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NCDC Newsletter

Quarterly Newsletter from the National Centre for Disease Control (NCDC)

From the Desk of the Director

Dr. L.S. Chauhan
Director, NCDC

This year-ending issue of the NCDC newsletter covers many public health topics relevant to India, beginning with the burden of hepatitis, as well as strategies and plans that are underway for its prevention and control. An analysis of outbreaks in 2013 is presented, along with descriptions of a diphtheria outbreak in Bihar and Japanese Encephalitis outbreak in Tripura.

NCDC Highlights include activities undertaken by various departments. There is special focus on use of information and communication technology under the Integrated Disease Surveillance Programme. Interesting technical updates are included under the News and Events section, while an article published in MMWR is shared to supplement the hepatitis story.

We look forward to receiving your valuable comments and feedback.

Wishing you all a happy and prosperous 2014.

In This Issue

Lead Story

Hepatitis in India: Burden, Strategies and Plans

Hepatitis is the inflammation of the liver caused by viruses A, B, C, D or E. These viruses can be distinguished depending on the predominant mode of transmission — water or blood — and show significant differences in their epidemiology, presentation, prevention and control. Nearly 119,000 cases of all-cause viral hepatitis were reported in India in 2012. The Integrated Disease Surveillance Programme of the NCDC received notification of 290,000 cases of acute viral hepatitis in 2013.

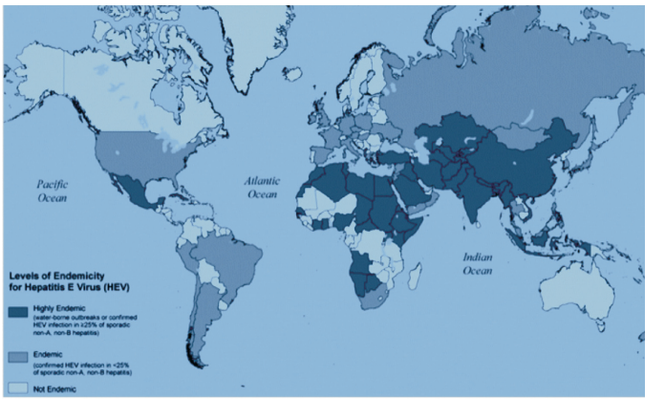
Water-borne Viral Hepatitis

Disease burden and sero-prevalence of hepatitis A and E. Globally, an estimated 1.4 million cases of hepatitis A virus (HAV) infection occur annually. The proportion of young adults at risk for HAV infection is very low in India. The Indian population is showing a recent upward shift in the average age at first HAV infection, among the socio-economically developed population resulting in pockets of susceptible populations.

Hepatitis E prevalence is highest in the East and South Asia regions, accounting for 60% of hepatitis E global incidence and 65% of global deaths. Despite the high endemnicity of hepatitis E virus (HEV) in the South Asian region (Figure 1), the sero-prevalence of antibody to HEV is only 25% in young adults. Among the Indian population, there is low sero-prevalence until age 15, reaching 40% in young adults.

HEV is the most important cause of epidemic hepatitis, though HAV is more common among children. Most

Figure 1: Global endemicity to HEV infection; darker shades suggest areas with greater burden of HEV sporadic and epidemic cases.



Source: Hughes J M et al. Clin Infect Dis. 2010;51:328-334

acute liver failures diagnosed in India are attributable to HEV, and HEV is the most common cause of hepatitis during pregnancy.

Agents. Genotypes I and III of HAV and genotype I of HEV are the predominant strains in India.

Transmission. Both HAV and HEV are transmitted through the fecal–oral route, due to ingestion of contaminated water — sewage-contaminated and inadequately-treated water. Mixing of contaminated soil into wells and rivers during rains or floods has also been associated with HEV outbreaks in India. Person-to-person transmission or through food route is relatively less common in HEV than in HAV.

Laboratory diagnosis. Recent infections are detected by the presence of IgM antibodies in the serum and acute increase in liver enzymes. IgG antibodies remain detectable for life in HAV infected persons but persist for only 15 years in those with HEV infection.

Prevention and control. Prevention and control of HAV and HEV transmission can be achieved by (1) improvements in sanitation and sewage disposal, measures for water and food safety, and health education on hygiene practices, and (2) use of effective inactivated and live attenuated HAV vaccines for controlling outbreaks.

Routine immunization against HAV has not been warranted in India considering the high sero-prevalence, and lower cost of antibody assay compared to that of the HAV vaccine. However, the recent epidemiological transition presents a need to develop an immunization strategy for susceptible populations. HEV recombinant protein vaccines are being studied.

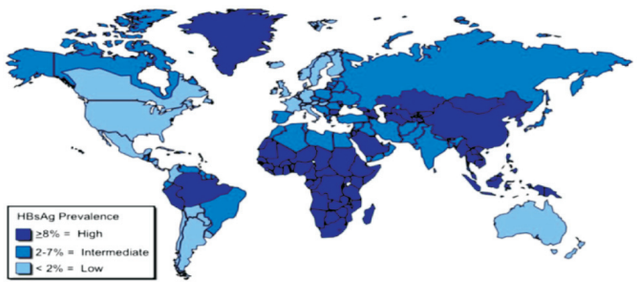
Blood-borne Viral Hepatitis

Hepatitis viruses B (HBV), D (HDV) and C (HCV), which predominantly transmit through the parenteral route, pose a serious "silent epidemic" challenge to India. Infected persons are unaware of their chronic carrier status, and continue to infect others for decades and eventually burden the society with loss of productive workforce, and the health care system with expenses of treating liver failures, chronic liver diseases, and cancers.

