From The Desk of the Director

This issue of NCDC Newsletter come at a time when on one hand the world is grappling with the spread of Zika Virus Disease to newer territories, India has formally announced a resounding victory on a bacterial disfiguring and disabling condition called yaws. A bittersweet moment, perhaps a reminder that the public health fraternity can never rest long on its laurels. So we must continue to march-on in public service.

Dr. S. Venkatesh
Director, NCDC

The lead story in this issue of the newsletter focuses on the World health Day theme of “Beat Diabetes”. India has the second highest number of diabetics in the world. It is time we wake up to this ticking time bomb and get our prevention and control strategies in order. We are also witnessing an epidemiological shift with chronic non-communicable diseases and disabilities being on the rise. An entire cluster of villages in Odisha has seen an increased prevalence of disability. This was investigated by our team of experts and is highlighted in our outbreak investigation section. The endeavors of our Prime Minister have led to recognition of Yoga as a holistic practice for well being by the United Nations. To mark the second International day of Yoga on 21 June, NCDC organized a demonstration session. This and many other activities of NCDC are covered under the NCDC news section.

I hope you find this issue of NCDC newsletter interesting. I always look forward to your comments and valuable feedback.

Lead Story

Beat Diabetes: Strategies and way forward for India

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels [ADA 2008] Diabetes is becoming a particular concern as it is one of the major causes of premature illness and death worldwide, the prevalence is increasing in every country in the world, and the toll is climbing in terms of human lives as well as the costs to society.

There are two type of diabetes.

1. **Type 1 diabetes** (insulin dependent) is due to autoimmune mediated destruction of β-cells of the pancreas, resulting in absolute insulin deficiency [ICMR Guidelines]

2. **Type 2 diabetes** (non insulin dependent) is characterised by insulin resistance and/ or abnormal insulin secretion [ICMR Guidelines]
Type 2 diabetes accounts for over 90% and Type 1 accounts for up to 10% of all diabetes. As per WHO, NCD accounted for 0.98 crore deaths in the country in 2014 and of all deaths 2% are due to diabetes annually. According to International Diabetes Federation (2014), India has 6.51 crore diabetes cases which is second highest number of diabetics in the world and is projected to have 10.9 crore affected persons by 2035. The prevalence of diabetes in the country is 9%. It is estimated that there are another 3.5 crore undiagnosed cases of diabetes and double is the burden of prediabetes.

Diabetes is a leading cause of cardiovascular diseases, the proportional mortality for which is as high as 26%.

Ironically Indians succumb to diabetes, high blood pressure and heart attacks 5-10 years earlier than their western counterparts, during their most productive years. This leads to considerable loss of productive years, to the country.

Epidemiological studies have repeatedly demonstrated that low consumption of fresh fruits and vegetables along with other unhealthy diet, increasing use of tobacco, and higher prevalence of sedentary lifestyle, overweight and obesity are prominent, modifiable risk factors for the development of insulin resistance, metabolic syndrome, and diabetes.

Treatment of diabetes underlines both Non-pharmacological and pharmacological interventions. Non-pharmacological management is the cornerstone for management of diabetes mellitus. This includes healthy diet and regular physical activity. The main aim of dietary management is to maintain ideal body weight, euglycemia, and desirable lipid profile and prevent and postpone diabetes related complications regular physical activity is essential since it has several benefits such as improvement in insulin sensitivity, reduction in hypertension, reduction of weight, improvement of lipid profile, improvement of cardiac function and increase in bone density. Pharmacological treatment comprises of various anti-diabetic agents in the form of medical drugs as well as insulin.

To contain the increasing burden of Non-Communicable Diseases in India, Ministry of Health and Family welfare, Government of India, launched the National Programme on Prevention and Control of Diabetes, Cardiovascular diseases and Stroke (NPDCS) in year 2010-2011 with the following objectives.

- Prevent and control common NCDs through behaviour and life style changes.
- Provide early diagnosis and management of common NCDs through opportunistic screening.
- Build capacity at various levels of health care for prevention, diagnosis and treatment of common NCDs.
- Train human resource within the public health set-up including doctors, paramedics and nursing staff to cope with the increasing burden of NCDs.
- Establish and develop capacity for palliative and rehabilitative care.

In the 12th five year plan (2012-2017), the program was integrated with National Health Mission and is being implemented through existing public health system to ensure long-term sustainability of the interventions. Following are the strategies of NPCDCS.

- Health promotion for healthy lifestyles that preclude NCDs and their risk factors.
- Specific prevention strategies which reduce exposure to risk factors.
• Early diagnosis through periodic/opportunistic screening of population and better diagnostic facilities
• Infrastructure development and facilities required for management of NCDs
• Human resources and their capacity building for prevention and treatment of NCDs
• Establishment of emergency medical services with rapid referral systems to reduce disability and mortality due to NCDs
• Treatment and care of persons with NCDs including rehabilitation and palliative care
• Health legislation and population-based interventions through multi-sectoral approach for prevention of NCDs
• Building evidence for action through surveillance, monitoring and research

Way Forward

The Government should consider a massive investment and effort to prevent and control NCDs and their risk factors in the coming years. Health promotion and primary prevention need to be given more attention to reduce the incidence of Diabetes/NCDs and their risk factors; promote healthy lifestyle through effective education and public engagement. Some of the steps in the direction to achieve the above are:

