This issue of NCDC newsletter has a lead story on the status of International Health Regulations (IHR) implementation in India. The IHR are an international legal instrument that is binding on 196 countries across the globe, including India. Their aim is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. NCDC is focal point for IHR implementation in India. In 2017 we have reported compliance to all 13 core capacities with an overall improvement in country capacity for prevention, detection and response to health risks of potential international concern.

In this issue, we also report a chemical leak incident in Shamli UP affecting 383 persons. Response by NCDC led to quick public health action and containment of the incident. Ability to respond to chemical, biological, and radiological incidents are important parameters for IHR compliance for any country. The IDSP programme is critical for generating early warning signals for public health response. It has completed more than a decade of existence with footprints across all 707 districts and has reported 1710 outbreaks in 2017. The NCDC news section carries information on various important activities carried out in this quarter including observance of World Antibiotic Awareness Week and World Rabies Day, activities related to rollout of National Programme for Prevention and Control of Viral Hepatitis. Besides these many other important activities carried out by NCDC are also included. I look forward to any feedback from the readers.

IHR (2005) implementation in India- overview and task ahead

The global spread of severe acute respiratory syndrome in 2002-2003 highlighted the need to detect and control disease outbreaks at their source. The 2005 revised International Health Regulations (IHR), as a legally binding global framework, were established to provide a framework for improving detection, reporting, and response to Public Health Emergencies of International Concern (PHEIC). The IHR (2005), third edition can be accessed at http://www.who.int/ihr/publications/9789241580496/en/.

According to the IHR (2005), PHEIC refers to an extraordinary public health event which is determined, under specific procedures: (a) to constitute a public health risk to other States (countries) through the international spread of disease; and (b) to potentially require a coordinated international response. WHO encourages the use of Decision instrument (Annex 2) to assess the events and the need to notify the WHO. The Decision instrument is given in Fig.1
States Parties that answer “yes” to the question whether the event meets any two of the four criteria (1-4) above, shall notify WHO under Article 5 of the International Health Regulations. The Regulations include much more than a list of specific infectious diseases and cover a wide range of public health risks of potential international concern which could include:

- Biological, chemical, or radiological and nuclear events in origin or source, or diseases potentially transmitted by:
  - persons (e.g. SARS, influenza, polio);
  - goods, food, animals (e.g. Rift Valley fever);
  - vectors (e.g. plague, yellow fever, West Nile fever); or
  - the environment (e.g. radiological and nuclear releases, chemical spills or other contamination).

The global implementation of IHR began on June 15, 2007 and was ratified by 196 WHO member states. The IHR (2005) requires countries to assess the ability of existing national structures, capacities and resources to meet minimum requirements for public health surveillance and response. Under the revised regulations, Member States have much broader obligations to build national capacity for surveillance and response in the event of a public health emergency of international concern and to share information about such emergencies. The areas that need attention for IHR implementation have been called capacities. A range of potential health hazards that fall under IHR capacity requirements along with the capacities for surveillance and response these have been grouped under the following headings as given in Figure 2:

Figure 2: Core capacities requirements under IHR
Major obligations of the state parties/countries under IHR have been summarized in Fig. 3. In recent years, India has promoted the implementation of the IHR comprehensively, continually strengthening the core public health capacities, points of entry capacity, as well as risk prevention and control of biological events (infectious diseases, zoonotic diseases, and food safety), radiological, nuclear and chemical events, etc. **Progress made in core capacities**

After adoption of the revised IHR in June 2007, all member countries were required to develop and implement a minimum of core public health capacities by June 2012, to ensure compliance with the IHR (2005). India’s original target date to ensure compliance was 8th August 2012 to become IHR compliant (WHO/HSE/GCR/LYO/2013.1).

However, India requested for extension till 2014 and later a second extension was sought until 2016 to be compliant with IHR (2005).

To help the state parties assess their capacities, a monitoring framework i.e. WHO IHR self-assessment questionnaire was developed. The progress made in IHR core capacities implementation is measured annually by utilization of the *WHO IHR self-assessment questionnaire*. To ensure that the full spectrum of relevant hazards is covered, National Centre for Disease Control (NCDC), the National Focal Point (NFP), leads the process of completing the questionnaire, in close collaboration with ministries/departments responsible for the various capacity areas. Every year India has reported the progress on IHR implementation by responding to the IHR self-assessment questionnaire. Based on the response to IHR self-assessment questionnaire 2015, India communicated to WHO about its compliant status to IHR. The IHR core capacities implementation score (2010-2016) as reported on WHO Global Observatory is shown in Fig. 4.
Each bar represents the capacity score in percentage and the triangle represents the average regional score i.e. SEAR countries. The average value of 13 core capacity indicators is 98% for 2016. The average value of 13 core capacity indicators for period 2010-2016 is 70% in the WHO South East Asia region. Based on the annual reporting data of 2016, the three top challenges identified for India are points of entry (89%), food safety (93%) and response (94%). The requirements under IHR core capacities and the progress made so far is summarized:

**National legislation, policy and financing:** To support and enable implementation of the IHR, countries should have an adequate and appropriate legal framework along with policies to identify national structures and responsibilities. A review of existing legislations and national policies to facilitate NFP functions has been carried out and the legislations in relevant areas exist on date for meeting the IHR requirements and are available at: [http://www.ncdc.gov.in/writeaddata/mainlinkfile/File573.pdf](http://www.ncdc.gov.in/writeaddata/mainlinkfile/File573.pdf). The Epidemic Diseases Act, 1897 is operational currently.

**Coordination and NFP communications**

Effective implementation of the IHR requires multi-sectoral, multidisciplinary
approaches through national partnerships for effective alert and response systems. National Centre for Disease Control has been designated the NFP-IHR India.

Institutional mechanisms exist at the level of ministry of Health & Family welfare (MoHFW) for effective coordination & communication between various sectors. A high level inter-ministerial Joint Working Group is in place for responding to major disease outbreaks (H1N1, SARS, Ebola, CCHF, KFD, etc.). SOPs are available for coordination between IHR NFP and stakeholders IHR NFP. NFP provides WHO with updated contact information and annual confirmation.

**Surveillance:** The IHRs require rapid detection, prompt risk assessment, notification and response to public health risks. Integrated Disease Control Programme (IDSP) provides a nationwide framework for surveillance at national, intermediate and local levels. Surveillance data on epidemic prone and priority diseases is analysed regularly. Information sources and mechanisms for capturing and registering PH events have been identified. IDSP mid-term review / Joint Monitoring Mission was conducted as a part of the IHR core capacity mandate on Nov-December, 2015 by WHO. Post Joint Monitoring Mission, a revised list of diseases under surveillance and reporting formats have been finalized with the support of WHO. A workshop for strengthening the surveillance system of Infectious Disease Hospitals in India was organized in May 2017 at Hyderabad. Recently, special surveillance formats have been developed to address public health events under IHR (2005) in collaboration with EMR Division. Updates can be accessed on IDSP website at idsp.nic.in.