Disease burden and sero-prevalence. HBV and HCV together are estimated to have led to 500 million chronically infected persons and one million deaths annually (Figures 2 and 3 present global HBV endemnicity and HCV endemnicity, respectively).

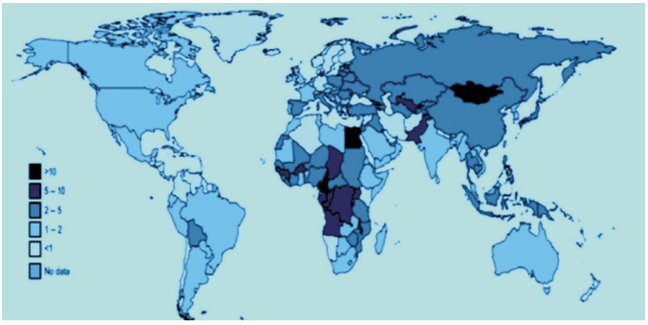
In the South-East Asia region, the estimated burden of chronic HBV infection is 100 million and the estimated burden of chronic HCV infections in South Asia is 50 million. HBV is the second most common cause of acute viral hepatitis after HEV in India. With a 3.7% point prevalence, that is, over 40 million HBV carriers, India is considered to have an intermediate level of HBV

Figure 2: Global endemicity to HBV infection; darker shades suggest areas with greater sero-prevalence of HBV.



Source: Hwang and Cheung NAJMS. 2011;4(1):7-13

Figure 3: Global endemicity to HCV infection; darker shades suggest areas with greater sero-prevalence of HCV (%).



Source: Lavanchy. ClinMicrobiol Infect 2011;17:107–115

endemnicity. Every year, one million Indians are at risk for HBV and about 100,000 die from HBV infection. The population prevalence of HCV infection in India is 1%. HDV infection is not very common in India and is observed in 10% to 20% of HBV positive patients.

Agents. Genotypes A and D of HBV, and genotypes 1 and 3 of HCV are more prevalent in India.

Transmission. HBV, HDV, and HCV infections are commonly caused by exposure to infected blood. Infections also occur as a result of iatrogenic exposures (transfusion/ transplantation/dialysis of infected blood/ blood products or organs/tissues), and use of contaminated injections/equipment.

Epidemics due to unsafe injection practices have been documented in India (hepatitis B carriage and C infection is 46% and 38%, respectively), such as among injecting drug users and healthcare workers caring for infected people.

Transmission through unsafe sexual intercourse and transmission from mothers to infants is well-established, though less frequent for HCV infection. Perinatal transmission is about 10% if the mother is hepatitis B surface antigen (HBsAg) positive only and about 90% when the mother is positive for both HBsAg and hepatitis B e-antigen (HBeAg). HCV accounts for most of the post transfusion hepatitis cases.

HDV exclusively super-infects or co-infects those infected with HBV and transmits through both iatrogenic and sexual routes. The ability of HBV and HCV to survive for prolonged periods in the external environment increases their infectivity.

Though HBV is the major cause of chronic liver disease, cirrhosis and liver cancers in India, about 20% of them are also associated with HCV infection. Dual infection of HDV and HBV has more serious presentation of liver failures in acute infections and liver cancers in chronic infections. HBV and HCV co-infection and their co-infection with HIV is another area of concern.

Laboratory diagnosis. Presence of HBsAg determines infectivity of the HBV infected case. Presence of HBeAg suggests increased viral replication in the infected case. Appearance of anti-HBs implies immunity to HBV infection either by natural infection or vaccination. Acute infection is identified by the presence of IgM hepatitis B core antigen (anti-HBc). Presence of anti-HBc in the absence of IgM anti-HBc and persistence of HBsAg indicates chronic infection.

Presence of anti-HCV and anti-HDV suggest exposure to HCV and HDV, respectively. HCV-RNA detection is necessary for verification of current HCV infection. Liver disease activity is evaluated on clinical imaging, blood biochemistry, liver enzymes, and histo-pathological findings along with viral load studies

Prevention and control. Prevention and control can be achieved through safe and effective HBV vaccines. WHO recommends routine infant vaccination along with catch-up immunization for adolescents and high risk populations. India introduced universal immunization against hepatitis B in 10 states in the year 2002, and in 2011, scaled up this operation countrywide. Recently a pentavalent vaccine, which also protects against HBV, has been introduced in some states. The HBV vaccine also protects from HDV infection. There is no vaccine against HCV.

Screening and immunization of high-risk groups, such as those with history of exposure, risky practices, and occupational risk; specific measures for prevention of mother-to-child transmission and promoting safe blood supply, safe injections and safe sex are other recommended preventive measures.

The Way forward

As per a recent global policy report (2013), India still needs to work in areas of generating data for evidence-based policies, implementing preventive measures, raising awareness and partnerships, and screening and management of viral hepatitis. As part of a new national hepatitis initiative, led by NCDC as the nodal agency, ten medical colleges have been identified to carry out surveillance for hepatitis. The activity will be initiated in a phased manner and at the end of five years, a network of 10 laboratories will be established.