• Development of IEC package compiling valid information to foster widespread, sustained and accurate statistics on diabetes and NCDs and advance accurate media coverage and improve awareness on Diabetes/NCDs, risk factors, and management with emphasis on healthy lifestyle
• Emphasize population-based interventions through integrated and comprehensive approaches on prevention from exposure to risk factors, specific measures at individual and family levels, early diagnosis through screening and better diagnostic facilities, improved capacity for management and universal access to health services
• Empowerment of the communities as a cost-effective public health strategy in the direction to promote early diagnosis, treatment compliance, self care among patients with diabetes, that will improve glycemic control and reduce complications
• Multisectoral actions (such as agriculture, education, finance, information, sports, urban planning, trade, transport) and multi-stakeholder involvement (including governments, civil society, academia, the private sector) to address NCDs and their underlying social determinants and risk factors
• A target/outcome oriented robust surveillance system to monitor the trends of NCD and to assess the effectiveness of the programme.

A life-course approach is key to prevention and control of NCDs, starting with maternal health, including preconception, antenatal and postnatal care and maternal nutrition; and continuing through proper infant feeding practices, including promotion of breastfeeding and health promotion for children, adolescents and youth; followed by promotion of a healthy working life, healthy ageing and care for people with NCDs in later life.

(Contributed by Dr Sonia Gupta, NCDC)
Epidemiological investigation of clustering of disability in four villages of Nayagaon district, Odisha, April 2016

NCDC conducted an epidemiological investigation into the likely cause(s) of disability in four villages of Odaon block in Nayagarh district of Odisha state was done on the request of Ministry of Health & Family Welfare. A central team which included members from National Centre for Disease Control and office of Regional Director Odisha, Regional office of Health & Family Welfare, was formed and team visited the concerned place in April, 2016. The investigation was conducted with the objective to assess the burden and pattern of disability among the four villages (Chadiapalli, Gudiapalli, Hariharpur and Panchrida Manpur) of Nayagarh District and ascertain its likely cause.

Methodology

Quantitative study: Rapid Household Survey (RHS) in all four villages (Chadiapalli, Gudiapalli, Hariharpur and Panchrida Manpur) of Nayagarh District for identification of affected individuals with disability verified by a clinical team. Information regarding the house to house survey for the identification of the individuals with disability and their verification were conveyed to the community leaders, Sarpanch of the villages, sector supervisor, auxiliary nurse midwives, multi-purpose workers, ASHAs, and anganwadi workers. A total of 10 teams were formed for conducting the RHS. Each team included AYUSH doctors, auxiliary nurse midwife, sector supervisor or multi-purpose worker as the team leaders and ASHA and anganwadi worker as supportive team members. The teams were briefed on the procedure to be followed during data collection, marking of households and data collection tool.

A working case definition of different types of disability (in seeing, in hearing, in speech, in movement, mental illness, multiple disability, any other) was formulated by a clinical team which included a paediatrician, physician, ophthalmologist, audiologist, ENT specialist and epidemiologist.

Three types of questionnaire were used:

- Household questionnaire: To study the demographic pattern of the community and identification of persons with disability
- Individual questionnaire: Identified individuals with disability were assessed to document the type of disability and cause of disability
- ANC Questionnaire: for assessment of antenatal care

Numbering of houses done by the RHS team (using the same methodology which used in polio house to house round, D was used for disability), for avoiding missing and duplicacy of the cases.
Qualitative study

- In-depth interviews were conducted with community leaders, ANM and ASHA and Health staff of CHC Sarankul
- Observation of environmental, occupational and local food habits by the team during visit

Lab Investigation:
Testing of fluoride level in urine samples and water samples was carried out.

Results: The central team screened 5,877 individuals. Out of them 187 (3.18%) individuals were identified to have been suffering from any type of disability. Maximum rate of disability was found in Chadiapalli village (4.09%) followed by Godiapalli (2.55%), Hariharpur (1.73%) and Panchrida Manpur (1.08%)

Table 1. Village wise distribution of the individuals with disabilities

<table>
<thead>
<tr>
<th>Name of the village</th>
<th>No. of Person with disability</th>
<th>Population</th>
<th>Disability Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chadiapalli</td>
<td>64</td>
<td>1564</td>
<td>4.09</td>
</tr>
<tr>
<td>Godiapalli</td>
<td>37</td>
<td>1450</td>
<td>2.55</td>
</tr>
<tr>
<td>Hariharpur</td>
<td>37</td>
<td>2137</td>
<td>1.73</td>
</tr>
<tr>
<td>Panchrida Manpur</td>
<td>49</td>
<td>4510</td>
<td>1.08</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
<td>9661</td>
<td>1.935</td>
</tr>
</tbody>
</table>

Disability was twice more common among males (69.2%) as compared to females (30.8%). 41.2% (77) were illiterate. Commonest type of disability among all the villages was locomotor (78; 41.7%) followed by hearing (50; 26.7%), mental (42; 22.4%), multiple (33; 17.6%), speech (31; 16.5%) visual (24; 12.8%) and any other (6; 3.2%).

