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NCDC Newsletter

Quarterly Newsletter from National Centre for Disease Control (NCDC)






Director's Desk

Heat waves pose great threat to human health leading to heat-related morbidity and mortality. Meeting the public health challenge of heat-related illnesses (HRI) in India requires a comprehensive approach that focuses on its prevention, early detection, and effective management. This issue of newsletter captures snapshot of activities coordinated by NCDC in this regard.

This issue further elaborates on the national conference, FETPICON 2023 organised by the institute in collaboration with the Indian Council of Medical Research- National Institute of Epidemiology (ICMR-NIE), WHO Country Office for India, and the US Centers for Disease Control and Prevention (CDC), India. It also reports the investigation of Malaria outbreak in Amroha district, Uttar Pradesh.

The other sections of this issue report various activities carried out during the first quarter of the year like hands on training on ELISA, sentinel surveillance on acute respiratory illness in context of Air Pollution, COVID-19 & Seasonal influenza surveillance under Integrated Disease Surveillance Programme (IDSP).

We hope that this newsletter has provided you with valuable insights, and updates. As you read through this newsletter, we encourage you to provide us with inputs and ideas so that we may continue to bring information that is useful and valuable to you.

Lead Story

NCDC takes lead in meeting the Public Health Challenge of Heat-related Illnesses in India

India is highly vulnerable to the impacts of climate change and ranks 7th in the global climate risk index, 2021. Among climate change induced extreme weather events, heat waves pose the greatest threat leading to heat-related morbidity and mortality.

Frequency, intensity and expanse of heat waves have increased since 1990s and will continue to increase if greenhouse gas emission is not controlled as per Paris Agreement. The time of heat wave onset has also advanced in the recent years. March 2022 and February 2023 were the hottest March and February respectively in 122 years of records by Indian Meteorological Department (IMD).

As per IMD, summer 2023 is expected to bring more heat waves due to the El niño effect. Besides the core heat wave prone states, the eastern part of India is also expected to face higher temperatures than normal in 2023.

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Impact of heat on population varies based on biological, behavioural, socioeconomic as well as environmental and institutional factors. Exposure to severe or continuous heat leads to heat stress which can manifest as heat-related illnesses (HRI), ranging from heat oedema (mild), heat tetany, heat syncope heat exhaustion and heatstroke (severe). Out of two types of heatstrokes, classical and exertional, it is slow developing classical (non-exertional) heatstroke that leads to most heat-related deaths. It has higher case fatality rate of 65% even if treated.

The cumulative heat wave-related mortality in India since 1992 is over 24000. Therefore, strengthening of early warning and awareness systems, ensuring health facility preparedness, capacity building of health care professionals, improving urban built environment, and functioning action plans are essential to reduce health impacts of extreme heat on the population.

India started HRI surveillance in 2015 following a disastrous heatwave which led to approx. 2300 heat-related deaths were reported from Odisha, Telangana and Andhra Pradesh combined.

In the beginning, whole spectrum of HRI cases ranging from heat rash to heatstroke was considered under the surveillance. In 2021, the surveillance guidelines were revised to focus on heatstroke cases and deaths with the inclusion of a detailed death investigation by a medical officer or an epidemiologist in case of suspected heatstroke death. Data is also being captured on daily emergency admissions, confirmed cardiovascular deaths and total deaths in the health facility. These guidelines are available in National Action Plan on Heat-Related Illness at https://bit.ly/NAPHRI.

In order to further strengthen health sector's response to climate change impacts, National Programme on Climate Change and Human Health (NPCCHH) was launched in 2019, consequent to introduction of Mission on Health under Prime Minister's Council on Climate Change (2015).

It has five key objectives:

- increasing general awareness
- capacity building of health care workforce
- strengthening health care preparedness
- supporting intersectoral coordination
- steering research with Indian Council of Medical Research (ICMR)

The programme is implemented through tiered organisational framework. Multisectoral task force, governing body and action plan on climate change and human health in each state and district work as platforms for intersectoral coordination in planning and implementation. Through these, NPCCHH addresses growing and urgent need to mitigate health impacts of extreme heat exposure.

Over the last four years, the programme has established the organisational structure with nodal officers in all states and districts. Twenty-one states have prepared State Action Plan on Climate Change and Human Health which includes action points on five priority climate sensitive diseases including extreme heat. States are supported by National Health Mission (NHM) through funding to focus on long-term adaptation and decarbonization efforts like energy audit, LED installation, solar panel installation, and rainwater harvesting. NPCCHH also supports retrofitting of old facilities and development of new facilities, to make them climate resilient. Overall, 46.5 and 50 crore budgets have been approved for year 2022-23 and 2023-24 respectively for states to carry out NPCCHH programme activities under NHM.

Under NPCCHH seasonal surveillance (March-July) was being carried out in 23 states in core heat wave prone zone. With upgradation of the surveillance system to Integrated Health Information Platform (IHIP) in 2023, all the states are required to submit daily reports from all health facilities—primary health care level and up under NPCCHH.

The data visualization tools are also developed to monitor trends of morbidity and mortality with daily meteorological observations and warnings provided by IMD at district level. Such tools enable district administrations to be aware of situation for preparedness and response.

Once the baseline is established, this kind of enhanced surveillance is envisioned to work as a yardstick to assess impacts of various climate adaptation and mitigation actions on population with changing climate and in true sense led to "health- centric climate response".

Public health action

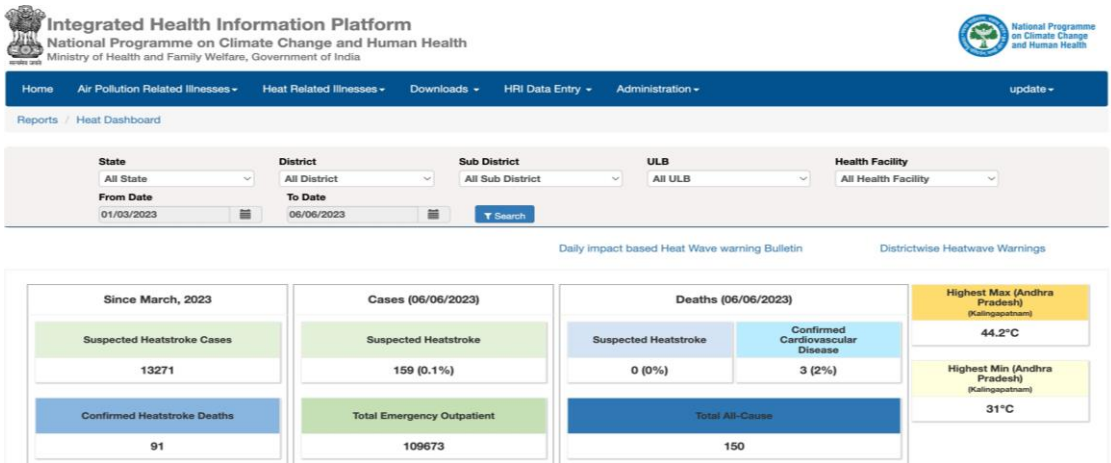
To address the forecast of higher than usual summer temperatures, NPCCHH-HQ began taking actions in February 2023.