(Contributed by Drs Aakash Shrivastava, Chief Medical Officer (Senior Grade), NCDC, Sanjay Kumar, EIS Officer)

Outbreak Update

2013 Outbreaks

A total of 1964 disease outbreaks were reported to and responded by the states/districts through Integrated Disease Surveillance Programme (IDSP) during 2013. As shown in the table below, Maharashtra (256, 13%), Karnataka (251, 12.8%) and West Bengal (232, 11.8%) reported the maximum number of outbreaks during this period. Acute diarrhoeal disease (576, 29.3%), food poisoning (370, 18.8%), viral fever/pyrexia of unknown origin (PUO) (272, 13.8%) and dengue (130, 6.6%) were the most common disease conditions causing outbreaks in 2013. Laboratory facilities were accessed in 63% of the outbreaks reported under IDSP by the states/Union Territories (UTs) in 2013.

To improve the quality of outbreak investigations, states/UTs have been requested to:

1. Prepare complete outbreak investigation reports and share the same with Central Surveillance Unit (CSU) at NCDC for feedback.

2. Send appropriate samples for laboratory investigations.

The CSU assists the states/UTs by critically reviewing and discussing some of the important reported outbreaks through video conferencing and providing feedback.

(Contributed by Drs Jagvir Singh, National Project Officer, IDSP, Pradeep Khasnobis, Chief Medical Officer (Senior Grade), IDSP)

State wise no. of outbreaks reported under IDSP 2013

Sl. No.	State / UTs	Year 2013
1	Andaman & Nicobar	1
2	Andhra Pradesh	123
3	Arunachal Pradesh	7
4	Assam	70
5	Bihar	134
6	Chandigarh	
7	Chhattisgarh	58
8	Dadra and Nagar Haveli	2
9	Daman & Diu	
10	Delhi	4
11	Goa	8
12	Gujarat	117
13	Haryana	15
14	Himachal Pradesh	5
15	Jammu & Kashmir	54
16	Jharkhand	50
17	Karnataka	251
18	Kerala	76
19	Lakshadweep	
20	Madhya Pradesh	98
21	Maharashtra	256
22	Manipur	4
23	Meghalaya	1
24	Mizoram	1
25	Nagaland	1
26	Odisha	113
27	Puducherry	
28	Punjab	24
29	Rajasthan	33
30	Sikkim	3
31	Tamil Nadu	149
32	Tripura	4
33	Uttar Pradesh	37
34	Uttarakhand	33
35	West Bengal	232
Grand Total		1964

Disease Wise no. of Outbreaks reported under IDSP - 2013

S.No.	Diseases/Illness	Year 2013
1	Acute Diarrhoeal Disease	576
2	Acute Encephalitis Syndrome	13
4	Anthrax	10
5	Chickenpox	121
6	Chikungunya	72
7	Cholera	96
8	Crimean-Congo Hemorrhagic Fever (CCHF)	8
9	Dengue	130
10	Diphtheria	4
12	Enteric Fever	1
13	Food Poisoning	370
14	Influenza A H1N1	1
16	Influenza B	1
17	Kala-azar	1
18	Leptospirosis	12
19	Malaria	43
20	Measles	89
22	Mumps	25
23	Pertussis	1
24	Rubella	7
25	Scrub Typhus	4
26	Viral Fever/PUO	272
27	Viral Hepatitis	99
28	Others	8
	Total	1964

Diphtheria in Bihar

On 14th September 2013, the Medical Officer in-charge of Dighalbank block Kishanganj District notified the District Surveillance Officer of suspected cases of diphtheria from Gorumara and Echamari villages of this block. A Rapid Response Team randomly chose 10 suspected cases for examination at Mata Gujri Memorial Medical College & Hospital, Kishanganj. 5/10 throat samples tested positive for diphtheria by culture. A national team from NCDC conducted a comprehensive outbreak investigation during 12th–19th November.

A case of diphtheria was defined as "a person of any age residing in Dighalbank block of Kishanganj district with presentation of at least two of the following symptoms — glandular swelling, throat pain, tonsillitis, dysphagia, respiratory distress, hoarseness of voice and fever from 1st September to 16th November, 2013."

The first case was notified on 12th September. The outbreak reports showed: 179 cases, 2 deaths, median age 7 years (range: 1-30 years); maximum cases (51%) among the 5-9 years age group; and more among females (63%). Of the eight affected villages, cases were mostly from Gorumara (66.5%), DogachiHaat (12.8%) and Talwarbanda (9.4%).

The first peak of cases was during 15th–16th September (15 cases (8.4%) each); second peak on 9th November (24 cases (13.4%)) (figure). The case fatality rate was 1.1%.