Fig.1 Distribution of any type of disabilities among individuals with disabilities

Almost two third (121; 64.7%) of all the disabilities were acquired and rest one third (66; 35.3%) were present since birth. Major causes of various types of impairments/disability were as follows: visual disability/impairment (24)- cataract (10; 41.6%), hearing (50)- pregnancy and birth related (14; 28%) followed by presbycusis
(13; 26%) among old age and hearing loss due to CSOM(12; 24%) among children, locomotor (78) - injury (23; 29.4%) followed by pregnancy and birth related (20; 25.6%) and Post Polio Residual Paralysis(13; 16.6%), mental (42) - pregnancy and birth related (28; 66.6%), speech (31) - pregnancy and birth related (21; 67.7%). Almost half (90; 48.1%) of the individuals with disability were not working or going to school/special school (in case of children) and only 11(5.7%) were using any types of aids and appliances, e.g., hearing aids, tricycle etc to improve the functioning. ANC care: Out of 20 pregnant female, five from each village who were interviewed for assessing the ANC care, in 95% (19) pregnancy was diagnosed with in 2 month of their last LMP (last menstrual period) and 90% (18) of the all pregnant female had first contact with health facility within 3 months of their last LMP or within a month of diagnosing their pregnancy. 85% (17) were going for regular ANC checkups, when asked about Folic acid consumption in first three months of their pregnancy, 60% (12) responded that they didn’t received any tablet, 20% (4) each told that either they had received or do not know about it.

Laboratory results

Testing of fluoride level in urine samples: The district Nayagarh is covered under NPPCF National Programme for Prevention and Control of Fluorosis (NPPCF). Regular school based screening for dental and skeletal fluorosis is going on for last 3-4 years and facility to test urine fluoride level of children has been made under NPPCF programme. Team collected a total of 30 urine sample to assess urinary fluoride level. Mean urinary fluoride level was 1.79 PPM, ranging from 0.53 PPM to 4 PPM. 76.6% of the children had urinary fluoride level of more than 1.0 PPM which is above normal level.

Testing of fluoride levels in Water samples: Department of RWSS is doing the regular testing for the fluoride level in all the drinking water sources. Most of the water sources except few having fluoride level within normal limit (WHO 0.8-1.2 mg/l, and up to 1 mg/l according to National Programme for Prevention & Control of Fluorosis), shown in Table. 2 given below

<table>
<thead>
<tr>
<th>Name of the Village</th>
<th>Water Sources</th>
<th>Fluoride (Mg/Ltr)</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chadheyapalli</td>
<td>Tube well</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dug Well</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pond</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RWSS Supply</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>Haricharpur</td>
<td>Tube well</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dug Well</td>
<td>0.53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pond</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RWSS Supply</td>
<td>1.17</td>
<td></td>
</tr>
<tr>
<td>Godipalli</td>
<td>Tube well</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dug Well</td>
<td>1.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personal Tube Well</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pond</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Fanchirida Maapur</td>
<td>Tube well</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dug Well</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pond</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RWSS Supply</td>
<td>0.85</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Details of Water Samples tested (Source: RWSS)

Qualitative-study results

Key informant interviews and observation by the central team during the visit brought to light, that the affected villages were almost 20 km away from district headquarter. There is no industrialization within 50 km of radius of the villages and no river is flowing nearby these villages. Main sources of water for drinking and cooking purpose are tube well and pipe water supply (in 3 village, but it is time bound supply of water). Main occupation of villagers is farming followed by manual labour. Staple food is rice with
plenty of locally grown vegetables and pulses. On interviewing key stakeholders, prolonged labour and delayed cry in newborn was one of the major findings.

**Conclusion**

Although the average rate of disability among all the four villages (1.935%) was less than both national average of 2.21% (Census 2011), and Nayagarh average of 2.063% (Annual health survey 2012-13), but it was high in Chadiapalli and Godiapalli (4.09% & 2.55%). Pregnancy and birth related complication was found to be the major cause of speech (67.7%), mental (66.6%), hearing (28%) and locomotor (25.6%) disability. Rehabilitative services for those who are suffering from physical, mental impairment /disability needs major improvements. ANC care needs further assessment with focus on the pregnancy and birth related cause of disabilities.

**Recommendations**

- Promotion of early screening of all young children of < 5 years of age for any impairment of the hearing, visual, mental and movement to bring them under early care of rehabilitative services.
- Screening for early identification of preventable visual (Cataract and Glaucoma) and hearing disability among children and elderly individuals.
- Raising awareness among the villagers on Importance of regular ANC Care and common causes of congenital birth defects leading to various types of physical and mental impairments and how to prevent them and availability of various aids and appliances for better functioning of the affected individuals.
- Prevention and early management of injuries which was found be the one of major reason for locomotor disability

*(Contributed by Drs Nilam Somalkar RD Bhubhaneshwar, Rinku Sharma & Jaikaran, NCDC)*

**News from around**

**CDC updates Zika Virus testing protocol to include urine testing**

Diagnostic testing for Zika virus infection can be accomplished using molecular and serologic methods. Real-time reverse transcription–polymerase chain reaction (rRT-PCR) is the preferred test for Zika virus infection because it can be performed rapidly and is highly specific. However, in most patients, Zika virus RNA is unlikely to be detected in serum after the first week of illness. Recent reports using adaptations of previously published methods suggest that Zika virus RNA can be detected in urine for at least 2 weeks after onset of symptoms. Currently, the CDC Trioplex rRT-PCR assay is the only diagnostic tool authorized by the Food and Drug Administration for Zika virus testing of urine. Further investigation is needed to determine the sensitivity and utility of Zika virus rRT-PCR on urine specimens collected ≥14 days after onset of symptoms.

