelled to avoid social contact. Online groups offering to run errands and collect groceries need to be created for them as it can help them as they are suffering the worst of isolation.

Pandemic Response

Shekher Chaturvedi

Pandemic is the disease which impacts more than one country or whole world to an extent. Thus unless one receives timely information, the major focus remains on responding to such incidences.

As far as responding to such a disaster in our country is concerned, the first and the foremost activity is to invoke the disaster management act 2005. Various provisions of this act comes into force and is binding on all the states and union territories. NDMA and NEC comes into force and issues certain guidelines and orders to be followed. NCMC also takes charge and issues certain guidelines in consultation with NEC, Ministry of Home Affairs and Ministry of Health and Family Welfare. Thus a unified area command is set up at the national level wherein the Secretary Ministry of Health and Family Welfare becomes the Operations Section Chief and tries to implement the guidelines, objectives and orders issued by the unified command.

Entire country is divided into various divisions (States and UTs) wherein Secretary Health and Relief Commissioners together form the unified command at divisional level. Logistic support is to be provided by various organizations such as Communication, Food & essential commodities, etc. police is utilized to help in maintaining law and order in the areas. Planning for the operations is being done jointly by Home, Health and Disaster management departments in the state/ Uts.

Media is to be handled jointly by Health and Home ministries at central level while health and disaster management department at the state level. They play the role of Information and media officer. Health Ministry and departments also play the role of safety officer. Home Ministry and Disaster Management Department play the role of Liaison officer at National and state/ UT level respectively.

Post disaster need is being identified through experience gained from other affected countries and previous experiences. Concerned Ministries and departments work in the direction of fulfilling and distribution of the needs. Keeping in view present pandemic the need of the hour is PPE, masks, sanitizers and ventilators and heat/ temperature detectors and essential commodities. Various agencies including NGOs and Government machineries are working together to fulfil these needs.

Community should also be geared up for responding to such pandemic in their own ways such as taking all possible precautions and adhering to the guidelines and orders being issued time to time by authorities.

Pandemics

Dr. Sushma Guleria

Pandemics are epidemics of disease that occur on a worldwide scale and are traditionally caused by infectious diseases such as influenza. Although unpredictable in their timing, recent history indicates that such pandemics can be expected to occur every 10 to 50 years and be continuous in nature. It is this level of certainty, and the fact that almost all humans will be vulnerable, that makes it paramount that planning is carried out at all levels of government to effectively manage such events. Epidemics can result in heavy mortalities in the short term leading to a depletion of population with a corresponding drop in economic activity. Infectious agents are constantly evolving, often acquiring enhanced virulence or epidemic potential. This results in normally mild infections becoming serious. The outbreak of Chikungunya that started in 2005 is one such example and some events experienced in India have highlighted such issues, needless to mention the current Novel Corona Virus threat looming across the globe. The outbreak of plague in Surat which was relatively small, disrupted urban activity in the city, generated an exodus and lead to a massive economic fallout. The ongoing human immunodeficiency virus/ acquired immuno deficiency syndrome epidemic in different parts of the country is leading to the diversion of substantial resources.

The spread of the invasive weed Parthenium hysterophorus after its accidental introduction into India has had wide repercussions on human and animal health, apart from depleting the fodder output.

Epidemics do not respect national borders. As international travel is easy, biological agents need to be tracked so that they do not enter new regions across the boundaries. This aspect has hence, made international collaboration crucial for epidemic control. Pandemics are large-scale outbreaks of infectious disease that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption. Evidence suggests that the likelihood of pandemics has increased over the past century because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment (Jones and others 2008; Morse 1995). Multiple outbreaks, notably the 2014 West Africa Ebola epidemic, have exposed gaps related to the timely detection of disease, availability of basic care, tracing of contacts, quarantine and isolation procedures, and preparedness outside the health sector, including global coordination and response mobilization (Moon and others 2015; Pathmanathan and others 2014). Pandemics are, therefore, identified by their geographic scale rather than the severity of illness. For example, in contrast to annual seasonal influenza epidemics, pandemic influenza is defined as "when a new influenza virus emerges and spreads around the world, and most people do not have immunity" (WHO 2010).