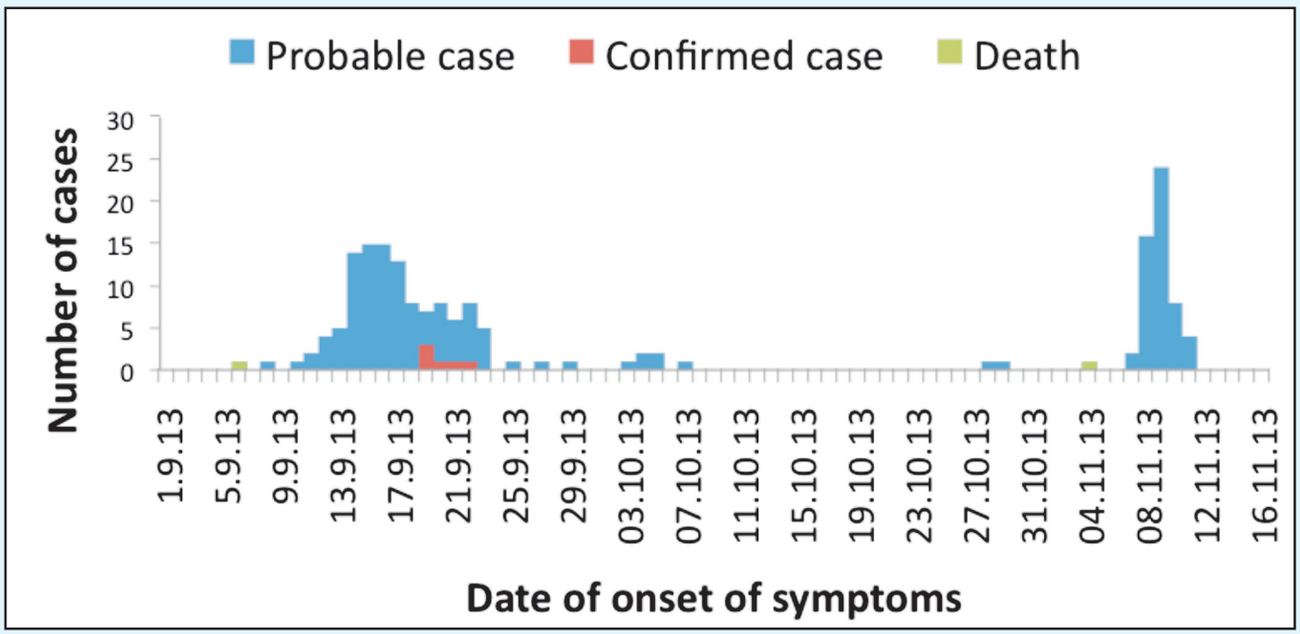
A vaccination coverage survey was conducted in the affected villages among children from 12 to 23 months of age. DPT-1, DPT-2, DPT-3 coverage was 71%, 57% and 11% respectively. 6% were fully immunized.

An unmatched case–control study of 37 cases and 37 controls showed statistically significant risk factors: previous exposure to a case of diphtheria (OR=163.2, 95% CI=24.7-3908); history of fever/muscle ache 4 weeks prior to onset of diphtheria (OR=25.3, 95% CI=6.9-122.8), past history of enlarged tonsils (OR=15.9, 95% CI=4.4-75.8), and never being vaccinated (OR=3.5, CI=1.3-9.6).

Recommendations: Conduct a special immunization round for diphtheria in Dighalbank block with DPT for children below 7 years and dT for 7 to 30 years. Routine immunization services to be strengthened in the area.

(Contributed by Drs Kapil Goel, EIS Officer, Sanjay Kumar, EIS Officer and Central Surveillance Unit, IDSP, Delhi)

Figure: Epidemic curve of diphtheria cases (n=179)



Japanese Encephalitis (JE) in Tripura

The first human case of JE in India was reported from North Arcot district of Tamil Nadu in 1955. Since then JE has been occurring as outbreaks affecting many states including the North East. No outbreaks were reported until 2013 in Tripura. Cases were reported to the Integrated Disease Surveillance Programme that carried out an investigation to confirm the JE outbreak in the state and explore its epidemiological characteristics.

From May to August 2013, 188 patients of clinically-suspected viral encephalitis were admitted to Agartala Medical College and the District Hospital.

Of these, 87 patients met the case definition of JE, defined as "having fever and any of the symptoms such as headache, altered sensorium, convulsions or unconsciousness."

Three patients died, with case fatality rate of 3.4%.

The cases occurred over a 4-month period — beginning in the first week of May 2013, reaching its peak from 1 July to first week of August (Figure). All the eight districts of the state were affected but most (75%) of cases were from three districts — West Tripura (38 cases), Gomatii (17) and Sepahiijala (12).

While cases were reported in all age groups, 33% were under 14 years. Male-to-female ratio was 2:1. No patient gave a history of JE vaccination. Clinical presentation besides fever included altered sensorium (85%), headache (52%), vomiting (32%), abnormal movement (9%), convulsions (21%) and unconsciousness (17%). As a post sequel of the disease, two patients had developed left-sided hemiplegia and aphasia.

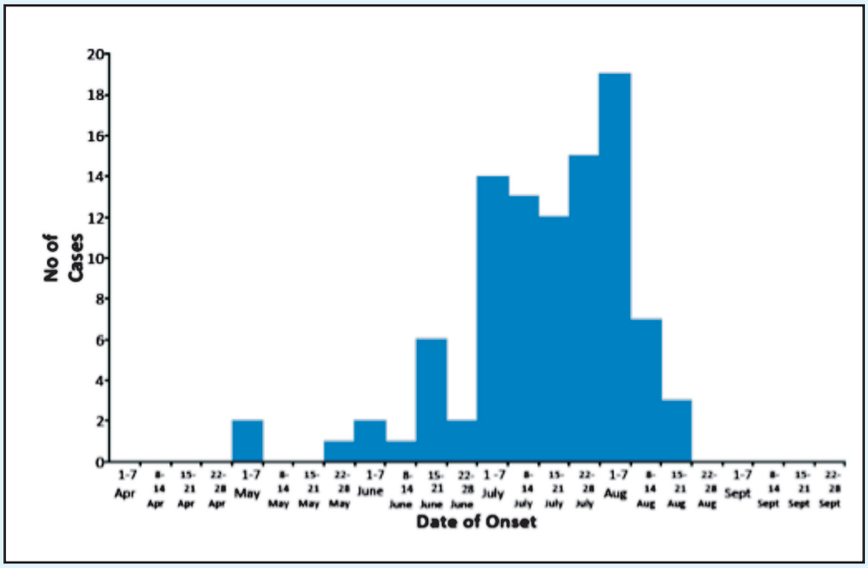
The Agartala Government Medical College's microbiology department which had started testing JE patients for the first time in 2013, found 14 cases positive for IgM antibodies for JE. Of these, five serum samples sent to NCDC reconfirmed the results.