On the basis of the newly available data, CDC recommends that Zika virus rRT-PCR be performed on urine collected <14 days after onset of symptoms in patients with suspected Zika virus disease. Zika virus rRT-PCR testing of urine should be performed in conjunction with serum testing if using specimens collected <7 days after symptom onset. A positive result in either specimen type provides evidence of Zika virus infection. Procedures for the collection and submission of body fluids, including urine specimens, have been described previously. CDC recommendations for Zika virus testing of serum and other clinical specimens remain unchanged at this time. CDC will continue to review and update guidance for Zika virus testing as new data become available. **Source: MMWR**
NCDC News

Union Health and Family Welfare Minister, Shri J P Nadda receives WHO Yaws eradication certificate for India in a celebratory function

A function was organized to mark the end of Yaws from India on 14 July, 2016 at National Media Center, New Delhi.

The Hon’ble Union Health and Family Welfare Minister Sh Jagat Prakash Nadda was the Chief Guest and Honorable Minister of State for Health and Family Welfare, Smt. Anupriya Patel was the Guest of Honor for the event. Several other dignitaries including the Secretary (Health and Family Welfare), Director General of Health Services, Regional Director of WHO South East Asian Region, Additional Secretary Child Health, Director NCDC and Country Head UNICEF graced the occasion. The function was also attended by officials from the Ministry of Health and Family Welfare, Govt. of India and special invitees from local administration, district & state health officials and NGOs working in the erstwhile yaws endemic states in India.

The Honourable Union Minister of Health and Family Welfare formally declared India as free of Yaws. He lauded the dedicated and concerted effort of health authorities of endemic states/districts in implementing and monitoring the Yaws Eradication Programme under the able leadership of the National Centre for Disease Control, the national nodal agency for the programme.

The dignitaries also released a monograph titled “Yaws Disease: End of Scourge in India”.

Hon’ble Health & Family Welfare Minister Sh J P Nadda receives certificate declaring India Yaws free from WHO Regional Director Dr Poonam Khetrapal
NCDC celebrates World Health Day 2016

Every year World Health Day is celebrated on 7 April to focus on a major public health issues and to commemorate the establishment of WHO in 1948. Theme for this year was ‘Beat Diabetes-scale up prevention, strengthen care, and enhance surveillance’ and the main goal of the campaign was to spread awareness about the rise of diabetes and its consequences.

NCDC and PGIMER/ Dr RML Hospital jointly organized technical Seminar on the occasion of the World Health Celebration 2016. Theme for the Technical seminar was “A healthy life despite diabetes” aiming at increasing awareness among health professionals, medical and paramedical students and the general public on prevention and management of diabetes and its complication. Prof Jagdish Prasad, DGHS, MoHFW inaugurated the function. In his address he stressed upon the importance of adopting the public health approaches in dealing with huge burden of pre-diabetes and diabetes and hence their role in prevention and control of cardiovascular disease.

Speaking on the occasion, Dr (Prof) AK Gadpayle, Director PGIMER & MS Dr RML Hospital welcomed the delegates and participants and stressed on the role of public health institutions and the tertiary care hospital in dealing with huge burden of diabetes in India. Dr NS Dharmshaktu, Spl DGHS, Govt of India delivered the keynote address on the occasion and explained the role of political, socio-cultural, behavioural and health system factors in curbing down the diabetic epidemic in the country. He also chaired the technical seminar organized on the occasion.

A panel discussion chaired by Dr BD Athani, Spl DGHS, Govt of India and co-chaired by Prof SV Madhu, Head Endocrinology, UCMS & GTB Hospital was also held on the occasion. Experts from the different institutions of the country participated in the panel discussion. The panelists discussed all aspects of prevention and management of diabetes including its complication, dietary management, lifestyle changes. Enthusiastic queries from the lay public and medical fraternity were answered to by the experts during the panel discussion.
NCDC also coordinated a number of activities in the country as a part of advocacy, communication and social mobilization to mark World Health Day 2016. These activities included an intensified opportunistic screening drive for diabetes in Institutes/ Medical Colleges across the country from 1 - 7 April 2016. An all India Poster making Competition was also organized on the occasion in Medical Colleges/ Institutes in the country. The participants were MBBS/ nursing students. Participating colleges/ institutes had submitted best two shortlisted entries to NCDC. Best three entries were given prizes by DGHS during World Health Day celebrations.

(Contributed by Drs Rinku Sharma & Sonia Gupta, NCDC)

Scientific symposium held on World No Tobacco Day

The Centre for Non Communicable Diseases, NCDC organized the World No Tobacco Day on 30 May, 2016. On the occasion a scientific symposium was held. Experts from Dte GHS & National Tobacco Testing Labs, MOHFW and Dept. of Pedodontics and Preventive Dentistry AIIMS, Delhi were called for sharing information and their views on the tobacco and related diseases.

The Director, NCDC welcomed all dignitaries and guests. He introduced the chief guest (Dr. N.S. Dharmshaktu, Special DG, DteGHS, MoHFW), Guest of Honour (Shri. Rajeev Kumar, Director, NCD, MoHFW, GoI), and speakers to the gathering. In his introductory keynote he highlighted the burden of tobacco consumption and related diseases in INDIA, and the role of the Centre for Non Communicable Diseases, NCDC in addressing them.