**Response:** Mechanisms for command, communications and control operations are required to coordinate and manage outbreak operations and other public health events effectively are being coordinated by EMR Division, DGHS at national level. Multidisciplinary, multisectoral Rapid Response Teams (RRT) have been established. A functional command and control operations centre in place at NCDC and MoHFW. RRTs are functional at the State and district levels. Most tertiary health care institutions/ health facilities have Infection Prevention & Control Policy and are duty bound to take all required steps for protection of health care workers. National guidelines are also issued from time to time e.g. H5N1 outbreak, during increase in number of cases of H1N1, Zika virus disease. Separate guidelines for hospitals are issued in case of PHEIC (Ebola, etc.). Hospital Infection Prevention and Control Guidelines are available on NCDC website at: http://www.ncdc.gov.in/writerereaddata/mainlinkfile/File571.pdf. NCDC is the nodal agency for AMR containment programme in India. The National Action plan for AMR containment is available on the NCDC website.

**Preparedness:** Preparedness includes the development of national, intermediate and local community/primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards.

The Crisis Management Plan, an all hazard plan is available to respond to the public health events arising out of biological, chemical or radio-nuclear agents. National resources have been mapped for IHR relevant hazards. Stockpiles (critical stock levels) for responding to priority events are accessible with the relevant sectors.

**Risk communication:** Risk communications is a multi-level and multi-faceted process, which aims to help stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. Risk communication mechanisms do exist in the country and have been implemented and tested through situations of actual emergency during the recent Ebola, MERS CoV threat and H1N1 pandemic, H5N1, dengue outbreak, disasters (floods,
earthquake, etc.). Risk Communication guidance document has can be accessed at http://ncdc.gov.in/writeaddata/mainlinkfile/File 593.pdf.

**Human Resource** Strengthening the appropriate knowledge, skills and competence of public health personnel is critical for effective implementation of the IHR. Sufficient Human resource capacity exists at the country level for IHR. India Epidemic intelligence services (EIS) in collaboration with CDC Atlanta is a two year collaborative activity being implemented since 2012. Division of Epidemiology has been designated as WHO collaborative centre for field epidemiology. Regional FETP programmes (3 months) for medical officers and one month programme for para medics are also conducted by Epidemiology division (NCDC). Training of HR from PoEs, IDSP, hospitals and labs undertaken at regional level by EMR, NCDC, IH, IDSP and other officials for EVD, MERS- CoV, Zika VD, etc.

**Laboratory:** It is of utmost importance to establish mechanisms for providing reliable and timely laboratory identification of infectious agents and other hazards likely to cause public health emergencies of national and international concern. Govt encourages laboratories to maintain high quality standards. Indian Public Health standards have been implemented and disseminated. NABL standards are available and also under the Clinical establishment Act, the laboratories need to conform to the quality standards. Designated laboratories are equipped to test / designated for diagnosis of priority public health threats (NCDC, NIV, etc.) conform to quality standards. Indian Public Health standards (National Health Mission) are available for laboratories at intermediate and local levels. Trainings on biosafety are carried out at NCDC, NIV Pune and by Society of Biosafety located at ICAR-NIHSAD Bhopal. Laboratory manuals of various disease programmes also include sections on biosafety viz. IDSP biosafety lab manual http://www.ncdc.gov.in/writeaddata/mainlinkfile/File572.pdf ), TB lab manual, HIV lab manual etc.

**POEs:** PoEs designated for development of capacities as specified in Annex 1 and list of ports authorized to offer ship sanitation certificates sent to WHO. Priority conditions for surveillance at designated PoEs identified, surveillance information at designated PoE shared with surveillance unit. Public Health advisories for Zika for International and conveyances as per MoHFW guidelines have been displayed at all PoEs. Vector control measures at POEs are regularly monitored and supervised by NCDC/NVBDCP teams, All hazard Contingency plans are available at PoEs and updated regularly.

Website on IHR at PoEs developed under GHSA http://www.ihrpoe.co.in and inaugurated by DGHS on 13 April, 2017. Training of PoEs on all hazard approach (including chemical and radio-nuclear emergencies) conducted. Workshops on Strengthening of inter – sectoral co-ordination for surveillance and response on all hazards organized at regional level in Aug 2017.

**Zoonotic:** Animal health focal point has been designated for coordination with IHR NFP. Programme for Strengthening of mechanism of intersectoral coordination for prevention and control of zoonotic diseases with Zoonosis Division, NCDC, Delhi as Nodal Co-ordinating Centre has been launched in the twelfth FYP. Standing Committee on Zoonosis has been constituted and has an advisory role. Joint Monitoring Group on Avian influenza addresses the concerns of emerging infectious diseases including zoonotic infections. Joint orientation training course to build capacity for prevention and management of Zoonotic Diseases for Medical and
Veterinary professionals was conducted by NCDC in collaboration with IVRI in Nov-Dec 2016, May 2017 and Jan 2018.

**Food safety:** The coordination between INFOSAN Emergency Contact Point and the IHR NFP has been established. Besides, a coordination mechanism between FSSAI and state food safety authorities under State Food Safety Commissioners is fully functional through Central Advisory Committee (CAC) under the FSSAI. Listing of the priority food safety risks is being worked out. For responding to food safety events, INFOSAN Network in the country is being developed. Food Safety Emergency Response plan is in the draft phase. Recall Regulations for recall of implicated food(s) and also Food import regulations are being notified. Roster of experts for assessment and response to food safety events is available.

**Chemical Safety:** The Hazardous substances management Division in the Ministry of Environment, Forest and Climate Change is the nodal agency. In order to minimize the risk during chemical emergencies, two rules viz. manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 are in place under the Environment (Protection) Act, 1986.

**Radiological emergencies:** Policies or plans for detection, assessment and response to radiation emergencies and functional coordination mechanism between relevant competent authorities have been established. Crisis Management Group of DAE (as per Crisis Management Plan-2014) is the national competent authority responsible for nuclear regulatory control/safety, and relevant sectors.

**Implementation of International Health Regulations (IHR): challenges and next steps**

There has been an overall improvement in country capacity for prevention, detection and response to health risks of potential international concern. Some of the challenges faced in IHR implementation include:

- IHR not a priority for other sectors/ministries.
- Inter-ministerial communication problems.
- NFP lacks authority resulting in delays in obtaining clearance for communication.
- Testing of plans.
- Surveillance of non-infectious agents e.g. chemical events.

**Next Steps**

- The “implementation” of the IHR will never be over, it is an ongoing process; we need to “maintain” core capacities and be able to use them effectively, when and where needed. (e.g. Ebola, Zika PHEIC).
- Boosting core capacities under the IHR (2005) within the broader health systems strengthening agenda, to address all hazards (zoonotic, food safety, chemical, biological, others).
- Formulate a comprehensive action plan for strengthening and maintaining IHR core capacities and also address the gaps identified based on 2016 data i.e. points of entry, food safety and response.
- The efforts to control public health threats require all stakeholders to continuously improve the way they coordinate and collaborate, to stay dynamic and to adapt to new challenges, including countries/Regional vulnerabilities.

*(Contributed by IHR Secretariat, NCDC)*
Chemical leak incident at Dayanand nagar, District Shamli, Uttar-Pradesh, October-November, 2017

On 10 October 2017, sudden onset of bitter taste in mouth, breathlessness, eye irritation, abdominal pain and headache were reported from students of Saraswati Shishu Vidya Mandir school, Shamli between 08:00-9.30am. A team of two Epidemic Intelligence Services (EIS) officers was constituted on 23 October 2017 to be deployed for providing support to the district. On 25 October 2017, a team of two EIS officers joined the investigation in Shamli district. All leading newspapers of Shamli covered the suspected chemical leak news and mentioned that the chemical was Denatonium Saccharide.

