Operational Guidelines

National Programme for Prevention and Control of Japanese Encephalitis/ Acute Encephalitis Syndrome

Government of India
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Directorate General of Health Services
National Vector Borne Disease Control Programme,
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FOREWORD

Successful Programme implementation always depends upon a time tested programme strategy and full understanding of all the components of the strategy by different functionaries in the field. Prevention and Control of Japanese Encephalitis/ Acute Encephalitis Syndrome (JE/AES) has been fortified by including multipronged strategy envisaging convergence with the designated Ministries, therefore for taking a step further towards successful programme execution, framing of operational guidelines is imperative.

It is a matter of great pleasure for me to know that Directorate of National Vector Borne Disease Control Programme (NVBDCP) has developed operational guidelines for all the functionaries working in the field of Prevention and Control of JE/AES.

The technical guidelines developed to cover all the aspects of health related components to be implemented in the programme mode shall prove to be useful and handy for all concerned health professionals while executing the programme related activity in the field.

I congratulate all the experts in general and the officials of Directorate of NVBDCP in particular for having framed this technical document that will go a long way in guiding the States for effective implementation of programme.

I wish all a great success and hope that by carrying out the programme activities in accordance with these guidelines sincerely in the field shall help us in achieving programme activities.

(Lov Verma)

Secretary (Health & FW)

PREFACE

Japanese Encephalitis (JE) over the years has emerged as one of the major public health problems in the country due to its complex eco-epidemiology. Subsequent to a major outbreak of suspected Japanese Encephalitis in Eastern Uttar Pradesh in 2005, Govt. of India took up the initiative of introducing Japanese Encephalitis vaccine in priority in high endemic areas in 2006. Simultaneously Directorate of National Vector Borne Disease Control Programme was vested with the responsibility of Prevention and Control of Japanese Encephalitis/ Acute Encephalitis Syndrome (JE/AES) in programme mode which resulted in development of technical guidelines for operationalising programme components in 2007. The guidelines covered all the important areas of Disease Surveillance, Prevention and control and case management aspects.

In view of the evidence of the entero-viral and other non-JE infections circulating in the endemic areas of Eastern Uttar Pradesh, Directorate of NVBDCP revised the above guidelines for including management of encephalitis as a result of entero-viral infections during 2009.

A major initiative of Govt. of India resulted in developing a unique programme seeking convergence of the Ministries like (i) Ministry of Drinking Water and Sanitation for provision of safe water supply (ii) Women and Child development for provided high quality nutrition to the vulnerable children (iii) Ministry of Social Justice and Empowerment for establishing District Disability Rehabilitation Centers. (iv) Ministry of HUPA for ensuring the supply of safe water in slums and towns (v) Ministry of Human Resource. The above convergence resulted in developing National Programme for Prevention and Control of JE/AES.

Ministry of Health and Family Welfare has been designated as the nodal agency for overseeing the progress made by the programme, therefore, it was felt that comprehensive guidelines on health components of the revised strategy be developed, to be followed by the States.

Directorate of NVBDCP has done a good job in coming up with a set of technical operational guidelines to be used by all the personnel engaged in Prevention and Control of JE/AES.

I am sure that all those functionaries involved in executing the programme successfully in the field will find these guidelines very useful and therefore I hope that the implementation of programme components will receive a great momentum which will ultimately lead to achieving the desired goal of significant reduction of mortality and morbidity due to JE/AES.

I wish programme all the success.

(Jagdish Prasad)
Director General Health Services

ACKNOWLEDGMENT

JE is an emerging public health problem afflicting mostly children between 1-15 years of age. Because of its eco-epidemiological complexity it poses a serious challenge in terms of prevention and control. Keeping in view this challenge, Government of India has formulated a multipronged strategy in five most Japanese Encephalitis endemic States. This strategy encompasses a unique multi-sectoral approach aimed at significantly reducing the disease burden as well as preventing mortality, morbidity and disability to a great extent. This approach necessitated the development of revised operational guidelines for convenient operationalization of the programme strategy in the field.

The operational guidelines on National Programme for Prevention and Control of Japanese Encephalitis/Acute Encephalitis Syndrome (JE/AES) developed by Directorate NVBDCP are expected to be used by all the stakeholders working in different endemic areas for Prevention and Control of JE/AES.

It is a matter of great pleasure for me to thank the experts from this Directorate as well as from Directorate General of Health Services, and Ministry of Health and Family Welfare who lent a helping hand and guided us in framing these guidelines. I am thankful for the overall technical guidance provided by Dr. Jagdish Prasad DGHS, Govt. of India. The support and encouragement provided by Sh. Anshu Prakash, Joint Secretary (MoH&FW) is gratefully acknowledged. The guidance received from Dr. Shiv Lal, Ex-Spl. DGHS (PH) and Programme Coordinator JE/AES is highly appreciated.

I will also express my gratitude to my colleagues, Dr. P.K. Sen, Additional Director, Dr. R.K. Jaiswal, Assistant Director and the consultants Dr. V. K. Raina, Dr. Aruna Rastogi, Dr. Nibedita Das, Dr. Poonam Mishra, Sh. B.R. Thapar and Sh. V.K. Reehl, for their invaluable contribution in preparing the guidelines. Secretarial Assistance while preparing this document rendered by the staff of JE division is also thankfully acknowledged.

I am sure that these guidelines will help all the concerned personnel in appropriately taking up Prevention and Control measures in the field.

(A.C. Dhariwal)

Director, NVBDCP

ABBREVIATIONS AND ACRONYMS

AES	: Acute Encephalitis Syndrome
ARL	: Apex Referral Laboratory
AFP	: Acute Flaccid Paralysis
ASHA	: Accredited Social Health Activist
APL	: Above Poverty Line
BCC	: Behaviour Change Communication
BPL	: Below Poverty Line
CFR	: Case Fatality Rate
DDRC	: District Disability Rehabilitation Centre
DVBDO	: District Vector Borne Disease Officer
GoM	: Group of Ministers
ICDS	: Integrated Child Development Services
IDSP	: Integrated Disease Surveillance Programme
IEC	: Information Education and Communication
IU	: Informer Unit
ICMR	: Indian Council of Medical Research
JE	: Japanese Encephalitis
JEV	: Japanese Encephalitis Virus
NIMHANS	: National Institute of Mental Health and Neuro Sciences
NIV	: National Institute of Virology
NHM	: National Health Mission
NRHM	: National Rural Health Mission
NVBDCP	: National Vector Borne Disease Control Programme
NPSP	: National Polio Surveillance Project
PICU	: Paediatric Intensive Care Unit
PMR	: Physical Medicine and Rehabilitation
WHO	: World Health Organization
MoHFW	: Ministry of Health and Family Welfare
MC ELISA	: IgM Antibody Capture Enzyme Linked Immuno Sorbent Assay
PIP	: Project Implementation Plan
SMO	: Surveillance Medical Officer
SPO	: State Programme Officer
SSSL	: Sentinel Surveillance Site with Laboratory
SSS	: Sentinel Surveillance Site without Laboratory
THR	: Take Home Ration
TM	: Technical Malathion
ULV	: Ultra Low Volume
VDL	: Viral Diagnostic Laboratory

Chapter – 1

Policy and strategic framework for implementation

1.1 Introduction:-

Japanese Encephalitis (JE) is a mosquito borne zoonotic viral disease. The virus is maintained in animals, birds, pigs, particularly the birds belonging to family Ardeidae (eg. Cattle egrets, pond herons etc) which act as the natural hosts. Pigs & wild birds are reservoirs of infection and are called as amplifier hosts in the transmission cycle, while man and horse are 'dead end hosts. The virus does not cause any disease among its natural hosts and transmission continues through mosquitoes primarily belonging to vishnui group culex. Vector mosquito is able to transmit JE virus to a healthy person after biting an infected host with an incubation period ranging from 5 to 14 days.

The disease affects the Central Nervous System and can cause severe complications, seizures and even death. The Case Fatality Rate (CFR) of this disease is very high and those who survive may suffer from various degrees of neurological sequeale. (An estimated 25% of the affected children die, and among those who survive, about 30-40% suffers from physical & mental impairment). The children suffer the highest attack rate because of lack of cumulative immunity due to natural infections.

The incidence of JE disease is never an indication of the risk at which the population is living in JE endemic areas, because of inapparent infections, which tend to outnumber the apparent infections and also due to the lifelong immunity, which develops despite inapparent infection. The ratio of overt disease to inapparent infection varies from 1:250 to 1:1000. Thus the cases of JE represent tip of the iceberg compared to the large number of inapparent infections. Usually the number of overt disease cases reported from each village is 1 or 2.

The first case of Japanese Encephalitis (JE) was reported in India in 1955 from Vellore, Tamil Nadu. The first major JE outbreak was reported in 1973 from Burdwan district of West Bengal. Since then JE/AES has been reported from 171 districts of 19 States in the country. A major outbreak of Japanese Encephalitis was reported from eastern UP during 2005 resulting in recording of more than 6000 cases and 1500 deaths. This led to a major decision of introduction of vaccine in high endemic areas. Simultaneously NVBDCP developed surveillance and case management guidelines for syndromic reporting of Acute Encephalitis Syndrome including Japanese Encephalitis. During this outbreak NIV Pune detected entero-viral infections (22%) out of 302 CSF/sera samples through RT-PCR.

Acute Encephalitis Syndrome (AES) is a general description of the clinical presentation of a disease characterized by high fever altered consciousness etc mostly in children below 15 years of age. Acute Encephalitis Syndrome (AES) has a very complex etiology and JE virus is only one of the many causative agents of Encephalitis. Further it is also

evident that many cases of AES in these States are caused by Entero-viruses which are spreading through unsafe drinking water sources. The disease is causing high mortality and disability. During 2013, a declining trend in the number of AES cases (27%) and (7%) in deaths was observed as compared to corresponding period of 2012.

The epidemiological analysis of the data collected for the States from 2008-2013 revealed the following:

- Most vulnerable age group between 1-5 years followed by 5-10 years and 10-15 years in that order.
- Least JE infections in infants (0-1 year).
- All the endemic States except Assam start reporting JE cases from July onwards attaining a peak in September- October.
- In Assam the cases start appearing from February and attain a peak in the month of July.
- Due to circulation of entero-viruses particularly in Eastern Uttar Pradesh AES cases are reported round the year.

Realizing the gravity of problem of AES & JE in the country, a Group of Ministers (GoM) was constituted vide Cabinet Secretariat's order no. 241/1/5/2011-CAB dated 4th November, 2011 by Govt. of India envisaging multi pronged strategy encompassing preventive (sanitation, safe drinking water, improvement in nutrition etc.), case management (capacity building of medical and para-medical staff, referral etc.) and rehabilitation (physical and social rehabilitation of disabled children), measures to address the problems relating to JE/AES.

On the recommendations of the Group of Ministers, Govt. of India approved National Programme for Prevention & Control of JE/AES.

The operational guidelines have been prepared by the Directorate of NVBDCP for implementation of National Programme for Prevention & Control of JE/AES. The guidelines are intended to guide the programme managers at state & district level for better management of the programme by providing information on AES surveillance, JE Vaccination, early case detection and speedy referrals of complicated cases to well equipped hospitals, rehabilitation of disabled children due to AES/JE which can help to reduce mortality & disability in affected children.

1.2 Goal and Objectives of the Programme

Considering the complexity of JE/AES problem and the urgency of addressing the adverse consequences of the growing incidence of JE/AES through a multi-pronged strategy, it has been decided to launch a comprehensive National Programme on Prevention and Control of JE/AES with the participation of concerned Ministries/ Departments. The **goal** of the Programme will be to reduce morbidity, mortality and disability in children due to JE/AES. The major **objectives** of the Programme shall be;

(i). to strengthen and expand JE vaccination in affected districts;

(ii). to strengthen surveillance, vector control, case management and timely referral of serious and complicated cases;

(iii). to increase access to safe drinking water and proper sanitation facilities to the target population in affected rural and urban areas;

(iv). to estimate disability burden due to JE/AES, and to provide for adequate facilities for physical, medical, neurological and social rehabilitation;

(v). to improve nutritional status of children at risk of JE/AES;

(vi). to carry out intensified IEC/BCC activities regarding JE/AES.

1.3 Strategy

The Ministry of Health & Family Welfare has been taking various prevention and control measures against Acute Encephalitis Syndrome (AES) but the nature of the problem suggests that AES should be construed as a broader development and rehabilitation challenge rather than merely a medical problem. Therefore, there is a need to put in place a multi-pronged strategy.

This strategy can be implemented only with the active engagement of the Ministries/ Departments of (i) Health and Family Welfare (ii) Drinking Water and Sanitation (iii) Social Justice and Empowerment (iv) Women and Child Development (v) Urban Development (Housing and Urban Poverty Alleviation) and (vi) Human Resource Development (Department of School Education and Literacy).

To begin with the, interventions shall be focused during Phase–I of the programme in 60 districts in 5 States (Assam, Bihar, Tamil Nadu, Uttar Pradesh & West Bengal) **Annexure- 1a,** out of 171 districts in 19 States, identified as JE endemic districts as shown in **Annexure- 1b.**

1.4 Guidelines, Protocols etc.

The new Programme combines the basic elements of on-going schemes of participating Ministries/ Departments. However, some new elements and strategies have been incorporated in the Programme. Therefore, the participating Ministries/ Departments will prepare and disseminate comprehensive guidelines/ protocols for the implementation of the Programme wherever required.

1.5 Monitoring, Supervision & Coordination

The complexity involved in the implementation of this National Programme with inputs, support and supervision from various Ministries/Departments is self-evident. Therefore, a Committee has been set up under the Chairmanship of the Secretary, Department of

Health & FW, Ministry of Health and Family Welfare with Secretaries and/ or their representatives from the Ministries/Departments of Drinking Water & Sanitation, Women & Child Development, Social Justice & Empowerment, Housing & Urban Poverty Alleviation, School Education and Health Research to supervise and monitor the activities of the Programme in coordination with various stakeholders including State Governments. The Committee will decide on measurable and time-bound monitoring indicators in respect of each Ministry/Department and monitor the progress on six-monthly basis against the agreed indicators. The Committee has also set up a Task Force consisting of officials and experts from participating Ministries/ Departments for making field visits, interacting with state and district authorities and coordinating with other ground level functionaries, besides assessing the progress of different components on the ground.

Chapter-2

Role and responsibilities of different Ministries

2.1 Ministry of Health and Family Welfare

Ministry of Health and Family Welfare has been designated as nodal agency to monitor the progress on the implementation of following programme components recommended by Group of Ministers (GoM).

a) Strengthening and Expanding JE Vaccination.

b) Strengthening of Public Health Activities

c) Better Clinical Management of JE/AES Cases.

d) Physical Medicine and Rehabilitation (PMR)

e) Establishing of District Counselling Centres

f) Monitoring, Supervision and Coordination

g) Research-Cum-Intervention Project

2.2 Ministry of Drinking Water and Sanitation

Considering the risk of transmission of (Entero-viral infection) AES through contaminated drinking water, the provision of safe drinking water and proper sanitation are critical for the prevention and control of AES. Ministry of Drinking Water and Sanitation will undertake following activities to improve supply of drinking water and its quality in 60 priority districts.

(i). Installation of new IM-II hand pumps to replace private/public/shallow hand pumps.

(ii). Mini water supply scheme in habitations where JE/AES cases are reported, with energized deep bore-well and stand posts with adequate number of taps and provision for chlorination. In States/habitations where piped water supply schemes exist in the affected areas, they can alternatively utilize this fund for extension of pipelines, installation of disinfection units like Ultrafilteration (UF) Activated Carbon (AC), Ultra violate (UV), Electro-chlorinator, and related activities for controlling bacteriological contamination.

(iii). Water safety measures for drinking water sources in the affected areas; immediate repairs of hand pump platform, raising of hand pump platforms in flood prone areas, construction of soakage pits, chlorination, etc.

(iv). Solid and liquid waste management in the affected habitations/districts.

(v). Awareness generation and capacity building of local community and field level engineers and technicians.

(vi). Water quality testing of all public sources in the 60 districts with sample testing for virological examination.

The Ministry will take up following activities to improve access to sanitation facilities.

(i). Effective demand generation for sanitation facilities through awareness creation and IEC

(ii). Incentivising BPL households for construction and usages of sanitation facilities.

(iii). Providing interest free loans out of revolving fund to APL households.

(iv). Providing sanitation facilities in schools and anganwadis housed in government buildings

The estimated costs of drinking water and sanitation components have been worked out based on requirements in 60 districts over a period of 3-5 years.

2.3 Ministry of Housing and Urban Poverty Alleviation (HUPA)

It is evident from available data that JE/AES is primarily a rural-based problem. However, JE/AES cases have been reported from some urban areas as well. Based on the reported cases and perceived risk of transmission of AES, a list of 66 municipalities which require adequate facilities for safe drinking water and sanitation has been prepared by the Ministry of Health and Family Welfare and is placed at **Annexure-2.**The Ministry of Housing and Urban Poverty Alleviation has estimated slum households and slum population at 4.77 lakh and 24.9 lakh respectively in identified 66 municipalities in 43 districts.

2.4 Ministry of Social Justice and Empowerment

The Ministry of Social Justice and Empowerment fulfills its mandate of providing rehabilitation services to target populations through a network of national institutes, composite regional centres, and district disability rehabilitation centres established across the country. The Ministry is also operating various schemes, including Scheme of Assistance to Disabled Persons for Purchase/ Fitting of Aids/ Appliances and Deendayal Disabled Rehabilitation Scheme (DDRS) for promoting physical, psychological, social, educational and economic rehabilitation of persons with

disabilities to enhance their quality of life and also to enable them to lead a life with dignity.

The Ministry has already initiated process of setting up District Disability Rehabilitation Centres (DDRCs) in 60 priority districts. The Government of Tamil Nadu has set-up DDRCs in all districts including 4 priority districts out of its own resources. The Ministry has also set-up a Composite Regional Centre in Patna and, therefore, a separate DDRC is not needed in Patna. The Ministry will, therefore set-up and operate 15 new DDRCs in remaining priority districts in 4 States over 5 years as follows:

S. No.	States	Districts
1.	Assam (6)	Dhemaji, Golaghat, Sonitpur, Tinsukia, Udalgiri, Lakhinpur
2.	Bihar (3)	Gopalganj, Nalanda, Saran
3.	Uttar Pradesh (5)	Balrampur, Kushinagar, Sant Kabir Nagar, Sitapur, Sravasti
4.	West Bengal (1)	Paschim Midnapur
Total 4 States and 15 Districts		

The Ministry will also assist the needy persons with disabilities in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation on priority basis in 60 districts. Similarly, the Ministry will provide Grant-in-AID to voluntary agencies under Deendayal Disabled Rehabilitation Scheme (DDRS) to provide services for pre-school and early intervention, special education, vocational training, and community based rehabilitation, and psycho-social rehabilitation in identified 60 districts.

2.5 Ministry of Human Resource Development (Department of School Education)

It was recognized that children with disabilities due to JE/AES need special facilities for their education. Department of School Education has informed that their mandate is to set up inclusive schools as no separate schools are established for mentally challenged children. However, it was agreed that a tailor-made curriculum was required to cater to specific needs of JE/AES affected children. It has been decided that a joint team consisting of officials from Ministry of Human Resource Development, National Institute of Mental Health and Neuro Sciences (NIMHANS) and Ministry of Social Justice and Empowerment will develop the curriculum, and the Ministry of Social Justice and Empowerment will set up special schools and training centres under Deendayal Disabled Rehabilitation Scheme (DDRS) in 60 districts based on assessed needs of affected children.

2.6 Ministry of Women and Child Development

Poor nutrition is an important risk factor for JE/AES. Therefore, it is critical that special efforts are made to improve the nutritional status of the children in affected areas. The Ministry of Women and Child Development will take steps to improve the monitoring of feeding of children at the Anganwadi centres with the help of district and state authorities under Integrated Child Development Services (ICDS) in 60 priority districts. The Ministry will also take special measures to train and sensitize Anganwadi workers and their supervisors regarding JE/AES.

The Ministry will also provide additional Take Home Ration (THR) to the moderately undernourished children enrolled under ICDS in 60 most affected districts.

Chapter - 3

Operational Guidelines for the activities to be conducted by Ministry of Health & Family Welfare

3.1 Strengthening and Expanding JE Vaccination.

Vaccination with the approved JE vaccine is one of the most effective preventive measures given the complex eco-epidemiology of the disease that involves multiple hosts supporting the circulation of JEV. In addition vector control measures also have their limitations given the exophilic as well as exophagic tendencies of the proven vectors belonging to Cx. Vishnui group. Subsequent to a major outbreak of JE in Eastern UP during 2005, GoI introduced JE vaccination with SA-14-14-2 vaccine in phased manner starting from 2006. 132 districts have already been brought under JE vaccination as part of Universal Immunization Programme (UIP). Out of 62 new districts proposed to be covered during 2012-13 & 2013-14, 16 districts have already been covered under JE vaccination during 2012-13. Further, new areas will also be covered based on epidemiological evidence. Micro planning for strengthening routine immunization including JE is planned in the programme which may include name based tracking and also capacity building and training of field level workers.

As per Govt. of India guidelines, 2 doses of JE vaccine have been approved to be included in UIP to be given one along with measles at the age of 9 months and the second with DPT booster at the age of 16-24 months w.e.f. April, 2013.

This activity will be undertaken by Immunization Division, Ministry of Health & Family Welfare in consultation with State concerned.