- NPCCHH-HQ, NCDC organised virtual training session on HRI symptoms, management and digital surveillance reporting for state, district nodal officers, and trainers on **February 16th and 20th, 2023.**
- Public health advisory, infographic posters and advisory for state health departments on necessary health facility preparedness and surveillance were issued with a communication from Secretary (Health) Shri. Rajesh Bhushan in **February 28th, 2023**.
- **National Action Plan on Heat-Related Illnesses** (2021) and training manuals for Nodal Officers, Medical Officers, Community Health Workers and Community were disseminated.
- In **February 2023**, two new guidelines were issued– Guidelines for Green and Climate Resilient Health Facilities and Guidelines on Solar Powering Healthcare Facilities to ensure health facility resiliency to extreme heat through long-term structural and functional measures like energy audit, cool roof/green roof, rainwater harvesting, and solarization.
- **On March 1st, 2023**, surveillance of HRI cases, deaths with routine emergency OPD and total number of deaths were initiated on the IHIP for easy and timely reporting from States/UT. As it is linked to IMD, it allows tracking of health data with meteorological parameters.
- Frequent surveillance feedback reports were provided to states to improve reporting.
- Need based training of nodal officers, medical officers and trainers continued.
- NPCCHH participated in heatwave preparedness and state review by National Disaster Management Authority (NDMA) in **January and March 2023.**
- Guidelines on heatstroke room and emergency cooling for secondary level health care facilities were disseminated on **April 18, 2023**
- NPCCHH officer participated in joint awareness webinar with National Institute of Disaster Management on **April 21, 2023**.

Way forward:

The programme strives to work extensively towards prevention, early detection and timely treatment of HRI. Through long-term measures, it also focuses on strengthening health care infrastructure and reducing health sector's greenhouse gas emissions.

Expert consultation for heatstroke management chaired by Prof (Dr) Atul Goel, DGHS and Director, NCDC, March 2023



Dashboard of HRI surveillance on IHIP portal, April 2023

Contributed By: Drs. Purvi Patel, Nivethitha, Aakash Shrivastava and NPCCHH team

Outbreak Section

Malaria outbreak investigation in block Gangeshwari, Amroha district, Uttar Pradesh, January-February 2023

Community Health Centre (CHC) Rehra, block Gangeshwari of Amroha district reported nine Plasmodium Falciparum (PF) cases in January 2023. A team of state health officials supported by two EIS officers and entomologists were deputed to investigate the Malaria outbreak on 29th January, 2023, with the objectives to describe the epidemiology of the outbreak, determine the entomological and environmental factors and provide evidence-based recommendations for prevention and control.

Methodology: We defined suspected case as, a resident of block Gangeshwari with acute fever, onset from 05 January 2023 to 14 February 2023. Confirmed case was defined as, any suspect case tested positive for malaria with RDT kit or blood smear microscopy between 05 January 2023 to 14 February 2023. We conducted active case search with Accredited Social Health Activist (ASHAs) and Auxiliary Nurse Midwives (ANMs) in 18 villages of block Gangeshwari. For passive case search, we reviewed records for malaria cases from Out Patient Department (OPD) and lab registers at CHCs, Primary Health Centres (PHCs), Health & Wellness Centres (HWCs) and district combined hospital Amroha. We collected data on demographic factors, travel history, hospitalization, treatment received and exposure. We assessed vector density through hand catch method and vector control activities in the affected households. We did situational analysis by interviewing officers from block to district levels and examining the availability of various diagnostics and treatment facilities.

Catching adult mosquito by spray method

Results: Total 219 suspected cases were identified out of which 17 were lab confirmed from 11 villages (population =27,777), with overall attack rate 7.9 per 1000 population. Maximum attack rate was observed in Mashukpur (17.2) village and minimum was observed in Rehra (0.5). Median age of cases was 33 years, IQR= 8 - 47. Cases were mostly in age group of >15 years and all belonged to rural areas. Index case was reported on 20th January, with maximum cases on 23rd and 24th January 2023, the last case being reported on 31st January. Common symptoms among suspected cases were headache in 71% and chills during fever in 65% cases. Mean days between onset of fever and date of diagnosis was 4.7 days (Range: 1 – 11 days) and mean duration of treatment of cases were 4 days and IQR was 3 - 5. Total 137 rapid diagnostic test (RDT) tests were done in 219 suspected cases. RDT confirmed malaria in 17 cases, out of which 15 were PF and 2 were mix cases (PF, PV). Total 16 microscopy blood slides were made out of which 11 slides were rejected due to quality issues and 5 were confirmed as PF Malaria. More than half of the suspected cases were seeking treatment from the government health facilities (52.5%). All the confirmed cases had received complete treatment i.e 3 doses of Inj. Artesunate and complete kit of Artemisinin-based combination therapy (ACT) kit. Inj. Artesunate was prescribed to 15 (88%) and ACT Kit to 2 (12%) cases. Tab. Primaquine was prescribed to mixed cases along with ACT Kit. None of the cases required hospitalization and Case Fatality Rate (CFR) was nil. District hospital and CHC procured ACT kits after established diagnosis of PF Malaria. Assessment of personal behaviours among cases indicated only 29 % used mosquito nets. Only 9% houses had mesh on the windows. Environmental investigations revealed presence of open drains near dwellings of 88% cases, 76% of houses were having a pond within a kilometer and presence of larval breeding sites in close vicinity of 29% houses. In 11 affected villages surveyed, residents

reported no anti-larval operations being carried out in past one month prior to the outbreak. An entomological survey including adult mosquito survey was carried out from 31st Jan to 1st Feb and 12th Feb to 13th Feb 2023 from both human dwellings and cattle sheds. The per man hour density of adult mosquitos varied from 1.5-5 between 31st Jan to 1st Feb 2023 and 1.7-4 between 12 to 13th Feb 2023.

Conclusion: We report an outbreak of P. Falciparum Malaria identified through diseases surveillance in low Malaria transmission season in rural Block Gangeshwari of district Amroha in January 2023. Cases were mostly adults, did not report any complications and none required hospitalization. None of the cases had travel history and may have acquired infection locally. Cases reported use of personal protective measures (mosquito nets, repellents, meshed windows) in low frequency and mosquito genic conditions due to open drains were observed near the cases.

Interview and sensitisation of confirmed case

Recommendation:

Short term:

1. Intensify IEC through engagement with village health and sanitation committee for:
   a) elimination of larval breeding at household level, observance of dry days
   b) increased awareness about personal protective measures for malaria prevention particularly use of nets/ repellents/ window mesh
2. Intensified fogging operations to be continued thrice in a month in the affected villages during outbreak period
3. Community Health Officers (CHOs) in areas reporting residual cases should be trained to
4. Offer RDT to all acute cases of fever, ensure complete treatment of lab confirmed cases and early referral for any complications.