Dr. NS Dharmshaktu, Special DGHS, spoke on the role of cultural, social and personal factors for influencing the consumption of tobacco in India. He also spoke at length on the role of international forces, tobacco lobbies in flourishing of tobacco industries in India. He stressed on need to improve the Acts, policies and their implementation to curb down the consumption of tobacco products in India.

Dr. L. Swasticharan (Chief Medical Officer, Dte GHS, MoHFW) guest speaker, spoke on the theme “Get ready for plain packaging” as a measures to restrict or prohibit the use of logos, colours, brand images or promotional information on packaging other than brand and product names aiming at (1) reducing the attractiveness of tobacco products (2) eliminating the effects of tobacco packaging as a form of advertising and promotion (3) addressing package design techniques that may suggest that some products are less harmful than others; and (4) increasing the noticeability and effectiveness of health warnings.

Prof. H.M. Chawla National advisor to National Tobacco testing labs emphasized on the role testing lab in gathering the toxicological evidences for tobacco related diseases. He threw light on the various harmful chemical substances including carcinogens that are released while smoking. He also talked about the hazards of e-cigarettes.

Prof. (Dr.) Mathur, Additional Professor, Pedodontics and Preventive Dentistry AIIMS, Delhi spoke on his own experiences during his journey from a dental specialist to a counsellor for tobacco cessation. He stressed on the facts that any doctor or health personnel can act as counsellor for tobacco cessation.
which is also the need of the hour because of the high burden of tobacco and related diseases in India. He also talked about the National Drug Dependence Treatment Centre run by AIIMS and its achievements.
Faculty, staff and students of NCDC actively participated in the deliberations after the talk.

(Contributed by Drs Rinku Sharma & Sonia Gupta, NCDC)

NCDC observes International Day of Yoga with a Lecture and demonstration of Yoga postures

NCDC celebrated the second International Day of Yoga, by organizing a lecture--demonstration session on 21 June, 2016 for all its faculty and staff. Guests from Ministry of Health & Family Welfare, DGHS, AYUSH, and various Medical colleges of Delhi were extended invitations.

Speaking on the occasion, the Director, NCDC stressed on the importance of practicing yoga in our day to day life. Chief Guest Dr. W. Selvamurthy gave a special address and a lecture on “Yoga for Holistic Health: a scientific perspective”. He reiterated that Yoga aims towards harmonizing one’s mind, body and soul by offering mental, physical and spiritual benefits. Apart from sharing the preventive, promotive and curative potentials of yoga, he also explained the scientific perspective of various Asanas through the evidences generated from various studies conducted by him. He stressed that there is a need to promote and popularize yoga at global level as a science and way of life among all sections of society.

The special address was followed by a lecture by Prof. Dr. Raj Kumar Yadav, Faculty in charge of Integral Health clinic, Deptt. of Physiology at AIIMS, New Delhi. He spoke on “Yoga: a Science and Medicine”. He discussed about the multicentric trial on heart patients and highlighted that yoga has shown positive effects in group of patients with hypertension, coronary artery disease and diabetes mellitus type 2. The studies have shown that the intervention of Yoga has so far been found to have favorable impact on fasting plasma glucose, lipoprotein profile, oxidative stress, autonomic balance, anxiety levels and subjective well being.

This was followed by lecture demonstration on Yoga and Health by Shri Amresh Kumar Jha, Yoga Expert and Kumari Bhavna Kalra, Yoga Instructor from Morarji Desai National Institute of Yoga. Shri Jha explained the interventions in lifestyle based on principles of Ashtang yoga and demonstrated certain yogasanas he also discussed how each asana can help to prevent and control specific health problems and to keep body and mind fit. The yoga experts also involved the audience by making them perform yogasanas.

Dr. Sonia Gupta, Additional Director and Head of Centre of Non-Communicable Diseases delivered the vote of thanks.

(Contributed by Drs Rinku Sharma & Sonia Gupta)

Public Health Surveillance in Simhastha Kumbh, Ujjain, Madhya Pradesh, 2016

Simhastha a Hindu religious mass gathering (Kumbh Mela) is held every 12 years in Ujjain, Madhya Pradesh on the bank of Shipra River. Ujjain Simhastha was celebrated from 22April - 21 May, 2016 and about 50 million pilgrims have attended and took a holy dip in Shipra River. Mass gatherings are considered to have potential for public health incidents, outbreaks and casualties attributed to inevitable overcrowding.
Teams from NCDC visited the Mela site prior to beginning of Kumbh Mela and set up an indicator based surveillance system integrated with IDSP reporting system with the help of district health administration. A standardized reporting format was developed and sentinel reporting sites were mapped out.

![NCDC team interacting with local](image)

Officers from NCDC and India Epidemic Intelligence Service (EIS) Officers were deployed on rotation for supporting public health surveillance and response in Simhastha, Ujjain during whole mela period. They were also on call or taking daily updates from the field and supported field teams.

Daily reporting was done from 42 reporting units. District surveillance unit compiled daily zonal and sector wise reports and results were shared with the surveillance team for analysis and planning response. Officers looked for clustering of cases and sensitized medical officer and health staff about case definition to make uniform provisional diagnosis. Real-time information from daily disease surveillance was used for quick public health response. The surveillance team also coordinated responses to two foodborne illness outbreaks and one heavy rainstorm.  