3.2 Strengthening of Public Health Activities

A district level model action plan including public health measures for containment of JE/AES has been developed in consultation with state and district health authorities in Uttar Pradesh. The model action plan envisages community based surveillance, entomological surveillance, vector control, and IEC/BCC capacity building involving community volunteers. It has been decided to implement similar action plan in 60 priority districts.
Details of public health activities to be carried out under public health measures is Annexed at **Annexure.3.**

3.3 Vector Control

JE vectors are exophillic and endophagic in nature. The risk of transmission increases when the human dwellings and animal sheds particularly piggeries are situated very

close to each other. When they are situated far from each other, the risk of transmission is reduced.

Because of outdoor resting habits and crepuscular nature, the vector control using indoor residual spray is technically not feasible. In addition to this, due to vast and enormous breeding habitats like perennial ponds, paddy fields and other water bodies, larval control using various anti larval measures is also not feasible as it is resource intensive. Therefore, vector control using ULV (ultra low volume) fogging is the only recommended method of vector control and can be used during JE epidemics also.

3.4 Disease Surveillance

JE Surveillance implies a continuous monitoring of all factors influencing transmission and effective control of JE, building up capacity for early recognition of impending outbreaks or epidemics. It is pertinent that the JE Surveillance system collects the information on epidemiologic, clinical, laboratory and entomological parameters from the identified sites on a regular basis.

The list of Apex referral laboratories is given at **Annexure-4.**

3.5 Advocacy Meeting

Advocacy meetings will include orientation training of ASHA / AWW and community volunteers.

3.6 Behavior Change Communication (BCC) / Information Education and Communication (IEC)

Preparation of community education, printing material, Nukkad Naatak at block PHC and prominent places and also advocacy workshop.

Behavior change communication (BCC) is a process of any intervention with individuals, communities and/or societies to develop communication strategies to promote positive behaviors which are appropriate to their settings. This in turn provides a supportive environment which will enable people to initiate and sustain positive and desirable behavior outcomes. BCC should not be confused with behavior modification, a term with specific meaning in a clinical psychiatry setting.

Behavior Change Communication is different from ordinary instructional method of communication and is target specific. A society consists of many sub-groups. The strategy for Behavior Change Communication will vary from group to group. Following points are important while considering the Behavior Change Communication strategy.[3]

- Vulnerability/risk factor of the target group.
- The conflict and obstacles in the way to desired change in Behavior.

- Type of message and communication media which can best be used to reach the target group.
- Type of resources available and assessment of existing knowledge of the target group about the issue which is going to be dealt with.

There can be several more points in this list. A successful Behavior Change Communication requires lots of research and meticulous planning about the knowledge content of the subject and behavior/attitude pattern of the target group.

Objectives of IEC/BBC in the Programme:

1) To promote individual services and all other interventions of the project by creating demand and acceptance among target groups.

2) To bring about desirable behavioral changes in the household maternal, child care and feeding practices.

3) To mobilize community participation and support for project activities.

4) To empower the communities to plan and implement sustainable interventions to reduce malnutrition among adolescent girls, women and children and improve health and nutrition status of the community.

In order to achieve above objectives, and keeping in view the nature of the disease, Govt. of India in collaboration with NDMA, NVBDCP, CHEB and other experts developed a prototype in Hindi for creating awareness amongst the affected community in 14 districts of Uttar Pradesh during 2012-13. Approximately 6000 trainers were trained in above districts for disseminating information to the community. The prototype material is annexed at **Annexure-5**.

3.7 Monitoring & Supervision

It has been observed that successful implementation of any disease control porgramme largely depends upon a robust supervision and monitoring mechanism. It is therefore of utmost importance to generate clear basic data which when filled up appropriately can be analysis efficiently for providing quick feed back to the concerned health authorities. The monitoring formats for JE/AES are given at **Annexure-6.**

In order to strengthen programme activities at field level, it has been proposed to provide human resource at state and district level ToR for the contractual appointment are provided at **Annexure-7**.

3.8 Setting Up of Department of Physical Medicine & Rehabilitation at Medical Colleges (Neuro-rehabilitation component)

In view of residual neurological sequelae in 30-40% of children who recover from JE/AES, there is a ‘felt need’ to have rehabilitation specialists (Physiatrists) trained in

assessment, quantification and management of disabilities occurring as a result of JE/AES. Thus a separate Department of Physical Medicine & Rehabilitation (PMR) at Medical Colleges (Neuro-rehabilitation component) in 10 medical colleges (**Annexure-8**) in high endemic States in the country has been recommended with the objectives of:

- providing high quality and affordable care to persons with musculo-skeletal & neurological disorders due to JE/AES with focus on reducing disability & handicap.
- Organizing manpower training program in consonance with the District Health Program and other paramedical persons involved or part of multidisciplinary rehabilitation team.
- Providing public health education in the area of rehabilitation related to JE/AES.

The department should have multi level teaching and training programs:

- Short term training program for medical from government medical colleges and district hospitals can be initiated. These physicians can visit the centers for a period of three to six months and acquire skill in recognition, evaluation and management of common disabling conditions.

- Training program for other health professionals like Physical therapists, Occupational therapists, Psychologists, social works and community based health workers involved in rehabilitation.

3.9 Paediatric Intensive Care Unit (PICU)

WHO defines(Acute Encephalitis Syndrome) AES by Acute febrile illness and a change in mental illness status (such as confusion, disorientation, inability to talk, and coma) and/or new onset of seizures excluding simple febrile seizures.
As there is no specific treatment, such patients require more supportive therapy in the form of taking care of feeding, airways, anticonvulsants for seizure control and management of intracranial pressure which requires close monitoring of patients. Therefore to reduce mortality, morbidity and disability in the patients it has been decided to set up a well-equipped 10-bedded Paediatric intensive care unit (PICU) in district hospitals of 60 priority districts. PICU will be a specific area of hospital where sophisticated monitoring, titrated life support, specific therapy and specialized nursing for potentially salvageable, critically ill patients with life threatening illness will be provided. PICU will be a nursing unit that will be staffed and equipped to look after such patients and their needs or who require extensive nursing care and almost constant observation. As recommended under programme the components for PICU is enclosed as **Annexure-9.**

Chapter-3A

Epidemiological Surveillance

Background

Effective epidemiological surveillance of JE would require recording of encephalitis so that the actual disease burden can be assessed area wise. Various activities pertaining to epidemiological surveillance i.e. collection, compilation, analysis and interpretation of data, follow-up action and feedback should be carried out in a systematic and organized manner. Epidemiological surveillance of JE would include components of laboratory based serological surveillance (3E) and clinical surveillance (detailed below).

To carry out clinical surveillance of JE it is crucial that all health institutions, which are attending to patients either at outpatient department or as indoor cases, be on the lookout for any patients presenting with the signs and symptoms of encephalitis. All the reporting units (health institutions) in endemic areas both in public and private sector should further notify all these suspected JE cases based on standard case definitions. For reporting by all reporting units a line list of these cases should be prepared on the standardized reporting format and submitted to the higher authorities.

For surveillance purposes, JE is commonly reported under the heading of “acute encephalitis”. In the WHO’s guidelines for JE surveillance, syndromic surveillance for JE is recommended. This means that all cases of Acute Encephalitis Syndrome (AES) should be reported. Laboratory confirmation of suspected cases can be done where feasible. The following case definition should be used for reporting of suspected JE cases in endemic areas:

Case Definition of Suspected case:

- Acute onset of fever, not more than 5-7 days duration.
- Change in mental status with/ without
    - New onset of seizures (excluding febrile seizures)
    - (Other early clinical findings – may include irritability, somnolence or abnormal behavior greater than that seen with usual febrile illness)

Important

- In an epidemic situation fever with altered sensorium persisting for more than two hours with a focal seizure or paralysis of any part of body, is encephalitis.
- Presence of rash on body excludes Japanese Encephalitis.
- AES with symmetrical signs and fever is likely to be cerebral Malaria.

JE and AES Surveillance

The purpose of JE and ASE Surveillance is to estimate disease burden and understand the disease pattern in terms of its influence on morbidity and mortality. The incidence of JE and AES will form the basis of any future planning for prevention and control of this

disease. JE and AES surveillance would thus mean generation of authentic and valid information on epidemiological, clinical, laboratory and entomological parameters on regular basis. This surveillance will be carried out through sentinel sites and other health institutions.

- Sentinel Surveillance Sites with laboratories (SSSL) facilities
- Sentinel Surveillance Sites without laboratories facilities
- Other Informer Units

Sentinel Surveillance Sites (SSSL) with laboratories facilities

The key component of the AES surveillance system is the referral hospital with laboratory capacity to diagnose JE. These sites would include government or private health facilities which are engaged in treating a large number of AES patients.

JE and AES surveillance at the local level will be institution based, initially through at least one sentinel surveillance site with laboratory facility per district. Seventy Eight such sentinel surveillance sites have been identified where laboratories facilities will be strengthened in the first phase (List is given at **Annexure-10**).

Activities: Each SSSL would have a designated nodal officer for coordination of JE/AES surveillance activities. In SSSL, Medical Officers (MOs), pediatricians, and other physicians, nurses who see patients with AES should inform the designated Nodal Officer immediately upon presentation of the AES case. The case should be further subjected to laboratory investigations for which the nodal officer should immediately notify the District Vector Borne Disease Officer (DVBDO) or the designated officer in charge of AES/JE surveillance in the district. The SSSL will regularly generate and transmit information on the AES/JE cases and outcome. These units will also send regular information to DVBDO. There should be case investigation and line listing of suspected cases of JE in order to track these cases back their villages and to take appropriate control measures.

Records and Reports: The identified SSSL should maintain documentation of the patients reported upon. For reporting of AES and confirmed JE cases and deaths from States to NVBDCP, AESF-1 and AESF-1A form will be used. Line list of AES and JE confirmed cases will be maintained and submitted to SMO/SPO in the form AESF-3 by nodal officer.

Sentinel Surveillance Sites without laboratory facilities (SSSs)

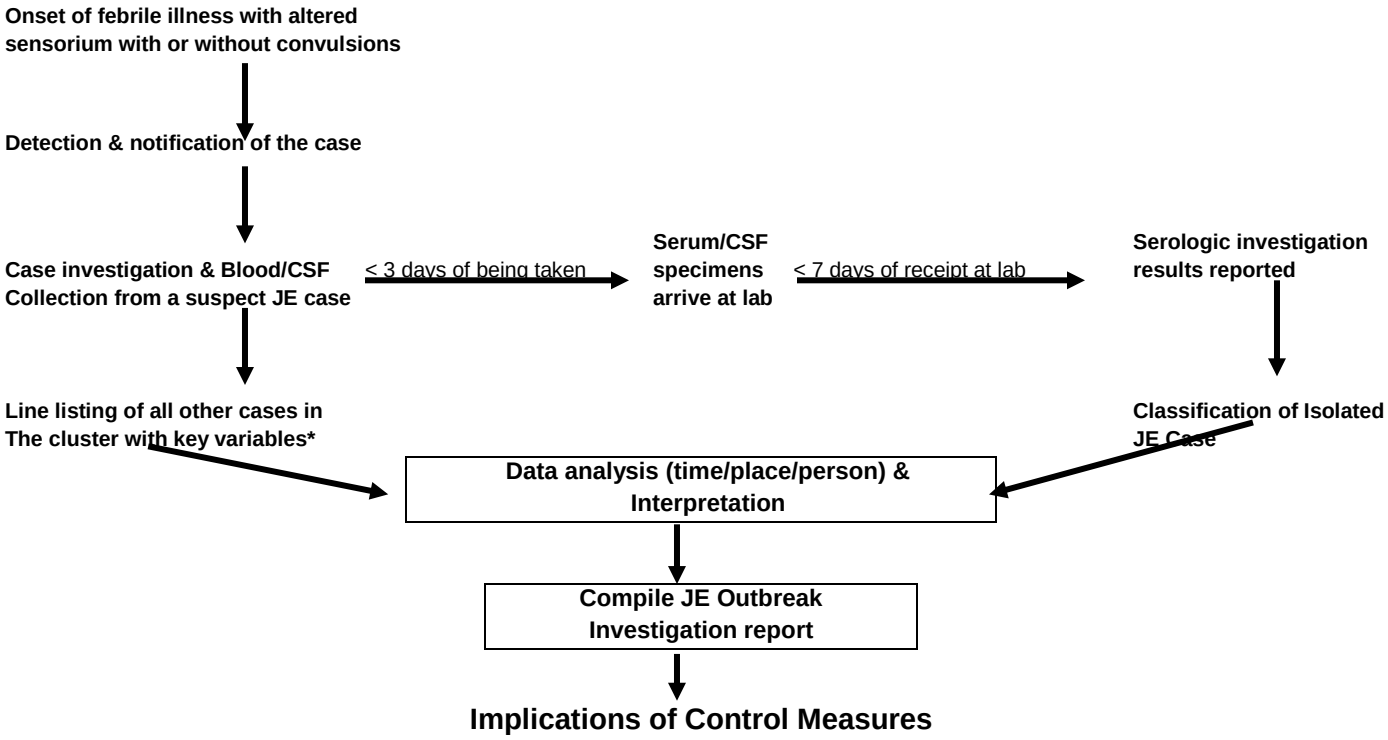
Some of the identified sentinel surveillance sites in government or private health facilities such as district hospitals, CHCs, PHCs etc. are engaged in treating a large number of AES patients and do not have facilities for laboratory diagnosis of JE. Such sentinel surveillance sites will be linked to the nearest facilities or SSSL with facilities for sero-diagnosis of JE.

Informer Units (IU)

These are smaller health facilities or private practitioners who are visited by AES patients but in relatively smaller numbers than reporting units. These units should inform the DVBDO or Surveillance Medical Officer (SMO) under National Polio Surveillance Project (NPSP) whenever they come across an AES case as is being done for reporting of AFP cases. They usually do not maintain detailed documentation of the patients visiting them.

To further strengthen the AES reporting at the district level IDSP resources can be utilized and the Epidemiologist may be involved in investigation of the AES cases.

Figure : THE PROCESS OF AES SURVEILLANCE



JE surveillance activities at the district level

The District Vector Borne Disease Officer (DVBDO) or the identified health officer will study all reports received from all SSSL, SSSs without Laboratory and informer units and also reconcile data with existing surveillance systems such as IDSP to identify if there are any outbreaks. In the office of DVBDO, compilation of all information/reports will be undertaken for interpretation and action. Report will be submitted to SPO form AESF-2, AESF-2A, AESF-3.

Case Investigation

All cases that are notified should be verified and investigated by a specially trained DVBDO, designated Surveillance Medical Officer or district level epidemiologist within 48 hours of notification. The necessary steps in the AES case investigation are:

Once a case of AES is reported by a physician, health unit or any other source, the District Vector Borne Disease Officer (DVBDO) or any other designated official must personally see the case to ascertain if the case meets the AES case definition.

Using the case investigation form AESF-4 as a guide, obtain the history and conduct a physical examination of the patient. Co ordinate the collection of specimens of serum or CSF and transportation to the identified laboratory.

Completeness and timeliness of reporting from the reporting units should be regularly monitored. To summarize, following surveillance activities need to be carried out at the district level:

- Monitoring daily/weekly/monthly surveillance reports of AES/JE cases including "nil" case reports submitted by different reporting Units.
- Ensuring analyzed of AES/JE cases and reconciling data with existing, surveillance systems such as IDSP to identify if there are any outbreaks.
- Ensuring that all data from cases are properly collected, analyzed and interpreted from local action.
- Ensuring that surveillance reports and case investigation data are shared with other surveillance systems such as IDSP and forwarded to SPO, /NVBDCP (National Vector Borne Disease Control Programme) on Daily / weekly or monthly basis as per requirement.
- Supervision and monitoring at all levels would be strengthened for ensuring effective surveillance.

Surveillance activities at state level

The District will report to the state on daily/weekly/monthly basis as per requirement depending on the disease situation.

Data from the districts will be compiled and analyzed at the state level to understand the disease situation to provide feedback to the districts and to initiate appropriate prevention and control measures.

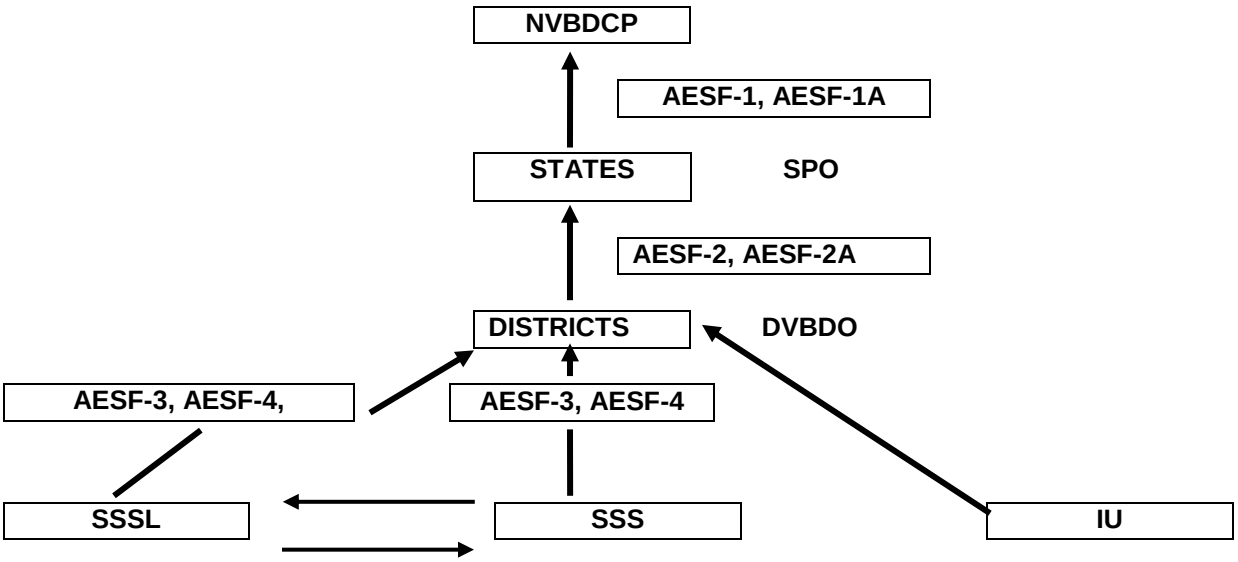
To strengthen the JE/AES surveillance the state may coordinate with existing ICMR designated Viral Diagnostic Laboratories (VDL).

Final compiled date from the state will be send to the national level on daily/weekly/monthly basis as desired by the disease situation.

Presently 85 sentinel sites and diagnostic centres exist in different States. Considering growing number of JE reporting districts, it has been decided to add 20 more such

centres with provision of manpower, equipment, kits, capacity building etc. In each sentinel site there is a provision for contractual appointment of a Data Entry Operator (DEO). Terms of Reference of DEO are annexed at **Annexure- 11.**

Figure 3: INFORMATION FLOW DIAGRAM



AESF-1A & AESF-2A – during an outbreak

AESF 1/1A	=	AES Cases & JE cases reporting Form from the States
AESF 2/2A	=	AES Cases & JE cases reporting Form from the Districts
AESF 3	=	Line Listing Form
AESF 4	=	Case Investigation Form
SSSL	=	Sentinel Surveillance Sites with laboratory facilities
SSS	=	Sentinel Surveillance Sites without laboratory facilities
IU	=	Informer Unit

Periodicity of Reports

Daily report should be generated and transmitted in an outbreak situation, weekly report in transmission period and monthly report in inter-epidemic period. In outbreak situation action taken report should be sent along with daily report.

Note : The decision on the periodicity of the reports will be made at the state level by the state programme officer based on the local JE transmission pattern.

Monitoring indicators

- Completeness of monthly reporting
- Timeliness of monthly reporting
- Percentage of serum samples taken
- Percentage of all suspect cases for which specimens were collected
- Proportion of AES cases tested for JE
- Concurrent evaluation of JE vaccination campaign
- JE vaccination coverage under RI
- Percentage reduction in CFR

Chapter 3B

Early warning signals, JE outbreak investigations and management

Monitoring the early warning signals for predicting an outbreak of JE is the key activity which needs to be established and undertaken at different level with utmost attention. The clues for an impending outbreak can be picked up from following.

- Prediction of high rainfall by the meteorological department, an unusual increase in the adult vector density.
- Relative increase in pig population and water frequenting birds should alert the local officers. They should share such information with the District Nodal Officer of JE Surveillance (DMO).
- Virus detected in the suspected animal hosts and in mosquitoes can also act as an indicator for warning a forthcoming outbreak.
- Other associated parameters and the surveillance data can be correlated to above to identify early warning signals.
- Epidemiological data for the last ten years would indicate the trend of the diseases in the specific area. Micro analysis of such data at the district level would help the district health officer to predict areas which are at risk of having epidemic outbreak of JE.

To obtain the earliest linking of an impending outbreak it is essential that all the components of surveillance i.e. collection, compilation, analysis and interpretation of data, follow-up action and feedback must be carried out in a systematic and organized manner. Supervision and monitoring at all levels is mandatory for ensuring effective surveillance.

The state Programme officer would compile district-wise surveillance data generated through epidemiological, entomological laboratory and veterinary surveillance, predict the suspected outbreak and warn the districts for implementation of proper measures for prevention of outbreak. Outbreak investigations should be initiated if there is a sudden increase in cases or if cases reported are different from historical information, in terms of season, geographic area, age group, or case fatality. All compiled reports should be sent to Dte. of NVBDCP on regular basis as per proforma attached at **Annexure-12**.