Long term:

1. State malaria programme should analyse five-year data and map blocks reporting new cases; these blocks should be prioritized for vector control activities in pre and post monsoon, such as:
   a) Larval source reduction (cleaning of open drains, proper drainage system for waste water) in coordination with Agricultural department, Irrigation department and Panchayati Raj department.
   b) Entomological surveillance to be strengthened throughout year to map vector density, vector composition, behaviours and habitat
2. Strengthen early diagnosis and reporting of Malaria cases in IHIP, IDSP

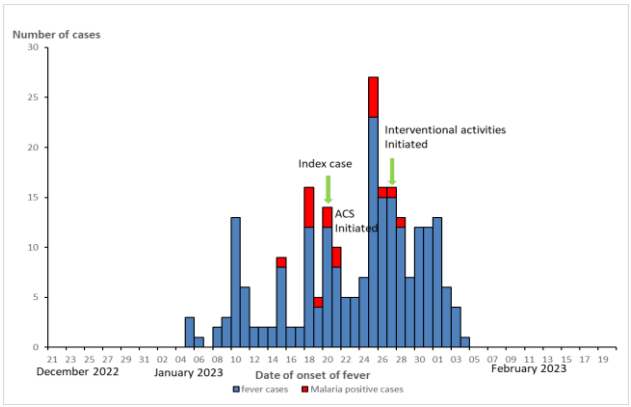


Figure 1: Cases of fever by date of onset, block Gangeshwari, Amroha, Jan-Feb 2023 (N=219)

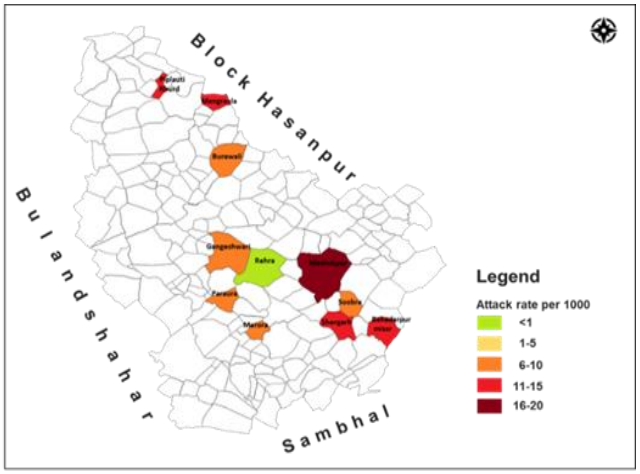


Figure 2 : Map showing village-wise attack rate of cases, Block Gangeshwari, Jan-Feb 2023

Contributed by: Drs Shashank Bassi, Ratish Bhuvan Pathak, Tanzin Dikid, Vikasendu, Naveen Rastogi, Satish Kumar, Vijaypal Singh

NCDC organises FETPICON 2023 in collaboration with ICMR-NIE, WHO and CDC

NCDC, Delhi, organised the "Field Epidemiology Training Programs – India Conference (regional)" (FETPICON 2023) at the Rudraksha International Cooperation and Convention Centre, Varanasi, Uttar Pradesh, India, on February 22nd - 24th, 2023. It is India's second national conference of FETP organised for South-East Asia region. The conference was organised in close collaboration with the Indian Council of Medical Research-National Institute of Epidemiology (ICMR-NIE), WHO Country Office for India, and the US Centers for Disease Control and Prevention (CDC), India. FETPICON 2023 provided a platform for FETP alumni and current officers from the three-tiered FETPs in India (Advanced-India Epidemic Intelligence Service, Intermediate-FETP, and Frontline-FETP) to share their public health response, surveillance system evaluations/analysis, and program implementation experiences. The conference hosted about 300 delegates from seven countries (Bangladesh, Nepal, Vietnam, Philippines, Indonesia, US, and India), Indian state health departments, Ministry of Health and Family Welfare (MoHFW), India FETP faculty, alumni, current scholars of FETP India programs, residents of the community medicine department, US CDC, Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), South Asia Field Epidemiology and Technology Network (SAFETYNET), and regional FETPs in South-East Asia.

The conference was inaugurated by the Hon'ble Union Minister of State (MoS) for Health and Family Welfare Dr Bharati Pravin Pawar, and dignitaries Dr. VK Paul, Member (Health), NITI Aayog, Mr. Partha Sarthi Sen Sharma, Principal Secretary Health, Govt of UP, Dr. Roderico Ofrin, WHO Representative for India, Dr. Meghna Desai, Country Director, CDC India and Dr. Atul Goel, DGHS & Director, NCDC. MoS released the "One India" FETP Roadmap and CD Alert on Ebola Virus Disease. As part of the 'One India' FETP initiative, the Government of India plans to bring all FETPs in India under one umbrella to ensure the availability, accessibility, acceptability, equity, and quality of the field epidemiology workforce across the country. The roadmap provides strategic goals and objectives to ensure that FETPs in India are high quality, embedded within government institutions, sustainable, and provide equal opportunities for learning across cadres in the public health system.

This conference also included panel discussions on various topics by experts from MoHFW, NITI Aayog, NCDC, ICMR-NIE, WHO, and CDC. Dr. VK Paul spoke about the vision for "Public Health Workforce in India" and highlighted a broad perspective on strengthening the workforce and need for collaborations. Dr. Manoj Murhekar, Director, ICMR-NIE gave a comprehensive overview on converging the efforts of FETP in India.

A panel discussion on "FETP's Global, Regional and Indian perspective" by dignitaries Dr. Denise Cardo, U.S. CDC, Dr. George Shakarishvilli, TEPHINET, Dr. Masaya Kato, Regional Office for South-East Asia (SEARO), Dr. Manoj Murhekar, ICMR, and Dr. Sujeet Kumar Singh, NCDC highlighted various aspects of FETP training programs, what sets us apart and what binds us together. Dr. Kipp Baggett, Head of FETP at CDC headquater, in his plenary address, discussed FETP from the perspective of global health and presented three global roadmaps on health workforce development, including India's FETP roadmap. Panel Discussion by Dr. Himanshu Chauhan, IDSP, Dr. P Ganesh Kumar, ICMR-NIE, and Dr. Vikasendu Aggarwal, SSO-UP on Technology and Innovations driving public health in India, shed light on the innovative tech-based solutions helping India step towards a healthier tomorrow.

Conference included 44 oral presentations, 51 poster presentations and 10 stories from the field by participants, followed by question-answer sessions. Themes of presentation included outbreak investigations, surveillance system evaluations, program evaluations, one-health,

noncommunicable diseases and emergency response. The conference also included site visits for participants to the Varanasi COVID-19 Command Center, Namami Ganges site, and HWCs. The conference also promoted networking, knowledge exchange, ideas, and field experience among the FETP programs and public health professionals from regional, national, and state levels. Along with bringing all the India FETPs together, this conference provided an opportunity to show the national and state leadership, the importance of FETP officers in strengthening disease surveillance, preparedness, and emergency response and advocated for nominating state officers for FETP training.

Dignitaries for panel discussion during FETPICON 2023

Poster presentation by a participant during FETPICON 2023

Participants of FETPICON 2023

Contributed by: Drs Arti Bahl, SK Jain, Tanzin Dikid, Meera Dhuria, Ramesh Chandra, Anubhav Srivastava, Suneet Kaur, Shailaja Humnabadkar, Vijaypal Singh, Abhishek, Jitender, Nitesh Ojha

Hands on training of Technical Staff on ELISA technique

Centre for AIDS & Related Diseases (CA&RD) conducted hands-on training for technical staff from Division of Parasitic Disease (DPD) on Enzyme-linked immunosorbent assay (ELISA) technique at NCDC, Delhi from 9th January to 20th January 2023.