A case–control study carried out during the latter part of the outbreak showed that cases were more likely than controls to have proximity of rice field from house (OR: 4.22, 95%CI:1.65–11.1), orchids near house (OR 2.64 ,95% CI:1.05–7.0), pond within 500 meters of house (OR 4.11,95% CI:1.11–18.93), presence of cattle in the house (OR 2.64, 95% CI:1.06–6.66). According to the state authorities, Culex mosquito was found in the outbreak area, albeit in small numbers.

In conclusion, a large outbreak of JE in Tripura occurred for the first time in 2013, which was confirmed serologically. The case fatality rate was low. Since JE disease was never reported from the state, vaccination against this disease had never been a part of the disease control programme. The authorities are however planning now to procure JE vaccination for use in the future.

(Contributed by Drs Satish Kumar, EIS Officer, Ram Singh, Patna Branch, NCDC, and P Chatterjee, SSO, Tripura)

Figure. Distribution of JE cases over time, Tripura, May-Aug 2013



NCDC Highlights

Government Approves National Rabies Control Programme under 12th Plan

After successfully pilot testing the strategy for human rabies control during the 11th Plan, the Ministry of Health and Family Welfare (MOHFW) has approved Rs 50 crores under the 12th Plan for the National Rabies Control Programme. NCDC will coordinate the activities of the human health component, which focuses on training of doctors and paramedicals in appropriate animal bite management and implementation of intradermal route of inoculation.

The strategy for the animal health component which includes population surveys, mass vaccinations and population management of stray dogs will be pilot tested and implemented in a phased manner. The activities of the animal health component will be coordinated by the Animal Welfare Board of India.

The MOHFW has approved Rs 23.75 crores for NCDC to focus on developing intersectoral coordination by strengthening the existing surveillance system of IDSP for coordination with the veterinary component and sensitizing other sectors (such as environment and forest, local civic bodies), for prevention and control of zoonotic diseases of public health importance. The programme will be implemented throughout the country with joint manpower of trained health and veterinary professionals and awareness generation among the community.

(Contributed by Drs. Veena Mittal, Addl. Director, NCDC, Mala Chabbra, Joint Director, NCDC)

Laboratory-based Surveillance for Viral Hepatitis

Ten medical colleges have been identified to carry out surveillance for hepatitis. The activity will be initiated in a phased manner and at the end of five years a network of 10 laboratories would be established.

The clinical case definition is "an acute illness with discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting), and jaundice." The NCDC will be the nodal agency for the implementation. The existing infrastructure in medical colleges under IDSP will be strengthened and funds will be transferred to them after signing of the MOU. A nodal person will be identified in the medical colleges for implementation and monitoring of surveillance. Samples will be collected by a technician in the medical colleges. 10 samples will be collected from the OPD (denominator = the total number attending the OPD). Sample of all patients admitted with jaundice in the IPD will be included (denominator = all patients admitted on the same point in time). Blood samples with all biosafety precautions will be collected from the patients.

The proforma will include demographic and clinical information, risk factor, and vaccination history. The outcome of this surveillance will be generation of baseline data for hepatitis, identification and management of acute cases, identification of major risk factors and contacts of infected persons requiring counseling and/or post-exposure prophylaxis.

(Contributed by Dr Archana Aravindan Specialist Grade II (PH), Dr Shweta Bhagat Specialist Grade II (Micro), Dr Shashi Khare, Addl. Director & HOD (Micro), NCDC, Delhi)

Tabletop Exercise: SHOC Room

CDC-GDDIC will assist in organizing a course on how to create and conduct a tabletop exercise from 24–28 February, 2014 as a follow-up to the SOP development which took place in 2013. This will allow NCDC staff to exercise their roles in the SHOC and learn more about its utility. Experts from CDC-Atlanta will hold a 3–4 day tabletop exercise training and then assist NCDC in conducting a tabletop exercise. The goal is to put into effect the newly developed SHOC Plan to ensure that key staff can easily use the guide to help with the expected actions in emergencies.

(Contributed by Drs Jagvir Singh, National Project Officer, IDSP, Amit B. Karad, Assistant Director, NCDC)

International Health Regulations Meeting

A stakeholders meeting was held under the chairmanship of Director, NCDC. The participants included experts from NCDC, Dte. GHS, FSSAI, GDD-IC and APHO, Delhi. Each of the 13 core capacities was discussed in detail and bottlenecks were identified. The following emerged from the meeting: (1) Considerable progress has been made in the field of early detection and response to public health threats but gaps remain; (2) For chemical safety and legal framework, India should apply for a 2-year extension beyond 2014; (3) Greater involvement of stakeholders is needed from ministries/ departments outside of the health sector; (4) Further strengthening of the capacities of the NFP in general and the IHR secretariat in particular is required; (5) Communication mechanisms between the NFP and stakeholders need to be streamlined.