*(Contributed by Drs CS Aggarwal, NCDC & Rajesh Yadav, CDC India)*  

**Antimicrobial Stewardship Programme for General Medical practitioners at NCDC**  

Antimicrobial resistance (AMR) is widely recognized as a serious public health threat. Emergence and spread of resistant microorganisms is facilitated by irrational use of antimicrobial drugs and inadequate hospital infection control practices. There is much need for increased education and awareness about antimicrobial resistance among the public and health-care professionals and a robust antimicrobial stewardship programme in health care settings to minimize morbidity and mortality due to antimicrobial-resistant infections and preserve the effectiveness of antibiotics in the treatment of common bacterial infections.

To facilitate this, a continuing medical education programme was organized by NCDC on ‘Rationalizing antimicrobial use to contain antimicrobial resistance’ for general medical practitioners in Delhi on 25th May 2016. The programme was attended by 30 participants from general practice.

The inaugural session of programme was graced by Dr B. D. Athani, Special DGHS and Dr. Rakesh Gupta, President, Delhi Medical Association. The programme was initiated with a short quiz to assess awareness of participants about strategies to combat drug resistance, rational use of drugs and infection control practices.

The technical session included lectures by different experts focusing on creating awareness among general practitioners both in private and public sector about antimicrobial resistance among human
bacterial pathogens and promoting rational use of antimicrobial agents in different clinical conditions. Dr Sunil Gupta, Head Microbiology at NCDC, presented an overview of country scenario of antimicrobial resistance among common bacterial pathogens and the activities taken up under the National programme for containment of AMR. Dr Sangeeta Sharma, Secretary, Delhi society for promoting rational use of drugs, spoke on antimicrobial stewardship programme. Dr S. Anuradha, Professor Medicine at Maulana Azad Medical College (MAMC), discussed rational prescription in common clinical syndromes in general practice. Dr Vikas Manchanda, Asst Professor, Microbiology at MAMC covered health care associated infections and role of hospital infection control practices in limiting AMR. A highly interactive and informative panel discussion was also held on “when to prescribe antibiotics and when not to”, moderated by Dr Rakesh Gupta

The participant found the programme very helpful in enhancing their knowledge on rational prescription of antimicrobial agents and applying treatment guidelines in general practice. In future, more such activities would be carried out in different zones of NCT of Delhi and thereafter in other parts of the country.

(Contributed by Drs Sarika Jain & Sunil Gupta, NCDC)

Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries and affect more than one billion people, costing developing economies billions of dollars every year. Soil transmitted Helminthiasis is one of the NTDs identified by WHO. An Expert Group meeting on Soil Transmitted Helminthiasis (STH) was held on April 5, 2016 under the Chairmanship of Dr. S. Venkatesh, Director, NCDC, Delhi to review the progress made with respect to STH prevalence mapping in India.

The meeting was attended by the experts from Department of Child Health, MoHFW, NCDC, NVBDCP, Academic Institutions, WHO and NGOs. The experts were apprised of the coverage of NDD February 2016 round and results of STH mapping completed in 19 states/UTs. Based on the prevalence data from STH surveys of 19 states/UTs and available predictive maps, the group made following recommendations on frequency of mass deworming:

1. Annual deworming in states/UTs of Delhi, Chandigarh, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Punjab, Rajasthan and Uttarakhand in view of their low STH prevalence and biannual deworming in remaining 27 states/UTs of India.

2. Need for organizing efficacy studies in different geographical and demographic locales of India.

(Contributed by Drs SK Jain & Vinay Garg, NCDC0

Labatory strengthening at state and district level is an important initiative under IDSP. A project on implementation of Laboratory Quality Management System
(LQMS) was initiated in the IDSP state referral laboratories (SRL) in Assam and Punjab in August 2015. This project was supported by CDC/IQLS. On site laboratory assessments of the state referral laboratories using LQSI Laboratory Quality Stepwise Implementation (LQSI) assessment tool from WHO (https://extranet.who.int/lqsi), were conducted in October 2015. Quality managers from SRLs and state microbiologists from the 2 states were trained on use and outcome of the assessment tool. This was followed by onsite assessments of the laboratories by officers from NCDC/IQLS along with the quality managers from respective laboratories. Based on gaps identified during the onsite assessments, certain key areas were identified for training. Accordingly a 5 day training workshop was held at Chandigarh and at Guwahati for quality managers and deputy quality managers from state referral laboratories and state microbiologists from the 2 states (total 18 state participants). These training workshops focused on practical training on inventory management, process control (pre analytical, analytical and post analytical), equipment and personnel management, internal quality control and biosafety.

Reassessment of the SRLs to assess the progress in implementation of LQMS was carried out jointly by NCDC and IQLS from 23 May to 3 June 2016. Two manuals namely “Guide for Implementation of Biosafety in IDSP laboratories” and “Quality Manual” have also been drafted as part of this project which would support in extending this project to other states in a phased manner. The project ended with an NABL internal auditor training for the quality managers and deputy quality managers from the 8 SRLs and IDSP state microbiologists from Assam and Punjab on 8-11 August 2016 at NCDC. The participants of this training included 11 Microbiologists from NCDC. Major impact of this project has been in developing the basic understanding of the LQMS and its importance among all the laboratory staff of the IDSP SRLs and some of these laboratories have already initiated the activities for NABL accreditation.