Participants underwent comprehensive training in ELISA including lectures on introduction to ELISA, pre- & post-tests, Quality Control (QC) in ELISA – LJ Charts and Westgard Rules, biomedical waste management etc. Under the supervision and guidance of trainers from CA&RD, the participants successfully performed ELISA testing using human samples.

Dr. Aarti Tewari, Joint Director (JD), Dr. Bibhash Nandi, Deputy Director (DD), and trainers from CA&RD interacted with the participants to facilitate group discussions, training activities and gathered ideas for improvement of future interactive workshops to be conducted by CA&RD.

Demonstration of ELISA test using human samples

Contributed by: Drs Bibhash Nandi, Aarti Tewari, Manju Bala

Progressing towards the Goal of Eliminating Lymphatic Filariasis (LF) by 2030: NCDC trains healthcare professionals

NCDC has been conducting training programs for health professionals under the National Filaria Control Programme (NFCP) and Urban Malaria Schemes (UMS) from various endemic States/UT to control filariasis in India. These programs are held at the NCDC branches in Varanasi, Kozhikode, and Rajahmundry, each branch conducts four trainings per year. Medical officers, biologists, and district programme officers can attend five-day trainings, while technicians and filaria inspectors can attend ten-day trainings. After COVID-19 pandemic, trainings resumed in 2022, and 188 health professionals were trained.

The training focused on epidemiology of LF, including agent, vector and host factors, clinical manifestations, diagnosis, and management of morbidity. It also included key elements of the LF elimination strategies including planning, monitoring, and evaluation of Mass Drug Administration (MDA).

During the training, importance of field visits and surveys for collecting night blood smears or vectors, as well as conducting vector control activities, was emphasized.

Participants gained hands-on experience in collecting, preserving, dissecting, and transporting mosquitoes as well as collection of samples, preparation of smears, de-haemoglobinization, staining, and microscope examination of parasites. They were also trained for preparation of line lists of lymphedema and hydrocele cases, collection and analysis of data and report writing.

Hands on training on staining and preparation of smears

Lymphatic Filariasis patient's examination during field visit

Contributed by: Drs Sayana Bhaskaran, Shubha Garg, Ankur Garg

Bio-medical Waste Management training at Central Bio-medical Waste Storage Facility, NCDC

Centre for AIDS & Related Diseases (CA&RD) conducted training at Central Bio-medical Waste storage facility, NCDC, Delhi on 21st February 2023 of technical staff from various laboratory divisions of NCDC on the management of bio-medical waste, hands on training on scanning of barcode on individual bags and submitting real time data.

Dr, Aarti Tewari, JD, Dr. Bibhash Nandi, DD and other staff members from CA&RD conducted a refresher training on the major amendments proposed in the Bio Medical Waste (BMW) Management Rules, 2016 and its likely implication along with the duties of health care workers which include proper segregation, packaging, storage and transportation of waste. The Central Pollution Control Board (CPCB) has mandated the use of authorized biomedical waste management mobile software to record all data related to BMW generated. A demonstration was given on using software to scan barcode stickers on individual bags and submitting real time data to the authorized agency of Delhi Pollution Control Board (DPCC).

The contact information of people for troubleshooting software issues and daily functioning of the Central Bio-medical waste storage facility was conveyed.

Training on handling BMW

Contributed by: Drs Bibhash Nandi, Aarti Tewari, Manju Bala

NCDC celebrates National Science Day with Ramjas College, Delhi University

The Centre for Arboviral and Zoonotic Diseases (CAZD), in collaboration with Ramjas College, Delhi University, organised a workshop titled "Understanding Arboviral and Zoonotic Diseases" at the conference hall of Ramjas College on February 28th, 2023.

The workshop was held on the occasion of National Science Day as a tribute to recognize the contributions of Dr CV Raman in the field of science. The theme of National Science Day 2023 was 'Global Science for Global Wellbeing.' The teams from zoology department of Ramjas College under the chairmanship of Dr Amit Bhatacharya and Dr Mayanglambam Ojit Kumar Singh and representatives from CAZD, Centre for Medical Entomology and Vector Management (CMEVM), and IDSP from NCDC conducted the workshop with 90 other participants.

Prof. Manoj Kumar Khanna, Principal, Ramjas College, Prof. Hament Kumar Rajor, Vice-Principal, Ramjas College and Dr. Monil Singhai, Joint Director, NCDC inaugurated the workshop.

Prof. Manoj Kumar Khanna emphasized the importance of science in shaping the modern world. Dr Monil Singhai sensitised them about arboviral and zoonotic diseases of public health importance. Dr Vishesh Sood, Assistant Director, CAZD, delivered a session on essentials for zoonotic disease such as categorization, epidemiology, prevention & control measures,

zoonotic interfaces seen in everyday life, zoonotic diseases that can be transferred through these interfaces, and effective techniques to prevent them.

Dr. Arun Chauhan, Assistant Director, CMEVM, highlighted the vectors of public health importance in disease transmission, focusing on vectors of mosquito-borne diseases, their life cycle, habitat, identification of adult mosquitoes and their larvae, and control measures in the context of the dengue vector.

Ms. Ritu, Geographic Information System (GIS) Specialist, IDSP elucidated the importance of GIS mapping in disease surveillance for visualizing and analyzing spatio-temporal profiles of diseases, especially in terms of trends, dependencies, and interrelationships between public health data and the environment.

Dr Stuti Gupta, Assistant Director, CAZD, and Dr Cordelia, Deputy Assistant Director, CAZD, conducted an interactive session related to zoonotic diseases. In addition, Ms. Yosman Shah Dhar, ARO, Ms. Neha Aggarwal, Technician, and Ms. Babita Singhal, IC, CAZD, Dr Sukhbir Singh, Consultant, and Dr Abhay, Technician, CMEVM coordinated the display of IEC material for awareness on the important zoonotic diseases like Rabies, Anthrax, Brucellosis, Kala-Azar, Scrub Typhus, Dengue, Malaria, Chikungunya, Japanese Encephalitis, and live demonstration of all four development stages of Culex and Aedes mosquito life cycles.

Glimpses of the workshop on Arboviral and Zoonotic Diseases

Contributed by: Drs. Cordelia, Vishesh Sood, Stuti Gupta, Monil Singhai

NCDC conducts Workshop on "External Quality Assessment Scheme for HIV testing"

Centre for AIDS & Related Diseases (CA&RD) conducted workshop on "External Quality Assessment Scheme (EQAS) for Human Immunodeficiency Virus (HIV) testing" on 28th February and 1st March 2023 for technical Officers & Laboratory Technicians of 13 State Reference Laboratories (SRLs) in Medical Colleges of Delhi, Rajasthan, Jammu & Kashmir and Haryana, which are linked to National Reference Laboratory (NRL) for HIV at CA&RD, NCDC.

Dr. Manju Bala, Addl. Director & HOD talked about preparation of proficiency testing panels by NRL twice in 2022-23 and its distribution to 13 SRLs and 431 Integrated Counselling and Testing Centers (ICTC). She also advised the SRLs to perform the gap analysis for their National Accreditation Board for Testing and Calibration Laboratories (NABL).