Early Warning Signals

Directorate of NVBDCP monitors daily/weekly or monthly incidence of JE as per the needs. During epidemics, daily monitoring is carried out while weekly reports are insisted upon during the transmission season. During the inter-epidemic period a monthly report is expected from the States. This surveillance data is further analyzed by

the Dte. of NVBDCP and interpreted to detect any warning signals(WS) for JE outbreak. Based on epidemiological trends advance warnings are given to the States. Some of the early warning signals for JE outbreak are:

- ***Reporting of a suspect case, with clustering in time and space which do not fit into the expected known endemicity or seasonality of JE, in a given area.***
- Fluctuations in ecological conditions conducive for vector breeding and enhanced adult density of JE vectors.
- Presence of amplifying host in good number
- Detection of viral activity in vector
- Detection of viral activity in zoonotic reservoir/s

It is emphasized that comprehensive analysis of all available information is made to estimate the risk of an outbreak.

Risk Factors for JE outbreak in an Area

- Increase in susceptible population
- High density of Culex mosquitoes
- Presence of amplifying hosts such as pigs, water birds etc.
- Paddy cultivation

Outbreak investigation

JE is a disease of public health importance because of its epidemic potential and high case fatality rate. JE, in patients who survive, complications may lead to lifelong sequelae. The first major outbreak of JE occurred in Bankura and Burdwan districts, West Bengal, in 1973 and since then it has spread to many States/ UTs of the country. Though JE is primarily a disease of rural agricultural areas, where vector mosquitoes proliferate in close association with pigs and other animal reservoirs, epidemics have also been reported in peri-urban areas where similar conditions may exist. For investigation of an outbreak, the first principle is to have in place a system to receive early warning signals and confirm diagnosis. In areas of low JE endemicity every single suspect JE case needs to be investigated. However in areas where HE is endemic the term outbreak can be applied to an unusual increase in suspected JE cases compared to the normal transmission or increase beyond the normal range due to seasonal variations. This normal range will be different from place to place. Following steps should be taken for epidemic outbreak investigation:

Steps of Outbreak Investigation

- Define an outbreak.
- Assessment of the number of suspected cases in the area and confirmation of an outbreak. In case JE diagnosis is confirmed, incidence rates may be worked out.
- Delineation of the area involved in outbreak
- Investigation of reported cases in the Case Investigation Form (AESF-4).

- Line list of cases including age and gender distribution of suspected cases, date(s) of onset of fever and other symptoms in a chronological order and severity of illness of the cases, including deaths. (AESF-3).
- Laboratory confirmation of suspected cases
- Assessment for presence of reservoir host such as pigs, cattle, poultry in the near vicinity of suspected cases.
- Vector surveillance should be initiated immediately, which should include collection of larvae and adult mosquitoes, identification of vector species, density and for incrimination of the vector mosquitoes.
- History of JE outbreak in the past must be noted.
- Analysis and report on the distribution and risk factors associated with the outbreak.
- After an outbreak is over, detailed report the outbreak must be prepared on the Form JE F-10 and submitted to Directorate of NVBDCP.

Anticipatory preparation for managing an outbreak of JE:

- Anticipatory preparations should be made for timely availability of medicines, equipment and accessories as well as sufficient number of trained medical, nursing and paramedical personnel.
- For clinical management of JE cases States should identify the facilities like CHCs, District Hospitals and Medical colleges. These institutions should ensure the availability of the necessary drugs, IV fluids & equipment before the onset of JE transmission season.

- It is essential for investigation of an outbreak that rapid response teams are constituted at state and district level for investigation and containment of an outbreak. These teams should have experts in medicine, epidemiology, entomology and microbiology.
- Peripheral institutions have to be prepared to manage any outbreak. For this provision should be made for Technical Malathion, fogging machines, health education materials, preliminary laboratory investigations, transportation of cases to referral centers before the transmission season.
- The staff should be oriented towards detection of cases and trained to take immediate remedial measures to report cases in prescribed format and also follow up for laboratory confirmation. The data should be collected and analyzed to understand the causes of the outbreak.

Outbreak containment

After receiving the warning signals and investigation of a suspected outbreak, the containment measures should automatically be rolled out. The rapid response team should be mobilized and it should start immediate containment action. To minimize the mortality and reduce CFR prompt and appropriate clinical management of suspected JE cases is essential. Cases occurring in periphery, needing specialized care, should be referred to the referral centre without any delay. Some of the measures detailed below will be found useful for managing JE outbreak:

- Daily monitoring of the outbreak, cases and deaths. Besides early referral of cases to higher treatment centres.
- Daily report to State/ National Health Authorities
- The local health authorities particularly the PHC medical officers and district health officials must be aware of the disease profile in their area. As the overt in a village in a given season does not exceed more than 2 cases, the local health personnel and the community at large must be alerted about reporting occurrence of any fever case with altered sensorium.
- For early reporting involve key members of the community.
- Control measures should be implemented immediately. Vector control measures especially fogging the Malathion technical should be carried out immediately in the affected village, use of bed nets; full sleeve clothes etc. during evening hours should be promoted to prevent mosquito bites.
- Continue community education for personal prophylaxis like use of impregnated mosquito nets, keeping piggeries away from human habitations etc.

Chapter 3C

Eco-Entomological Surveillance

Entomological surveillance helps to monitor JE vector density continuously in JE endemic areas (trend data), suggest appropriate vector control measures, undertake entomological investigations during epidemic and evaluate the impact of control measures. The entomologist and insect collectors or / Biologist / Entomologist attached with Filaria Control Unit may be assigned and made responsible for entomological surveillance in the district. They would identify index villages in the district for entomological surveillance.

Vector Mosquitoes of Japanese Encephalitis

In India, JE virus has been isolated from 17 mosquito species in wild caught specimens from different parts of the country. Maximum isolations have been recorded from Culex vishnui group consisting of *Cx.tritaeniorhynchus, Cx.vishnui and Cx.pseudovishnui*. Female mosquitoes get infected after feeding on a vertebrate host harbouring JE virus and after 9-12 days of extrinsic incubation period, they can transmit the virus to other hosts.

Culex vishnui subgroup of mosquitoes are very common, widespread and breed in water with luxuriant vegetation, mainly in paddy fields and their abundance may be related to their breeding in rice fields, shallow ditches, pools, fish ponds, etc. Preference for breeding places during rainy season and irrigation channels bordering the paddy fields support breeding during non-monsoon season. Rain water collections in low lying areas with aquatic vegetation/ submerged grasses support the breeding during post monsoon months. However permanent water collection in ponds, ditches etc. with aquatic vegetation such as water hyacinth, elephant grass, etc. provide favourable breeding places during all months. In view of the breeding habitats of the vector mosquitoes, JE is usually associated with rural areas with paddy cultivation.

Cx.tritaeniorhynchus, the principal vector of JE has been reported to be an outdoor restor (exophilic) but may rest indoor during some part of the year. Vector of JE are zoophilic and feed outdoor as well as indoor. They prefer to feed on cattle and also feed on pig. Cattle such as cows may reduce risk by diverting vector mosquitoes (zooprophylaxis).

For planning vector control measures, the bionomics of vector mosquitoes in an area needs to be studied.

Objectives of Entomological Surveillance

1. To identify the JE vector mosquitoes in an area
2. To monitor JE vector abundance in JE endemic areas
3. To detect JE virus in vector mosquitoes
4. To suggest appropriate vector control measures

Procedure

Entomologist and insect collectors or/ Biologist/National Filaria Control Officers in the districts will be responsible for entomological surveillance in JE endemic areas. An entomological team of National Institute of Malaria Research (NIMR) may also conduct these studies. Refresher training of these functionaries would be organized by the DTE. of NVBDCP on receiving request from States. They will identify index villages in the district for entomological surveillance.

Choice of index villages

- At least 3 villages in which JE has occurred in the recent past (past five years)
- At least 2 villages which remained unaffected till date would be monitored in each affected block
- Sampling would be carried out on fortnightly basis
- Surveillance would be carried out round the year to known the JE vector density, their resting behaviour, feeding behaviour and detection/isolation of JE virus from vector mosquitoes.

Following entomological investigations are to be carried out:

Larval surveys

Larval density and Mapping of breeding sites: Larval survey should be carried out by the entomological team periodically. All potential breeding sites will be surveyed and will be reported on the standard proforma. All permanent breeding sites of JE vectors would be identified (mapped) and provided to District officers for implementation of control measures.

Larvae collected in the field would be reared in laboratory for emergence of adult mosquitoes for identification of vector species. For this purpose standardized reporting format AESF-6 form **(Annexure-13)** for breeding survey will be used by all the entomological/ reporting units.

Adult surveys

Indoor/ Outdoor resting collection and the Dusk Collection should be carried out from fixed as well as random sites in indoor sites such as human dwelling/cattle sheds/mixed dwelling and outdoor situations such as bushes, plantations, standing crops, etc. by hand catch method using suction tubes. Per Man Hour Density (PMHD) will be monitored and reported in standard prescribed format AESF-7 (**Annexure-14)**. This collection would be carried out in the index villages only.

Cx. tritoeniorhynchus predominantly rests outdoors on agricultural crops and wild vegetation, depending on local situations, where they can also be monitored by BPD Hop Cage method; formerly known as sweep cage method (NICD). The density of mosquito may be estimated as average number of mosquitoes collected per 10 Hop

Cages. The larger the area covered by hopping, the better representation of the mosquito density.

$$\text{Mosquito density (Per 10 HC)} = \frac{\text{Total number of mosquitoes collected} \times 10}{\text{Total numbers of hops made on vegetation}}$$

Susceptibility of JE vector mosquitoes and larvae

Susceptibility status of JE vector mosquitoes to insecticides particularly Malathion in JE endemic areas should be carried out by entomological teams in the state/ICMR/ any other institute. Map should be prepared in all JE endemic States about the status resistance in vector mosquitoes to insecticides. Format AESF-9 (**Annexure-15)** will be used for reporting susceptibility/resistance status of vector mosquitoes.

Method for Collection and Transportation of mosquitoes for isolation of JE virus

For entomological studies the virus isolation would be attempted from vector mosquitoes, which would be collected in a screw-capped clean test tube and sent to the laboratory at NIV/CRME. Particularly, in epidemic situations it becomes necessary to collect vector mosquitoes for isolation of JE virus.

In an epidemic situation, it is desirable to collect mosquitoes from the affected areas-both indoor and outdoor, so that they may be processed for virus isolation. This may give an indication of the species acting as vector of the area. Mosquitoes can be collected by standard method such as aspirator, baited traps, biting collections and light traps.

The mosquitoes should be held alive in 'Barraud Cages' wrapped with moistened lint or cloth. If the collection locality is not far from the laboratory or transportation can be done within a day or two, they may be transported alive in Barraud cages. For such transportation, it is necessary to provide raisins soaked in water or cotton pledged soaked in 10 percent glucose solution inside the Barraud cage.

If the collection locality is far from the laboratory and immediate transportation is not possible, mosquitoes may be identified, pooled species wise and stored in liquid nitrogen, refrigerators or on dry ice for subsequent transportation to the laboratory. If facilities for liquid nitrogen or dry ice storage are not available in the field, transport medium may be used to store the mosquito pools. It is, however, necessary that such pools are constantly kept in the refrigerator or transported on wet ice. Since the Centre for Research in Medical Entomology (CRME), ICMR, Madurai and Tamil Nadu has developed a technique whereby the JE antigen can be detected in even 28 days old desiccated mosquitoes and NICD has also detected JE virus antigen even after 20 months of mosquito collection from field. It would be possible to get the JEW antigen detected from the mosquitoes regularly dispatched to CRME, Madurai by post. However, the care should have to be taken not to allow mosquitoes attacked by fungus or affected by dilapidation before enveloping for dispatch.

Laboratory Support

The following virological investigations should be carried out in labs:

1. Screening/ isolation of JE virus from suspected JE vector mosquitoes.
2. Vector incrimination would be done in collaboration with NIV Pune, CRME Madurai and NICD, Delhi.

Entomological/Vector Control guidelines

- In India, JE virus has been isolated from 17 mosquito species in wild caught specimens from different parts of the country. Maximum isolations have been recorded from *Culex vishnui* group consisting of *Cx. tritaeniorhynchus*, *Cx. vishnui* and *Cx. pseudovishnui*. Female mosquitoes get infected after feeding on a vertebrate host harbouring JE virus and after 9 – 12 days of extrinsic incubation period, they can transmit the virus to other hosts.
- *Cx. tritaeniorhynchus*, the principal vector of JE has been reported to be an outdoor restor (exophilic) but may also rest indoor during some part of the year. Vectors of JE are zoophilic and feed outdoor as well as indoor. They prefer to feed on cattle and pigs. Cattle such as cows may reduce risk of transmission by diverting vector mosquitoes (zooprophylaxis). For planning vector control measures, the bionomics of vector mosquitoes in an area needs to be studied.

Vector Control

- JE vector are exophillic endophagic in nature. The risk of transmission increases when the human dwellings and animal sheds particularly piggeries are situated very close to each other. When they are situated far from each other the risk of transmission is reduced.
- Because of outdoor resting habits and crepuscular nature, the vector control using indoor residual spray is technically not feasible. In addition to this, due to vast and enormous breeding habitats like perennial ponds, paddy fields and other water bodies larval control using various anti larval measures is also not feasible as it is resource intensive. Therefore, vector control using ULV fogging (ultra low volume) is the only recommended method of vector control and can be used during JE epidemics also.

Pre requisites of thermal fogging

- Thermal fogging with portable fogging is done in outdoor situations (outside human habitation), where large number of JE cases are reported.
- Fogging should be carried out in downwind to upwind direction.

- During outdoor fogging it is important to direct the fog to all possible adult mosquito resting sites like bushes, tree-shaded areas and other outdoor resting in peri domestic habitats.
- The most effective type of thermal fog for mosquito control is medium / dry fog i.e. it should just moisten the hand when the hand is passed quickly through the fog at a distance of about 2.5 to 3.0 metres in front of the fog tube.
  The technical specification recommended for fogging machined should be of BIS standard no. 14855 (Part 1): 2000 for Vector Control.

Time of Fogging

ULV fogging is carried out only when right weather conditions are present. These conditions presented in the following table:

Climatic condition	Most favourable conditions	Average conditions	Unfavourable conditions
Time	Late evening between (17:00 19:00 hrs)	Early evening	Mid-morning or afternoon
Wind	Steady, between 3-13 km/hr	0-3 km/hr	Medium to strong, over 13 km/hr
Rain	No rain	No rain	Heavy rain
Temperature	Mild	Mild	Hot

Frequency of fogging:

During outbreak situations, fogging applications have to be carried out at 7-10 days interval till a significant reduction in vector densities is achieved.

Points to remember during ULV fogging

- In the late evening hour, temperature is very cool when the vector mosquitoes are most active fogging is more effective.
- Cool weather in the evening hour is more comfortable for worker wearing protective clothing.

- In the afternoon when the temperature is high, convection currents from the ground will prevent concentration of the spray close to the resting places of adult mosquitoes flying or resting, thus rendering the spray ineffective.
- An optimum wind speed of between 3 and 13 hm/hr enables the spray to move slowly and steadily over the ground, allowing for maximum exposure of mosquitoes to the spray. Air movements of less than 3 km/hr may result in vertical mixing, while winds greater than 13 km/hr disperse the spray too quickly.
- In heavy rain, the spray generated loses its consistency and effectiveness. When the rain is heavy, spraying should stop and the spray head of the ULV machine should be turned down to prevent water from entering the blower.
- ULV fogging in JE control is not recommended as a routine vector control method, it should only be used during epidemics or when large number of JE cases are reported from any JE endemic areas.

Selection of insecticide and requirements of material and manpower

The insecticide is selected on the basic biological effectiveness against the vector concerned, its likely effect on target and non-target organisms, and its hazard to humans, threat to the environment posted by its proposed use, cost, transportation requirements and availability of suitable application equipment. Under NVBDCP, Presently Malation and Pyrethrum formulations are use for fogging applications,

For thermal fogging: 5 per cent Malathion (Technical) in kerosene/diesel (1 litre of technical Malathion in 19 litres of diluents).

The application rate of insecticide with most of this equipment is generally <0.5 litres per hectare and requirements can be worked out on this basis. Mostly the effective application is about 330 ml per hectare; however, it varies with type of machine used. Usually a maximum of 1-1.5 km radius from the epicenter of outbreak is considered adequate. The manpower requirement is also dependent on the type of equipment. Most of the portable mist blowers/foggers can be operated by one person, yet it is desirable to make a team of two operators to facilitate transportation of insecticides, spares etc. and maintenance of records of operations.

Personnel Protection Measures

In addition to the vector control, personnel protection measures also help in reducing man vector contact and help in reducing disease transmission. Therefore, intensive IEC activity on use of personnel protection measures in preventing JE cases is also essential. Some of the recommended personnel protection measures are described below.

a. **Protective clothing** :- Clothing reduces the risk of mosquito biting if the cloth is sufficiently thick or loosely fitting. Long sleeves and trousers with stockings may protect the arms and legs, the preferred sites for mosquito bites. Schoolchildren should adhere to these practices whenever possible. Impregnating clothing with

chemicals such as permethrin can be especially effective in preventing mosquito bites.

b. **Mats, coils and aerosols**:- Household insecticidal products, namely mosquito coils, pyrethrum space spray and aerosols have been used extensively for personal protection against mosquitoes. Electric vaporizer mats and liquid vaporizers are more recent additions which are marketed in practically all urban areas.
c. **Repellents** :- Repellents are a common means of personal protection against mosquitoes and other biting insects. These are broadly classified into two categories, natural repellents and chemical repellents. Essential oils from plant extracts are the main natural repellent ingredients, i.e. citronella oil, lemongrass oil and neem oil. Chemical repellents such as DEET (N, N- Diethyl-m-Toluamide) can provide protection against JE vector for several hours. Permethrin is an effective repellent when impregnated in cloth.

Procurement of fogging machine

While procuring the fogging machine, the technical specification recommended for fogging machined should be of BIS standard no. 14855 (Part 1): 2000 for Vector Control. Procurement of these machines can also be made through Directorate of General of Supplies Disposals (DGS&D) Rate contract No. FOGGING_MC/WMT-3/RC-V1090000/1214/13/06284/804 date 17th Feb, 2013 valid till 16/02/2015.

Veterinary Based Surveillance:

By identifying the prevalence & density of pigs, ducks, and ardeid birds and detecting viral activity in susceptible hosts, veterinary surveillance helps to track the rate of Haemagglutination Inhibition (HI) antibody carriers and the appearance of antibody from fresh infection as an index of the spread of JE virus in animal host. Veterinary-based surveillance is conducted with the help of animal husbandry department. Sera sample from these animals is randomly collected for serology to ascertain transmission of JE virus. Sera sample from these animals is randomly collected for serology to ascertain transmission of JE virus.

Like most other arboviral infections, JE is basically a disease of animals. Pigs and birds, particularly those belonging to Family Ardeidae (e.g. cattle egrets, pond herons, etc.) are natural hosts. The virus is generally maintained in the enzootic form and appears as focal outbreaks under specific ecological conditions. Infection in human beings is caused as a result of spill-over of infection from zoonotic cycle.

At low vector density level the virus circulates in ardied birds-mosquito ardied bird cycle. However, at the commencement of monsoon season or increased availability of surface area mosquito breeding e.g. paddy cultivate etc., the vector population builds up rapidly, the virus from wild birds through vector mosquito species spreads to peri domestic birds and then to mammals like cattle and pigs, etc. and eventually spills over to man.

Natural Reservoirs of JE virus

a)-Birds : Some species of birds like pond herons, cattle egrets, poultry birds, ducks and sparrows, etc. appear to be involved in natural transmission of JE virus. Migratory birds may be involved in the transfer of virus one region to another.

b)-Cattle : Cattle do not circulate virus in their blood but develop antibodies against them; hence they do not act as natural host for the virus. It is believed that prevalence of an enormously large population of cattle in India as compared to pigs may act as deterrent to the spread of JE infection, as the vector mosquito species have got more preference for cattle blood as compared to that of human beings.

c)-Pigs : Infected pigs do not manifest many overt symptoms of the disease but allow multiplication and circulation of the virus in their blood. They are capable of infecting a large number of vector mosquito species, which in turn may transmit the virus to man after the completion of extrinsic incubation period of 9-12 days. The pigs are thus considered to be “amplifier hosts” for the virus.

Animal surveillance

The purpose of animal surveillance is to track the rate of HI antibody carriers and the appearance of antibody from fresh infection as an index of JE viral activity and its spread in animal hosts.

Objectives

The objectives of Veterinary based surveillance are:

- Prevalence of Pigs/Ducks, Ardied Birds in an area
- To detect viral activity in susceptible hosts

Procedures

Veterinary-based surveillance can be conducted with the help of Animal Husbandry Department Assessment of pig density in relation to human habitation should be carried out. Density of other susceptible host population should also be carried out periodically. Sera sample from these animals should be randomly collected for serology to ascertain transmission of JE virus.

As the pigs are amplifying host for JE virus, monitoring of antibody titre in pigs would be helpful in determining viral activity. Generally, 5-8 months old piglets should be selected and blood samples should be collected. The antibody titre in the serum samples should be estimated. Detection of IgM antibody would indicate recent infection. The area where HI antibody carrier pigs are high and IgM antibody is detected the area can be considered at risk of JE virus infection.