Objectives of the investigation
1. To describe the epidemiological characteristics of the incident.
2. To identify risk factors associated with it.
3. To provide recommendations for control and prevention

Methods
We gathered information regarding chemical leak affected cases from leading newspapers and reviewed surveillance data available at the IDSP portal to confirm the existence of unusual health related event affecting large number of people. We started investigation by gathering information from Principals of Saraswati Shishu Vidya Mandir School, Shamli, Medical superintendent and causality medical officer (CMO) of district hospital, Shamli, where cases were admitted and treated, regarding the symptoms of cases and treatment provided. Based on preliminary information, we framed a case definition to be used for searching for cases.

Case Finding
We defined a case as “Bitter taste in mouth or breathlessness in a person who was in Dayanand colony between 09-15 October 2017”. For finding the additional cases, a rapid house to house case search was done in the Dayanand Nagar. A questionnaire containing demographic, clinical features and suspected exposure was devised for data collection. We also conducted passive surveillance by reviewing list of cases available at the district hospital, Shamli. Completion of the data shared by the district hospital was done. Finally the data was entered in Epi Info7 and the results were expressed in proportions.

Key informants interviews
Interviews of the key informants was done of the stakeholders involved.

Lab Investigations: No sample was collected from any case for lab investigation specific to chemical exposure.

Environmental Investigations: The concerned division of Ministry of Environment Forest and Climate change, New Delhi, the Uttar Pradesh Pollution Control Board did an environmental investigation of the incident and took the samples of ash and sand from the dumping yard and the road adjacent to it.

Results
Descriptive Epidemiology: We analysed the data to describe the occurrence of cases over time using an epidemic curve, spot map to understand the geographic distribution, symptom distribution among cases.
A line-list of 383 cases was prepared including cases reported to district hospital, Shamli and private hospitals and cases searched by active house-to-house survey. Of all cases 60% (228) were females. Median age of cases was 13 yrs (range 3-63 yrs), 70% (270) cases were given medical treatment, and no death was reported. Most of the cases reported bitter taste in mouth followed by breathlessness (94%) and eye irritation (61%) followed by abdominal pain (Table-1).

### Clinical features

<table>
<thead>
<tr>
<th>Clinical features</th>
<th>Number of cases (383)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitter taste in mouth</td>
<td>362</td>
<td>94</td>
</tr>
<tr>
<td>Breathlessness</td>
<td>236</td>
<td>61</td>
</tr>
<tr>
<td>Irritation of eyes</td>
<td>92</td>
<td>24</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>99</td>
<td>25</td>
</tr>
<tr>
<td>Headache</td>
<td>108</td>
<td>28</td>
</tr>
<tr>
<td>Vomiting</td>
<td>189</td>
<td>49</td>
</tr>
</tbody>
</table>

### Conclusion

Epidemiological investigation suggested that the suspected chemical leak occurred from the late hours from 9 October 2017 and affected maximum people that lived/passed in and around the dumping yard of sugar mill. Majority of cases were seen on 10th October 2017 in and en route to school. The sudden occurrence of illness among school children could be due to the presence of school in proximity to suspected dumping yard of sugar mill (300m). Key informant interviews revealed that Schools had proper evacuation plan for emergency and the list of all emergency contact numbers. PCR responded immediately. Based on the recommendations of Ministry of Environment Forest and Climate change, New Delhi, the Uttar Pradesh Pollution Control Board had issued closure order u/s 31A of the Air Act 1989 to close down the operation activity of the distillery plant of Sir Shadi Lal Sugar mill, Shamli.

### Recommendations

- Appropriate action should be taken by the concerned authorities as per regulations for proper land use so that the community is not affected.
- As a short term measure, use of road adjacent to dumping yard by residents and school students should be discouraged.
- Health risks of people living around an area where suspected chemicals are dumped should be communicated to the residents.
- An epidemiological investigation should be done in all the incidents related to factories/mills.

For such incidents, inter-sectoral co-ordination should be strengthened so that comprehensive risk assessment can be carried out.
Public Health Action

Mill authorities fenced dumping yard by concrete walls and gate after the incident (pictures attached)

Public Health Action following investigation

- This investigation led to restricting access to dumping yard, training of staff of district hospital in disaster preparedness.
- This incident was also reported to CSU, IDSP as a part of early warning signal.

(Contributed by Drs Ashok K Talyan, S Qadri, EISO cohort # 5, Drs Meera Dhuria, CS Aggarwal, NCDC)

Outbreaks reported to IDSP in year 2017

Number of reported outbreaks of epidemic prone diseases by districts/states under IDSP for the year 2017 are 1714. Madhya Pradesh, Karnataka, Uttar Pradesh and Bihar are the states contributing to nearly 40% of the reported disease outbreaks. Maximum surge was observed in the state of Madhya Pradesh with 191 outbreaks reported in the year 2017.

Acute Diarrhoeal Diseases constituted maximum number of outbreaks (355) followed by Measles (229) and Chicken pox (228) respectively. Five outbreaks of Crimean Congo Haemorrhagic fever were reported in Gujarat. Few isolated outbreaks of Brucellosis in Assam and Rajasthan, Chandipura Viral Encephalitis in Gujarat, HSV in Bihar and Melioidosis in Assam were observed. Nearly 614 (50%) outbreaks were lab confirmed out of total 1129 outbreaks (excluding food poisoning, chicken pox and Melioidosis).
### Table 1: Outbreaks reported from the respective states in the year 2016 & 2017

<table>
<thead>
<tr>
<th>S No</th>
<th>States</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andaman &amp; Nicobar</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Andhra Pradesh</td>
<td>53</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>Arunachal Pradesh</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Assam</td>
<td>103</td>
<td>95</td>
</tr>
<tr>
<td>5</td>
<td>Bihar</td>
<td>255</td>
<td>136</td>
</tr>
<tr>
<td>6</td>
<td>Chandigarh</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Chhattisgarh</td>
<td>120</td>
<td>61</td>
</tr>
<tr>
<td>8</td>
<td>Dadra and Nagar Haveli</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Daman &amp; Diu</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Delhi</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Goa</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Gujarat</td>
<td>148</td>
<td>101</td>
</tr>
<tr>
<td>13</td>
<td>Haryana</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>14</td>
<td>Himachal Pradesh</td>
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<td>20</td>
</tr>
<tr>
<td>15</td>
<td>Jammu &amp; Kashmir</td>
<td>56</td>
<td>66</td>
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<td>16</td>
<td>Jharkhand</td>
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<td>Karnataka</td>
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</tr>
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</tr>
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<td>26</td>
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<td>28</td>
<td>Punjab</td>
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<td>Tripura</td>
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<td>12</td>
</tr>
<tr>
<td>36</td>
<td>West Bengal</td>
<td>206</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2679</td>
<td>1714</td>
</tr>
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### Table 2: Disease outbreaks reported in year 2017