Risks

- Pandemics have occurred throughout history and appear to be increasing in frequency, particularly because of the increasing emergence of viral disease from animals.
- Pandemic risk is driven by the combined effects of spark risk (where a pandemic is likely to arise) and spread risk (how likely it is to diffuse broadly through human populations).
- Some geographic regions with high spark risk, including Central and West Africa, lag behind the rest of the globe in pandemic preparedness.

Impacts

- Pandemics can cause significant, widespread increases in morbidity and mortality.
- Pandemics can cause economic damage through multiple channels, including short-term fiscal shocks and longer-term negative shocks to economic growth.
- Individual behavioral changes, such as fear-induced aversion to workplaces and other public gathering places, are a primary cause of negative shocks to economic growth during pandemics.
- Some pandemic mitigation measures can cause significant social and economic disruption.
- In countries with weak institutions and legacies of political instability, pandemics can increase political stresses and tensions. In these contexts, outbreak response measures such as quarantines have sparked violence and tension between states and citizens.

Mitigation

- Pathogens with pandemic potential vary widely in the resources, capacities, and strategies required for mitigation. However, there are also common prerequisites for effective preparedness and response.
- The most cost-effective strategies for increasing pandemic preparedness, especially in resource-constrained settings, consist of investing to strengthen core public health infrastructure, including water and sanitation systems; increasing situational awareness; and rapidly extinguishing sparks that could lead to pandemics.

- Once a pandemic has started, a coordinated response should be implemented focusing on maintenance of situational awareness, public health messaging, reduction of transmission, and care for and treatment of the ill.

- Successful contingency planning and response require surge capacity—the ability to scale up the delivery of health interventions proportionately for the severity of the event, the pathogen, and the population at risk.

- Risk transfer mechanisms, such as risk pooling and insurance, provide a viable option for managing pandemic risk.

With specific reference to India, the essential protection against natural and artificial outbreaks of disease will include the development of mechanisms for prompt detection of incipient outbreaks, isolation of the infected persons and the people they have been in contact with and mobilisation of investigational and therapeutic countermeasures. The response to these challenges is coordinated by the nodal ministry—Ministry of Health and Family Welfare (MoH&FW) with inputs from the Ministry of Agriculture (MoA) for agents affecting animals and crops. The support and input of other ministries like Ministry of Home Affairs (MHA), Ministry of Defence (MoD), Ministry of Railways (MoR) and Ministry of Labour and Employment (MoL&E), who have their own medical care infrastructure with capability of casualty evacuation and treatment, have an important role to play. With a proper surveillance mechanism and response system in place, epidemics can be detected at the beginning stage of their outbreak and controlled.

References:

- NATIONAL DISASTER MANAGEMENT GUIDELINES MANAGEMENT OF BIOLOGICAL DISASTERS, July 2008 https://nidm.gov.in/pdf/guidelines/new/biological_disasters.pdf

- Pandemics: Risks, Impacts, and Mitigation; Nita Madhav, Ben Oppenheim, Mark Gallivan, Prime Mulembakani, Edward Rubin, and Nathan Wolfe. https://www.ncbi.nlm.nih.gov/books/NBK525302/

Coping with Stress and Anxiety during a Pandemic disaster like COVID-19

Ashish Kumar Panda

The outbreak of coronavirus disease 2019 (COVID-19) has been stressful for people with strong mix of fear, anxiety and strong emotions in adults and children. Everyone reacts differently to stressful situations. Stress during an infectious disease outbreak may include:

- Feelings of numbness, disbelief, fear, anxiety;

- Worry about self health and the health of loved ones;

- Variations in appetite, eating patterns, energy level, activities and the sleeping pattern;

- Physical reactions, such as headaches, body pains, stomach problems, skin rashes.

- Change in behavior pattern, more anger or short-temper.

- Difficulty in concentrating;

- Chronic Health problems getting worsened;

- Increased use of alcohol, tobacco, or other drugs;

We need to take care of ourselves, family members, friends and this helps in coping with our own stresses. As a positive outcome, the community gets stronger and stress resilient. As a basic disaster management philosophy, one should either help himself or get help for himself first and then only endeavor oneself into community service.

How to help yourself?