(Contributed by Dr Lata Kapoor, IDSP)

NABL certification of Centre for AIDS and related diseases

The Centre for AIDS and Related Diseases, NCDC receives certificate of renewal of NABL accreditation in the field of Medical testing as per ISO 15189:2012 from February 2016 to February, 2018. The Centre for AIDS and related disease serves as a referral diagnostic laboratory for HIV and related diseases along with providing quality control for diagnostic test kits for HIV, HBV and HCV. The Centre actively supports the National AIDS Control Programme by conduction of External Quality Assessment Scheme (EQAS) for HIV serology for State Reference Laboratories (SRLs) and their Integrated Counseling & Testing Centres at Delhi, Haryana, Rajasthan and J&K.

Training of Biosafety practices in Public Health Laboratories

Workers in all laboratories need to follow the principles of International best practices to prevent themselves from coming into contact with pathogens. If lab workers do not follow these principles they risk not only their own health but that of their colleagues, family and friends and the reputation of their organization. The principles of international best practice are that pathogens are kept contained and manipulated precisely in controlled environment to prevent the worker or the environment coming into contact with the pathogens. This is achieved by wearing appropriate personal protective equipment,
containing pathogens in appropriate tubes or sealed containers or bags, manipulating samples using good microbiological practices, disinfecting and autoclaving effectively using specialized equipment appropriately and selecting the level and appropriateness of procedures and equipment by a process of risk assessment. A training on "Biosafety practices in Public Health Laboratories" was organised on 28 June, 2016 under the chairmanship of Dr Sunil Gupta, Addl. Director & Head Microbiology, Biotechnology & Centre for AIDS & Related Diseases in the Central Seminar Hall at 3 PM for all Officers and technical staff of NCDC. This training was attended by 67 participants. The training started with a welcome address by Dr Sunil Gupta Addl. Director & Head (Microbiology, Biotechnology & Centre for AIDS & Related Diseases). Dr Somenath Karmakar, Additional Director, Microbiology took a presentation on the ventilation in biosafety & biosecurity systems. A practical demonstration on hand washing was taken by Dr Monil Singhai, Assistant Director, Zoonosis and a spill management exercise was conducted by Dr. Sanjim Chadha, Assistant Director, Biotechnology. A video on personal protective equipment was also shown. A presentation on risk assessment was done by Dr Purva Sarkate, Assistant Director, Microbiology.

(Contributed by Drs Sanjim Chadda & Sunil Gupta, NCDC)

National IDSP review held in Jaipur

National review meeting of IDSP was held from 9 – 11 June, 2016 at Jaipur, Rajasthan. The inaugural ceremony was graced by Dr B R Meena, Director Health Services, Rajasthan and Dr S Venkatesh Director NCDC & PD (IDSP). Senior officials from MoHFW, NCDC and WHO also attended the review meeting along with representatives from State health departments except Jammu & Kashmir, Himachal Pradesh, Assam, Chhattisgarh, Manipur, Daman and Diu, Andaman & Nicobar Islands and Lakshadweep. Dr Pavana Murthy from WHO presented the salient points of Joint Monitoring Mission of Integrated Disease Surveillance Programme carried out by various National and International experts, in December 2015. Following the inaugural ceremony, a Panel discussion on “Emerging Public Health emergencies with special focus on Yellow fever and Zika” was held. Dr S Venkatesh, Director NCDC moderated the session, in which Dr S K Singh, DDG (IH), Dr Sunil Gupta, Addl. Director and HOD Micro NCDC, Dr Mala Chhabra, Addl. Director and HOD Zoonosis NCDC, Dr T G Thomas, Joint Director Medical Entomology and Vector Management, Dr Pradeep Khasnobis, Officiating NPO and Dr Pavana Murthy from WHO country office participated. Experts touched upon recent developments on Zika virus disease, yellow fever, influenza, MERS-CoV, meningococcal meningitis,
& present position of India in AMR by Dr Sunil Gupta, Addl Director & HoD Microbiology, NCDC. He also informed about recent updates of “hospital infection control guidelines” which have been developed by NCDC are available on website (ncdc.gov.in). On day 2, officers of NCDC made several presentations on important public health areas. Some highlights of the day were: presentation made by Dr Sanket Kulkarni, on Strategic Health Operations Centre, NCDC, a session on “Sample collection, Storage and Transportation” by Dr Sunil Gupta, Addl. Director and HOD Microbiology; a session on Data Management under IDSP including Block Level Data Entry and Outbreak Management were by Dr Saurabh Goel and Dr. Ruchi Jain respectively and a session on Laboratory component along with LQMS by Dr Lata Kapoor and Dr Mangesh Patil.

On Day 3, Guest of honour Dr Dharmshaktu Special DGHS, MOHFW, GOI along with Dr V K Mathur Director RCH, Govt. of Rajasthan unveiled the first issue of IDSP disease alert “Prakop Chetavani” and announced the launch of “New website of IDSP”. He also discussed with the participants on surveillance activities in their State and advised involvement of community in disease surveillance and sharing of best practices.

Group Work was conducted and the participants discussed and prepared a plan of action regarding gaps, challenges and how to overcome them which was presented by the states in front of dignitaries. The meeting ended with vote of thanks to the chair.