Sera sample from pigs to be randomly collected for serology in collaboration with veterinary department to ascertain transmission of JE virus in pigs. The process of

collection of pig sera would be on regular basis for generating regular data for early warning signals**.**

Laboratory analysis of Sera samples

Animal sera sample collection should be done with the help of Veterinary Department and screening for antibody carriers could be done by microbiology unit of Veterinary Research Institutes having such facilities. Study of different strain of virus could be done with the help of NCDC, Delhi, National Institute of Virology, Pune and CRME, Madurai.

Differential diagnosis

Disease outbreaks in pigs is characterized by abortions, fetal mummification or stillbirths, and encephalitis in pigs up to 6 months of age, or disease outbreaks in horses characterized by fever, jaundice or nervous signs of depression and in coordination or hyper-excitability should be considered as possible JE infections.

As a part of the emergency response, any clinical disease in pigs and horses that may be JE should be investigated to establish the extent of infection. Isolation of virus should be attempted from suitable cases. Serology should be conducted on sick horses, with sera-sampling two weeks later to confirm antibody conversion to JE. Similar serological monitoring should be conducted in piggeries suspected of being infected. If it was desired to define free zones, the surveillance requirements to establish and maintain the zone will have to be developed at the time. Pigs would be the most sensitive sentinel animals, though because of operational difficulties, the existing arbovious surveillance programs (that do not use pigs) would need to be used.

Veterinary Research Institutes

List of Institutes for screening for antibody carriers and other virology studies is given below:

i) National Institute of Virology (NIV), Pune.
ii) Centre for Research in Medical Entomology (CRME), Madurai.
iii) VBRI (Veterinary Biological Research Institute), Shanthinagar, Hyderabad, Andhra Pradesh.
iv) Kyasanoor Forest Disease Laboratory, Shimoga, Karnataka.
v) Institute of Vector control and Zoonosis Hosur, Tamil NAdu.
vi) Indian Veterinary Research Institute (IVRI), Izatnagar, Bareilly, U.P.243122. His Fax no. 0581-2303284 and email- dirivri@ivri.up.nic.in
vii) Diagnostic Research Laboratories, RWITC. Ltd. (Approved By Govt. of India), 6 Arjun Marg, Pune 411001, Maharashtra

Chapter 3D

Case Management of Acute Encephalitis Syndrome/Japanese Encephalitis

Case Definition of Suspected case:

- Acute onset of fever, not more than 5-7 days duration.
- Change in mental status with/ without
    - New onset of seizures (excluding febrile seizures)
    - (Other early clinical findings – may include irritability, somnolence or abnormal behavior greater than that seen with usual febrile illness)

Important

- In an epidemic situation fever with altered sensorium persisting for more than two hours with a focal seizure or paralysis of any part of body, is encephalitis.
- Presence of rash on body excludes Japanese Encephalitis.
- AES with symmetrical signs and fever is likely to be cerebral Malaria.

Case Classification:

Laboratory-Confirmed case : A suspected case with any one of the following markers:

- Presence of lgM antibody in serum and/ or CSF to a specific virus including JE/Entero Virus or others
- Four fold difference in lgG antibody titre in paired sera
- Virus isolation from brain tissue
- Antigen detection by immunofluroscence
- Nucleic acid detection by PCR

In the sentinel surveillance network, AES/JE will be diagnosed by lgM Capture ELISA, and virus isolation will be done in National Reference Laboratory.

Probable Cases

Suspected case in close geographic and temporal relationship to a laboratory-confirmed case of AES/JE in an outbreak

Acute Encephalitis Syndrome due to other agent

A suspected case in which diagnostic testing is performed and an etiological agent other than AES/JE is identified

Acute Encephalitis Syndrome due to unknown agent

A suspected case in which no diagnostic testing is performed / no etiological agent is identified / test results are indeterminate

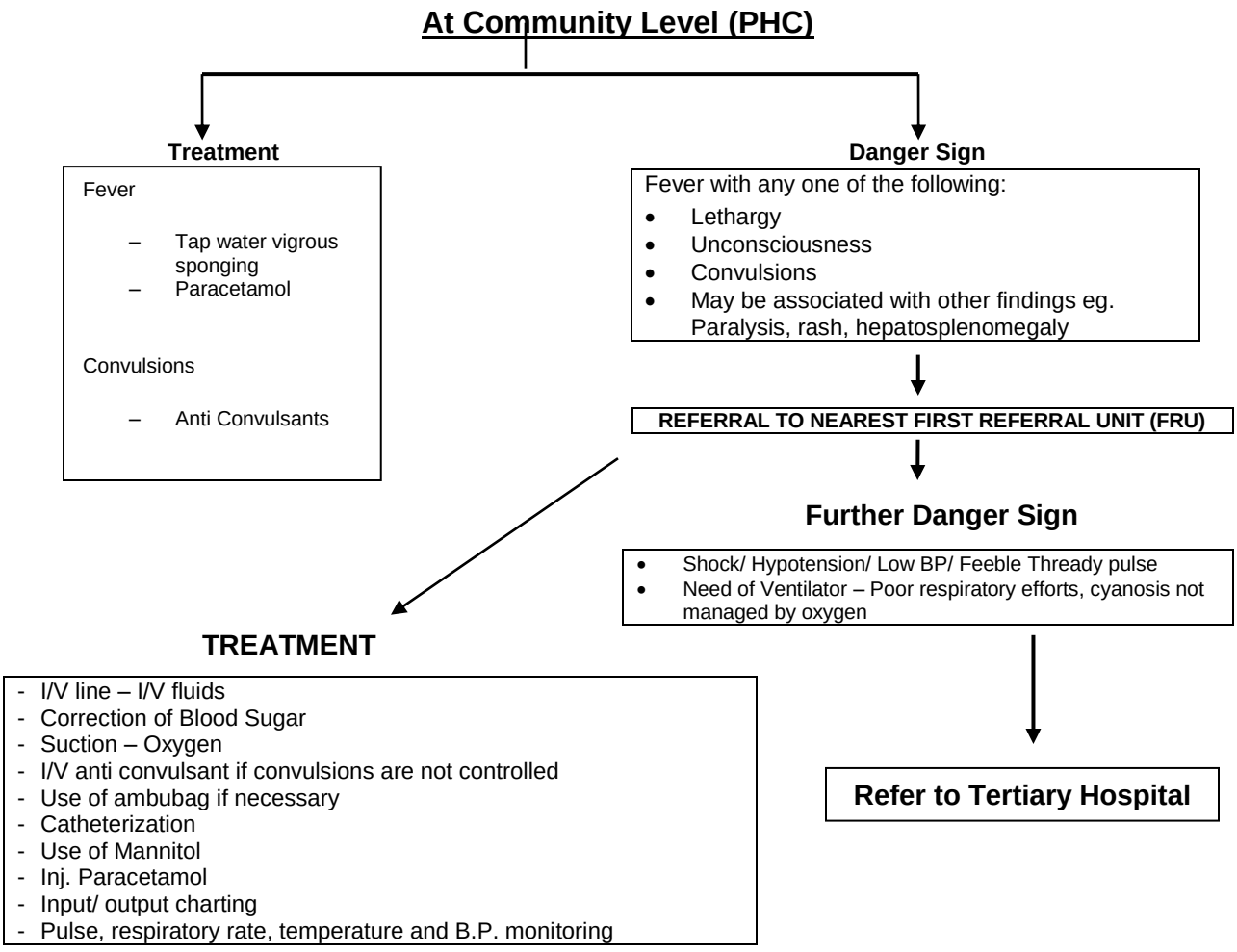
MANAGEMENT OF ACUTE ENCEPHALITIS SYNDROME (AES) INCLUDING JAPANESE ENCEPHALITIS

One of the major components of the Programme Strategy is the case Management of the patients, most of whom are admitted in Health Institutions in a serious condition. This necessitated NVBDCP to design guidelines on Case Management of Japanese Encephalitis in 2007 which can be accessed on the website. The evidence of circulation of entero-viruses in the community in Eastern UP was established by ICMR which prompted revision of above guidelines by incorporating the case management of other Encephalitis including JE. This revision was done in 2009 and the detailed guidelines are as follows:-

Danger Sign & Line of Treatment

Management of Acute Encephalitis Syndrome including Japanese Encephalitis is essentially symptomatic. To reduce severe morbidity and mortality, it is important to identify early warning signs and refer patients to health facility and educate the health workers about the first line if management at the grassroots level. Chart 1 depicts what is to be done for a patient at the community level.

Chart : Management of AES including Japanese Encephalitis



MANAGEMENT OF CASES OF AES INCLUDING JE

Treatment at the health facility, it is important to exclude other causes of CNS affliction like meningitis or cerebral malaria which require specific treatment. Treatment will depend on the condition in which patient is received in the health facility. Since patients are likely to arrive with high grade fever and change in mental status or convulsions proceed with the assessment of patency of airway.

The treatment at PHC/ CHC District level or at tertiary care hospitals remains the same. Depending upon the needs of care and availability of facilities available at the centre/ hospital the patients to be transferred to the nearest higher centre for further management. It should be ensured before transferring the case, all the available treatment is provided to the patient. Only needy patients where such facilities are not available, to be transported. The time consumed in transportation itself is a major cause of high mortality rate.

In all endemic areas, all the facilities including training can be arranged before hand except Ventilatory Support. All Centres should be equipped with ambu beg and oxygen in addition to other medicines and I/V cannula.

<u>The treatment of the patients may require, as follow:-</u>

1.) Management of Airways and Breathing.
2.) Management of Circulation.
3.) Control of Convulsion and Intracranial pressure
4.) Control of Temperature
5.) Fluid and Electrolytes and Calories/ Nutrition
6.) General management
7.) Specific treatment of any for treatable cause
8.) Investigations, Samples Collection & Transportation
9.) Reporting of a case
10.) Rehabilitation

MANAGEMENT OF AIRWAY AND BREATHING

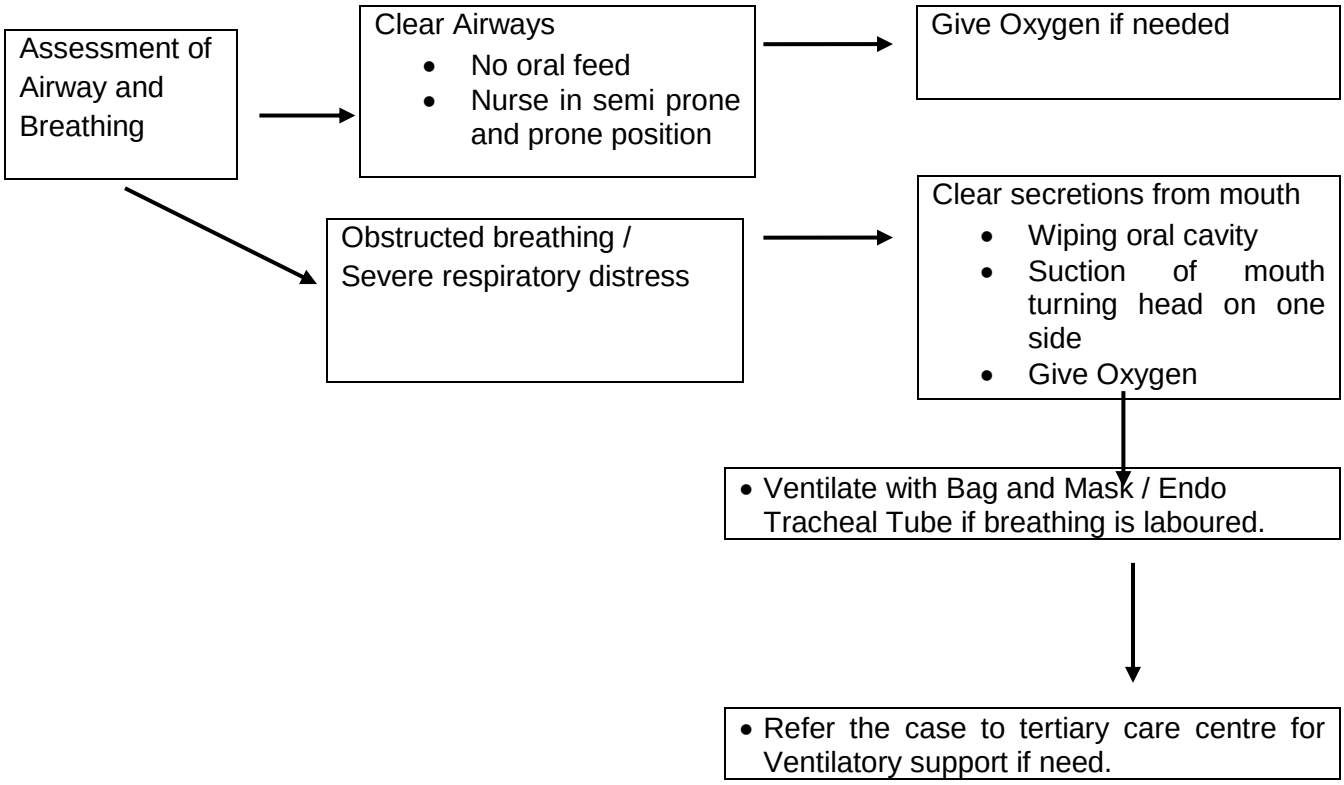
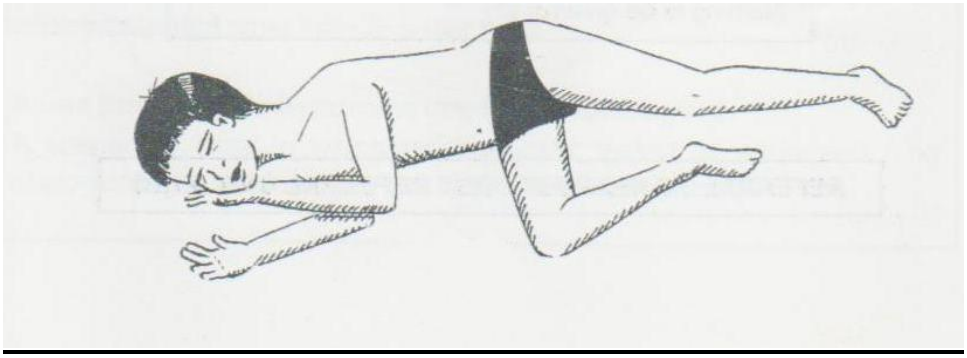


Fig 1. <u>Position of the Patient</u>

- Turn the patient on the prone side to reduce risk of aspiration.
- Keep the neck slightly extended and stabilize by placing cheek on one hand.
- Bend one leg to stabilize the body position.

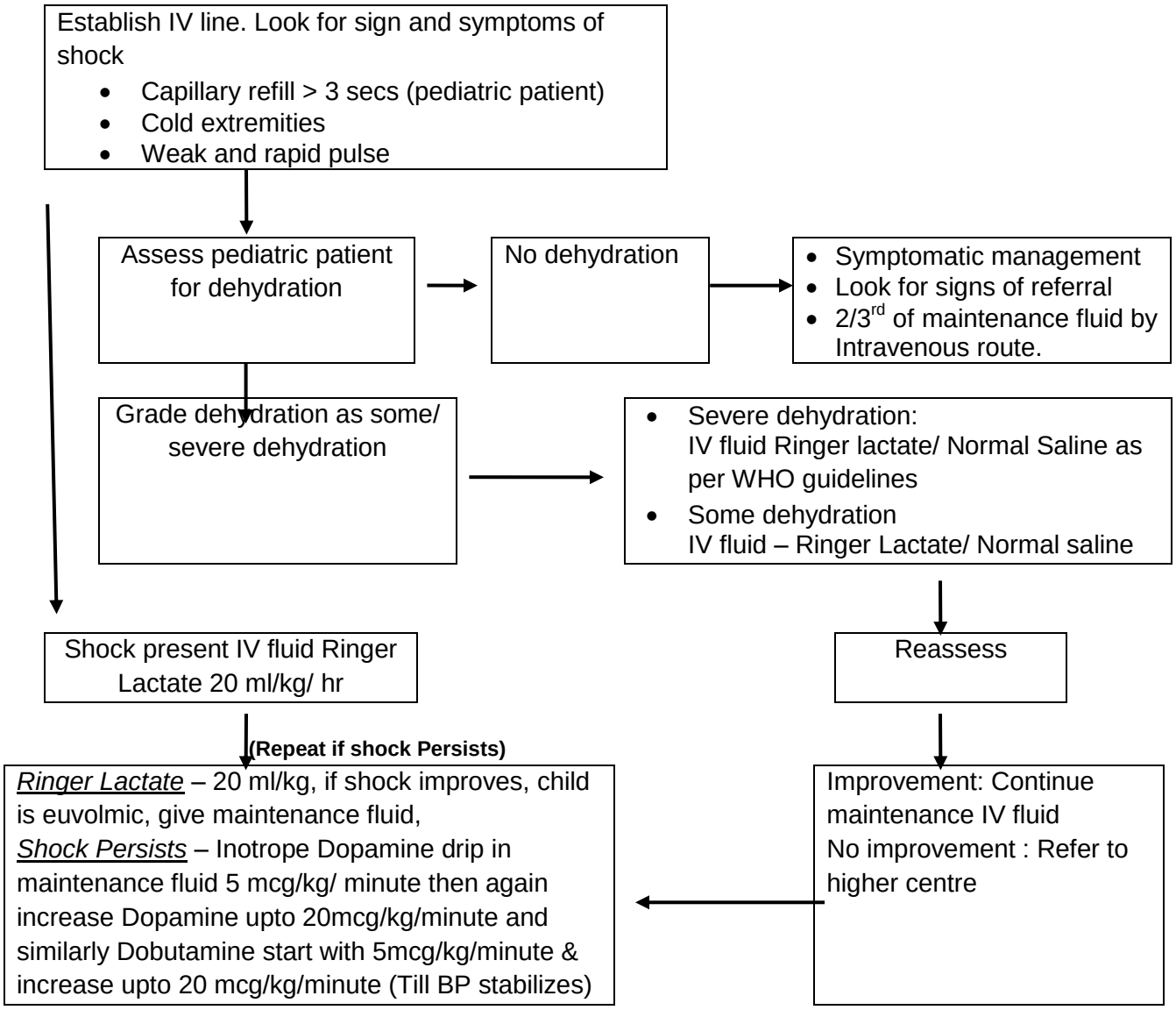


<u>Indications of Ventilatory Support</u>

1. Detoriating General Condition
2. Very Shallow Respiration/ Severe Respiratory Distress/ Heart Sound are Feeble
3. Capillary Refilling time/ colour of Patient Not Improved

4. Dusky Colour of body/ Cyanosis
5. Needs continuous Bag and Mask (Ambu) respiration
6. ABG Parameters

MANAGEMENT OF CIRCULATION



NB : These are broad guidelines; ultimate decision regarding management will depend upon the attending physician.

MANAGEMENT OF CONVULSIONS & I.C.T.

Give anti convulsants if there was a history of convulsions and not given earlier, or convulsions are present. Number one to three are first drug of choice, if convulsions are not controlled.

Anti Convulsants

Sl. No.	Name of Drugs	Closes	Available as	Route of Administration	Indication	Limitation/ Side Effects
1.	Phenobarbitone (Gardinal/Luminal)	20-40mg/kg As loading dose	200mg per ml. ampule	I/V Slowly after dilution in normal saline	Convulsion in infants can be used in all age groups	Good drug controlling seizure & long term use.
2.	Phenytoin (Eptoin/Dilantin)	15-20mg/kg	100mg/ 2ml amp.	I/V Slowly after dilution in normal saline	Convulsion in all age all groups	Good drug for control of seizure & as maintenance
3.	Sod. Valporate	20-40 mg/kg	I/V Oral Syrup	Syrup can be given as per rectal	All age group	-do-
4.	Diazepam	0.1-0.3mg/kg	I/V or P/R	• I/V slowly • Syrup Suppository P\R	Uncontrolled Convulsions	May cause respiratory arrest in newborns & infants. Short acting
5.	Lorazepam	0.05-0.1mg/kg oral,	I\V	I/V Slowly	Uncontrolled Convulsion Safe in infants	Tachy cardea, depression Confusion blurred vision
6.	Midazolam	0.2mg/kg	1mg/5kg	S/C, intra nasal safe in injections	Uncontrolled convulsion in infants	Short acting
7.	Inj. Paraldehyde 11%	0.1-0.2mcg/kg deep gluteal can be replaced after ½-hrs.				

Maintenance Dose

- Phenobarbitone 3-8mg/kg/day I/V or oral
- Phenytoin 5-8 mg/kg/day I/V or oral
- Sodium Valproate 40-60mg/kg/day Oral

MANAGEMENT OF INCREASED INTRACRANIAL PRESSURE (Only after correction of Dehydration)

i. Mannitol 20% I/V – 5 ml/kg in ½ hrs as 1st dose than 2.5 ml/kg at 6 hrs. intervals upto 48 hours (8 doses).
ii. Injection Lasix I/V – 1 mg /kg upto 40 mg can be given.

iii. Glycerol solution:- Oral – 0.5 ml/kg mix with fruit juice can be given by nasogastric tube – 3 times a day
iv. Steroids – are not indicated in viral encephalitis including JE.