<table>
<thead>
<tr>
<th>S.No</th>
<th>Diseases/Illness</th>
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<th>2017</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Acute Diarrhoeal Disease</td>
<td>709</td>
<td>355</td>
</tr>
<tr>
<td>2</td>
<td>Acute Encephalitis Syndrome</td>
<td>24</td>
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</tr>
<tr>
<td>3</td>
<td>Acute Resp. Illness</td>
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<tr>
<td>4</td>
<td>Anthrax</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>5</td>
<td>Chickenpox</td>
<td>401</td>
<td>229</td>
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<td>6</td>
<td>Chikungunya</td>
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<td>7</td>
<td>Cholera</td>
<td>114</td>
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<td>8</td>
<td>Crimean-Congo Haemorrhagic Fever</td>
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<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Dengue</td>
<td>177</td>
<td>164</td>
</tr>
<tr>
<td>10</td>
<td>Diphtheria</td>
<td>24</td>
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</tr>
<tr>
<td>11</td>
<td>Dysentery</td>
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<td>15</td>
</tr>
<tr>
<td>12</td>
<td>Enteric Fever</td>
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</tr>
<tr>
<td>13</td>
<td>Fever with Rash</td>
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<td>31</td>
</tr>
<tr>
<td>14</td>
<td>Food Poisoning</td>
<td>395</td>
<td>265</td>
</tr>
<tr>
<td>15</td>
<td>Influenza A H1N1</td>
<td>-</td>
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<tr>
<td>16</td>
<td>Influenza A H3N2</td>
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<td>17</td>
<td>Influenza B</td>
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<tr>
<td>18</td>
<td>Jaundice</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>19</td>
<td>Kala-azar</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Leptospirosis</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>21</td>
<td>Malaria</td>
<td>39</td>
<td>35</td>
</tr>
<tr>
<td>22</td>
<td>Measles</td>
<td>294</td>
<td>231</td>
</tr>
<tr>
<td>23</td>
<td>Meningitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Mumps</td>
<td>45</td>
<td>27</td>
</tr>
<tr>
<td>25</td>
<td>Pertussis</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>Rubella</td>
<td>41</td>
<td>9</td>
</tr>
<tr>
<td>27</td>
<td>Scrub Typhus</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>28</td>
<td>Viral Fever/PUO</td>
<td>80</td>
<td>54</td>
</tr>
<tr>
<td>29</td>
<td>Viral Hepatitis</td>
<td>98</td>
<td>70</td>
</tr>
<tr>
<td>30</td>
<td>Zika virus disease</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>31</td>
<td>Others</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2679</td>
<td>1714</td>
</tr>
</tbody>
</table>
NCDC News

NCDC leads a National awareness campaign on antimicrobial resistance to mark Antimicrobial week

The World Antibiotic Awareness Week (WAAW) for 2017 was held from 13th November until 19th November, with theme as ‘Seek advice from a qualified healthcare professional before taking antibiotics’. National Centre for Disease Control (NCDC) organized and coordinated various activities during this week to raise awareness and improve understanding on Antimicrobial Resistance (AMR) amongst general public, school students, professionals (healthcare, animal/food sector, pharmaceutical industry, researchers) as well as other stakeholders.

Prior to the onset of the event a symposium was organized by NCDC and Indian Medical Association (IMA), with support from WHO Country Office for India, at the IMA Headquarters Delhi. Conducted on 11th November 2017, the symposium brought together IMA office bearers and aimed at raising awareness, standardizing messages on AMR and drafting an IMA roadmap to contain AMR in India. The event also served as a platform to officially unveil and launch the new information, education and communication (IEC) products, designed to spread AMR awareness during the WAAW 2017. The panel comprised of representatives from NCDC, IMA and WHO.

Activities during World Antibiotic Awareness week (13th – 19th November 2017)

A. Madhya Pradesh Workshop on Antimicrobial Resistance

NCDC officially kicked off the WAAW 2017 by supporting the Madhya Pradesh Workshop on AMR at Bhopal on 13th November 2017. The theme for the workshop was ‘Combatting AMR in Madhya Pradesh - Towards an Agenda for Action’. The workshop was organized by the Directorate of Health Services, Madhya Pradesh with support from NCDC, Ministry of Health and Family Welfare (MoHFW, Government of India), WHO Country Office for India and Neeti Foundation. The panel comprised of Dr Manohar Agnani (Joint Secretary, Policy, Government of India, MoHFW), Ms. Gauri Singh (Principal Secretary, Health), Dr K L Sahu (Director Health Services, Madhya Pradesh), Dr Sunil Gupta (Head, Microbiology Department & Additional Director, NCDC), and Dr Anuj Sharma (WHO Country Office for India). The workshop brought together stakeholders from human health (public and private), animal/food sector, Food and Drugs Administration, Pollution Control Board, environment, research, and state health administration, on one forum, with an aim to spread awareness on AMR and emphasize upon the importance of a cross to spread awareness on AMR and emphasize upon the importance of a cross
sectoral approach towards containing AMR. All speakers addressed the gathering during the inaugural session.

The workshop also served as a platform to engage the stakeholders and participants in brainstorming sessions for initiating development of a State Action Plan on AMR (in alignment with the Nation Action Plan on AMR containment and with due cognizance to state needs and priorities). To facilitate the development of the State Action Plan on AMR, participants were divided in six groups, based on their areas of expertise and to reflect key strategic priorities for a collaborative containment of AMR. The six groups were:- Group 1: Awareness and understanding - communications and trainings; Group 2: Knowledge and evidence - AMR surveillance and laboratories; Group 3: Infection prevention and control - human health, animals/food and community/environment; Group 4: Optimise use of antimicrobials - regulations/access & surveillance of antibiotic use, antimicrobial stewardship in humans and antimicrobial stewardship in animals/food; Group 5: Research & development, innovations and financing; and Group 6: Collaborations and convergence. Group members engaged in active discussions to formulate key focus areas, objectives and broad activities (in context to Madhya Pradesh), for each of the six strategic priorities described in the National Action Plan on AMR. Final group work was presented by the group representative (rapporteur). The outputs served as preliminary framework and require further refinement, prior to actual development of strategic action plans on AMR containment.

B. Participation in an interactive TV show “Doctors Online” hosted by National Channel “Doordarshan” at 6.30-7.00 pm on 13\textsuperscript{th} Nov 2017 on raising awareness among general public about antibiotic resistance strengthening of regulatory framework. It was attended by Dr AC Dhariwal (Director, NCDC) and Dr Lata Kapoor (Joint Director, NCDC). A number of questions related to the irrational use of antibiotics and the spread of antibiotic resistance were asked by general public. Dr AC Dhariwal and Dr Lata Kapoor replied them all by emphasizing on the importance of using antibiotics wisely and various other aspects to contain spread of AMR. They also shared various initiatives by the Indian Government, including strengthening of regulatory framework through the Red Line campaign.

C. Public Lecture and Panel Discussion on AMR

A public lecture and panel discussion on AMR with the theme ‘Use Antibiotics with Caution’ was organized at the All India Institute of Medical Sciences (AIIMS), New Delhi on 14\textsuperscript{th} November 2017. The panelists included Dr Randeep Guleria (Director AIIMS), Dr AC Dhariwal (Director, NCDC), Dr Rita Sood (Medicine Department, AIIMS), Dr Arti Kapil (Microbiology Department, AIIMS), Dr Rajesh Malhotra (Orthopedics Department, AIIMS and Chief, AIIMS Trauma Centre), Dr Rakesh Lodha (Pediatric Department, AIIMS), Dr Anoop Daga (Department of Hospital Administration, AIIMS), and Dr Karan Madan (Pulmonology Department, AIIMS). The audience comprised of general public and nursing staff. All speakers addressed the gathering during the inaugural session.