(Contributed by Dr Himanshu Chauhan, Epi Dept, NCDC)

GIS and FAST training

To strengthen NCDC capacity in Geographic Information Systems (GIS) and Field Adapted Survey Toolkit (FAST) two trainings were held at NCDC from 9th to 20th December, 2013 (same class was repeated over two weeks).

The training was organized by the Global Disease Detection India Centre and conducted by Mr Carl Kinkade, CDC, Atlanta. The training was scheduled in two batches, and 33 participants from NCDC, National Institute of Health & Family Welfare (NIHFW), MOHFW and All India Institute of Medical Sciences (AIIMS) were trained successfully.

This unique CDC course was conducted for the second time at NCDC. It included areas such as the Arc GIS Desktop software application, and hands-on-training for FAST. The training (mainly designed for EIS officers and field epidemiologists), showed how to map geographic locations and its applications in public health. Participants found the training helpful due to its classroom training and hands-on application using open source software. CDC has provided two free GIS licenses to NCDC. During the training, a meeting was convened under the chairmanship of Dr Anil Kumar, HOD Epidemiology to discuss and prepare a roadmap on how to use the GIS software in disease surveillance and SHOC at NCDC.

(Drs Anil Kumar, Addl. Director, NCDC, Rajeev Sharma, Public Health Specialist, CDC)

EIS Conference, 2013

The 1st India Epidemic Intelligence Service (EIS) Conference was held from 21–23 November, 2013 at the NCDC. The theme was "Combating Emerging Infections and Non Communicable Diseases." The Conference provided an opportunity for EIS officers to present their epidemiological investigations and analyses. The inauguration ceremony was conducted in the presence of Joint Secretary, MOHFW along with the Director of NCDC, Dr Scott Dowell from CDC, Dr Amy Dubois, US Embassy Health Attaché, Dr Kenneth Earhart, Director CDC-India, and Dr Anil Kumar, Head Epidemiology Division, NCDC. The India EIS Officers and MPH FE Scholars from NCDC shared their experiences and study findings with conference delegates.

(Contributed by Dr Aakash Shrivastava, Chief Medical Officer (Senior Grade), NCDC, Ms Neha Pandey, Communication Expert, GDD-IC)

International Seminar: NCDC Participation

The first CDC Atlanta-sponsored FETP Global Seminar was held on 12th December, 2013.

Dr Tripurari Kumar spoke on: *"The Burden and Risk Factors of Death due to Influenza-A (H1N1) in Punjab, India"*. The discussants were Dr Shashi Khare, Deputy Director NCDC and Head of the Division of Microbiology NCDC, Delhi who spoke on *"Pandemic Influenza A H1N1: How India contained?"* and Dr Renu Lal, Influenza Coordinator, CDC-India Influenza Division, US Embassy, New Delhi, who spoke on *"How does this study fit into the context of influenza in India"*.

The session was attended by field epidemiologists-in-training around the world, and will be a monthly series where all FETPs globally will have a chance to present their findings.

(Contributed by Dr Kayla Laserson, CDC-India)

News and Events

H7N9 Influenza: Update

Human infections with a new avian influenza A (H7N9) strain were first reported in China in March 2013. Most of these infections resulted from exposure to infected poultry or contaminated environments. WHO reported 132 human H7N9 infections, with 44 deaths.

As of 25 October 2013, a total of 137 cases with 45 deaths were reported from China. As of mid-December, sporadic cases continue to be reported. Currently there is no evidence to indicate sustained human-to-human transmission. There is limited information about the scope of the disease and source of exposure. Some of the confirmed cases had contact with animals or with environments where animals are housed. The virus has now been found in chickens, ducks, and captive-bred pigeons at live bird markets near locations from where cases were reported.

Thus far, most patients with this infection have had severe pneumonia. Symptoms include fever, cough and shortness of breath. No vaccine for the prevention of avian influenza A (H7N9) infections in humans is currently available. There is little experience with the use of neuraminidase inhibitors drugs for its treatment.

Certification of Polio Eradication

A region is certified polio free if there has been no wild poliovirus in the region for three consecutive years, surveillance quality is of global standards, and phase 1 laboratory containment plans have been made. With the last case of wild poliovirus detected on 13 January 2011, the South-East Asia (SEA) Region of WHO will be eligible to become certified by February 2014.

In 2009, India accounted for nearly half of the world's polio cases. However, no wild poliovirus has been detected from any source in the country since 13 January 2011. The Independent Monitoring Board of the Global Polio Eradication Initiative has lauded this achievement in its various reports.

The SEA Region will be the fourth WHO region in the world to be certified polio-free. As it completes three years, India is also looking forward to playing a role in the development of the polio end-game strategy, with support from WHO and other partners. The strategy involves a carefully planned phased withdrawal of the oral polio vaccines from the programme while phasing in the use of inactivated polio vaccine.

The SEA Regional Certification Committee will review all information and will consider certification. Once that happens, SEA Region will join other already-certified regions (Pan American, Western Pacific and European). WHO and partners are working with the Eastern Mediterranean Region and African Region to increase vaccine campaigns in hopes of certifying those regions in the near future. Only after all regions are certified will the Global Certification Committee recommend to WHO to declare the world free of wild poliovirus. Sustained efforts must continue until global polio-free certification is achieved.

Alarming Increase in Obesity in the Developing World

The Overseas Development Institute reports that the number of obese and overweight people in the developing world has nearly quadrupled between 1980 and 2008. The number of obese or overweight people affected in the developing world rose from 250 million to 904 million, compared to the developed world, where the number increased from 321 million to 557 million during the same period.