CONTROL OF TEMPERATURE

a) If No Rigors:-

i. Tap Water Sponging: Not only on forehead, palms or soles, whole body to be wet with water and fan(ceiling/table/manual) is on. Cold sponging is harmful.
ii. If temperature is too high – Cold Sponges may be kept on head, axilla and groins.
iii. Injection Paracetamol: 5mg/kg, deep intra muscular at either lateral side of thigh or upper outer Quadrant of hip. If injection is not available give Paracetamol 10-15mg/kg maximum upto 600 mg by Nasogastric tube. Paracetamol Suppository are also available which may be used. Other antipyretic medicines e.g. nemusulide/ brufen/ meftal/ aspirin etc are not advisable, specially in children.

b) If chills or Rigors present :

i. Don't cover patients
ii. Don't do water sponging
iii. Use Paracetamol injection, syrup, through nasogastric tube or Paracetamol suppository as advised above.

MANAGEMENT OF FLUID ELECTROLYTES AND CALORIES/NUTRITION

(A) Assessment of Dehydration

Dehydration is classified into No/ some/ Severe Dehydration. Since it is difficult to assess dehydration in a patient of encephalitis as the patient is lethargic and unable to drink, therefore, skin turgor takes precedence over other signs. An objective way of classification would be as follows:

(i) Some Dehydration:

- Irritability
- Thirsty
- Sunken Eyes
- Less Tears
- Dry Mouth
- Skin Turgor Delay

(ii) Severe Dehydration:

- Floppiness
- Drowsiness/ Lethargy
- Unconscious
- Inability to Drink

(iii) Signs of shock

- Oliguria/ anuria
- Rapid and thready pulse
- Capillary filling time > 3secs
- Low Blood Pressure

(B) Management of Dehydration:

(a) **Some Dehydration:**

- IV fluid Ringer lactate/ N saline 100m/kg to be given over 8 hrs.
- Where the facility for IV fluids is not available administer ORS 75m/kg in 4 hrs through nasogasrtic tube
- Reassess: if there is improvement continue with maintenance IV fluid/if no improvement is detected, switch to plan for severe dehydration

(b) Severe Dehydration

- IV fluid Ringer lactate 100ml/kg is given as per the table below Table 1:

Rate of Fluid (Ringer Lactate)	30ml/kg	70ml/kg
< 1yr	2 hrs	4 hrs
>1yr	1 hrs	5 hrs

- Reassess: If there is improvement switch to maintenance/ if no improvement is detected or deterioration is observed infuse IV fluid more rapidly.

(b) Maintenance

Maintenance fluid is administered at the following rate Table 2:

Weight	Fluid Volume
1 – 10	10 ml / kg
11 – 20	1000 ml + 50cc/kg over & above 10 kg
21 – 40	1500 ml+20cc/kg over & above 10 kg

(C) <u>Calories/ Nutrition</u>

During CNS infections and convulsion and hyperphyrexia state, calories specially glucose required is increased and it should be given in form of 10% Dextrose or even 25% Dextrose may be given on arrival of the patient. A total dose of 200 mg/kg may be given. All I/V fluids with Dextrose should be continued till patient is stabilized, convulsions are controlled, no vomiting and distention of abdomen, at this time, intra gastric feeding may added and slowly I/V fluids are replaced by total nasogastric feeding.

GENERAL MANAGEMENT

i. ***Suction :*** Frequent suction either by mucous sucker, or suction machine to be done on an unconscious patient, so secretion may not collect in mouth to avoid aspiration and maintenance the patency of airways.

ii. ***Nasogastric Aspiration :*** Nil orally, place a Nasogastric/ Ryles tube into stomach and do a frequent suction to avoid any vomiting and aspiration. It will also help in decompensation of stomach and decrease intra abdominal pressure. It will help in respiration.

iii. ***Care of Eye, Bowel Bladder & Back :***

- Eyes to be covered by wet gauge
- An antibiotic Eye ointment may be applied twice a day or liquid paraffin may be put in eyes to avoid drying of Cornea.
- If child does not pass stool, put a glycerine enema.
- Bed should be well maintained, don't allow to form any bed sore. Spirit & powder may be applied on back and on all pressure points.
- Frequent changing of patient's position.
- Catheterize the patient to avoid soiling of beds.
- Physiotherapy once patient is stabilized
- Other General Nursing Care
- Treat Secondary infections – by appropriate antibiotics
- Treat underlying other pathology – e .g. anemia, malnutrition, etc.

TREATMENT OF SPECIFIC CAUSE IF ANY

i. **Herpes -** Acyclovir – 10 mg/kg/dose, slowly over a period of one hour – 8 hourly X 21 days.

ii. **Zoster Varicella -** Acyclovir – 10mg/kg/dose, 1/2hrs slowly, over a period of 1 hour – 8 hourly X 2-3 weeks.

iii. **Malaria -** I/V Quinine – 20 mg/kg in 5% Dextrose slowly over a period of 1hr then 10mg/kg 8 hourly. Monitor Blood Sugar and Blood Pressure.

iv. **Meningitis (Pyogonic) -**
Start with inj. Ampicillin 400 mg kg 6 hourly upto 12gm/day+
Inj. Ceftrioxone 100-150mg/kg as stat dose than in two dived doses 12 hourly+
Steroid Change antibiotics according to C/S report and response.

v. **TBM -** Anti Tubercular Drugs (1NH, PZA, Rcin + Ethambutol + Steroids)

vi. **Toxoplasmosis -** Pyrimethamine 2mg/kg/24 hours in two divided doses X 2 days than 1mg/kg/ on alternate day.

vii. **Amoebiasis -** Metronidazole – 10mg/kg I/V slowly 8 hourly X 10-14 days.

viii. **Fungal Infection -** Inj. Amphotericin – B 5mg/kg/24 hours or Fluconazole – oral 200-400mg/kg for 3-6 months.

ix. **Neurocysticercosis -** Albendazole oral 10/mg/kg(upto 400 mg)/day X 2 weeks.

REHABILITATION

- Physiotherapy/ PMR
- Advice of Pediatric Neurologist
- Correction to fix deformity – by Orthopaedic Surgeon
- Child Psychologist advice
- Various prosthesis
- Artificial appliances

REPORTING OF A CASE

It is very important to report all the suspected cases of AES or JE to the appropriate health authorities to prevent further spread of disease. It should be reported promptly in prescribe proforma. The details should be filled in clear and neat writing and all the information in the proforma should be provided.

CLINICAL DIFFERENTIATION OF JE FROM OTHER VIRAL/BACTERIAL/ PARASITIC INFECTIONS

JE primarily involves the gray matter of many parts of the Central Nervous System. Differentiation of Encephalitis and Encephalopathy and making a probable etiological diagnosis of Japanese Encephalitis and Epidemic Brain Attack in rural areas, (where facilities are minimum but expectations are maximum), on clinical grounds is extremely important to manage the encephalitis case not only as an individual but also for the community since the management of JE and EBA call for immediate reporting to the Health Authorities for a wider coordinated intervention by many different departments to contain the epidemic. Epidemics of Viral Encephalitis demand a clinical diagnosis about the causative Virus for controlling the epidemic at the earliest and for asking for the specific test.

Simple clinical observations help in assessing the depth of coma, planning emergency measures necessary to save the child, limit disability, prognosticate and to initiate epidemic control measures. This must be followed by neurological examination for any localizing signs and to plan for the urgent investigations for a final diagnosis.

Exclusion of treatable conditions like Cerebral malaria, Epidemic Brain Attack, Meningoencephalits, Herpes simplex virus encephalitis, Varicella / Zoster encephalitis, Metabolic causes of encephalopathy, Tuberculous Meningitis is extremely important since they require prompt additional specific treatment.

The therapy for JE/Epidemic Brain Attack is primarily conservative and supportive since there is no specific treatment for both Japanese Encephalitis and Epidemic Brain Attack, and both have a high case fatality rate, if prompt medical and nursing care is not provided.

Analysis of fatal cases of JE/Epidemic Brain Attack revealed that ignorance is killing more children than the pathogen per se. Only 1 death out of every 35 deaths is directly due to JEV and all others are preventable with prompt and early management bringing down the USUALLY REPORTED case fatality rate of JE from 35-50% to less than 1%. Similar degree of lowering of morbidity is also possible. Same is the case with Epidemic Brain Attack also.

The prognosis of JE depends on the extent of involvement at primary presentation, timely management and autoimmune mechanisms of this disease.

Japanese Encephalitis Case Definition:

Suspected case for referral to Hospital:-

i. Fever
ii. Altered Sensorium

Viral Encephalitis Syndromic Surveillance: *Suspected JE*

Primary Criteria:

i. Epidemic season
ii. Acute Fever
iii. Altered Sensorium lasting > 6 hours
iv. No rash[1]
v. No evidence of any other encephalitis

Supportive Criteria

i. Focal Neurologic S/S
ii. Endemic areas
iii. JE Season
iv. CSF consistent with Viral Encephalitis
v. Normal metabolic Profile

Probable JE

- Encephalitis syndrome
- CSF consistent with Viral Encephalitis
- Elevated IgM antibody
- Stable antibody

Confirmed Case:

- *Suspected case plus*
- *Any one or more of the following*
  - *JE IgM in CSF*
  - *Or 4 fold or greater rise of antibody titers in paired sera (acute / convalescent)*
  - *Or detection of virus, antigen or genome in tissue, blood or other body fluids.*

Management in Tertiary Level Hospitals

i. Hypoxia is alleviated by intubation, positive pressure ventilation, and ensuring an arterial Pao_2 of 65 mm Hg or better.
ii. Hypotension is treated in a stepwise fashion by first volume infusion with isotonic fluids to normovolemia, next vasopressors and finally treatment is directed at reducing ICP in an effort to maintain CPP greater than 50.
iii. Brainstem involvement may necessitate intubation & mechanical ventilation.
iv. Cardiac arrest requires resuscitation measures.
v. SIADH (Syndrome of Inappropriate Anti Diuretic Hormone) is treated with Hypertonic saline.

Role of Immunoglobulins in Case Management of AES cases:

The experts are of the opinion that IV immunoglobulin cannot be recommended for routine use in AES cases including JE in view of the current scientific evidence.

List of required equipments and drugs at various levels are enclosed at **Annexure-16.**

Chapter-3E

Laboratory Network

Laboratory based serological surveillance

Sometimes, it may be difficult to differentiate Japanese Encephalitis from those caused by other viruses, bacteria etc. as clinical signs of JE are indistinguishable from other causes of AES. Under such circumstances laboratory confirmation is essential for accurate diagnosis of JE. Confirmation of a suspected or probable case of JE would require the support of a well equipped laboratory to test blood and cerebrospinal fluid (CSF) for the same.

For strengthening of JE sero- surveillance in the country following activities will be carried out:

- Laboratory confirmation of JE cases
- Collection, Storage and Transportation of samples to serology laboratories
- Establish a Net work of JE testing laboratories
- Establish Reporting system and ensure use of uniform formats
- Establish internal quality assurance in the laboratory

Laboratory confirmation of JE cases

The fever and AES surveillance will capture any suspected JE cases which can be confirmed by laboratory tests as per the following markers:

- Presence of IgM antibody in serum and/or CSF
- Four fold differences in IgG antibody titre in paired sera
- Virus isolation from brain tissue
- Antigen detection by immunofluoroscence
- Nuclic acid detection by PCR

Laboratory confirmation of suspected JE cases would be carried out in the identified sentinel laboratories. At the laboratories the preferred test of JE diagnosis is the IgM Capture ELISA (enzyme linked immunosorbent assay).

Internal quality control of JE tests would be assured in the laboratory. These laboratories may also do other investigations or send the specimens on to national levels as necessary. JE laboratories will also be included under the External Quality Assurance for laboratory services under NVBDCP.

Specimen collection and transportation

Blood (serum) and Cerebrospinal fluid (CSF) are the specimens to be collected for JE diagnosis. Blood samples should be collected from suspected JE cases within 4 days

after the onset of illness for isolation of virus and at least 5 days after the onset of illness for detection of IgM antibodies. A second, convalescent samples should be collected at least 10-14 days after the first sample for serology.

Patient information should be recorded as below on a laboratory request and report form (AES-5) that must accompany the specimen when it is referred to the laboratory:

i) Name, age and sex of the patient.
ii) Full Mailing Address.
iii) Number of cases with similar illness in the locality/village/town.
iv) Name and contact address of treating doctor.
v) Brief clinical features with a special note on any asymmetry of clinical signs and symptoms.
vi) Three dates are very important :
- Date of last JE vaccination;
- Date of onset of first symptom
- Date of collection of sample.

vii) Label the vial with the patient's name, date of collection and specimen type. The specimens should be labeled with the number and this must be identical to the number given in the AESF-4.
viii) In the case of an outbreak, a laboratory request and report form in the form of a line list may be prepared.

Blood/Serum

Equipment for collection of serum the following equipment, and blood collection kit would be required

- 5ml vacutainer tube(non-heparinized) with 23g needle/5ml syringe with needle
- 5ml blood collection tubes if syringe and needle is used for blood collection
- Disposable gloves and face mask (one set each)
- Tourniquet
- Sterilizing swabs
- Sterile serum storage
- Specimen labels, marker pen
- Band aid
- Zip lock plastic bags
- Lab request form
- Cold box(vaccine carrier) with ice packs
- First aid kit (Along with address of nearest referral facility in case of blood collecting complications).

Collection procedure

- Collect 5ml blood by venepuncture in a sterile tube labeled with patient identification and collection date
- The blood should be kept at room temperature until there is complete retraction of the clot from the serum

- Blood can be stored at +4^{o} C to +8^{o} C for up to 24hrs before the serum is separated
- Do not freeze whole blood
- There are 2 options available to ensure that the proper specimen reaches the lab

Option 1

Transport whole clotted blood specimen to laboratory within 24 hours.

Option 2

- This could be centrifuged at 1000 rpm for 10minutes to separate the serum
- If centrifuge is not available, carefully remove the serum using a pipette, avoid extracting red cells
- Transfer the serum aseptically to a sterile labeled vial
- Store the serum at +4^{0}C to +8^{0}C until transport to the laboratory

Transportation of blood/serum specimens

- Specimens should be transported to the laboratory as soon as possible. Do not wait to collect additional specimens before transporting
- Place specimens in Zip lock or plastic bags and pack with absorbent material (cotton/tissue paper)
- Use a Thermos flask with ice or a vaccine carrier
- If using ice packs (should be frozen) and vaccine carrier, place frozen icepacks along the sides and place the samples in the center
- Place lab request form in plastic bag and tape to inner side of the Styrofoam bos/ vaccine carrier
- Arrange a transporting date
- When the arrangements have been finalized, inform the lab of the time and manner of transportation
- Serum should be shipped on wet ice within 48 hours or stored at +4^{0}C to +8^{0}C for a maximum period of 7 days
- In case a delay is anticipated, sera must be frozen at -20^{0}C and should be transported to the specified laboratory on frozen ice packs. Repeated freezing and thawing can have detrimental effects on the stability of IgM antibodies.

Cerebrospinal fluid (CSF)

CSF specimen would be collected in a sterile screw capped bottles under all aseptic precautions by a trained person. The containers should be properly labeled and transported at the earliest to the designated laboratory. All attempts would be made to collect CSF sample for confirmation of diagnosis.

Collection procedure

CSF is the fluid that bathes, cushions, and protects the brain and spinal cord. It flows through the skull and spine in the subarachnoid space, which is the area inside the arachnoid membrane. To obtain a specimen of cerebrospinal fluid the procedure is carried out by expert medical officer. Lumbar puncture (spinal tap) is the most common means of collecting a specimen of CSF.

- The patient is positioned on his side with his knees curled up to his abdomen and with chin tucked in to his chest. (Occasionally this procedure is performed with the person sitting and bent forward)
- The skin is scrubbed, and a local anesthetic is injected over the lower spine. The spinal needle is inserted, usually between the 3^{rd} and 4^{th} lumbar vertebrae.
- Once the needle is properly positioned in the sub-arachnoid space, pressures can be measured and fluid can be collected for testing
- After the sample is collected, the needle is removed the area is cleaned, and a bandage is applied
- The patient is asked to remain flat, or nearly flat, for 6 to 8 hours after the procedure.
- Overall, discomfort is minimal to moderate. The entire procedure usually takes about 30minutes, but it may take longer. The actual pressure measurements and fluid collection only takes a few minutes.

Examination of CSF is an essential step in the diagnosis of any patient with evidence of meningeal irritation or affected cerebrum. Approximate 2-3ml of CSF is collected and part of it is used for physical and cytological, biochemical, and microscopic examination and the remaining CSF is to be stored aseptically for serology, viral culture, bacteriological or fungal examination. The following important precautions need to be taken for CSF collection and transportation:

- CSF is a precious specimen, handle it carefully and economically. It may not be possible to get a repeat specimen
- Collect CSF in a screw capped sterile container and not in an injection vial with cotton plug
- Do not delay transport and laboratory investigations
- Perform physical inspection immediately after collection and indicate findings on laboratory requisition form
- Store at $+4^0$C, if delay in processing is inevitable.

Storage and transport of CSF sample

Place the specimens at $+4^0$C as soon as possible after collection. Dispatch these at the earliest possible opportunity on wet ice in a large thermos or an ice-box to the designated laboratory. Considering the emergency, preference should be given to hand carry the sample to the designated laboratory. Samples for PCR should be transported

on dry ice. A designated person (or persons) would be responsible for storage, packing and transport of samples according to national or international guidelines.

Criteria for rejection of CSF/Serum samples

- Leakage of sample
- Haemolyzed sample
- Inadequate quantity
- Improperly cold chain maintenance during transportation
- Improperly labeled sample
- Samples collected in improper containers
- Turbid serum sample (contaminated)

All laboratories would be classified in the following categories:

i) District Sentinel Surveillance Laboratories

The laboratory attached with hospitals or medical college will be a designated JE Sentinel Surveillance laboratory. Laboratory confirmation of suspected JE cases would be carried out in these identified sentinel laboratories. Directorate of NVBDCP envisages strengthening these laboratories so that necessary equipment and testing kits are made available in a phased manner. Govt. of India would provide Mac ELISA test kits as well as ELISA Reader in places where such equipment is not available. Adequate training will be imparted to medical and paramedical staff working in these laboratories. In the first phase, 50 sentinel surveillance laboratories have been identified. Subsequently, SSL at district level will be strengthened in all endemic districts in a phased manner.

ii) National laboratories/Referral laboratories

National laboratories such as NCDC, NIV, Pune, NIMHANS, Bangalore, etc. already exist in the country for diagnosis of JE cases and to investigate the viral strain of AES cases. Samples from any district sentinel laboratories may be sent to these laboratories for detail analysis.

Reporting

All test results would be conveyed back to respective Sentinel Surveillance/Reporting Units Sites and to DMO in the form (AESF- 5) for planning and implementation of appropriate control measures. All complied reports will be sent to SPO.

Quality Assurance

All the laboratories are to be accredited by WHO. This accreditation requires 100% proficiency score in test panels and a yearly on-site review by trained WHO virologists. The program monitors the turnaround time between specimen receipt in the laboratories and report for all laboratories in the network.

Sero- Surveillance in vaccinated Children

Any case of post vaccinated effects like fever seizures etc. should be investigated for the virus strains to match the same with the vaccination strain or otherwise. For children vaccinated with JE vaccine within six months of illness onset, testing a single serum sample for JE IgM may not be diagnostic because it may diagnosis can only be confirmed by demonstrating JE IgM in the CSF, JE virus isolation, a positive nucleic acid amplification test, immuno histochemistry, IFA, or a four-fold or greater rise in antibody titre in acute and convalescent phase serum samples.

Chapter – 3F
Paediatric Intensive Care Unit

Paediatric Intensive care unit (PICU) is a specific area of hospital where sophisticated monitoring, titrated life support, specific therapy and specialized nursing for potentially salvageable, critically ill paediatric patients with life threatening illness or injury, is provided.

It is evident that AES/JE causes inflammation of brain coverings (Encephalitis) which in most of the cases results in temporary/permanent Neuro Muscular deficit. Such patients require more supportive/conservative treatment for a longer period

PICU beds are occupied by patients with a wide range of clinical conditions but all have dysfunction or failure of one or more organs, particularly nervous system, respiratory and cardiovascular systems. Patients usually require intensive monitoring, and most need some form of mechanical or pharmacological support such as mechanical ventilation, renal or vasoactive drugs.

Adequate facilities at district hospitals are essential for better clinical management leading to improved survival of children affected by JE/AES.

In order to achieve this objective, it has been decided to set up a well-equipped 10-bedded intensive care unit (ICU) in district hospitals of 60 priority endemic districts.

These PICUs will be well equipped with medical equipments like pediatric ventilator, defibrillator, bed side monitors, blood gas analyzer and syringe pumps. For the patients requiring continuous supply of O_2 there is provision of central gas supply (O2, compressed air, nitrous oxide and vacuum) in PICU.As encephalitis patient due to abnormal Intra cranial pressure requires closed monitoring of vital parameters like Blood Pressure, HR, RR and Temperature ,bed side monitors will be installed at each bed side. To have better view of all the patients, the PICUs will have central monitoring station from where the clinical parameters of the patients can be accessed.

Continuity and stability of nursing staff are of paramount importance in this area. Ideally the nurses posted in PICU should not be rotated too often and senior medical nursing staff should also take interest in checking their standard of competence and training them adequately. Depending upon the workload of that area the numbers of nurses should be decided.

For day to day administrative, technical control and for round the clock coverage of the ward, medical officer who should preferably have critical care background be appointed in the PICU.