Keynote address was given by Dr Randeep Guleria, as he emphasized on the importance of Swachh Bharat to achieve a Swasth Bharat. Dr Guleria stressed on the urgent need to save the efficacy of the existing antibiotics with emphasis on infection prevention & control measures as the most cost-effective interventions to control the AMR problem. Dr AC Dhariwal shared various initiatives by the Indian Government, including through the Red Line campaign, with the audience.
Need for public health measures like hand washing to control AMR transmission, as well as importance of public awareness, were also emphasized.

Awareness was raised through various informative products (posters, standees and plaques) bearing specific messages like ‘how misusing and overusing antibiotics puts us all at risk’ and ‘everyone has a role to play’. Technical and logistical support was provided by WHO, FAO and USAID for the event. NCDC also shared pamphlets with key messages with the attendees. The public lecture generated keen interest amongst the attendees as was evident by interactive rounds of question-answer sessions between the general public and panelists.

**D. AMR awareness in Schools**

The faculty from the National Centre for Disease Control visited various schools of Delhi to increase awareness of AMR among the students and conducted an interactive session and a quiz on antibiotics and antimicrobial resistance for students of classes 6 to 10.

Approximately 1700 children from three schools namely Gujarati Samaj Senior Secondary school, Rajpur Road, Civil Lines (Dr Ankur Garg, Dr Suneet Kaur and Dr Arti Bahl visited on 16.11.2017), Rajkiya Pratibha Vikas Vidyalaya (Dr Ankur Garg and Dr Arti Bahl visited on 17.11.2017) and Bengali Senior secondary School, Civil Lines (Dr Tanzin Dikid, Dr Shallu Kathuria, Dr Suneet Kaur and Dr Arti Bahl visited on 17.11.2017) participated in the event. Awareness was raised through various informative products (posters and standees) bearing specific messages like ‘how misusing and overusing antibiotics puts us all at risk’ and ‘everyone has a role to play’. During the activity, prizes such as special mugs bearing the theme “Think Twice Seek Advice” and the T-Shirts from FAO enticed with AMR awareness message “Use antibiotics wisely” were distributed to the students giving correct answers as a token of appreciation. The students clearly understood the importance of self-hygiene and hand washing, steps for hand washing. The school awareness activities are continuing in different schools of Delhi.
E. CME Programme at LHMC

A CME program was jointly organized by NCDC, Lady Hardinge Medial College (LHMC) and CDC India, at LHMC on 18th November 2017. Theme for the CME was ‘Rational Use of Antimicrobials in Clinical Care Settings’ and the objectives were to generate awareness on AMR, understand the importance of the Hospital Antimicrobial Stewardship Program (AMSP) as well as discuss rational use of antimicrobials for AMR containment, among medical students. The esteemed panel comprised of Dr Kayla Lasserson (Director, CDC India), Dr NS Dharmshaktu (Special Advisor, MoHFW), Dr Rajiv Garg (Director, LHMC), Dr AC Dhariwal (Director, NCDC), Dr Sunil Gupta (Head, Microbiology Department & Additional Director, NCDC) and Dr Ravinder Kaur (Professor & Head, Microbiology Department, LHMC). All speakers addressed the gathering during the inaugural session.

Chief Guest, Dr NS Dharmshaktu, appreciated Indian Government’s efforts in addressing AMR at a national level and highlighted the critical role of all sectors in combating the problem. Dr AC Dhariwal acknowledged Dr Dharmshaktu’s leadership in driving national health agendas as well as support extended by CDC India under Dr Kayla Lasserson’s direction. The critical role of regulatory agencies in drafting and implementing policies, as well as importance of operational research & campaigns (such as red line initiatives) for AMR containment, were highlighted by Dr Dhariwal. Dr Kayla Lasserson was pleased at CDC partnership with NCDC for consolidation of efforts on AMR containment.

Activities for the second half of the CME comprised of scientific sessions and a panel discussion. The scientific sessions commenced with a presentation by Dr Sunil Gupta describing India’s response towards AMR containment. Dr Gupta acknowledged the political commitment of Hon’ble Prime Minister of India and Dr JP Nadda (Union Minister of Health and Family Welfare), and highlighted various awareness activities organized by NCDC during WAAW 2017. Various other presentations were also very educative as they described principles of rational prescription of antibiotics, important role of Hospital Antimicrobial Stewardship Program (AMSP) as well as trends on antibiotic resistance in bacteria. A brainstorming round of quiz, was organised and winners were presented with special mugs bearing the theme “Think Twice Seek Advice” for disseminating information on AMR.

The scientific sessions were followed by a panel discussion on “Current issues related to AMSP in Public Healthcare Settings” that was moderated by Dr Lata Kapoor (Microbiologist & Joint Director, NCDC). A healthy discussion was followed by various recommendations put forth by the panel, including regular training of nursing
staff and resident doctors on Infection Control Practices, as well as need for updated hospital antibiograms to monitor hospital acquired infections.

(Contributed by Dr Sunil Gupta and NCDC AMR team)
Technical working group and advisory group meeting held to plan rollout of National Programme for Prevention and Control of Viral Hepatitis

NCDC initiated integrated activities on prevention and control of viral hepatitis

This initiative was conceptualized by the National Steering Committee on Viral Hepatitis, which was constituted under the Chairmanship of the Secretary (H&FW) with the following terms of reference

- To review the current status of viral hepatitis & responses, identify opportunities & challenges in mounting health. care response to viral hepatitis
- To develop a National Action Plan for the Prevention, Care & Treatment of Viral Hepatitis with clear vision, goals, strategy, targets, timelines and indicators to measure progress.
- To identify possible synergies between prevention & management of viral hepatitis & other health programmes.
- To align the proposed hepatitis response in India with other national health & development strategies, plans & targets.
- To provide guidelines for developing surveillance of viral hepatitis.
- To develop guidelines for programme for training health care personnel & educating community about hepatitis.
- To recommend measures to streamline elimination of transmission of vaccine preventable viral hepatitis.

The working groups to develop the National Action Plan on Viral Hepatitis was formalised in the 1st meeting of the National Steering Committee on Viral Hepatitis held on 25th July 2017. The 10 working groups were:

- Surveillance (acute, chronic and sequelae surveillance).
- Injection safety and infection control.
- Safety of blood and blood products.
- Immunization.
- Laboratories.
- Care, Support and Treatment.
- Awareness and communication.
- Research and Innovation.
- Training and Capacity Building.
- Water and sanitation.

Objective:
The 1st meeting of the working groups on viral hepatitis was held on 14th September 2017 at NCDC, Delhi where the constitution and terms of reference of 10 groups were finalized and it was decided that a draft national action plan on prevention and control of viral hepatitis be framed.

The draft national action plan for prevention and control of viral hepatitis was finalised in the meeting of the working groups under the National Steering Committee on viral hepatitis on 12th & 13th October, 2017.

The proposal for an integrated initiative for prevention and control of viral hepatitis was approved in the Empowered Programme Committee (EPC) meeting held on 22nd December, 2017.