- It is natural to feel stress, anxiety, grief, and worry during and after a disaster. Notice and accept how you feel. Self-care during an emergency will help your long-term healing.
- Hearing about the pandemic repeatedly may be disastrous mentally. So avoid too much of regular watching, reading, or listening to news or use of social media.
- Improve your own immune system by resorting to Yoga or mild exercise mixed with meditations. Give your body healthy and balanced timely food. Avoid alcohols and drugs and get enough sleep/rest for your body.
- Take breaks from your routine job and indulge in some hobbies of your choice thereby living your left over dreams in leisure time.
- Communicate with people you trust thereby build healthy relationships and strong support system.
- Reducing stress in others too sometimes helps your own cause of stress.
- Share real facts about pandemic and learn about real risk from reliable sources and this will certainly reduce your stress. This will also help others reduce stress through your valuable information about the outbreak. Staying informed helps a lot in such situations.
- Emotional Health is very important. Keep on learning about how to keep it healthy.
- Take medical help in case the stress disturbs you on regular basis and your daily life is getting affected.
- People with past of mental health conditions should continue their treatment during such epidemics and should also watch for any deterioration of their situations as well.

How to help Children and Teens?

How a child reacts and the common signs of distress can vary according to the child's age, previous experiences, and how the child typically copes with stress. When parents themselves deal with pandemic calmly and confidently, they provide the best support to their children. When you are prepared, rested, and relaxed you can respond better to unexpected events and can make decisions in the best interest of your family and loved ones. Parents and family members may watch for changing symptoms in children and teens so that they can be helped timely to cope up with stress:

- Younger child may cry or get irritated;
- Excess of toileting or incidents of bedwetting;
- Sad and worried;
- Variation in eating or sleeping patterns;
- Teens may seem irritable and may show change in behavior;
- Avoiding schools/colleges or bad performance there;

- Difficulty with attention and concentration;
- Being inactive and not showing interest in their hobbies/friends etc.;
- Headaches and pain in body;
- Alcohol or drug abuse;

We can follow this:

- Indulge in giving time to kids, talking to them about pandemic, filling them with right kind of information and reassuring them that this phase shall pass and things will come to normalcy;
- Review safety plans before a disaster or emergency happens. Having a plan will increase your children's confidence and help give them a sense of control.
- Reassure children and teen about their safety. Tell them about your own worries and how you cope with them;
- Don't let them stay alone for long;
- Children and teen sometimes misinterpret news items and things on social media, so it is better to limit their access to such things;
- If schools and colleges are shut down, make a healthy learning schedule for them at home so that regular studies don't get suffered and it also keeps them busy. Such schedules should also include their recreation and entertainment;
- We need to be role models to our children and teens by showing them how to deal with such crisis situations;
- Provide children with opportunities to talk about what they went through or what they think about it. Encourage them to share concerns and ask questions.
- If children continue to be very upset or if their reactions hurt their schoolwork or relationships then parents may want to talk to psychologists to help their children and teens.

How Emergency Responders help themselves?

The Emergency Responders have to see human suffering live, they risk their personal lives, bear huge workload, have to take quick life and death decisions for sufferers/survivors and all the most they are separated from their families and near-dears during their response service. This adds to their stress exponentially. If they have to continue helping the society, they need to manage their stress remarkably as their wellbeing, cool mind and sharpness is what matters the most during crisis times.

Emergency Responders should prepare themselves for a response by learning as much as possible about their roles in the epidemics response. They should clearly detail their family members about the need for their being absent for longer duration in such operations. Not only that, they should continue sharing their feelings and experiences with fellow workers, friends and family members during the operation of response. They need to plan beforehand about their household, childcare, and pet care needs. They should limit their working alone time and try to work in teams to lessen stress. They need to work for 12 hours or less shift, not more than that. They should take healthy diet, take adequate sleep and do breathing and relaxation exercises regularly. They should understand that there is nothing wrong in saying “no” sometimes to things that you cannot do as you are not the only person in response. They should keep taking breaks as their own wellbeing is most important.

They should know about stress burnouts where they can feel extreme exhaustion. They may also experience secondary traumatic stress which is reactions and symptoms resulting from exposure to another individual's traumatic experiences rather than direct exposure to situations. They need to follow buddy system by partnering with fellow emergency responders:

Burnout: Includes feeling sad, apathetic and depressed, frustrated, irritation, blaming others, feeling indifferently, remaining alone, poor hygiene maintenance, tired look, guilt feeling of being failure, nothing can be done, want of alcohol/drugs etc.