To keep abreast with the latest development in the field of medical technology hands on training and refresher training have been scheduled for the doctors and nursing staff.

Chapter – 3G
Physical Medicine Rehabilitation

Objective – Relevance of the Department

Japanese Encephalitis/Acute Encephalitis Syndrome is one of the public health problems in the country because of the high case fatality rate which is about 30 % and residual neurological sequelae in 30-40% of children who recover. Limited therapeutic options and lack of specific treatment for JE/AES, significantly contribute to the morbidity and functional impairment. Rehabilitation has become an integral subspeciality in the health care system to cater to the needs of these patients. There is a 'felt need' since long to have rehabilitation specialists (Physiatrists) trained in assessment, quantification and management of disabilities occurring as a result of JE/AES. Further a separate department of Physical Medicine & Rehabilitation is the need of the hour in the Medical Colleges in high endemic States in the country, which will contribute in rehabilitation, capacity building and human resource development in the field of rehabilitation.

Clinical Services

The department, to begin with, should have one unit and should provide the following patient care services:

Daily Out Patient Services: 9.00 AM onwards

In Patient facility: 10 beds

General Ward (Male): 5; General Ward (Female): 5;

Therapy sections: A well equipped Physical, neurological and psychological therapy should provide daily services for patients

Ideally the institute should have tie-up with centers with orthotic division (preferably part of the department), urologists and plastic surgeons for referrals, whenever necessary.

Supportive services from allied specialties namely neurology, imaging, neurosurgery, psychiatry, speech and hearing, psychology and social work.

Training/Academic programs:

The department should have multi level teaching and training programs:

Short term training program for medical from government medical colleges and district hospitals can be initiated. These physicians can visit the centers for a period of three to six months and acquire skill in recognition, evaluation and management of common disabling conditions.

Training program for other health professionals like Physical therapists, Occupational therapists, Psychologists, social works and community based health workers involved in rehabilitation.

Infrastructure

Space/ building

Ward should preferably be on the ground floor with easy accessibility of ambulance, car trolley and wheel chair. A covered veranda, with steps, ramps are advisable. All clinical departments must be easily approachable. Ideally, it should be an independent wing of the hospital or an annex designed for wheel chair access. Wards with 10 beds (or more), each should be curtained for privacy. Toilets should be 45cms High and extended 60 cms from wall. Rail on one side and a bar to hold on the other side. Wash basin should be hand operated with clear distance for wheel chair to slide underneath-at least 75cms. Bath should have a telephone cord shower unit. Commode wheelchairs and shower curtains be provided.

The building should provide the following area:

- Ward
- Out-patient department
- Physiotherapy section-Hall, office, store room
- Occupational therapy section-Hall, office store room
- Orthotic section (optional)
- Office for physicians
- ADL training room

Adequate space for inpatient, outpatient and department as per institute norms.

List of Equipment/Furniture required has been given at **Annexure – 17.**
Details of Manpower at **Annexure-18** and TOR at **Annexure-19** are given.

District Counseling Centres

Rehabilitation of the surviving disabled children is an important objective of the Programme. It is for this reason that 10 medical colleges across 5 States will be identified for addressing this problem through provision of medical rehabilitation services to AES/JE affected children. JE/AES affected children as well as their parents/attendants need to be counseled about post recovery complications like loss of speech and hearing, irritability and loco-motor and behavioural disorders. For this purpose, in addition to establishing 10 PMR departments, it is also proposed to set up 60 counseling centres at district hospitals in the priority districts. **Annexure-20**

Chapter – 3H

Financial Management

GUIDELINES

The National Programme for Prevention and Control of JE/AES is a new initiative to address multifarious problems associated with JE/AES in the 60 most endemic and vulnerable districts in 5 States of India in the first phase. Adequate and timely funding of different activities is critical to achieve the objectives of the Programme. It may not be feasible and practical to channelize substantial resources to specific districts. Hence the funds for various components of the National Programme need to be made available to take care of the additional requirements. It has also been provided that in order to facilitate implementation, the sharing of costs of different activities between Central and State Governments per the normal sharing pattern under the regular programme as would be so decided. Necessary provision will be made in the budget of respective Ministries/ Departments over and above the normal allocation.

Summary of Estimated Costs

The estimated costs for implementing Phase 1 of the National Programme for Prevention and Control of JE/AES are summarized below:

S. No.	Ministry/ Department	Estimated Costs (Rs. In crore)
1.	Ministry of Health and Family Welfare	1131.49
2.	Ministry of Drinking Water and Sanitation	Drinking Water - 750.23 Sanitation. – 1551.34 Total – 2301.57
3.	Ministry of Housing and Urban Poverty Alleviation	418.00
3.	Ministry of Social Justice and Empowerment	9.19
4.	Ministry of Women and Child Development	177.85
Total		**4038.10**

Component-wise Estimated Costs for Health Sector under National Programme for Prevention and Control of JE/AES (based on activities elaborated above) are as follows:

				(Rs. In Crore)
S. No	**Component**	**Total for 5 years**		**Grand Total**
		Non-Recurring	**Recurring**	
1	Strengthening Public Health Activities in 60 priority districts	8.40	92.94	**101.34**
2	JE Vaccination	0.00	200.72	**200.72**
3	Establishment of Pediatric ICUs at 60 district hospitals	126.60	422.61	**549.21**
4	Establishment of 20 New JE/AES Surveillance Sites	4.07	9.47	**13.54**
5	Establishment of PMR Dept. at 10 Medical Colleges	50.00	118.55	**168.55**
6	Establishment of60 District Counselling Centres	0.30	13.00	**13.30**
7	Research-Cum-Intervention Projects	0.00	35.00	**35.00**
8	Monitoring& Coordination	0.89	48.94	**49.83**
Grand Total		**190.26**	**941.23**	**1131.49**

Funding Pattern

The funds will be released to States/UTs through the State Health Society in the same envelope as for other Vector Borne Diseases, to carry out the activities at different levels, as outlined in the Operational Guidelines. Fund released from State to District Health Society would inter alia include funds for activities approved for 60 most endemic districts.

State shall have the flexibility for inter-usability of funds limited to a ceiling of 10% from one component to another, under intimation to the GOI, in order to ensure operational flexibility in implementation.

The Statement of Expenditure (SOE) and Utilization Certificate (UC) as per General Financial Rules shall be submitted for each component.

Fund flow mechanism

All funds will be released to States and Districts through NRHM structure. Financial management groups (FMG) of Programme Management support unit at the State and District level, (established under NRHM), will be responsible for maintenance of accounts, release of funds, expenditure reports, utilization certificates and audit arrangements.

Annual action plan

Annual action plan shall consist of the activities with the tentative date of implementation. Thereafter the State shall submit the consolidated action plan for a year to the Directorate of NVBDCP with the tentative calendar of the activity when that shall be executed. The responsibility for the preparation of the action plan shall be that of the state. The tentative budget shall be the part of the action plan. The state action plan is approved by the MOH&FW after it is examined by NVBDCP.

Important Dates for Submission and Approval of Annual Work Plan

Activity	Date
Last date of submission by state/UT to GoI	31st December of the previous financial year
Last date for approval by GoI	28th February of the previous financial year

Release of funds to State Health Societies (SHS)

On the basis of the approved action plan by MOH&FW, NVBDCP shall release the funds in 2 installments, taking into consideration the unspent balance on the last day of the financial year. The release shall be made by the GOI to the State Health Societies (SHS). 1st Installment shall be 50 % of the approved action plan considering the unspent balance.

Conditions for release of 1st installment

- Audited report along with Utilization Certificate (UC in the prescribed format GFR19A**) **Annexure - 21** to be submitted for the preceding year (e.g for 1st release of 2009-10, audited report of 2007-08)
- Statement of Expenditure for the previous year (e.g for 1st release of 2009-10, SOE of 2008-09)
- Bank/Cash balance as on 1st April of the year (e.g for 1st release of 2009-10, balance as on 1st April 2009)

Conditions for release of 2nd installment

- Audited report along with Utilization Certificate (UC in the prescribe format GFR19A**) is submitted by the state for the previous year (e.g for 2nd release of 2009-10, audited report of 2008-09)
- Statement of Expenditure (upto 15th of August) of the current financial year).

Monitoring and Evaluation

Statement of Expenditure will be submitted on monthly basis by District Societies to SHS (State Health Society) which in turn after consolidating expenditure statement send it to Directorate of NVBDCP by the 20th of the following month Performa of Statement of Expenditure is enclosed in **Annexure - 22**.

Books of Accounts and satisfactorily working of Financial Management System of State Societies shall be reviewed / Monitored by visits of Finance Personnel of this Directorate frequently.

Books of accounts to be maintained at SHS / DHS

The following books are to be maintained at the state level and District level.

- Cash book (double column)
- Journal book
- Ledger
- Budget control register
- Advance register
- Fixed assets register

Cash book must be closed on daily basis even if no transaction has been executed in that particular day.

Quarterly unspent position

The state society shall furnish consolidated quarterly fund position of state covering fund position of the district societies to the Directorate of NVBDCP within 10th of the close of the quarter to enable the Directorate to consider further release of funds in a timely manner.

Audit of accounts of SHSs

The accounts shall be audited annually by the firm of Chartered Accountants empanelled by Comptroller and Auditor General of India. The books of accounts and related records shall be kept updated regularly by the State Society / District Society so that consolidated Annual Audit Report of the State Society incorporating audited accounts of District Societies may be sent to the Directorate.

The important activities and dates for external audit (as per NHM) is annexed at **Annexure-23.**

The following documents are to be submitted by the auditor:

- Receipts and payments account
- Income and expenditure account
- Balance sheet
- accounting policy
- Schedule of fixed assets
- Schedule of outstanding advances recoverable
- Schedule of sundry debtors/creditors (if applicable)
- Bank reconciliation statement along with balance statement from bank
- Utilization certificate, in the prescribed format. (GFR-19A)

Chart of Accounts

Sl No.	Component	Budget
1	1. Human Resources	Project Management Unit in Externally Aided Component state (EAC state) , MPW as per the sanction of MOHFW
2	2. Training	Type and duration of training please refer chapter training
3	3. Commodities, products and drugs	NVBDCP shall provide fund or the stock of the commodities products and drugs as per the centralized list (for supply of the commodities product and drugs please refer the chapter Annual Action Plan)
4	4. IEC/ BCC	NVBDCP shall provide cash assistance to 6 schemes of IEC/BCC listed
5	i. Planning and administration	Cash Grant
	ii. Monitoring and evaluation	
	iii. MIS (NAMMIS)	To provide support for data updating

Approved specifications for the equipments required for various facilities to be established under the Programme have been appended. These specifications may have to be adhered to, while inviting the bids for procurement of these equipments.

Provisions contained in Chapter 6, 7 and 8 of General Financial Rules, 2005 outlining the procedure to be followed for procurement, maintenance of inventory and stock shall have to be adhered to.

Drawing of funds:

Executing Agencies shall draw the funds as per the procedure approved in the Finance and Accounts Rules prescribed by the State Government concerned. Withdrawal of funds for making payments towards the works undertaken by the Executing Agencies will be through cheques only and as prescribed in the rules and departmental instructions. Drawal of funds for any other purpose shall not be permitted.

Utilization of Interest Earned on Deposits:

The interest amount accrued on any deposit shall be treated as additional resources and should be utilized on the approved activities of the National Programme.

Audit of works:

Regular physical and financial audit of the works under the scheme shall be carried out at the end of each financial year, in each district. The audit shall be done either by Local Fund Auditors or by Chartered Accountants listed in the panel of the State Government or AGs of the State.

The audit report together with action taken on the Auditor's observations is required to be submitted along with the proposal for release of second instalment of funds. Such Action Taken Note should be authenticated by Auditor.

Progress reports:
Progress reports will be submitted in prescribed proforma for the purpose.

Annexure – 1a

List of 60 JE/AES reporting priority district

S. No.	States	Districts	
1	Assam (10)	1. Barpeta	2. Lakhinpur
		3. Dhemaji	4. Sibsagar
		5. Dibrugarh	6. Sonitpur
		7. Golaghat	8. Tinsukia
		9. Jorhat	10. Udalgiri
2	Bihar (15)	1. Aurangabad	2. Nawada
		3. Darbhanga	4. Patna
		5. East Champaren	6. Samartipur
		7. Gaya	8. Saran
		9. Gopalganj	10. Siwan
		11. Jahanabad	12. Vaishali
		13. Muzaffarpur	14. W. Champaran
		15. Nalanda	
3	Tamilnadu (5)	1. Madurai	2. Thiruvarur
		3. Karur	4. Villupuram
		5. Thanjavur	
4	Uttar Pradesh (20)	1. Azamgarh	2. Kushinagar
		3. Balia	4. Lakhimpur kheri
		5. Balrampur	6. Maharajganj
		7. Basti	8. Mau
		9. Behraich	10. Rai Bareilly
		11. Deoria	12. Sant Kabir Nagar
		13. Gonda	14. Shaharanpur
		15. Gorakhpur	16. Shra Vasti
		17. Hardoi	18. Siddharth Nagar
		19. Kanpur Dehat	20. Sitapur
5	West Bengal (10)	1. Bankura	2. Hoogly
		3. Birbhum	4. Howrah
		5. Burdwam	6. Jalpaiguri
		7. Dakshin Dinajpur	8. Malda
		9. Darjeeling	10. Paschim Midnapur

Annexure-1b

The List of JE/AES Reporting 171 Districts in 19 States

S. No.	States	Districts	
1.	Andhra Pradesh (12)	1. Adilabad	2. Chittur
		3. Karim Nagar	4. Khammam
		5. Krishna	6. Kurnool
		7. Medak	8. Mehboob Nagar
		9. Nalgonda	10. Nellore
		11. Nizamabad	12. Warangal
2.	Arunachal Pradesh (1)	1. Chenlang	
3.	Assam (16)	1. Barpeta	2. Darrang
		3. Dhemaji	4. Dibrugarh
		5. Goalpara	6. Golaghat
		7. Jorhat	8. Kamrup
		9. Lakhimpur	10. Morigaon
		11. Nagaon	12. Nalbari
		13. Sibsagar	14. Sonitpur
		15. Tinsukhia	16. Udalgiri
4.	Bihar (24)	1. Aurangabad	2. Gaya
		3. Gopalganj	4. East Champaran
		5. Mujjafarpur	6. Nawada
		7. Samastipur	8. Siwan
		9. West Champaran	10. Arwal
		11. Araria	12. Banka
		13. Bhagalpur	14. Bhojpur
		15. Buxar	16. Jamui
		17. Jehanabad	18. Lakhisarai
		19. Nalanda	20. Patana
		21. Saran	22. Sheikhpura
		23. Vaishali	24. Darbhanga
5.	Delhi (2)	1. North District	2. North East District
6.	Goa (2)	1. North Goa	2. South Goa
7.	Haryana (6)	1. Ambala	2. Kaithal
		3. Karnal	4. Kurukshetra
		5. Panipat	6. Yamunanagar
8.	Jharkhand (8)	1. Giridih	2. Pakur
		3. Palamu	4. Ranchi
		5. W.Singhbhum	6. Dumka
		7. Jamatra	8. Sahibganj

9.	**Karnataka (10)**	1. Tumkur	2. Bellary
		3. Bijapur	4. Dharwad
		5. Gadag	6. Haveri
		7. Kolar	8. Koppal
		9. Mandya	10.Raichur
10	**Kerala(2)**	1. Allepy	2. Trivandrum
11	**Meghalaya (4)**	1. East Khasi Hills	2. West Khasi Hills
		3. Jantia Hills	4. Ribhoi
12.	**Maharashtra (9)**	1. Gondia	2. Amravati
		3. Beed	4. Bhandara
		5. Gadhchiroli	6. Latur
		7. Nagpur Rural	8. Washim
		9. Yeotmal	
13.	**Manipur (8)**	1. Bishnupur	2. Chandel
		3. Churachandpur	4. Imphal East
		5. Imphal West	6. Kangkokpi
		7. Senapati	8. Thoubal
14.	**Nagaland (7)**	1. Dimapur	2. Mokongchung
		3. Wokha	4. Kohima
		5. Tuenseng	6. Juneheboto
		7. Loungleng	
15	**Punjab(2)**	1. Sangrur	2. Shaheed Bhagat Singh Nagar
16	**Tamilnadu (13)**	1. Karur	2. Cuddalore
		3. Madurai	4. Perambulur
		5. Thanjavur	6. Thiruvannamalai
		7. Thiruvarur	8. Thirchirapalli
		9. Villipuram	10. Kalakuruchi **
		11. Virudh Nagar	12. Thiruneveli
		13. Pudukottai	
17.	**Uttar Pradesh (34)**	1. Allahabad	2. Ambedkar Nagar
		3. Azamgarh	4. Ballia
		5. Balrampur	6. Barabanki
		7. Bareilly	8. Basti
		9. Behraich	10. Deoria
		11. Faizabad	12. Fatehpur
		13. Ghazipur	14. Gonda
		15. Gorakhpur	16. Hardoi
		17. Jaunpur	18. Kanpur Nagar
		19. Kheri	20. KushiNagar
		21. Lucknow	22. Mahrajganj
		23. Mau	24. Maujjafarnagar
		25. Pratapgarh	26. Raibareilly

		27.	Saharanpur	28.	Sant Kabir Nagar
		29.	Shahjahanpur	30.	Siddharth Nagar
		31.	Sitapur	32.	Srawasti
		33.	Sultanpur	34.	Unnao
18.	**Uttarakhand(1)**	1.	Udham Singh Nagar		
19.	**West Bengal (10)**	1.	Birbhum	2.	Bardhaman
		3.	Hoogly	4.	Howrah
		5.	Paschim Midnapur	6.	Jalpaiguri
		7.	Dakshin Dinajpur	8.	Uttar Dinajpur
		9.	Malda	10.	Darjeeling
Grand Total: 19 States & 171 Districts					

Annexure – 2

List of Municipalities/ Local Bodies of 5 Priority States

Assam (23 Municipal Bodies)	
Name of Districts	**Name of Municipal Bodies**
1. Barpeta	1. Barpeta Municipal Corp.
	2. Howli
	3. Pathshala
	4. Sorbhoj
2. Dhemaji	5. Dhemaji Town
	6. ShilaPathar
3. Dibrugarh	7. Dibrugarh Town
	8. Moran Town
4. Jorhat	9. Jorhat Town
	10. Moriyoni Town
	11. Titabar
5. Lakhimpur	12. Lakhimpur Town
	13. Bihpuria
6. Sivsagar	14. Sivsagar
	15. Nazira
	16. Sonari
7. Sonitpur	17. Tezpur
8. Tinsukia	18. Tinsukia
	19. Doomdoma
	20. Naharkatia
	21. Sapakhowa
9. Udalgiri	22. Udalguri
	23. Tangla
Bihar (15 Municipal Bodies)	
1. Arwal	1. Arwal Nagar Parishad
2. Darbhanga	2. Darbhanga Nagar Nigam
3. East Champaren	3. Motihari Nagar Parishad
4. Gaya	4. Gaya Nagar Nigam
5. Gopalganj	5. Gopalganj Nagar Parishad
6. Jehanabad	6. Jehanabad Nagar Parishad
7. Muzaffarpur	7. Muzaffarpur Nagar Nigam
8. Nalanda	8. Bihar Sarif Nagar Nigam
9. Nawada	9. Nawada Nagar Parishad
10. Patna	10. Patna Nagar Nigam
11. Samastipur	11. Samastipur Nagar Parishad

12. Saran	12. Chhapra Nagar Parishad
13. Siwan	13. Siwan Nagar Parishad
14. Vaishali	14. Hajipur Nagar Parishad
15. W. Champaren	15. Bettiah Nagar Parishad
Tamil Nadu (2 Municipal Bodies)	
1. Madurai	1. Madurai
2. Thanjavur	2. Thanjavur
Uttar Pradesh (17 Municipal Bodies)	
1. Azamgarh	1. Mubarakpur
2. Bahariach	2. Bahariach
	3. Nan Para
	4. Risia
3. Balrampur	5. Notified Area Tulsipur
	6. Notified Area PatchPerwa
4. Basti	7. Basti
5. Deoria	8. Deoria
6. Gorakhpur	9. Gorakhpur Nagar Nigam
	10. Sahjawan
7. Kushinagar	11. Padrona
8. Maharajganj	12. Maharajganj
	13. Nautanwa
9. Sant Kabir Nagar	14. Nagar PalikaParishad, Khalilabad
	15. Nagar Panchyat, Hariharpur
	16. Nagar Panchyat, Mehdawal
10. Siddharthnagar	17. Naugarh

West Bengal (9 Municipal Bodies)	
1. Birbhum	1. Suri
2. Dakshin Dinajpur	2. Balurghat
3. Darjeeling	3. Siliguri
4. Hoogly	4. Baidyabati
5. Howrah	5. Howrah
6.Jalpaiguri	6. Jalpaiguri
	7. Mal
	8. AlipurDuar
7. Malda	9. English Bazar

Annexure – 3

Components of Public Health Activities

Sl.No.	Component	Activity
1	Disease Surveillance	i) Capacity Building in Case management ii) Incentive for ASHAs
2	Diagnostic faculty	i) Training
		ii) Reagent, etc.
3	Vector Control	i) Procurement of Technical Malathion
		ii) Arrangement of POL
		iii) Procurement of Pulse fog machine
		iv) Training of spray men
4	IEC/BCC	Advocacy Meetings i) ASHA/ AWW
		ii) Traditional Healers
		i) Community Education Printing Material
		ii) Nukkad Natak at Block PHCs
		iii) Nukkad Natak at prominent places
		iv) Advocacy workshops
5	Monitoring and Supervision	Vehicle Hiring
6	Contingency	Three entomological kits, Cage, Traps, vials. test tubes stationery and postage etc.