Dr. Aarti Tewari, JD apprised the participants about the importance of participation in EQAS for HIV testing and entering data of EQAS results in NACO Prayogshala. She also briefed about updates in National AIDS Control Programme and review of SRLs activities on EQAS and Quality Management System (QMS) as per ISO 15189:2012. Dr. Bibhash Nandi, DD apprised the participants on the laboratory methods for diagnosis of HIV and also talked about good laboratory practices including biosafety. Hands-on training on in-house calibration of laboratory equipment along with a demonstration of Western Blot technique was also conducted.

Participants of the EQAS workshop

Contributed by: Drs Bibhash Nandi, Aarti Tewari, Manju Bala

News From Around

India celebrates National Anti-Leprosy Day

World Leprosy Day was observed on 29th January this year with the theme "Let us fight Leprosy and make Leprosy a history". On the occasion, Hon'ble Union Minister for Health and Family Welfare, Dr. Mansukh Mandaviya stated that India can achieve the target of Leprosy Mukt Bharat by 2027, three years ahead of the target year of SDG. He also emphasized that even though it is a curable disease, consistent efforts are needed to eliminate leprosy because if not detected and treated at the early stage, it can cause permanent disabilities and deformities among the affected person, leading to discrimination of such persons and their family members in the community. He also talked about comprehensive measures adopted for prevention of development of disease and Leprosy Case Detection Campaign (LCDC) under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi.

Accentuating on the efforts of National Leprosy Eradication Programme (NLEP), Hon'ble Union Minister of State for Health and Family Welfare Dr Bharati Pravin Pawar, talked about leprosy programme of the country which strives to detect and treat cases as early as possible, gives treatment free of cost to prevent the development of disabilities and deformities, medical rehabilitation of those with existing deformities. She addressed the important component, welfare allowance which has been raised from Rs 8,000 to Rs 12,000 to patients for their reconstructive surgery. She also launched a video for addressing stigma issues attached with leprosy as part of the nationwide awareness campaign.

She highlighting the achievements of the programme:

- Prevalence rate decreased from 0.69 per 10,000 population in 2014-15 to 0.45 in 2021-22.
- Annual new case detection rate per 100,000 population from 9.73 in 2014-15 to 5.52 in 2021-22.
- Strengthened surveillance through ASHA-based Surveillance for Leprosy Suspects (ABSULS)

National Strategic Plan & Roadmap for Leprosy (2023-27) and National Guidelines for Antimicrobial resistance (AMR) Surveillance in leprosy were released along with launch of Nikusth 2.0 Portal for leprosy case management under NLEP. It will aid in efficient data recording, analyzing and reporting of the data in the form of indicators and a real time dashboard at centre, state and district levels.

Ms Roli Singh, AS&MD (NHM), MoHFW, Shri Rajiv Manjhi, Joint Secretary Leprosy, Dr. Atul Goel, DGHS & Director, NCDC, Dr. Roderico H Ofrin, WHO representative to India, Dr. Sudarsan Mandal, DDG along with other dignitaries and officials were present at the event.

Virtual address by Hon'ble Union Minister for Health and Family Welfare, Dr. Mansukh Mandaviya

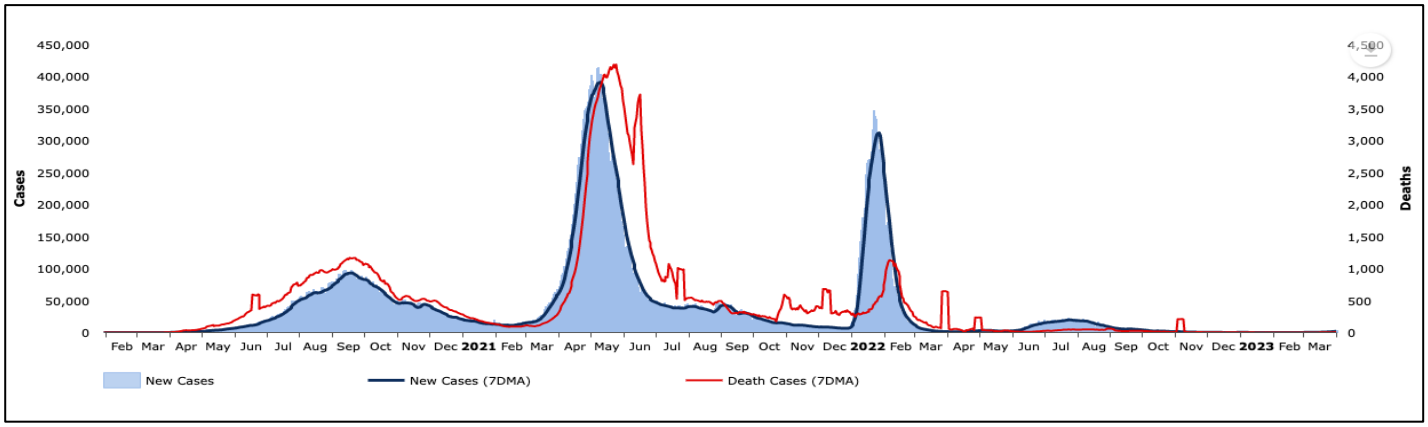
National Strategic Plan & Roadmap for Leprosy (2023-27) launch