Secondary Traumatic Stress (STS): Includes too much of worrying and fear about imaginary things, always on guard attitude, pacing heart, stressed look, recurrent thoughts of trauma and also to feel too much sorry for others' conditions etc.

Buddy System: Two emergency responders partner together to support each other, and monitor each other's stress, workload, and safety. They need to know each other's background, interests, hobbies, family, each other's strengths and weaknesses. They have to keep alert for each other and work as a team. They should share workloads, help each other with rest/break, acknowledge achievements, share experiences etc.

Emergency responders are our heroes and they need to be treated likewise. They risk their own lives, leave their own families to serve, to facilitate and protect the mankind. We should be gracious enough to be of any help to them during or after epidemics response exercise. We should not only care about them but also for their families who might be in dire need of emotional and physical support during crisis times. Let us be humane enough to salute to these heroes who selflessly come forward to serve us by all enthusiasm, capacity and dare.

What about the quarantine-released people?

Being separated from others during quarantine and thereafter coming out in open to live again with the society can give different kinds of feelings such as:

- Feeling of relief after quarantine;
- Worry about self health and the health of near dears (fear of still being the carrier of virus etc);
- Stress from the experience of continuous monitoring during quarantine;
- Frustration, anger and sadness as people around you still treat you as untouchables for quite some time to avoid contracting the disease;
- Sorry feeling about not being able to live up to responsibilities to your family, workplace during quarantine;
- Other emotional or mental health changes;
- During other disasters, people come forward to help each other by all possible means, while in such epidemics, people distance away from each other and it creates an emotional vacuum in the society;

We need to be compassionate with them, engage with them, listen to their experiences and treat them with respect as they are now the experienced warriors. They have gone through perhaps a lot, which in unexplainable, like separation, emotional vacuum, fear of death and all kinds of negativity & despair. Gestures of trust, faith, love and togetherness will bring smiles into their faces and lives. This will further give them courage and purpose in leading a normal life once again with zeal and positivity.

Conclusion : In nutshell, Epidemics bring mental stress and trauma to one and all, does not see age, gender, economic status, literacy level or expertise in emergency management. We all behave differently in different stress scenarios and we all need help during such crisis times. We need to be vigilant, prepared, with sufficient information and coping mechanisms, help others in need, share vital and right information, keep our immune systems strong with healthy diet and regular exercise, build community bonding through awareness, compassion and humanity. Low phases in lives come and go away, providing us lessons to be learnt for future betterment and chances to become more resilient to epidemics in waiting.

References:

CDC-Centre for Disaster Control and Prevention website (www.cdc.gov).

Corona virus Threat to Human Survival: SARS to Covid-19

Kumar Raka

In the past two decades, the world has seen at least three coronaviruses emergence and surge causing outbreaks that have caused considerable global health concerns. As per medical definition "Coronavirus is a common type of virus that infects humans, typically leading to an upper respiratory infection. Seven different types of human coronaviruses have been identified. Most people will be infected with at least one type of coronavirus in their lifetime. The viruses are spread through air by coughing and sneezing, close personal contacts touching an object or surface contaminated with the contact and rarely by fecal contamination. The illness caused by most coronaviruses usually lasts a short time and is characterized by runny nose, sore throat, feeling unwell, cough and fever."

The first severe acute respiratory syndrome (SARS) Coronavirus (SARS-CoV) infecting humans was identified in late 2002. As per World Health Organization SARS-CoV may be an animal virus from an uncertain animal reservoir (perhaps bats) that was transmitted to other animals (civet cats) and thereafter it infected humans. The SARS-CoV outbreak started in Guangdong, China, and spread to many countries in Southeast Asia, North America, Europe, and South Africa. Transmission was primarily person to person through droplets that occurred during coughing or sneezing, through personal contact (shaking hands), or by touching contaminated surfaces. Of note, health professionals were particularly at risk of acquiring the disease, as transmission also occurred if isolation precautions were not followed and during certain procedures. The last case of SARS-CoV occurred in September 2003, after having infected over 8,000 persons and causing 774 deaths with a case fatality rate calculated at 9.5%. Symptoms[1] are influenza-like and include fever, malaise, myalgia, headache, diarrhoea, and shivering (rigors). No individual symptom or cluster of symptoms has proved to be specific for a diagnosis of SARS. Transmission of SARS-CoV is primarily from person to person. As per WHO, currently no areas of the world are reporting transmission of SARS. Since the end of the global epidemic in July 2003, SARS has reappeared four times – three times from laboratory accidents (Singapore and Chinese Taipei), and once in southern China where the source of infection remains undetermined although there is circumstantial evidence of animal-to-human transmission.