Annexure-4

List of Apex Referral Laboratories

1. National Institute of Mental Health & Neuro-Sciences, Bangalore.
2. Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow.
3. Post Graduate Institute of Medical Sciences, Chandigarh.
4. All India Institute of Medical Sciences, Delhi.
5. National Institute of Cholera & Enteric Diseases, Kolkata.
6. Regional Medical Research Centre(ICMR),Dibrugarh.
7. Kings Institute of Preventive Medicine, Chennai.
8. Institute of Preventive Medicine, Hyderabad.
9. National Centre for Disease Control (NCDC), Delhi
10. National Institute of Virology, Pune
11. B.J. Medical College, Ahmedabad, Gujarat
12. State Institute of Virology, Allepy, Kerala.

Annexure-5

Material for IEC/BCC

क्या करें

दिमागी बुखार का टीका जरूर लगवाएँ।

मच्छर मारने के धुएं के छिड़काव (फॉगिंग) के समय घर के खिड़की दरवाज़े खुले रखें।

मच्छरों से बचाव के लिए मच्छरदानी व मच्छर अगरबत्ती आदि का प्रयोग करें।

पूरे बाँह की शर्ट एवं फुल पैंट एवं पैरों में मोजे पहनें।

सुअरों को घर से दूर रखें रहने की जगह साफ सुथरा रखें एवं जाली लगाएं।

पीने के लिए इंडिया मार्का-II हैण्ड पम्प के पानी का प्रयोग करें।

क्या ना करें

मरीज़ को पीठ के बल न लिटाएं।

बेहोशी व झटके की स्थिति में मरीज़ के मुँह में कुछ भी नहीं डालें।

घर के आस पास गंदा पानी इकट्ठा न होने दें।

इधर-उधर कूड़ा-कचरा व गंदगी न फैलाएं।

खुले मैदान या खेतों में शौच न करें।

४० फीट से कम गहराई के हैण्ड पम्पों का पानी न पीयें।

तालाब या पोखरे के पानी को नहाने या मुँह धोने के लिए भी प्रयोग न करें।

झोला छाप डाक्टरों के पास न जाएं।

तालाब या पोखरे में जलकुम्भी या अन्य पौधे न पैदा होने दें।

Annexure-6
AESF-1

PROFORMA FOR MONTHLY REPORT ON ACUTE ENCEPHALITIS SYNDROME CASES/ JAPANESE ENCEPHALITIS * STATES

State_____ **District**_____

Period included in the report: From_____ **to** _____

Date of Report:

S.I.No.	Name of the Districts	Disease	Name of affected PHCs	No. of cases reported - Age wise (corresponding month of last year)										No. of cases reported - Age wise (Current month)										Cumulative Total				Number of samples Collected	No. found +Ve For JE		Remarks
				0-1		1-5		6-15		>15 yrs		Total		0-1		1-5		6-15		>15 yrs		Total		Cases		Deaths					
				M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	V	N	V	N		V	N	

C: Cases **D: Death** **M: Male F: Female** **V: Vaccinated N: Not Vaccinated**

**** Mention causes of encephalitis or AES unknown.**

(Name & Signature)
Designation

Send this report to NVBDCP, New Delhi by Fax No. 011-23968329, email: nvbdcp-mohfw@nic.in

AESF-1A

PROFORMA FOR DAILY/WEEKLY REPORT ON ACUTE ENCEPHALITIS SYNDROME CASES/

JAPANESE ENCEPHALITIS * FROM STATES

State_____Year_____Month_____Weekly Report (from----------to----------)/ Daily Report (date--------)

Sl. No.	Name of District	Disease	During the week / Day				Progressive Total (From 1st January to ---------)				Remarks
			Cases	Deaths	No. of samples Collected	No. found + ve for JE	Cases	Deaths	No. of samples Collected	No. found + ve for JE	Cases
1.		AES									
		JE									
2.		AES									
		JE									

*= Daily report during epidemic/outbreak and weekly report otherwise

(Name & Signature)
Designation

During outbreaks, send this report daily to NVBDCP, New Delhi Fax No. 011-23968329, email: nvbdcp-mohfw@nic.in

PROFORMA FOR MONTHLY REPORT ON ACUTE ENCEPHALITIS SYNDROME CASES/ JAPANESE ENCEPHALITIS * FROM DISTRICTS

State_____ District_____
Period included in the report: From_____ to _____
Date of Report:

S.I.No.	Name of the Districts	Disease	Name of affected PHCs	No. of cases reported - Age wise (corresponding month of last year)										No. of cases reported - Age wise (Current month)										Cumulative Total				Number of samples Collected	No. found +Ve For JE		Remarks
				0-1		1-5		6-15		>15 yrs		Total		0-1		1-5		6-15		>15 yrs		Total		Cases		Deaths					
				M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	V	N	V	N		V	N	

C: Cases D: Death M: Male F: Female V: Vaccinated N: Not Vaccinated

** Mention causes of encephalitis or AES unknown.

(Name & Signature)
Designation

Send this report to Sate Programme Officer (SPO), _____ by Fax Number _____or email ID

PROFORMA FOR DAILY/WEEKLY REPORT ON ACUTE ENCEPHALITIS SYNDROME CASES/ JAPANESE ENCEPHALITIS * FROM DISTIRCTS

State_____Year_____Month_____Weekly Report (from----------to----------)/ Daily Report (date--------)

Sl. No.	Name of the Sentinel Surveillance Site	Disease	During the week / Day				Progressive Total (From 1st January to ---------)				Remarks
			Cases	Deaths	No. of samples Collected	No. found + ve for JE	Cases	Deaths	No. of samples Collected	No. found + ve for JE	Cases
1.		AES									
		JE									
2.		AES									
		JE									

*= Daily report during epidemic/outbreak and weekly report otherwise

(Name & Signature)
Designation

During outbreaks, send this report daily to State Programme Officer (SPO), _____by Fax Number_____or email ID

Linelist of AES/ JE Cases

Monthly/ Weekly/ Daily Report (Encircle the appropriate*)

AESF-3

This report is sent from _____(Specify --- Name of SSS/District/State)

Period Included in this report from _____to _____
Total Number of Cases in this period _____(Write "Nil" if there are no cases)
Date of Report:

Cases ID Numb	Name & address	District Name	Block Name	Religion	Sex	Age	No. Of Dses	Date of last JE vaccination	Date of admission	Date of onset of symptoms	Date of onset fever	Change in mental status (Y/N)	Seizure (Y/N)	Type of sample	Date fo sample collection	Lab Result	Outcme	Remark
				(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
AES-																		
AES-																		
AES-																		
AES-																		
AES-																		

Person sending the report :_____Designation _____Signature_____

---

(1) Religion: H= Hindu, M=Muslim, O= Others
(2) Sex of child :M= Male F=Female
(3) Age
(4) No of vaccination doses & date of last JE vaccination
(5) Date of Admission
(6) Date of onset of symptoms
(7) Date of onset fever
(8) Change in mental status
(9) Seizures yes, no=2, unknown=3
(10) specified type of samples collected i.e. blood or CSF& date of collection
(11) Lab Result: 1=Positive, 2=Negative, 3=Not tested, 4=Unknown
(12) Status at Discharge: Normal/Disable/Died on /Any other
(13) Final Classification: 1=Lab Confirmed JE 2= Probable JE 3=AES Unknown, 4= AES other agent Date of death of discharg

***Daily report during epidemic /outbreak, Weekly report in transmission season and Monthly report every month**

(Name & Signature)

Designation

ACUTE ENCEPHALITIS SYNDROME/ SUSPECTED JE CASE INVESTIGATION FORM

EPID NUMBER: AES-_____ - _____ - _____ AESF-4

Reporting information

Date Case Reported: _____ / _____ / _____ **Notified by:_____**

Date Case Investigated:_____ / _____ / _____ **Investigated by:_____**

Patient information

Patient's Name:_____ **Sex:_____**

Date of Birth: _____/ _____ /_____ **Age: Year_____Months_____**

Father's Name:_____ **Religion : Muslim / Hindu / other**

Address: **Landmark:**

Village / Mohalla:_____ **Block/Urban area:_____**

District:_____ **State:** **Setting: Urban / Rural**

Travel history over past two weeks from onset of first symptoms

Date from:

Date to:

Address

Block

District and

State

Immunization history

JE immunization :Yes / No / Partial / Unknown **Date of last JE immunization:_____/ ____/ ____**

Signs and Symptoms

Date of onset of first symptoms:_____/ _____/_____ **Headache: Yes / No / Unknown**

Change in mental status: Yes / No / Unknown **Paralysis: Yes / No / Unknown**

Fever: Yes / No / Unknown **Unconsciousness: Yes / No / Unknown**

Seizure: Yes / No / Unknown **Neck rigidity: Yes / No / Unknown**

Date of contact with public health system (PHC/CHC/DH)

Details of contacts with private practitioners 1……..2……..3……..

Mode of transport to health facility……..

Any Other, specifiy:_____

Sample collection, tracking and results

Specimen	Date Collection	Date Sent	Date Result	Condition	Laboratory Result (circle)
CSF					Positive Negative Not tested Unknown
Serum 1					Positive Negative Not tested Unknown
Serum 2					Positive Negative Not tested Unknown

Diagnosis and final classification

Final classification: **Laboratory confirmed JE / Probable JE / AES unknown / AES other agent**

Clinical diagnosis:_____

Discharge status

Status at discharge: **Alive / Dead / Unknown** **Date of discharge: _____/_____/_____**

If alive, status of recovery: **Recovered completely / Recovered with disability**

If died, date of death: _____/_____/_____

*** Condition is good if adequate if specimen is transported in reverse cold chain**

(Name & Signature)
Designation

Annexure- 7

TERMS OF REFERENCE OF MANPOWER
STATE LEVEL

1. State Consultant (JE/AES):

Purpose

To strengthen the national JE/AES prevention and control programme at the state level by improved surveillance and information management for decision-making at all levels of the Programme.

Responsibilities:

Working in close collaboration with state VBDCP officials and other Consultants:

i. To ensure that current programme guidelines for national JE/AES prevention and control programme at the state level for planning, training, service provision, monitoring, supervision and surveillance of are applied in all health facilities and by all health workers concerned in the state.

ii. To coordinate with National, State and District level officers to establish good practices of supportive supervision in the state for the control of national JE/AES prevention and control programme at the state level.

iii. Conduct regular field visits for ensuring quality implementation of the programme and provide technical support to the concerned staff on site, including ongoing on-the job training and supportive supervision to Consultant (JE/AES)

iv. To ensure timely data analysis, presentation and interpretation for surveillance at state level.

v. To supervise the logistics so as to ensure against stock-outs.

vi. To provide technical support to State Programme Officer (SPO) and guide DMOs, for the preparation of district plans for control of JE/AES.

vii. To actively seek involvement of state administration, NGOs, CBOs and the private sector (health and non-health) under various schemes.

Qualification and Experience

Essential: M.B.B.S., MD in PSM/Community Medicine/Public Health/Clinical Sciences with 1 - 2 Years of experience in working in National health programmes at state/district level**.**

However, the essential qualification may be relaxed in cases of experienced candidates or if there are no candidates available with the prescribe qualification.

Nature of Appointment

The appointment of the Consultant will be on contract basis initially for a period of one year (subject to satisfactory performance) and extendable further years on basis of performance.

Reporting:
The State Programme Officer of state shall be overall in charge of the Consultant (JE/AES). He/she would liaise with Directorate of NVBDCP on a regular basis.

Age:
Should not be above 63 years and ready to travel extensively.
In case of experienced candidate age norms may be relaxed

Remuneration:
Upto Rs. 75,000/- per month consolidated with a provision for 5% annual increment subject to ceiling of Rs. 75,000/- and satisfactory performance assessment by the reviewing officer.

Travel
TA/DA as per State's NRHM rules.
Rescission
Either party can terminate the contract at any time giving fifteen days notice in writing.

Deliverables
The consultant will be required to submit a Monthly Activity Report and a year ending Annual Report to State Programme Officer with a copy to Directorate of NVBDCP. Evaluation of performance will be done based on these activity reports.

Selection
Selection and appointment shall be carried out through advertisement

2. Finance Consultant

Purpose
To maintain proper accounting including analysis, financial reporting, budgeting, financial software and reporting systems as per programme requirement to strengthen the financial management arrangements within JE control programme of NVBDCP and to ensure adherence to the norms of GoI.

Responsibilities
Working in close collaboration with NVBDCP administrative staff:

i. To keep and maintain a separate account for the JE/AES control programme for State NVBDCP as per guidelines.

ii. To prepare monthly financial statements for the JE/AES component of the programme and to be sent to NVBDCP to claim reimbursement.
iii. To compile monthly account on the basis of monthly receipts and expenditure accounts received from various districts and the Headquarter.
iv. To render financial advice to the project on all financial matters.
v. To coordinate with NVBDCP Headquarter on all financial matters.
vi. To liaise with state and NVBDCP Headquarter in getting financial sanctions whenever required.
vii. Any other assignment to be given by the State Programme Officer and Directorate of NVDBCP.

Qualification and Experience

CA/ ICWA/ MBA or equivalent. **And** Minimum 3 years of experience in accounting, including analysis, financial reporting, budgeting and financial software and reporting systems preferably in Govt. sector.

However, the essential qualification may be relaxed in cases of experienced candidates or if there are no candidates available with the prescribe qualification

Nature of appointment

The appointment of the Consultant will be on contract basis initially for a period of one year (subject to satisfactory performance) and extendable further years on basis of performance.

Reporting

The State Programme Officer of state shall be over all in charge of the consultant. He/she would also liaise with Directorate of NVBDCP on a regular basis.

Age:

Should not be above 63 years and ready to travel extensively.
In case of experienced candidate age norms may be relaxed

Remuneration:

Rs. 40,000/- to 50,000/- per month consolidated with a provision for 5% annual increment subject to ceiling of Rs. 50,000/- and satisfactory performance assessment by the reviewing officer

Travel

TA/DA as per State's NRHM rules

Rescission

Either party can terminate the contract at any time giving one month notice in writing.

Deliverables

The consultant will be required to submit a Monthly Activity Report and a year ending Annual Report to State Programme Officer with a copy to Directorate of NVBDCP. Evaluation of performance will be done based on monthly activity report.

Selection

Selection and appointment shall be carried out through advertisement

3. <u>Data Manager</u>

Purpose

To collect and maintain data including analysis, should be efficient in working on software and reporting systems as per the program requirement to strengthen the arrangements within JE control program.

Responsibilities

Working in close collaboration with NVBDCP administrative staff:

i. To keep and maintain data for JE/AES control program for State as per guidelines.
ii. To prepare monthly analysis reports for JE/AES.
iii. To co-ordinate with NVBDCP Headquarters
iv. Any other assignment to be given by the State Program Officer and Directorate of NVBDCP.

Qualification and Experience:

Master in Computer Application (MCA) with 3 years of working experience in data handling in National health programs at state/district level.

OR

Post Graduate Diploma in Computer Applications with 5 years of working experience in Data handling in National/State health program.

However, the essential qualification may be relaxed in cases of experienced candidates or if there are no candidates available with the prescribe qualification

Nature of Appointment:

The appointment of Data Manager will be on contract basis initially for a period of 1 year (subject to satisfactory performance) and extendible further years on basis of performance.

Reporting:

The State Program Officer of State shall be over all in charge. He/She would also liaise with Directorate of NVBDCP on a regular basis.

Age:

Should not be above 60 years and ready to travel extensively.

Remuneration:

Rs.30,000/- to Rs.40,000 - per month consolidated with a provision for 5% annual increment subject to ceiling of Rs. 40,000/- and satisfactory performance assessment by the reviewing officer.

Travel

TA/DA as per State's NRHM rules.

Rescission

Either party can terminate the contract at any time giving one month notice in writing.

Deliverables

The consultant will be required to submit a Monthly Activity Report and a year ending Annual Report to State Programme Officer with a copy to Directorate of NVBDCP. Evaluation of performance will be done based on these activity reports.

Selection

Selection and appointment shall be carried out through advertisement

TERMS OF REFERENCE
DISTRICT LEVEL

1. District Consultant (JE/AES)

Purpose

To strengthen the national JE/AES prevention and control programme system, surveillance and information management for control of JE/AES for decision-making at district.

Responsibilities:

Working in close collaboration with administrative staff at District level and other consultants:

i. To ensure that current Programme Guidelines for planning, training, service provision, monitoring, supervision and surveillance of Vector Borne diseases are applied in all health facilities and by all health workers concerned in the district

ii. To coordinate with State and District level officers to establish good practices of supportive supervision in the state for the control of JE/AES prevention and control programme.

iii. Conduct regular field visits for ensuring quality implementation of the programme and provide technical support to the concerned staff on site, including ongoing on-the job training and supportive supervision to District Vector Borne Disease Officers.

iv. To ensure timely data analysis, presentation and interpretation for JE/AES surveillance at district level.

v. To supervise the logistics so as to ensure against stock-outs.

vi. To provide technical support to State Programme Officer (SPO) and guide District VBD Officers, for the preparation of district plans for control of JE/AES.

vii. To actively seek involvement of state administration, NGOs, CBOs and the private sector (health and non-health) under various schemes.

Qualification and Experience

Essential: M.B.B.S. with 5 Years of experience in working in Public health programmes**.**

OR

M.Sc life science with zoology as a subject at Graduation level with 5 years of experience in public health programs. Candidates having their PhD degree will be preferred.

Desirable: Masters degree in PSM, Community Medicine, Public Health and Entomology.

However, the essential qualification may be relaxed in cases of experienced candidates or if there are no candidates available with the above qualification.

Nature of appointment:

The appointment of the Consultant will be on contract basis initially for a period of one year (subject to satisfactory performance) and extendable further years on basis of performance.

Reporting:

The District Programme Officer of state shall be overall in charge of the Consultant He/she would liaise with state VBDCP on a regular basis.

Age:

Should not be above 65 years and ready to travel extensively

In case of experienced candidate age norms may be relaxed

Remuneration:

Rs. 40,000/- to 50,000/- per month consolidated with a provision for 5% annual increment subject to ceiling of Rs. 50,000/- and satisfactory performance assessment by the reviewing officer

Travel

TA/DA as per State's NRHM rules

Rescission

Either party can terminate the contract at any time giving fifteen days notice in writing.

Deliverables

The consultant will be required to submit a Monthly Activity Report and a year ending Annual Report to State Programme Officer. Evaluation of performance will be done based on these activity reports.

Selection

Selection and appointment shall be carried out through advertisement

2. <u>Technical Assistant</u>

Responsibilities

As Technical Assistant, He/ She will assist in day-to-day implementation activities. Should be computer literate. The responsibilities will be:

i. To handle all related files and folders
ii. Job related to all correspondence and records
iii. To assist in official procedures like noting, drafting and maintenance of files.
iv. To keep follow up actions of the subject matter allocated
v. To enter data in excel files and tables

Qualification & Experience

Graduate from recognized University with typing speed of 30 words per minute and shorthand speed of 80 words per minute with computer knowledge on MS office and should have minimum 1-2 years experience in handling of official correspondence.

However, the essential qualification may be relaxed in cases of experienced candidates or if there are no candidates available with the prescribe qualification

Nature of appointment

The appointment will be on contract basis for a period of one year, extendable each year on basis of performance, in the Project Period.

Reporting
The in- charge will be the officer to whom he/she is assigned duties.

Age
Should not be above 40 years and ready to travel.

Remuneration
Rs. 15,000/- to Rs. 20,000/- per month consolidated with a provision for 5% annual increment subject to ceiling of Rs. 20,000/- and satisfactory performance assessment by the reviewing officer.

Travel
TA/DA as per State's NRHM rules.

Rescission
Either party can terminate the contract at any time giving fifteen days notice in writing.

Selection
Selection and appointment shall be carried out through advertisement.