The growing rates of overweight and obesity in developing countries is alarming as it will lead to a huge increase in the number of people suffering certain types of cancer, diabetes, strokes and heart attacks, putting an enormous burden on public healthcare systems. Major reasons for the growing epidemic of obesity are change in diet, increasingly sedentary lives, rising incomes and shifting away from traditional diets to those rich in fats and sugar.

The governments must treat the situation as an emergency and address it without delay.

Forthcoming Meetings/Conferences

Annual EIS Conference in Atlanta
Dates: April 28 – May 2, 2014

CDC Public Health Grand Rounds: Youth Violence
Dates: 18, February 18
Venue: Atlanta, Georgia
For details: www.cdc.gov/about/grand-rounds

CDC Public Health Grand Rounds: MDR-TB
Dates: 18 March, 2014
Venue: Atlanta, Georgia
For details: www.cdc.gov/about/grand-rounds

Use of Modern Technology in Public Health

Information and Communication Technology (ICT) Network under the Integrated Disease Surveillance Programme

A strong information and communication system is an important component of a modern day surveillance system, as timely flow of information, as well as its analysis and use are key for a rapid response to prevent and control disease outbreaks.

Under the Integrated Disease Surveillance Programme (IDSP) information and communication technology (ICT) linkages have been established between the Central Surveillance Unit (CSU) at NCDC Delhi, state surveillance units, district surveillance units, government medical colleges and major premier health institutions on a Satellite Broadband Hybrid Network. The Indian Space Research Organization has helped establish satellite connectivity while the National Informatics Centre (NIC) has helped set up a terrestrial network across the country.

The NIC has created a single-stop web portal (http://www.idsp.nic.in) for IDSP with options for data entry and analysis from the district level upwards related to disease surveillance. The portal can also convert data into charts and graphs. The data entry operators and data managers placed at district and state levels, have been trained in data entry, analysis and transmission. The portal also has information on media, outbreak alerts, and a resource section which contains the latest manuals of IDSP, weekly outbreak report and official orders. Presently around 90% districts report weekly data on the IDSP portal.

Strategic Health Operations Centre (SHOC) at NCDC–Delhi

EDUSAT Earth Station at NCDC

A 24X7 call-centre has been established to receive disease alerts from anywhere across the country on a toll free number 1075 (1800-11-4377) for verification and to initiate appropriate public health action.

To ensure preparedness and enhance the quality of disease surveillance, regular video conferences are organized by CSU with state/districts surveillance units to discuss outbreak investigations and control measures taken. Video conferencing facilities are also used for training purposes, programme reviews etc.

Whenever infectious disease outbreaks occur, NCDC is called upon to provide onsite and central support to the affected states and Union Territories. To better support these efforts, the Strategic Health Operations Centre (SHOC) at NCDC–Delhi was developed in September 2012. Equipped with state-of-the-art technology the SHOC allows NCDC to communicate, collaborate, and coordinate information and resources during outbreak responses from a centralized location.

(Contributed by Drs Jagvir Singh, National Project Officer, IDSP, Pradeep Khasnobis, Chief Medical Officer (Senior Grade), IDSP, NCDC)

MMWR: Selected Coverage

Morbidity and Mortality Weekly Report (*MMWR*)

Investigation of Hepatitis E Outbreak Among Refugees — Upper Nile, South Sudan, 2012-2013

During the week of July 2, 2012, the deaths of two pregnant women and one child were reported by household mortality surveillance in Jamam refugee camp, Maban County, Upper Nile State, South Sudan. All were reported to have yellow eyes before death. During July 27–August 3, 2012, three adult males with acute onset jaundice were admitted to the Médecins Sans Frontières (MSF) hospital in Jamam camp; two died within 4 days of admission. The Republic of South Sudan Ministry of Health, United Nations High Commissioner for Refugees (UNHCR), CDC, and humanitarian organizations responded through enhanced case surveillance, a serosurvey investigation, and targeted prevention efforts. As of January 27, 2013, a total of 5,080 acute jaundice syndrome (AJS) cases had been reported from all four Maban County refugee camps (Doro, Gendrassa, Jamam, and YusufBatil). Hepatitis E virus (HEV) infection was confirmed in a convenience sample of cases in each camp. A cross-sectional serosurvey conducted in Jamam camp in November 2012 indicated that 54.3% of the population was susceptible to HEV infection. Across all camps, an AJS case-fatality rate (CFR) of 10.4% was observed among pregnant women. The outbreak response has focused on improving safe drinking water availability, improving sanitation and hygiene, conducting active case finding, and optimizing clinical care, especially among pregnant women. Sustaining these improvements, along with strengthening community outreach, is needed to improve outbreak control. Further investigation of the potential role for the newly developed HEV vaccine in outbreak control also is needed.

If you would like to read the full article, please see MMWR, July 26, 2013 / 62(29);581-586

EIS 3rd Cohort 2014 — Announcement

The National Centre for Disease Control (NCDC), in collaboration with the US Centers for Disease Control & Prevention (CDC), is currently hosting the India Epidemic Intelligence Service (EIS) Programme, modeled on the US EIS Programme. This is a joint venture between India and USA, aimed at preparing public health professionals for leadership positions at district, state and national levels. Applications are invited for the enrolment of the 3rd cohort of outstanding public health professionals for India EIS, commencing in September 2014 for a period of two years.