Nine years later, a new coronavirus causing respiratory disease first identified in Saudi Arabia in 2012. It was named Middle East respiratory syndrome coronavirus (MERS-CoV). Since 2012, MERS-CoV has been reported in 27 countries, mainly middle eastern nations, and approximately 80% of human cases have been reported from Saudi Arabia. Cases identified outside Middle East and people who travelled and to Middle East or came into contact with infected persons from the Middle-East. In these patients, travel history is imperative, as all cases have been linked to persons in or near the Arabian Peninsula. As per WHO, MERS-CoV is a zoonotic virus transmitted between animals and people. Scientific evidence suggests that people are infected through direct or indirect contact with infected dromedary camels. MERS-CoV does not pass

easily between people unless there is close contact, such as the provision of clinical care to an infected patient without strict hygiene measures.

Similar to SARS-CoV, health professionals were at higher risk of acquiring the disease, as demonstrated in the outbreak in South Korea. Symptoms[2] of MERS-CoV are nonspecific, but many patients end up with severe acute respiratory distress. WHO records "A typical case of MERS includes fever, cough, and/or shortness of breath. Pneumonia is common, however some people infected with the MERS virus have been reported to be asymptomatic. Gastrointestinal symptoms, including diarrhoea, have also been reported. Severe cases of MERS can include respiratory failure that requires mechanical ventilation and support in an intensive-care unit." However, in comparison with SARS-CoV, MERS-CoV is still circulating, data from WHO shows that almost 80% of the reported MERS-CoV cases have been in Saudi Arabia; a total of 1,983 cases, with 745 related deaths and a case-fatality rate of 37.5[3].

On 30 December 2019, a cluster of patients with pneumonia of unknown etiology was observed in Wuhan, China, and reported to the World Health Organization (WHO) China bureau in Beijing. A week later, 7 January, 2020, a new coronavirus (SARS-CoV-2) was isolated from these patients. This virus was initially referred to as novel coronavirus 2019 (2019-nCoV) but was given the official name of COVID-19 by the WHO on 11 February, 2020. This new virus has infected more people than either of its two predecessors. he most common symptoms of COVID-19 are fever, tiredness, and dry cough. Some patients may have aches and pains, nasal congestion, runny nose, sore throat or diarrhea. These symptoms are usually mild and begin gradually. Some people become infected but don't develop any symptoms and don't feel unwell. Most people (about 80%) recover from the disease without needing special treatment. Around 1 out of every 6 people who gets COVID-19 becomes seriously ill and develops difficulty breathing.

Older people, and those with underlying medical problems like high blood pressure, heart problems or diabetes, are more likely to develop serious illness. People with fever, cough and difficulty breathing should seek medical attention. People can catch COVID-19 from others who have the virus. The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than 1 meter (3 feet) away from a person who is sick. On 12 March, 2020 outbreak of Covid-19 was announced by WHO a pandemic. Till now, the outbreak has spread to 203 countries infecting 616,742 humans and causing 203 deaths. In summary, the story of Covid-19 continues to evolve. Because SARS-CoV and MERS-CoV have had different behaviors, Covid-19 will likely have unique features of its own that we will learn as the outbreak further progresses.

References:

1. Hsieh, Y. H., King, C. C., Chen, C. W., Ho, M. S., Lee, J. Y., Liu, F. C., ... &JulianWu, J. S. (2005). Quarantine for SARS, Taiwan. Emerging infectious diseases, 11(2), 278.

2. Cho, S. Y., Kang, J. M., Ha, Y. E., Park, G. E., Lee, J. Y., Ko, J. H., ... & Ryu, J. G. (2016). MERS-CoV outbreak following a single patient exposure in an emergency room in South Korea: an epidemiological outbreak study. The Lancet, 388(10048), 994-1001.