Justification of the initiative

- India’s Global commitment.
  SDG 3.3 “… Combat hepatitis by 2030”
- High morbidity and mortality due to acute as well as sequelae.
- Lack of nationally representative data and better estimates of disease burden.
- States already rolling out independent of national standardized treatment guidelines.

Multiple activities across ministries are being carried out for prevention and control of viral hepatitis & under various divisions in the Ministry of Health &FW like immunization, injection safety& infection control, safety of blood and blood products, harm reduction in key populations, Swachh Bharat Abhiyan, surveillance of viral hepatitis, safe drinking water and sanitation. However there are gaps in terms of lack of facilities for diagnosis and management of Viral
Hepatitis, IEC among general population and health care workers and integration of the existing interventions.

**Aim & Objectives:**

**Aim:** To reduce morbidity and mortality due to viral hepatitis

- To increase the awareness and take promotive prevention measures through various stake holders.
- To capacitate the health sector response to viral hepatitis, including early diagnosis, management and surveillance.
- To build capacity of health care providers through structured training programs.

The targets under this initiatives are as follows

<table>
<thead>
<tr>
<th>Number of People tested for Hepatitis</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,60,000</td>
<td>10,10,000</td>
<td>30,10,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of labs with capacity to do hepatitis testing</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>360</td>
<td>665</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Treatment centers</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

**Strategies:**

- Preventive interventions:
  - Awareness generation.
  - Immunization of hepatitis B.
  - Safety of blood and blood products.
  - Injection safety, safe socio-cultural practices and infection control.
  - Safe drinking water, hygiene and sanitary toilets.
  - Strategy 2: Co-ordination and collaboration with different ministries and departments.

- Increasing access and promoting diagnosis & providing treatment support for patients of hepatitis C

- Building capacities at national, state and district levels

Under this initiative a technical resource group on care, support and treatment was constituted and the 1st meeting was held on 27th & 28th February, 2018 at NCDC, Delhi to deliberate on development of the national treatment guidelines and the operational guidelines for treatment of viral hepatitis.

**NCDC nodal centre for Viral Hepatitis surveillance in the country**

The programme has been extended for 3 years (2018-20) with a budget estimate of 38.37 cr by the Standing Finance Committee (SFC), however budget will be available in 2018-19.

**Objectives:**

To describe the distribution of virus-type specific hepatitis, and their risk factors in a given settings.

**Strategies:**

A comprehensive surveillance for hepatitis should be rolled out in phases and in the first phase surveillance will be done only for acute viral hepatitis.

- To establish laboratory network for surveillance of viral hepatitis in different geographical locations of India.

- To strengthen the laboratories in terms of facility, training of manpower for quality testing. Samples will be sent to the reference laboratory for external quality check.

- To investigate outbreaks of viral hepatitis in co-ordination with IDSP.

- To develop technical material for generating awareness among healthcare providers and in the community about waterborne and blood borne hepatitis.

- The patient will be linked with treatment facility for hepatitis C if required and management of acute cases.

**Expected output:**

- Proportional distribution of the virus types, for the recent infections
- Description of trend of recent infections, by type
- Association of type specific acute viral hepatitis, with putative risk factors, which will help generate hypothesis for further investigation
A Technical Resource Group (TRG) on surveillance of viral hepatitis comprising of Gastroenterologists, Epidemiologists, Microbiologists and representatives from NACO, ICMR, WHO, CDC has been constituted. Two meetings have been conducted during 2017-18 to develop the surveillance plan and the operational guidelines.

A network of nine laboratories have been established by signing the MoU.

Recruitment of some of the sanctioned manpower on contract basis at NCDC as well as the sentinel sites has been done.

A National level training of trainers (ToT) for surveillance of viral hepatitis was held for the clinicians and microbiologists at Delhi on 9th November 2017

(Contributed by Dr Sandhya Kabra and Viral Hepatitis team)

NCDC organizes a workshop on effects of climate change on health for state health departments

National Action Plan on Climate Change & Human Health (NAPCCHH) prepared by Health Ministry is an effort to make climate resilient health care services. This requires integrated approach with health, non-health programmes and other missions for reducing impacts of climate change. But India is diverse in term of health statistics which vary from state to state depending on geographic conditions, weather, resources, infrastructure and demographic. The States/ UTs are expected to plan/update their related programmes related to human health by identifying a nodal officer from Dept of Health, constitution of team of experts from state departments like Health, Environment, Pollution Control Board, Meteorological division, Disaster Management Authority etc. Hence regional consultations had been conducted to address this issue.

The Centre for Environmental and Occupational Health at National centre for Disease Control organized regional consultations in South, North, East-Northeast and West-Central in year 2017. The bureaucrats along with senior officials of the states witnessed these meetings. The comments were invited on NAPCCHH in these regional consultations. Senior officials in health departments, institutes and other ministries of state and UTs were sensitized on the issue of health impacts of climate parameters. The states and union territories are now in the process of drafting their specific action plan for climate change and human health.

The action points identified for each state and Union Territories were: a) identification of Nodal officer for Climate Health Services, b) establishment of Environment Health Cell in health department, c) constitution of Expert Group involving relevant stakeholders. The states and UTs are expected to list the climate sensitive illnesses, their geographical risk mapping, vulnerability assessment, micro-planning related to action plan and logistics and laboratory and other related services.

The regional consultations were successful in terms of participation and identification of a dedicated nodal officer and were in agreement with overall content and broad design of national action plan prepared by NCDC- MoHFW.

(Contributed by Dr Shikha Vardhan)
National NCD Survey in seven Northern states

According to WHO estimates of 2010, 60% of all deaths in India are attributed to Non Communicable Disease (NCDs). The four identified major NCDs are Cardiovascular Diseases (CVD), Diabetes, Chronic Respiratory Diseases (Chronic Obstructive Pulmonary Diseases and Asthma) and Cancers. The 15 leading risk factors based on Burden of disease 2010, attributing to NCDs, are dietary risks, household air pollution, smoking, high blood pressure, childhood underweight, occupational risks, ambient particulate matter pollution, high fasting blood glucose, iron deficiency, alcohol use, physical inactivity, suboptimal breastfeeding, high body mass index, high cholesterol and sanitation.

Government of India with support from the WHO Country Office (India) finalized the 10 National targets and 21 indicators to monitor the risk factors, morbidity & mortality due to NCDs and system preparedness for management of NCDs. The year 2010 will serve as a baseline for assessing progress made for achieving the NCD targets in 2015, 2020 and 2025. The list of 10 targets and 21 indicators is given in Table 1.