Eligibility: (1) MBBS plus MD (Public Health) OR MBBS plus MD (Clinical/ Para-Clinical) with two years public health experience OR MBBS with PG Diploma in Clinical/Para-Clinical field from any recognized institution with three years of PH experience OR MBBS from any recognized institution with five years of PH experience, may also apply; (2) 25–45 years at the time of application; (3) Sponsored/ nominated candidates should be regular/ permanent employees of Central/ State Health Service or equivalent viz. ESI, Railways, Municipal Corporations, Local Bodies, etc; self-sponsored candidates may also apply.

Applications shall be accepted in the prescribed application form, which must be e-mailed to eiscellncdc@gmail.com on or before May 1, 2014.

Prospective applicants are urged to visit the NCDC website http://ncdc.gov.in for additional information and prescribed application form. The compendium explaining the India EIS Programme, detailed selection procedures, applicable stipend and allowances is also available at the NCDC website.

For any further query, please email at eiscellncdc@gmail.com.

Monitoring Disease Trends

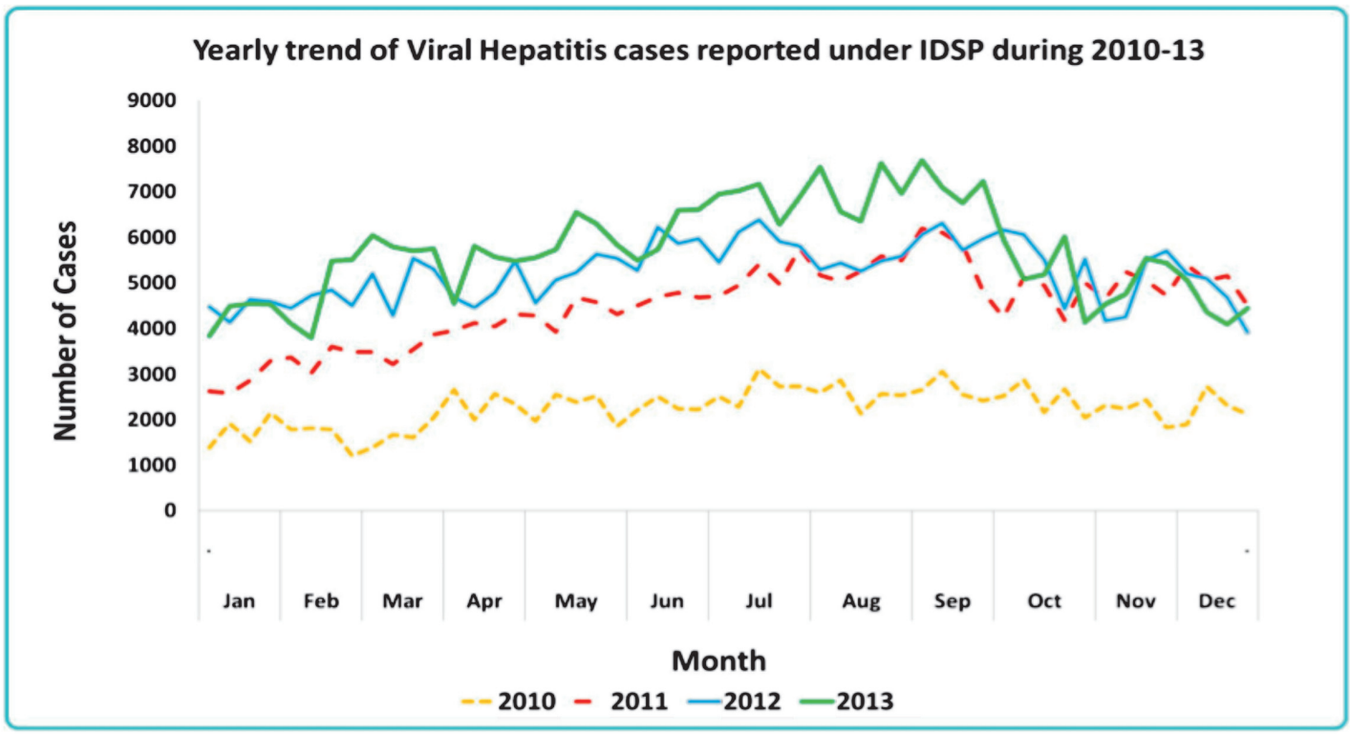
Viral Hepatitis in India, 2010 to 2013

The Government of India has initiated a viral hepatitis prevention and control programme that proposes to set up laboratory-based surveillance in a phased manner in the 12th five year plan.

Under the Integrated Disease Surveillance Programme (IDSP), 315 outbreaks of viral hepatitis were reported from 2010 to 2013. Most of the outbreaks were reported from Gujarat (74), Kerala (64), Punjab (31), Maharashtra (24) and Uttarakhand (21). The majority of these outbreaks were due to hepatitis E and hepatitis A viruses.

Analysis of data reported in 'P' format shows that (see figure) viral hepatitis cases are reported every year and most cases are reported during the monsoon season with rapid decline in the post-monsoon period (starting October).

Most cases have been reported from Gujarat (17.1%), Tamil Nadu (12.7%), Uttar Pradesh (11.8%), West Bengal (7.3%) and Madhya Pradesh (7.3%).



Note: The data may not be complete due to non-receipt of data from all reporting units under IDSP

(Contributed by Drs Jagvir Singh, National Project Officer, IDSP, Pradeep Khasnobis, Chief Medical Officer (Senior Grade), IDSP, NCDC, Amit B. Karad, Assistant Director, NCDC, Mr Prasun Sharma, Statistician, IDSP)

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