3. Altamimi, A., Abu-Saris, R., El-Metwally, A., Alaifan, T., &Alamri, A. (2020). Demographic Variations of MERS-CoV Infection among Suspected and Confirmed Cases: An Epidemiological Analysis of Laboratory-Based Data from Riyadh Regional Laboratory. Bio Med Research International, 2020.

COVID-19 Pandemic and lockdown Impact among children in villages of Tamil Nadu

Dr. Balu I

Background

Novel Corona Virus contracted worldwide. World Health Organization (WHO) declared this first pandemic of novel coronavirus a 'public health emergency of international concern. Government of India has also taken various steps to prevent from COVID-19. Prime Minister has announced complete lock down for 21 days from 25 March 2020. The steps taken by government has controlled the spread of Corona and also had impact on life of children. This paper discuss the impact of COVID-19 and lockdown among the children in villages of Tamil Nadu. This paper is written based on the observations and media coverage.

Education

To prevent from COVID-19, Government of Tamil Nadu initially closed the schools from LKG to UKG followed by schools were closed from 1-5 standard so lakhs of school students were affected. Government has cancelled final examinations up to class IX and declared that all students are pass. The students belong to the class from 1-9 Standard were happy. Final examination for 12th Standard was on going and thousands of students were un able to appear for the examination due to the lockdown. Government of Tamil Nadu has declared that the examination will be re scheduled for the students who are not able to appear for final examination. But the children were in stress because their effort has been wasted and they have to prepare for second time.

Nutrition

Poor families were lost their employment and forced to survive without income. Children belong to daily wage labour families were suffered for food. The Schools were also closed so they were forced to depend on their family for getting a meal. Children who are studying at convent schools also not able to get nutrient food from their family. When the children were going to school the parents use to follow the food chart provided by the school since the schools are closed the children are not getting nutrient food. Due to lockdown vegetables and food material were not available in village and the people were not able to go to nearest down for purchasing ration. Few sellers visited the village and sold the vegetables, pulses etc. but the price of vegetables were high so the people were not able to feed their children with nutrients.

Mental Health

The parents were not aware to educate their children so most of the children were panic due to the COVID-19. The way the parents conveyed the message to the children were created panic among the children. Many children were started crying and not willing to come out of their house.