Source: PIB press release

Contributed by: Dr Shikha Yadav

Surveillance Section

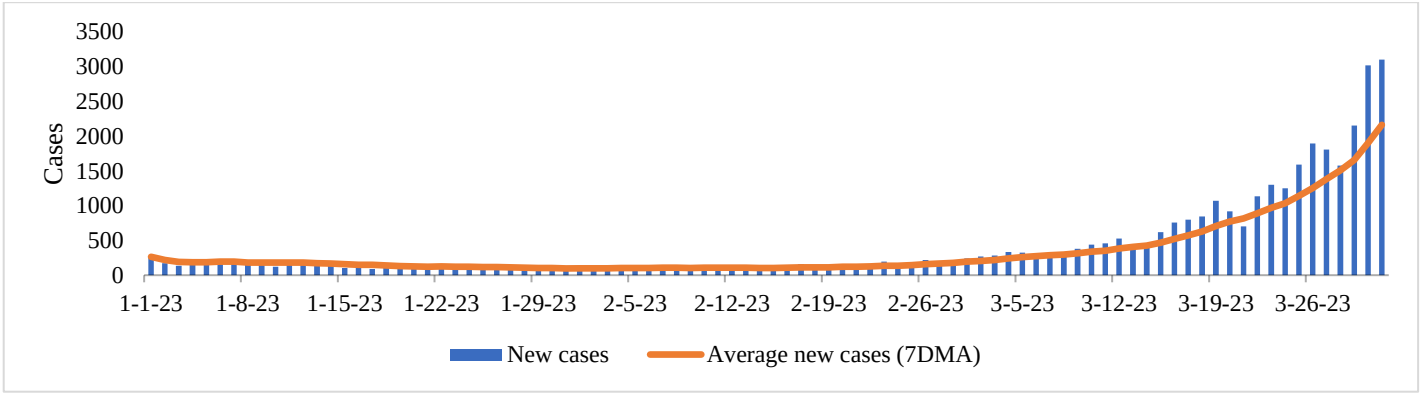
COVID-19 surveillance under IDSP



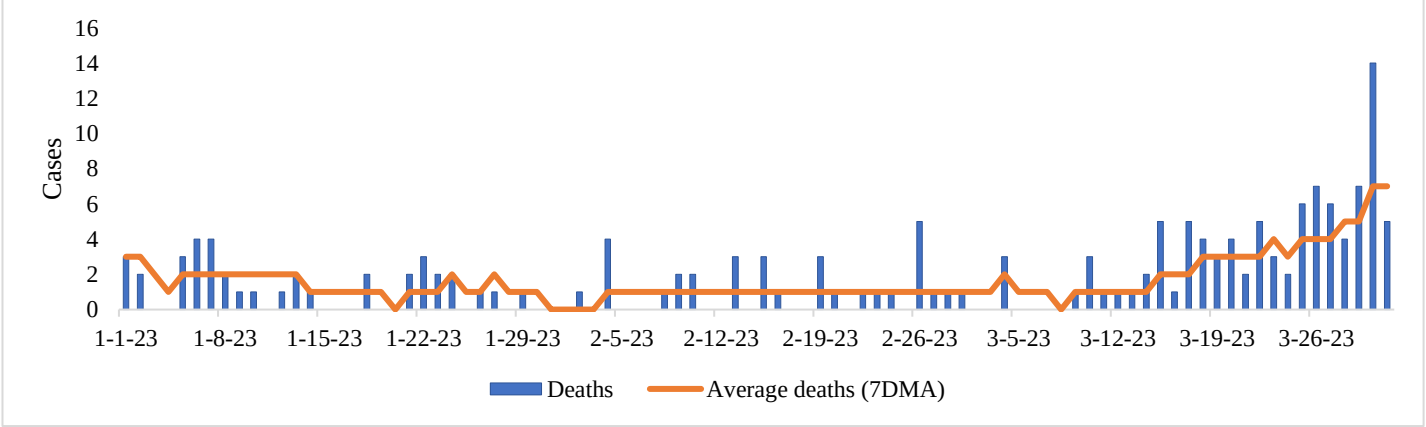
Newly reported Covid 19 cases (cumulative till March 31)*

As on 31st March the total number of confirmed cases were 4,47,17,067 with 15,208 active cases and 5,30,867 total deaths. A total of 4,41,69,711 cases were discharged/ cured.

- India's 1st peak started around April' 2020, with peak in September' 2020, and it lasted till February 2021 when the cases declined to reach very low 7- Day Moving Average (DMA).
- 2nd peak started in March 2021 with cases surged in May 2021.
- 3rd peak started in December 2021 with surge in January 2022, thereafter cases started to decline with decreased number of new cases of 7-DMA in April 2022.
- Subsequently there was a rise in new cases (7 DMA) in July, 2022 followed by decline in September 2022.



Newly reported COVID 19 cases in India (Jan- March 2023) *



Deaths in COVID 19 cases in India (Jan- March 2023) *

***Source:** IHIP

Newly reported cases per day have been low with consistently low 7-DMA in January and February 2023. In the first and second week of March 2023 there was an increase in 7-DMA, and thereafter a sharp rise in cases was seen during the last two weeks of March 2023. Deaths in Covid 19 cases consistently have been low with one to two deaths per day, but there was a slight increase in the last week of March 2023 to an average 5 deaths per day.

IDSP continues to monitor the trends closely and take necessary and timely action.

Contributed by: Drs Himanshu Chauhan, Arushi Ghai

Seasonal Influenza A (H1N1) surveillance under IDSP

Seasonal influenza is an acute respiratory infection (ARI) caused by influenza viruses which circulate in all parts of the world. There are 4 types of seasonal influenza viruses, types A, B, C and D. Influenza A viruses are further classified into subtypes according to the combinations of the hemagglutinin (HA) and the neuraminidase (NA), the proteins on the surface of the virus. Subtype A(H1N1) and A(H3N2) influenza viruses are currently circulating in humans. Influenza B viruses are not classified into subtypes, but can be broken down into lineages. Influenza type B viruses belonging to either B/Yamagata or B/Victoria lineage are currently circulating.

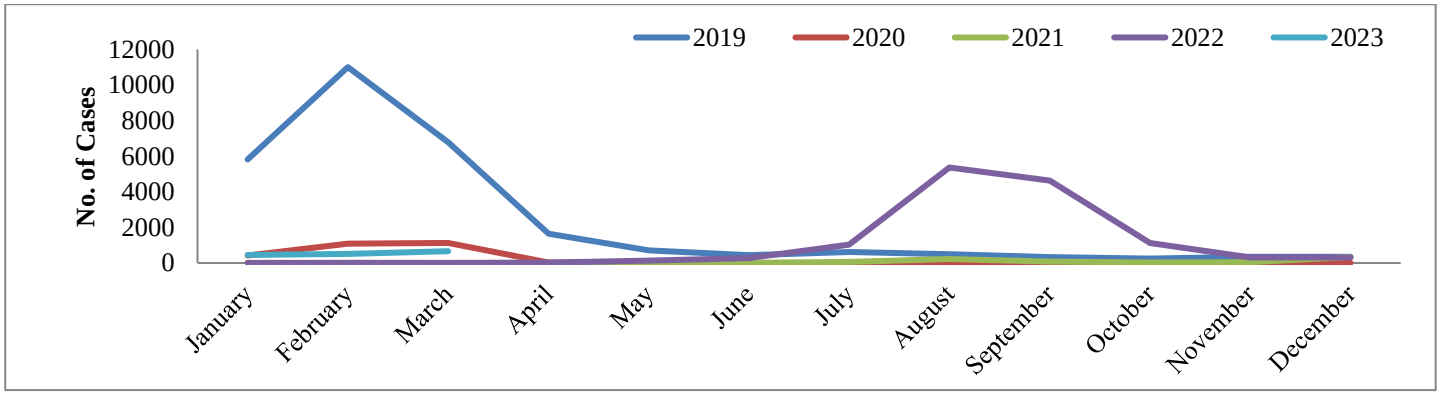
A near real time surveillance of cases of Influenza like Illness (ILI) and Severe Acute Respiratory Infections (SARI) presenting in OPDs and IPDs of health facilities is undertaken by IDSP, NCDC. According to the latest data available on IDSP-IHIP, a total of 4629 laboratory confirmed cases of Influenza have been reported till 27th April 2023 by the states. This includes 1,245 cases in January, 1,297 in February and 1,615 cases in March and 472 cases in April (till 27th April).

Further, the IDSP-IHIP data from health facilities indicate that during the month of January 2023, a total of 397,814 cases of ARI/ILI were reported from the country that increased to 436,509 during February and further to 458,850 cases in March. In the first 27 days of April, this number stands at 358,564 cases. The corresponding data for admitted cases of SARI is 7,041 cases in January, 6,901 during February, 7,109 during March and 5,867 during the first 27 days of April.