<table>
<thead>
<tr>
<th>S.No</th>
<th>NCD Indicators</th>
<th>Targets:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposures and Outcomes: Relative reduction from 2010 levels</td>
<td>2020</td>
</tr>
<tr>
<td>1.</td>
<td>Unconditional probability* of dying between aged 30-70 from cardiovascular disease, cancer, diabetes, or chronic respiratory disease</td>
<td>10%</td>
</tr>
<tr>
<td>2.</td>
<td>Cancer incidence, by type of cancer, per 10,00.00 population</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Age standardized prevalence of current alcohol consumption in adults aged 18+ years</td>
<td>5%</td>
</tr>
<tr>
<td>4.</td>
<td>Age standardized prevalence of obesity among adults aged 18+ years (defined as body mass index greater than 30 kg/m²)</td>
<td>No mid-term target</td>
</tr>
</tbody>
</table>
5. Prevalence of obesity in adolescents (defined as two standard deviation BMI for age and sex overweight according to the WHO Growth References) | No mid-term target | Halt the rise in obesity
---
6. Age standardized prevalence of raised blood glucose/ diabetes among adults aged 18+ years (defined as fasting plasma glucose value 126 mg/dl or on medication for raised blood glucose) | No mid-term target | Halt the rise in diabetes
---
7. Age standardized prevalence of insufficient physical activity in adults aged 18+ years (defined as less than 150 minutes of moderate-intensity physical activity per week, or equivalent) | 5% | 10%
---
8. Prevalence of insufficiently active adolescent (defined as less than 60 minutes per day of physical activity) | 5% | 10%
---
9. Age standardized prevalence of raised blood pressure among adults aged 18+ years | 10% | 25%
---
10. Age standardized mean adult (aged 18+) population intake of salt per day | 20% | 30%
---
11. Age standardized prevalence of current tobacco use (smoking and smokeless) among adult aged 18+ years | 15% | 30%
---
12. Prevalence of current tobacco use (smoking and smokeless) among adolescents | 15% | 30%
---
13. Age standardized prevalence of adults (aged 18+ year) consuming less than 5 total servings (400 gm) of fruit and vegetables per day | No targets set
---
14. Proportion of household using solid fuels as a primary source of energy for cooking | 25% | 50%
---

**Health System Indicators: No baselines are needed for these. These are absolute targets**

| 15. Proportion of eligible adults (defined as aged 40 years and older with a 10 year CVD risk greater than or equal to 30% including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycemic control) to prevent heart attack and strokes | 30% | 50%
---
16. Availability and affordability of quality, safe and efficacious essential NCD medicines including generics and basic technologies (in both public and private facilities) | 60% | 80%
---
17. Vaccination coverage against hepatitis B virus monitored by number of third dose of Hep-B vaccine (Hep B3) administered to infants | No target set
---
18. Access to palliative care assessed by morphine- equivalent consumption of strong opioid analgesics (excluding methadone) per death of cancer | No target set
---
19. Proportion of women aged 30-49 yrs screened for cervical cancer at least once in lifetime | No target set
---
20. Proportion of women aged 30 yrs and above screened for breast cancer by clinical examination by trained health professional at least once in lifetime | No target set
---
21. Proportion of high risk person (using tobacco, smoking and smokeless and betel nut) screened for oral cancer by examination of oral cavity | No target set
---

**Table1. Identified Sources for information on the National NCD Target/Indicator Monitoring**

*National NCD Diseases monitoring survey, India 2015-16*

Indian Council of Medical Research (ICMR) is identified as the nodal agency for monitoring, evaluation and surveillance of the national NCD monitoring framework by conducting the regular and timely National NCD survey. Preparation of the first such National NCD survey started in 2014-15 with the following objectives:
**Primary objective**

1. To generate country/national level estimates of key NCD related indicators (risk factors and health system response) identified in the national NCD monitoring framework for the year 2015-16.

**Secondary objectives**

1. To create a central and regional pool of resources (protocols, standard tools, training manuals etc.) to support conduct of similar surveys at state level.

Central Co-ordination Unit (CCU) which includes heads of the teams from the five core technical agencies/teams – AIIMS, New Delhi, NIMS, New Delhi, MDRF, Chennai, NIE Chennai and ICMR focal point, are coordinating the National NCD survey nationwide. CCU has identified ten implementing agencies/Institutes for implementing this survey all over the India. Centre for NCD, NCDC is one of the implementing agencies in seven northeastern states/UTs of India namely, J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh and Delhi.

All over the India, 600 Primary Sampling Unites (PSU), 300 each in rural and urban areas, have been chosen through multistage and PPS (population proportion to size) sampling methods. Within each PSU 20 households have been selected through circular systematic random sampling method. Within the selected household all adolescent within age of 15-17 years and one adult between 18-69 years will be selected for conducting the interview on the four major behavioral risk factors (Tobacco, alcohol, physical inactivity and unhealthy diet). Anthropometric (BMI and waist circumference) and biochemical measurements (fasting blood glucose estimation through capillary methods and urine sample for urinary sodium estimation in some selected PSUs) will be done for assessing metabolic risk factor (obesity, high blood pressure and blood sugar). Health facilities from down (primary health care) to top (District Hospital) including private health facility, catering to the population of the selected PSU, are also being surveyed regarding their preparedness (in terms of human resources, infrastructure, equipments, drugs and logistics) for the management of the NCD patients. Uniqueness of the survey is that all the data during the survey is being collected in the handheld electronic devices which make whole process fast and at the same time reduces the chances of error.

**Centre for NCD, NCDC is implementing agency**

Centre for NCD, NCDC has signed a MoU with ICMR as per ICMRs rules and regulations for implementation of the survey in 52 primary sampling Unit (PSU) in Seven States /UTs. National TOTs for implementation of the survey was done jointly by AIIMS & NCDIR (ICMR Institute) for all ten implementing agencies in July 2017. Regional TOTs was done for NCDC Delhi and Assam team together in September 2017. NCDC has stated the NNMS implementation since 23 October 2018. Till date 48 PSU have been covered in J&K, Himachal Pradesh, Uttarakhand, Punjab, Haryana and Chandigarh. During the implementation of the NNMS following were the roles and responsibilities of Centre for NCD, NCDC

- Preparation of TORs of research staff and their recruitment (Research Associate, Medical Social Worker and Lab technician) Training of the team.
- Identification of the collaborators in the respective states to better coordination and handling of the any local issues if arises.
- Coordination with states administrative and health officers/officials for smooth implementation of the survey.
- Translation of the questionnaires in local language for better understanding and results.
- Vehicular arrangement for local movement of the team members.
• Equipments and logistics management for the survey.
• Administrative and financial management of survey.
• Supervision of data collection.

• Data management.
• Storage and transportation of urine samples to centrally identified laboratories.

Regular reporting to Central Coordinating Unit (CCU)

(Contributed by Dr. Rinku Sharma, NCDC)

NCDC marks World Rabies Day

World Rabies Day is celebrated annually to raise awareness about rabies prevention and to highlight progress in defeating this horrifying disease. Today, safe and efficacious animal and human vaccines are among the important tools that exist to eliminate human deaths from rabies while awareness is the key driver for success of communities to engage in effective rabies prevention.

World Rabies Day 2017 marks the announcement of the biggest global anti-rabies initiative. This year the theme of World Rabies Day was “Rabies Zero by 2030”.


World Rabies Day 2017 was celebrated on 4th October, 2017 by NCDC. Director, NCDC inaugurated the World Rabies Day, 2017.

Dr. Naveen Gupta presented on the topic World Rabies Day-2017 “Rabies Eliminate by 2030”. Dr. Anurag Aggarwal, Associate Professor, MAMC, Delhi presented the Epidemiological analysis of Rabies patient admitted in Maharishi Valmiki ID Hospital. Dr Naveen Masand, SMO, MVID Hospital, Pooth Khurd New Delhi presented about Management of Animal bites at Maharishi Valmiki ID hospital. Dr. H. K. Gohil, MO I/C MVID Hospital, Kingsway Camp, Delhi presented “Epidemiological analysis of Rabies patient admitted in Maharishi Valmiki ID hospital.