Water and Sanitation

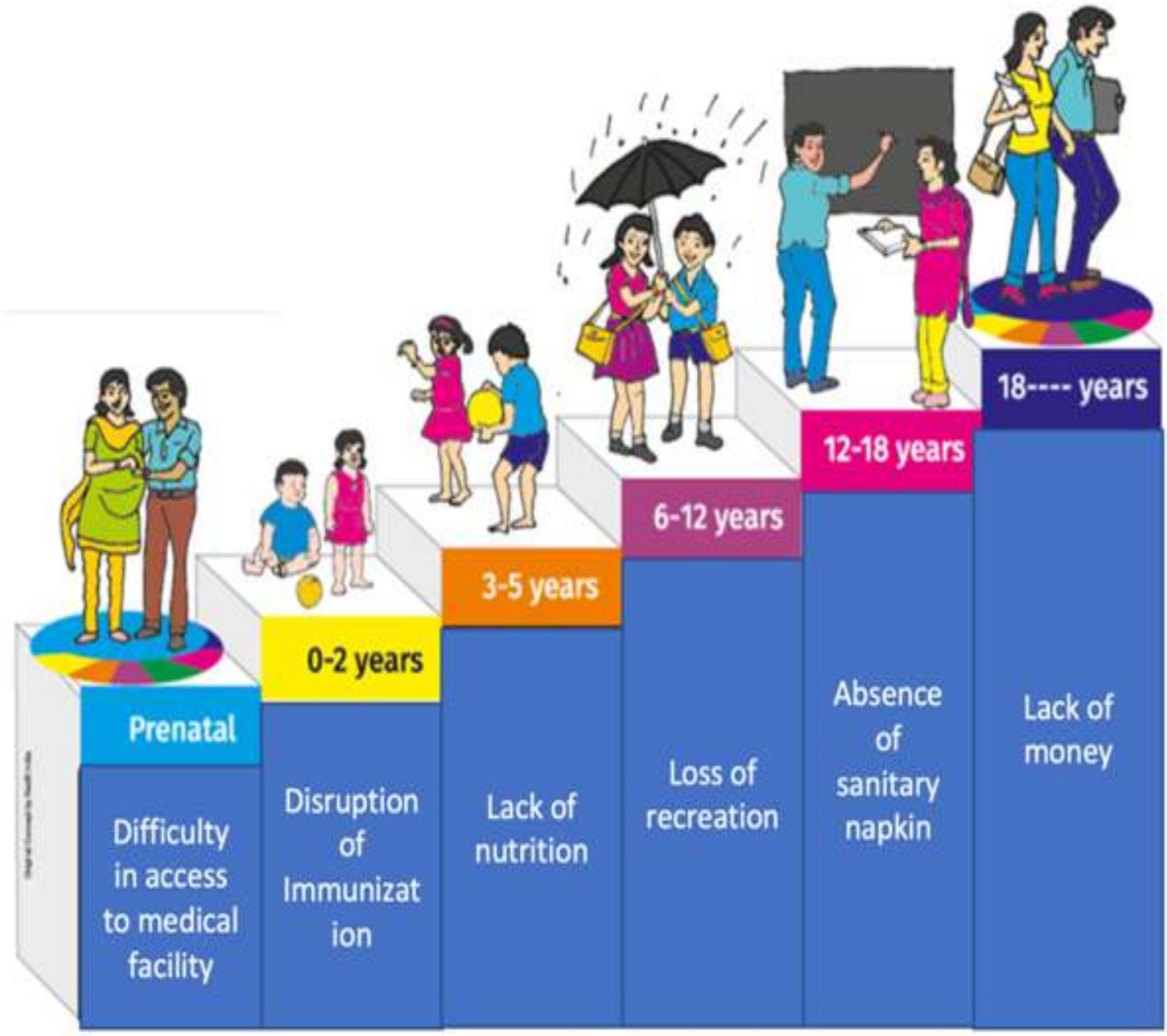
Being in summer season, drinking water was not available in many villages. Most of the villages were depending on water supplier who did not provided water. Children and pregnant women were suffered due to lack of drinking water. Before closing the schools, the teachers trained the children for proper hand wash but hand sanitizer was not available in nearest towns of the village so the children were not able to wash their hands with sanitizer.

Recreation

Many houses are too small where children cannot move anywhere even inside the home. Children were habituated to play outside but they were unable to come out and lost their recreation activities. Children were also not able to meet their friends' group which leads to stress. Being locked with home the children addicted to mobile phones. Average usage of mobile phone was increased among the children. The children were forced to engage with mobile phones, Television and Laptops. The children completely immersed with electronic gadgets.

Life Cycle approach and time critical service

Life cycle of children is divided in to five phases and phase wise critical services affected is discussed here. Important service for prenatal stage (pregnancy) is medical facility and periodical checkup. The pregnant women were unable to access the medical facility for periodical checkup. Immunization was disrupted for



infants (0-2 years). Since the health workers were engaged in COVID-19 prevention work. Middle class early childhood children (3-5 years) were suffered due to lack of nutrition. Children who are enrolled in Anganwadi centre were received nutrition food at their doorstep. Children (6-12 years) were lost their recreation and unable to meet their friends. Adolescents (12-18 years) girls were not able to get sanitary napkin. The government has taken various steps to prevent from COVID-19 but marginalized children were affected without nutrition and recreation.

Conclusion

Government of Tamil Nadu has taken various child centric initiatives to save the children from COVID-19. Due to lack of awareness among the parents, the children were suffered. Many children were in stress who actually needs counselling and recreation. Learnings from lockdown will help us to work proactively in future to avoid these problems which we are facing now.

******



Resilient India - Disaster Free India

We welcome comments / responses / articles from readers of our Newsletter

NIDM Newsletter - 7/2020 (January - March 2020)

Address for Communication

Executive Director,

National Institute of Disaster Management

(Ministry of Home Affairs, Govt. of India)

A wing, 4th floor, NDCC-II Building, Jai Singh Road, New Delhi - 110001

Phone: 011-23438286, Fax: 011-23438285

Email : ed.nidm@nic.in | Website: www.nidm.gov.in