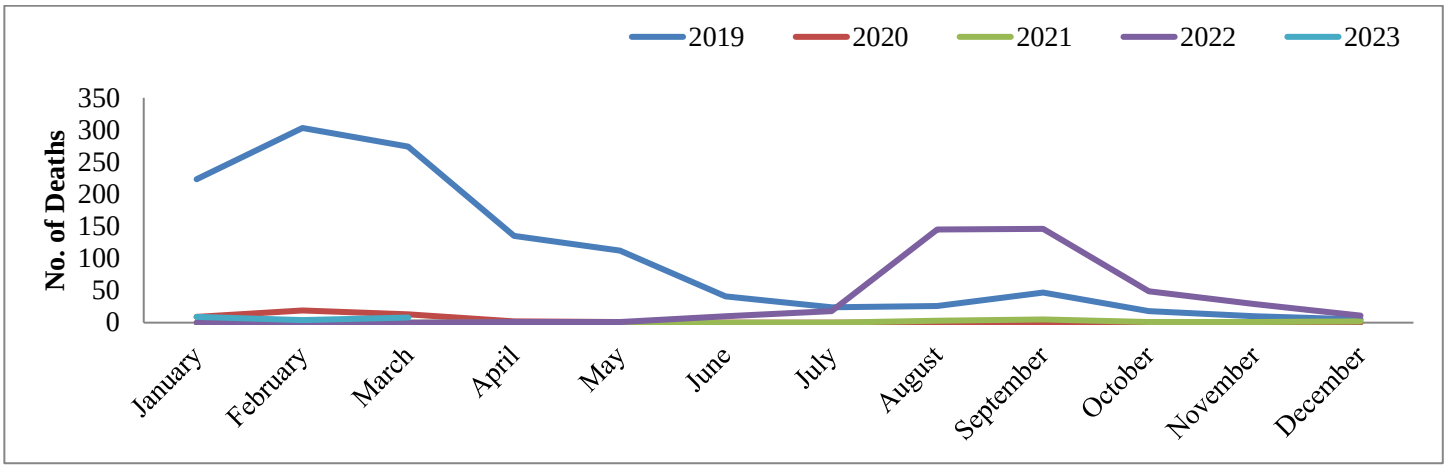
In addition, NCDC, Delhi, through IDSP also undertakes surveillance for Influenza H1N1 through three large networks of laboratories.

- A network of 12 sentinel labs supported by IDSP/NCDC
- A network of 41 labs supported by ICMR (out of which 6 are common to IDSP and ICMR)
- In addition, the States also undertake testing for Influenza through their own designated laboratories and share the data with IDSP

The weekly status of seasonal Influenza H1N1 is collected, collated, analyzed and shared with senior officers of MoHFW and is also made available in the public domain in the IDSP website.



H1N1 Cases trend 2019-2023



H1N1 Deaths trend 2019-2023

In 2023 (till 31st March), a total of 1616 H1N1 cases and 21 deaths have been reported (Data awaited from West Bengal). 451 H1N1 cases and 9 deaths were reported during the month of January 2023 while 504 cases & 4 deaths have been reported during February 2023. 661 cases and 8 deaths have been reported in the month of March 2023. Majority of the H1N1 cases are reported from Tamil Nadu (737), Maharashtra (451), Kerala (139), Gujarat (101), and Rajasthan (33). H1N1 deaths have been reported from Kerala (9), Punjab (4), Maharashtra (3), Haryana (2), Tamil Nadu (2) and Gujarat (1).

During the year 2022 (Till 31st Dec 2022), total 13402 H1N1 cases and 410 deaths were reported by the States/UTs in India.

MoHFW has provided guidelines on categorization of patients, treatment protocol, and guidelines on ventilatory management to the States/UTs which are also available on the website of the Ministry (www.mohfw.nic.in) and NCDC (ncdc.gov.in). MoHFW has also advised the State Governments for vaccination of health care workers dealing with H1N1 cases.

Vaccination Strategy: In line with WHO recommendation for influenza strain selection for the season of 2023, ICMR has recommended on the following seasonal Influenza vaccine composition.

The recommended quadrivalent vaccine should have:

- an A/Victoria/2570/2019 (H1N1) pdm09;
- an A/Darwin/ 9/2021 (H3N2);
- a B/Austria/1359417/2021 (B/Victoria lineage)
- a B/Phuket/3073/2013 (B/Yamagata lineage)

Contributed by: Drs Himanshu Chauhan, Sanket Kulkarni, Vinita Gupta

Sentinel Surveillance on Acute Respiratory Illness in Context of Air Pollution, Delhi

The data is from six sentinel tertiary care hospitals of Delhi and its analysis is depicted in the tables and graph with inferences as follows:

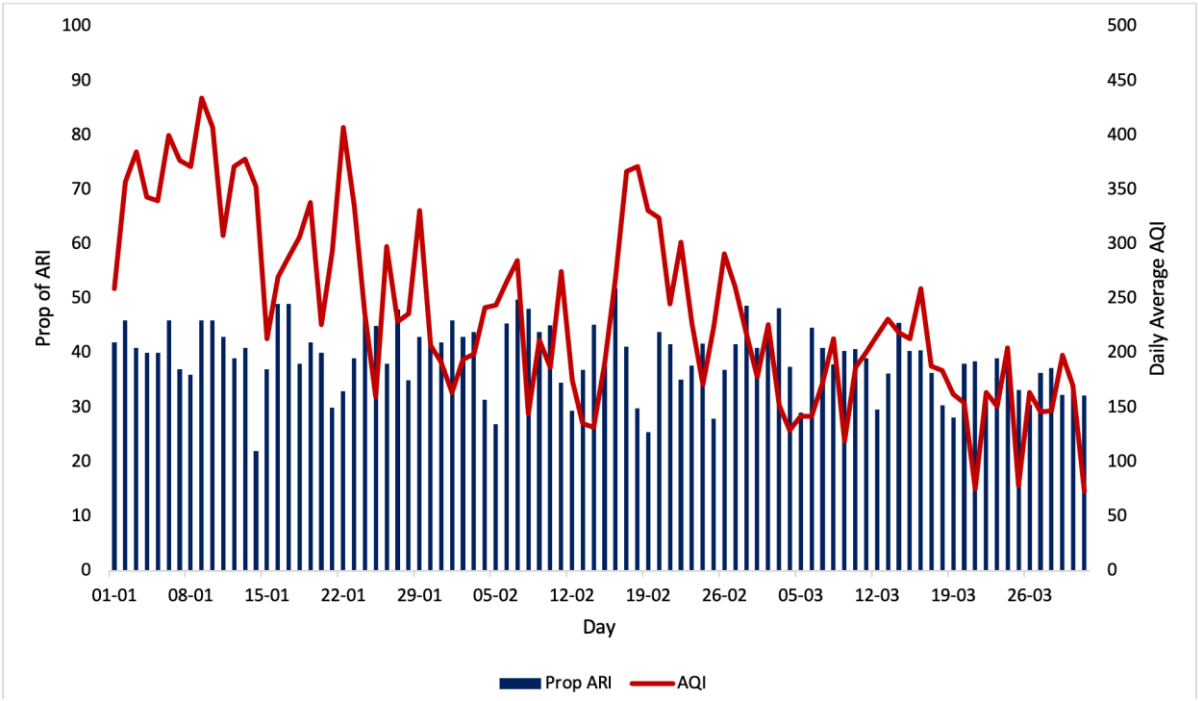
Table 1: Comparison of Emergency Admissions/Interventions of Acute Respiratory Illness (ARI) reported in Tertiary-Care Government Hospitals, Delhi (Jan-March 2023 with previous 3 months and corresponding months in the previous years)