(Contributed by Dr Pradeep Khasnobis & Dr Ruchi Jain, CSU IDSP)

Acute Encephalopathy Surveillance in Muzaffarpur, Bihar

Outbreaks of acute neurological illness with high mortality have been reported from Muzaffarpur, Bihar since 1995. In most outbreaks, previously healthy under 5 years age children typically present with acute onset of seizures and altered mental status in early morning hours, quickly deteriorating to coma associated with high mortality. Outbreaks usually occur in May and June, and coincide with Muzaffarpur’s litchi harvesting season.

NCDC and partner institutions along with US-CDC had conducted systematic investigations in 2013 and 2014 which demonstrated an association between this outbreak illness and hypoglycaemic agent MCPG found in litchi fruits. In 2015, guided by the findings, measures were taken to reduce morbidity and mortality, and the case incidence in 2015 (n=47) was about a tenth of the case incidence in 2014 (n=390).

India Epidemic Intelligence Service officers, NCDC conducted hospital based surveillance for the period 25 May - 10 July, 2016 at two paediatric hospitals of the district: Shri Krishna Medical College Hospital (SKMCH) and Krishnadevi Deviprasad Kejriwal Maternity Hospital (KDKMH), Muzaffarpur. The case was defined as child ≤ 15 years admitted to a participating hospital during surveillance period with altered mental status in the last seven days and/or new onset seizures in the last seven days (excluding simple febrile seizures).

A total of 36 AES cases including 5 deaths were reported during the surveillance period. Case fatality was 14%. The cases were from Muzaffarpur and four neighbouring districts: East Champaran, Sheohar, Sitamarhi, and Darbhanga (figure1). Muzaffarpur residents made up for 70% (n=25) of the cases and mostly belonged to central blocks of the district (figure2).
During the surveillance period, the first case was reported on May 27, 2016. Most cases were reported in the last week of May - first week of June, and the peak was observed on 04-06 of June 2016. The last case during the surveillance period was reported on June 28, 2016. Almost 70% (n=25) cases were ≤ 5 years of age. Male to female ratio was equal. History of seizures was reported in 97% cases (n=34/35) and altered mental status in 80% cases (n=28/33). At time of admission 85% (n=28/33) had altered sensorium and 50% of these (n=14/28) were unconscious. Over 60% (n=19/31) patients were afebrile (measured temperature ≤99.5F) at the time of admission, and over half of the cases (n=17/32) had hypoglycaemia (blood glucose level ≤ 70mg/dl); almost 44% (n=14/32) had blood glucose level ≤ 50mg/dl. CSF cytology and biochemistry was available for 20 cases and was mostly unremarkable.

A central team that visited during this period tested 19 serum specimens of Muzaffarpur cases for JE IgM using ELISA at NCDC; 1 was found positive. However larvae or adult vectors of Culex gp or environment for their breeding were not found. A good litchi harvest was reported this year, which was over by mid June. Discharged children reported having eaten fruits from orchards and missed evening meals during the season.

(Contributed by: Dr Amol Patil, EIS Officer NCDC and Dr Aakash Shrivastava, Joint Director, NCDC. Participating Epidemic Intelligence Service Officers: Dr Neeraj Singh, Dr AS Valan, Dr Preeti Padda, Dr Naveen Rastogi, Dr Janardhan Nayak, Dr Dipu Lowang)

Figure 2: Time Distribution of Acute Encephalopathy cases by date of admission to surveillance hospitals, Muzaffarpur, 25 May-10 July, 2016 (N=36)

Monitoring Disease Trends

Leptospirosis outbreaks reported to IDSP, 2013-16
Leptospirosis is an epidemic prone disease with high morbidity and mortality and is included in the list of diseases presently reported under IDSP. All reporting units of states / UTs report leptospirosis in ‘P’ form based on standard IDSP case definition. A total of 30 outbreak of leptospirosis have been reported from different states / UTs of India since 2013. Of all these outbreaks most outbreaks (20) have been reported from Tamil Nadu itself. Other states that have reported outbreaks are Assam, Karnataka, Kerala, Maharashtra, Punjab and Rajasthan.

In 2016, Punjab reported its first outbreak of Leptospirosis from District Hoshiarpur with one case, while Assam reported one outbreak with 5 cases and Tamil Nadu reported four outbreaks with 146 cases. However no death was reported till 14 August, 2016.

In 2015, Rajasthan (Distt Sirohi) and Assam (Distt Kamrup Metro) reported their first outbreak with 1 and 4 cases respectively. In the same year Tamil Nadu reported three outbreaks with 63 cases and Maharashtra reported 1 outbreak with 3 cases and 1 death.

In 2014, Tamil Nadu reported 5 outbreaks with 70 cases and Kerala reported 1 outbreak with 4 cases and 1 death. In 2013, a total of 12 outbreaks were reported out of which, 8 were reported from Tamil Nadu with 158 cases, 2 from Maharashtra with 25 cases and 1 death, 1 from Kerala with 20 cases and 1 from Karnataka with 22 cases. All these outbreaks have been confirmed by IgM ELISA on blood serum samples. A high index of suspicion should be maintained in any case presenting with abrupt onset of high fever, headache, conjunctival suffusion, myalgia and jaundice especially in areas where the disease is reported frequently. Early diagnosis and prompt treatment can curtail high mortality associated with this disease.

*(Contributed by Drs. Saurabh Goyal, Pradeep Khasnobis & Prasun Sharma, IDSP)*

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