A photograph competition was organized on good practices and/or bad practices with regard to prevention and control of rabies. Dr. Shruti Arora, Medical Officer on behalf of Sanjay Gandhi Memorial Hospital, GNCT of Delhi got first prize in Photograph Competition with a theme “Rabies Se Ladai, Tikakaran Va Safai”

The program ended by vote of thanks by Dr. Monil Singhai, Assistant Director.
National Standing Committee on Zoonosis takes stock of zoonotic diseases of public health importance

The 8th meeting of the Standing Committee on Zoonosis was held on 11th Dec, 2017 at DGHS Conference, Ministry of Health & Family Welfare, Nirman Bhawan, New Delhi under the Chairmanship of Dr. Jagdish Prasad, Director General of Health Services, Government of India, New Delhi. The Standing Committee on Zoonosis was constituted on 10th August, 2006. It has the members from Ministry of Agriculture, IVRI, ICMR, CRI, Kasauli, Wildlife Institute of India, Pasteur Institute of India, Haffkins Institute, and Members from State Governments, Director, Health services, Government of Gujarat, Madhya Pradesh, Kerala, Uttar Pradesh, Tamil Nadu and Director, Animal Husbandry & Veterinary Services, Government, of Haryana, Government, of West Bengal, Deputy Director General (Planning), GB Pant University, Pant Nagar and Joint Director and Head, Zoonosis Division, NCDC.

The meeting was attended by representatives from Ministry of Agriculture, Indian Council of Medical Research, World Health Organization, Indian Veterinary Research Institute Bareilly (UP), National Research Centre on Equine, Hissar (Haryana), National Institute of Veterinary Epidemiology & Disease Information, Bengaluru (Karnataka), Haffkine Institute, Mumbai (Maharashtra), National Institute of High Security Animal Diseases, Bhopal (MP), College of Veterinary Sciences, Udham Singh Nagar (Uttarakhand) and State Government representatives of Gujarat, Madhya Pradesh, Uttar Pradesh, Kerala, Haryana, Chandigarh, West Bengal, Tamil Nadu, etc.

The meeting had an expert deliberation on various issues pertaining to the prevention and control of Zoonosis in India. The discussions were held among the stakeholders regarding importance of establishing inter-sectoral coordination of various sectors viz. Human Health, Animal Husbandry, Wild Life for prevention and control of zoonotic diseases.

The Chairperson, SCZ, emphasized that prevention and control of outbreak of zoonotic disease is a multi-sectoral concern and hence “One health” involving multi-sectoral disciplines is a very important comprehensive approach to attain better health for humans, animals and environmental health.

The recommendations emerged to further refine and streamline the collection of data on rabies, reprioritization of zoonotic disease of public health importance, update on Inventory of labs and experts on ZPHI will be continued, the representative's form Animal husbandry to share the available information with stakeholders, information to be exchanged about AES and Influenza and other zoonotic diseases situation between health and veterinary sector.

The vote of thanks to the chair was presented by Dr. Naveen Gupta Head Zoonosis Division.
Expert lecture on Ecology, Entomology and Epidemiology of Vector borne diseases

Centre for Medical Entomology & Vector Management (CME&VM) division organized a guest on “Entomology, Ecology, Ethology and Epidemiology in Disease Investigation” By Padmashree Prof. P. K. Rajagopalan on 16th October, 2017. Padmashree Dr P.K. Rajagopalan Formerly joined the Indian Council of Medical Research, first as Entomologist at Virus Research Centre, Poona, later as Senior Scientist with WHO/ICMR project, and retired as Director of Vector Control Research Centre, Pondicherry (October 2017). Considering his eminence and pioneer in the field of Vector Control and Epidemiology of Vector Borne Diseases, a wide range of officers from WHO, CDC, NVBDCP, ICMR, NIMR, NIHFW, MCD, AIIMS, Delhi Administration and faculties/scholars/students from various Medical & different colleges of Delhi came to attend this informative & scientific lecture. About 200 participants attended the programme.

Dr. Rajagopalan had published 199 research papers in national and international journals. He is the member of many experts committees of national and international levels. He worked extensively on arthropod vectors of Medical importance, Japanese Encephalitis, Epidemiology of Kyasanur Forest Disease, Genetic control of mosquitoes, Elimination of Brugian Malayan Filariasis and Malaria control for over three decades.

Dr. Rajagopalan conferred the honor of Padmashree by Government of India in 1990. He was awarded with “P.N.Raju Oration Award” of ICMR in 1980, the prestigious “Om Prakash Bhasin Award” for Science and Technology in 1985; “Gold Medal” from Charles University, Prague in 1988. He elected as a fellow of Britain’s prestigious Society of Biology and The Royal Society of Tropical Medicine. Life Time Achievement award was confers him by the Association of Medical Microbiologists of India; National Congress of Parasitology and Department of Biotechnology, Anna University; SRM University, Chennai. While acknowledging his contribution in Advancement of Science and public health, the Indian Society for Malaria and Other Communicable Diseases and Indian Association of Epidemiologist awarded him with Life Time Achievement Award on the occasion of 11th Joint Annual Conference of ISMOCD & IAE held at Bengaluru on 10th June, 2016.
Trend of lab confirmed Influenza A H1N1 2013-17

National Centre for Disease Control (NCDC), Delhi, through its Integrated Disease Surveillance Programme (IDSP) undertakes surveillance for Influenza like Illness (ILI) and Severe Acute Respiratory Infections (SARI) in India. The daily data on Seasonal Influenza A (H1N1) is collected, collated, and analysed at the Central Surveillance Unit of IDSP. The States/UT’s wise weekly status of seasonal Influenza A (H1N1) is made available in the public domain of the IDSP website www.idsp.nic.in.

To enhance the preparedness by the States/districts, MOHFW has provided guidelines on categorization of patients, treatment protocol, vaccination, and guidelines on Ventilatory management which are also available on the website of the Ministry (www.mohfw.nic.in) and NCDC (ncdc.gov.in). To further strengthen the efforts in laboratory testing, IDSP assisted 12 Laboratories by providing laboratory support in terms of testing, quality assurance, technical guidance, providing viral transport mediums and diagnostic reagents. Laboratory support is further augmented by the diagnostic capacity supported by ICMR through its Virus Research Diagnostic Laboratories to test clinical samples.

Seasonal Trend

In 2017, the increase in cases was observed from 1st January to 12th March, 2017. Thereafter, increasing trend was observed from 12th June to 3rd September, 2017. A total of 38811 cases (highest no. of cases in the month of August) of seasonal Influenza (H1N1) and 2266 deaths were reported in 2017. The most affected States/UT’s were Gujarat, Maharashtra, Uttar Pradesh, Tamil Nadu, Rajasthan, Karnataka, Delhi, Telangana, Kerala, Madhya Pradesh, West Bengal, Andhra Pradesh, Odisha, Chhattisgarh, Punjab, Haryana, Goa, Assam, Uttarakhand, Puducherry and Kashmir Division (J&K). There was an increase in trend of cases observed from Rajasthan from 49th week of 2017 (ending on 10th December, 2017), which started showing decline trend of seasonal influenza (H1N1) cases from 2nd week ending on 14.01.2018.

In 2018, total 1257 cases and 126 deaths have been reported till February 2018.