	October 2021 – March 2022						October 2022 – March 2023					
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Reported in Emergency Department (as Median number of cases)												
All Emergency (n, IQR)	541 (91)	539 (130)	408 (79)	347 (81)	342 (147)	487 (104)	550 (120)	574 (110)	547 (113)	**516 (124)**	**558 (88)**	**561 (88)**
ARI Emergency (n, IQR)	106 (26)	126 (59)	138 (43)	110 (35)	122 (82)	184 (52)	189 (60)	224 (69)	222 (66)	**231 (68)**	**230 (78)**	**219 (74)**
ARI In-patient (n, IQR)	33 (14)	25 (10)	32 (11)	24 (7)	26 (12)	28 (12)	24 (9)	29 (9)	28 (13)	**39 (16)**	**36 (10)**	**34 (10)**
Reported in Emergency Department (as Monthly Total Cases)												
All Emergency (n)	17051	16125	13149	11095	10882	15092	17342	18304	17529	**16965**	**15346**	**17160**
ARI Emergency (n, % of All Emergency)	3370 (20)	4155 (26)	4594 (35)	3555 (32)	3621 (33)	5591 (37)	6178 (36)	7039 (38)	7032 (40)	**6981 (41)**	**6163 (40)**	**6461 (38)**
ARI In-patient (n, % of ARI Emergency)	1141 (34)	793 (19)	954 (21)	749 (21)	730 (20)	893 (16)	817 (13)	909 (13)	1010 (14)	**1298 (19)**	**1039 (17)**	**1090 (17)**
Treatment received (n, % of Total ARI Emergency Cases)												
Nebulization	2540 (75)	2627 (63)	2833 (62)	1435 (40)	1580 (44)	2840 (51)	4216 (68)	4915 (70)	4410 (63)	**4582 (67)**	**4137 (67)**	**4178 (65)**
Non-invasive ventilation	136 (4)	163 (4)	352 (8)	232 (6)	279 (8)	268 (5)	296 (5)	335 (5)	383 (5)	**475 (9)**	**358 (6)**	**314 (5)**
Invasive ventilation	64 (2)	77 (2)	87 (2)	87 (2)	87 (2)	92 (2)	63 (1)	85 (1)	100 (1)	**115 (2)**	**90 (1)**	**73 (1)**

Table 2: Comparison of Average monthly AQI measured in Delhi, 2022-23 and 2021-22

	2021-2022						2022-2023					
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Average Daily Air Quality Index (AQI)												
Monthly Median & IQR	170 (69)	381 (49)	329 (60)	264 (88)	233 (92)	218 (73)	228 (105)	335 (65)	314 (60)	331 (73)	234 (88)	170 (56)
Duration of Hazard (as No of Days per Pollution Category*)												
0-50 (Good)	1						2					
51-100 (Satisfactory)	3			2	1		4					3
101-200 (Moderate)	19			3	9	12	8	3		2	10	20
201-300 (Poor)	8	2	10	12	14	19	10	3	12	11	13	8
301-400 (Very Poor)		17	14	13	4		7	22	16	15	5	
401-500 (Severe)		11	7	1				2	3	3		

Graph 1: Daily AQI vs. Proportion of ARI cases reported to Emergency Department (%) in Tertiary-Care Government Hospitals, Delhi, Jan – March 2023



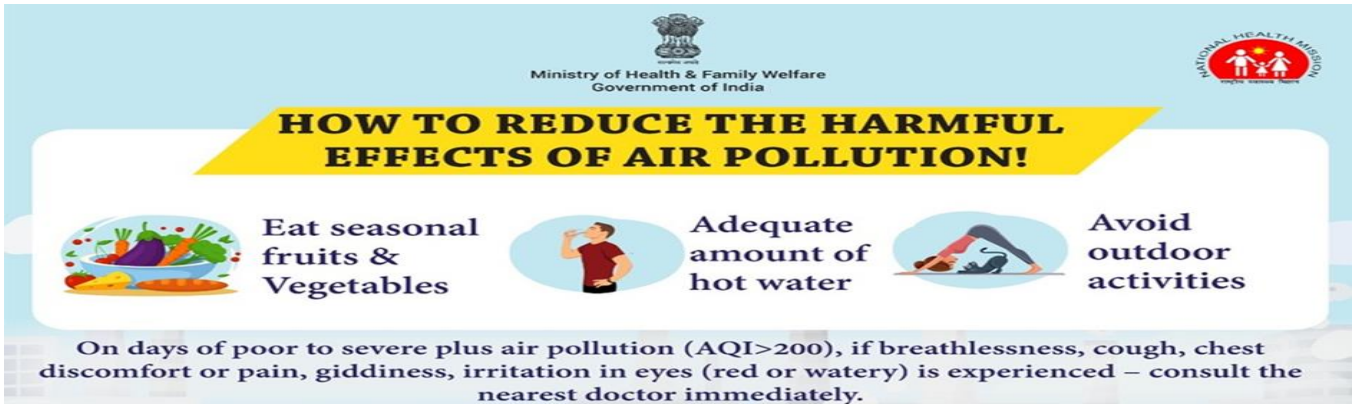
Interpretation:

Air Quality (Jan-March 2023): Daily Air Quality Index reported from CPCB in January 2023, were observed 3 days of severe category levels and 15 days of very poor category. The air quality started improving in the month of February, and it further improved in March with more days (20) recording moderate AQI. The air quality was relatively poorer in 2023, as compared to 2022 in January- February months while slightly better in March 2023 than that of March, 2022.

Respiratory Emergencies: The respiratory emergencies reported in January-March 2023 showed a decreasing trend towards the end of March 2023. It got improved from that of the previous two months. However, in comparison to corresponding three months of the previous year, cases were reported higher. Other interventions like admission, nebulization, invasive and non-invasive ventilation though higher in January month but showed a decreasing trend towards March 2023.

The above graph 1 shows the trend of AQI and ARI over the three months of Jan-March 2023 and both were observed a decreasing trend towards end of March 2023 when air quality improved. Overall, the surveillance data followed relatively the seasonal trends of Delhi for both the AQI reported as well as ARI emergencies.

Contributed by: Drs. Nivethitha, Rameshwar Sorokhaibam, Aakash Shrivastava, and NPCCHH team



Event Calendar NCDC

April – June 2023

May 22-June 02	Second Inception Course of EIS Training for Cohort 9
May 24-25	3x3 Frontline Epidemiology Training to develop Outbreak Investigation and Surveillance skills of Public Health Workforce in Gujarat – Third Contact Session
May 24-25	3x3 Frontline Epidemiology Training to develop Outbreak Investigation and Surveillance skills of Public Health Workforce in Gujarat – Third Contact Session
June 05	Webinar on "Energy efficiency in Healthcare facilities" under NPCCHH, Delhi
June 08-09	National Review Meeting on NPCCHH, Delhi

Important Health Days

30th January	World Leprosy Day
4th February	World Cancer Day
10th February	National Deworming Day
13th February	International Epilepsy Day
28th February	World Science Day
4th March	World Obesity Day
16th February	National Vaccination Day
20th March	World Oral Health Day
22nd March	World Water Day
23rd March	World Meteorological Day
24th March	World Tuberculosis Day

NCDC Buzz

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