Annexure -8

List of Medical Colleges for Establishment of PMR Dept

Sl. No.	Medical College	State
1	BRD Medical College, Gorakhpur	Uttar Pradesh
2	K.G.Medical College, Lucknow	
3	BHU, Varanasi	
4	Assam Medical College, Dibrugarh	Assam
5	Guwahati Medical College, Guwahati	
6	Bankura Medcial College, Bankura	West Bengal
7	North Bengal Medical College, Jalpaiguri	
8	Madurai Medical College , Madurai	Tamil Nadu
9	Gaya Medical College, Gaya	Bihar
10	Patna Medical College, Patna	

Annexure-9

Components of Peadiatric Intensive Care Unit (PICU)

1	**Equipments**	**Quantity/ies**
1.1	ICU Beds	**10**
1.2	Bed side monitors	**12**
	(with facility to measure and display following parameters);	
	Heart rate/Respiratory rate/Temp.	
	Non-invasive Blood pressure(NIBP)	
	Oxygen saturation(SpO2)	
	ECG	
1.3	Central Monitoring station	**1**
1.4	Defibrillator	**1**
1.5	Central gas pipeline (Oxygen, compressed air, vaccum) (2 pts. for O_2 and 1 for vacuum and compressed air)	**1**
1.6	Pediatric ventilators	**5**
1.7	ABG analyzer	**1**
1.8	Syringe pumps	**20**
1.9	**Misc instruments/equipment**	
1.9.1	Nebulizer	**1**
1.9.2	X ray view box	**1**
1.9.3	Transport ventilator	**1**
1.9.4	Transport monitor	**1**
1.9.5	Over head warmers	**2**
1.9.6	Recovery trolley	**1**
1.9.7	B type O_2 cylinder -	**1**
1.9.8	Ambu bag with mask (paediatric and adult size)	**5 (each size)**
1.9.9	Suction machine	**1**
1.9.10	Laryngoscope	**5(of different size)**
1.9.11	Endotracheal tube with cuff and without cuff	
	Note: - The estimated total cost of equipments has been decided by the Government. The Implementing Authorities in the respective States may be requested to adjust the additional cost of the equipments within the allocated budget. Any additional expenditure on equipment would have to be managed from State resources only.	
2	**Human Resource**	
2.1	Medical officers (60000 – 75000 per month)	**5* (2 P.G., 3 M.O.)**
2.2	Nursing staff (20000- 30000 per month)	**20***

2.3	Ancillary staff(outsourced)	**4**
2.3.1	House Keeping staff	
2.3.2	Nursing Attendant/orderly	
3	**Capacity Building**	
3.1	Hands-on-training for 10 days******	**2**
3,2	Refresher training for 2 days******	**3**
3.3	Nurses (Hands-on-training for 5 days)**	**3**
	Note: Training of Medical Officers – 10 working days hands-on training will be provided to all Medical Officers in Critical care at Apex Medical Teaching Institute/s of States in the 1st and 4th years. In addition, 5 working days in-house refresher training in critical care will be provided by regional Medical Colleges in 2nd, 3rdand 5th year. **Note:** Training of Nurses – 5 working days Practical training will be provided to the nursing staff in Critical care at regional Medical Colleges in 1st, 3rd and 5th year. *****The manpower recommended by GoM was reviewed in a meeting held in the office of DGHS and it was decided to revise the number of Medical Officers for ICU from 8 to 5 , whereas the number of nursing staff was revised from 15 to 20.Further during expert meeting it was suggested that in view of required continuous nursing care of critically ill patients, **the number of revised nursing staff may further be increased up to 25 with the condition that estimated cost of salary should be within the allocated budget.** ****** The duration of “Hands on training” and “Refresher training” for M.O.’s has been specified as **10 and 5 working days** respectively and “Hands on training” for nurses has been specified as **5 working days** **Note: The estimated total cost of salary to Human Resources and capacity building have been decided by the Government. The Implementing Authorities in the respective States may adjust the additional cost within the allocated budget. Any additional expenditure would have to be managed from State resources only.**	

T.O.R (PICU)

1. Job title: Medical Officer (ICU)

Qualifications:

Essential:

- MBBS or equivalent degree from institutions recognized by Medical Council of India.
- Must have completed compulsory internship.

Desirable:

- M.D.(Paediatrics)/DCH
- At least 2 years experience of working in a Hospital in Pediatric Critical Care management.

Age Limit: upto 40 years.

Job requirements/responsibilities:

1) To examine and manage severely sick encephalitis patients
2) To refer complicated case to higher care facility.
3) To provide follow up care to the patients
4) Any other job assigned by concerned officers.

Leave Policy- As per State government norms

2) Job title: Staff Nurse (ICU)

Qualifications:

- Bachelor's degree / diploma in nursing.

Desirable:

- At least 2 years experience of working in a Hospital in critical care management.

Age Limit: upto 40 years.

Job requirements/responsibilities:

1. To assist Medical Officer in management and follow-up of patients attending the ICU.
2. To counsel patients and their family members about risk factors of ICU.
3. Any other job assigned by concerned officers.

Leave Policy- As per State government norms

3) Ancillary Staff:

- **Qualifications**: as per State government norms
- **Leave Policy**: as per State government norms.

Annexure-10

List of Sentinel Sites

Sl. No.	Name of the States	No. of Sites	Year of Establishment	Name of Sentinel sites/ Institutes
1	Andhra Pradesh	6	2007-08	1. Medical College, Kurnool
				2. Veterinary Biological Research Institute, Hyderabad
				3. Govt. Medical college, Guntoor
				4. MGM Hospital, Warangal
				5. Institute of Preventive Medical , Hyderabad
				6. King George Hospital Andhra Medical College, Vishakhapatnam
2	Assam	9	2007-08	1. Assam Medical College, Dibrugarh
				2. Sivsagar Civil Hospital , Sivsagar
				3. Jorhat Civil Hospital, Jorhat
				4. Lakhimpur Civil Hospital, Lakhimpur
				5. GolaGhat Civil Hospital (IDSP), Golaghat
				6. Guwahati Medical college, Guwahati
				7. Baptil Mission Hospital, Tezpur
				8. Barpeta Medical College, Barpeta
				9. Silchar Medical College, Silchar, Cachar
	Bihar	7	2007-08	1. Patna Medical College & Hospital, Patna
				2. Sri Krishana Medical College & Hospital, Muzaffarpur
				3. Anugreh Narain Magadh Medical Hospital, Gaya
			2014	4. Nalanda Medical College Hospital, Nalanda
			2014	5. Darbhanga Medical College Hospital, Darbhanga
			2014	6. Jawahar Lal Nehru Medical College & Hospital, Bhagalpur
			2014	7. Rajendra Memorial Research Institute, Agamkuan, Patna
4	Delhi	11	2011-12	1. Babu Jagivan Ram Hospital, Jahangirpuri
				2. Dr. Bheem Rao Ambedkar Hospital, Rohini
				3. Maharishi Balmiki Hospital, Bawana
				4. Lok Nayak Hospital, Delhi Gate
				5. GTB Hospital, Dilshad Garden
				6. Chacha Nehru Bal Chikitsalaya, Shahadara
				7. Lal Bahadur Shashtri Hospital, Mayur Vihar
				8. Hindu Rao Hospital, Bara Hindu Rao
				9. Deen Dayal Upadhaya Hospital, Hari Nagar
				10. Pt. Madan Mohan Malviya Hospital , Malviya Nagar
				11. Sanjay Gandhi Memorial Hospital, Mangol Puri
5	Goa	3	2007-08	1. Goa Medical College, Goa
				2. North Goa District Hospital, Goa
				3. South Goa District Hospital, Goa
6	Haryana	3	2007-08	1. General Hospital Sector-6, Panchkula
				2. State Laboratory, Karnal
				3. Civil Hospital, Ambala City
7	Jharkhand	3	2011-12	1. Rajendra Institute of Medical Science (RIMS), Ranchi
				2. MGM Hospital, Jamshedpur

				3. Patliputra Medical college Hospital, Dhanbad
8	Chandigarh	1	2007-08	1. PGI Chandigarh,
9	Karnataka	5	2007-08	1. VIMS, Bellary
				2. District Surveillance Unit, Kollar
				3. Public Health Institute, Bangalore
				4. Karnataka Institute of Medical Science, Hubli
				5. Manipal Institute of Virus Research, Manipal
10	Maharashtra	5	2007-08	1. District Hospital, Bhandara
				2. District Hospital, Gondia
				3. Indira Gandhi Medical College, Nagpur
				4. District Hospital, Wardha
				5. District Hospital, Gadchiroli
11	Manipur	1	2007-08	1. J.N. Hospital Poompat, Imphal
12	Nagaland	1	2007-08	1. Civil Hospital, Dimapur
13	Tamil Nadu	7	2007-08	1. King Institute of Preventive Medicine, Guindy, Chennai.
				2. Madurai Medical College, Madurai.
				3. District Hospital, Thanjavur
				4. KAP Viswanathan Medical College, Annal Gandhi Memorial Government Hospital, Puthur, Trichy.
				5. Government Medical College, Villupuram.
				6. Thirunelveli Medical College- Thirunelveli
				7. Coimbatore Medical college-Coimbatore
14	West Bengal	6	2007-08	1. School of Tropical Medicine, Kolkata
				2. Burdwan Medical College, Burdwan
				3. North Bengal Medical College hospital, Siliguri
			2013	4. Bankura Sammilani Medical College Hospital, Bankura
			2013	5. Malda Medical College Hospital, Malda
			2013	6. SSKM Medical College Hospital, Kolkata
15	Kerala	1	2007-08	1. District Hospital, Kottayam
16	Uttar Pradesh	16	2007-08	1. District Hospital, Siddharthnagar
				2. District Hospital, Maharajganj
				3. District Hospital, Lakhimpur Kheri
				4. District Hospital, Basti
				5. District Hospital, S. Kabir Nagar
				6. District Hospital, Saharanpur
				7. District Hospital, Gorakhpur
				8. BRD Medical College, Gorakhpur
				9. District Hospital, Bahraich
				10. District Hospital, Kushinagar
				11. District Hospital, Gonda
				12. District Hospital, Balrampur
				13. District Hospital, Sultanpur
				14. District Hospital, Deoria
				15. KG Medical College, Lucknow
				16. District Hospital, Raibareli
	Total	**85**		

Annexure-11

TOR for Data Entry Operator (DEO)

- To assist Programme Division for data entry and management regarding works carried out under the National Programme for Prevention and Control of JE/AES.
- Entry of the epidemiological and other relevant data in the data base of the programme division.
- To analyze data and report the same to concerned official.
- Undertake any other assignment as directed by the officials.

Qualifications:

- Graduation
- 'O' level Computer Education
- Preferably 1-2 years experience in data entry & management.

Annexure-12

OUTBREAK INVESTIGATION REPORT AESF-10

General information

State : **……**

District: **……**

PHC/Town: **……**

Village /Ward:……

Population: **……**

Background information

Person reporting the outbreak:……..

Date report **……..**

Date when investigations started…….

Person (s) investigating the outbreak…….

Details of investigation

Describe how cases were found (may include a) house to house search in the affected area; (b) visiting blocks adjacent to the affected area; (c) conducting record reviews at local hospitals; (d) requesting health workers to report similar cases in their areas etc.

Descriptive epidemiology

Cases by time, place and person (attach summary tables and relevant graphs and maps)
Age specific attack rates and mortality rates

High risk age groups and geographical areas
Vaccination status of cases, unaffected population

Prevalence and density of JE vectors

Prevalence of reservoirs specially pigs

Description of control measures

_____
_____
_____

Description of measures for follow-up visits

_____
_____
_____

Brief description of problem encountered

_____
_____
_____

Factors which contributed to the outbreak

_____
_____
_____

Conclusions and recommendations

_____
_____
_____

Date

Signature
(Name & Designation)

Annexure- 13

AESF-6

FORMAT FOR MOSQUITO BREEDING SURVEY REPORTS

1) State_____ Zone_____ District_____ PHC_____ Locality_____

2) Month _____ Year _____

DETAILES OF MOSQUITO BREEDING SITES	NO. CHECKED	NO. FOUND +VE			DENSITY/ DIP	NAME OF SPECIES IDENTIFIED*
		Anopheles	Culex	Aedes		
1						
2						
3						
4						
5						
6						
7						
8						

***For identification of JE vectors: Larvae of mosquitoes may be reared in the Laboratories for adult emergence, as adult is easy to identify.**

1) Remarks : _____

Signature of the investigator

(Name & Designation)

Annexure-14

AESF-7

FORMAT FOR MONITORING OF
JAPANESE ENCEPHALITIS VECTORS DENSITY

A.1) State_____ Zone_____ District_____ PHC_____ Village_____

2) Month of Collection _____

3) Name of the insecticide sprayed _____ Date of last spray _____

4) Spray coverage- **Population** **Room** **House** **CS**

In % ---------- ---------- ---------- ----------

B. **JE Vector Density** (Per man hour density)

1. Time of collection (Morning his collection) 6 a.m. – 8 a.m.
2. Total time spent ---------- No. of Structure -------- No. of persons----------

NAME OF THE SPECIES	INDOOR				OUTDOOR
	HD	CS	MD	PMHD	PMHD

HD= Human dwelling CS = Cattle sheds MD = Mixed dwelling

PMHD = Per man hour density = No. of mosquito caught

No. of person X Time in hour

C. **ABDOMINAL CONDITION**

NAME OF THE SPECIES	UF	FF	SG	G	TOTAL

UF = Unfed FF= Full fed SG = Semi Gravid G= Gravid

Remarked if any ----------

Signature of Investigator

(Name & Designation)

Annexure-15

AESF-9

FORMAT FOR MONITORING OF INSECTICIDE SUSCEPTIBILITY STATUS OF JAPANESE ENCEPHALITIS VECTOR MOSQUITOES

(ADULT / LARVAL STAGE)

State----------Zone----------District ----------PHC----------

1) Date of test----------

2) Species tested----------

3) Insecticide tested ----------Name of insecticide ----------
Concentration ----------

4) Test sample --------- source of collection ----------Physiological stage UF/FF/SG

5) Test Results

	REPLICATE –I		**REPLICATE –II**		**REPLICATE -III**	
Test group	**Test**	**Control**	**Test**	**Control**	**Test**	**Control**
No. exposed						
No. dead						
% Mortality						
Most corrected						

UF= Unfed FF = Full fed SG = Semi Gravid G = Gravid

6) Temp:

7) Humidity:

Signature of the investigator
(Name & Designation)

Annexure-16

List of required equipments and drugs at various levels

1 Essential equipment at the PHC level:

Air way Sizes “0” and “1”,
Mucus sucker,
Rubber feeding tube of various sizes
5 ml & 2 ml Syringes with needles
Thermometer,
Adhesive tape
Enema set
Oxygen

2 Essential Drugs at the PHC level:

Syrup / Injection Paracetamol,
Diazepam rectal solution/ Syp. Diazepam/ Inj. Diazepam/Diazepam Suppository.
Suspension Valproate,
Glucose powder
Tab/Inj Frusemide
Inj Paraldehyde
I/V fluids

3 Essential equipment at the CHC level Hospital:

Air way Sizes “0” and “1”,
Mucus Sucker,
Rubber feeding tube size 14,
5 ml Syringe,
Thermometer,
Adhesive tape,
IV cannula, 22 to 24 ,
Ambu Bag,
Foley's Catheters of various sizes
Lumbar Puncture sets
Provision for Cerebrospinal fluid analysis
Enema set

4 Essential Drugs at the CHC level Hospital:

Syrup Paracetamol,
Rectal solution or Syrup Diazepam,
Suspension Valproate,
Syrup Chloral hydrate,
Inj Diazepam,
Inj Phenytoin,
IV fluids N/2, N/5 with 5 % Dextrose, 10% Dextrose, Hypertonic saline,
Normal saline,
Inj Dexamethasone,
Inj Mannitol 20 %,

Inj Frusemide,
Oral Glycerol
Inj Dopamine
Inj Phenobarbitone.
Vitamins
Syrup / Tab Haloperidol
Syrup Chloral Hydrate
Inj Paraldehyde
Inj. Ampicillin
Inj. Chloramphenicol.
Inj Ceftriaxone.

Annexure-17

List of Equipment/Furniture required for PMR Department

1. Wards (Special requirements):

- Paraplegia Beds-Steel Plate base with 3 components 10
- Dunlop mattress-10cm thick 10
- Pillows-6 per bed 60
- Bedside Tables 10
- Adjustable dining / reading tables 05
- Wheel chairs 10
- Trolleys 02
- Tricycles (2-hand operated, 2 motorized) 04
- Water Mattresses 10

2. Physiotherapy

Sl No	Physiotherapy Equipment	Quantity
1	Electrotherapy	one
2	Short wave Diathermy	one
3	Ultrasound	one
4	Muscle Stimulator	one
5	TENS	one
6	Traction Lumbar & Cervical	one
7	Wax Therapy	one
8	LASER	one
9	Interferential therapy	one
10	Infra-Red Lamp (IRL)	one
11	CPM Apparatus (Continuous Passive Motion)	one
Exercise Therapy		
12	Shoulder Wheel	one

13	Shoulder Pulley Bracket-wall mounting	one
14	Shoulder abduction ladder	one
15	Wrist Circumductor	one
16	Wall bar	one
17	Grip exercise with six springs	one
18	Weight cuffs (1/2-3Kgs)	one
19	Parallel Bar	one
20	Dumbells Iron	one
21	Medicine Ball (1kg, 2kg, 3kg, 5kg)	one
22	Quadriceps table	one
23	Stair case-corner type	one
24	Couch for suspension	one
25	Multi exercise therapy unit	one
26	Ankle and leg exerciser	one
27	Static Cycle	one
28	Exercise mat	one
29	Postural training mirror	one
30	Ankle exerciser	optional
Mobility Aids		
31	Wheel chair	two
32	Walker adult	two
33	Walker pediatric	two
34	Prone crawler	two
35	Walking frame	optional
36	Crutch axillary	two

37	Crutch forearm	two
38	Aluminum stick	two
Treatment Equipments		
39	Examination couch wooden (Foam padded)	two
40	Tilt Table	two
41	Activity mattress	two

3. Equipments Required for Occupational Therapy:

Sl. No	**Occupational Therapy Equipments**	**Quantity**
1	Bed with mattress-Double bed with pillows	Two
2	Mirror (adjustable & per table)	One
3	Cogni toys	One set
4	Finger ladder	One
5	U.E.Sling	One
6	Shoulder wheel	One
7	Suspension U.E	One
8	Supra board	One
9	Nuts & bolts board	One
10	Hand exercise table	One
11	Stool with caster	Two
12	Bolsters big	One
13	U.E.Cycle	One
14	Sanding boards Bilateral & Reciprocal	One+One
15	Coordination pig board with adjustable height	One
16	Post office box	One

17	Pinch tree	One
18	Push up blocks	One
19	Sliding tables	Two
20	Balance board (medium)	One
21	Spiro meter	One
22	Skate board with frame	One
23	Weighted cuffs (3 different weights)	Six
24	Weighted machine	One
25	Medicine balls	Two
26	Games	
27	ADL boards – 3 boards –pre dressing skills	
28	ADL taps, switches	
29	Adaptive devices	
30	Splints	

4. Specialized requirements:
    - Gait and Urodynamic laboratory

Annexure-18

Manpower for PMR Department

Sl. No.	Post	Number
1	Professor (specialist PMR)	1
2	Assistant Professor (specialist PMR)	1
3	Resident Doctors/ Medical officers	4
4	Physiotherapist	2
5	Occupational Therapist	2
6	Clinical Psychologist	1
7	Social Worker	1
8	Vocational counselor	1
9	Catheter attendant	1 Optional
10	Orthotist	1 Optional
11	Administrative staff	3

* Staff for the hospital/ clinical services (Nurses, Hospital assistants etc.) to be computed along with other services.

Annexure-19

TOR for Human Resource at PMR

S. No.	Post	Qualifications and Experience
1	Professor Physical Medicine and Rehabilitation	Qualifications: 1. A medical qualification included in Schedule-I or II or part II or the Third Schedule of the Indian Medical Council Act of 1956 {Candidate possessing qualifications included in part II of the III Schedule should also fulfill the conditions specified in Section 13(3) of the Act.} 2. A Post-graduate qualification e.g. MD in Physical Medicine and Rehabilitation or DNB in Physical Medicine and Rehabilitation of National Board of Examination. Failing availability of candidates with qualifications as in 2 above Post-graduate degree in Medicine, Pediatrics or Orthopedics. Experience: Experience in the field of Physical Medicine and Rehabilitation. The number of years of experience to be commensurate with that required in the particular state for that post.
2	Assistant Professor Physical Medicine and Rehabilitation	Qualifications: 1. A medical qualification included in Schedule-I or II or part II or the Third Schedule of the Indian Medical Council Act of 1956 {Candidate possessing qualifications included in part II of the III Schedule should also fulfill the conditions specified in Section 13(3) of the Act.} 2. A Post-graduate qualification e.g. MD in Physical Medicine and Rehabilitation or DNB in Physical Medicine and Rehabilitation of National Board of Examination. Failing availability of candidates with qualifications as in 2 above Post-graduate degree in Medicine, Pediatrics or

		Orthopedics. Experience: Experience in the field of Physical Medicine and Rehabilitation. The number of years of experience to be commensurate with that required in the particular state for that post.
3	Resident Doctor or Resident Medical Officer Physical Medicine and Rehabilitation	Essential Qualifications: A medical qualification included in Schedule-I or II or part II or the Third Schedule of the Indian Medical Council Act of 1956 {Candidate possessing qualifications included in part II of the III Schedule should also fulfill the conditions specified in Section 13(3) of the Act.} Desirable: Depending on the availability and existing rules for recruitment to the post at the state hospital: A Post-graduate qualification e.g. MD in Physical Medicine and Rehabilitation or Diplomate in sPhysical Medicine and Rehabilitation of National Board of Examination.
4	Physiotherapist	Bachelor degree in Physiotherapy.
5	Occupational Therapist	Bachelor degree in Occupational Therapy.
6	Clinical Psychologist	Post-graduate degree in Psychology. Experience of working with persons with disability.
7	Medical Social Worker	Post-graduate degree in Social Work. Experience of working with persons with disability.
8	Vocational Counselor	Post-graduate degree or diploma in Vocational Guidance or Psychology or Education. Experience of working with persons with disability.
9	Catheter attendant	Qualifications equivalent to Hospital Attendant.
10	Orthotist	Bachelor’s degree in Prosthetics and Orthotics.
11	Administrative Staff	As per the state norms.

Annexure – 20

TOR of District Counselor

- Counseling of JE/AES affected children as well as their parents/attendants about post recovery complications like loss of speech and hearing, irritability and loco-motor and behavioural disorders.
- To raise awareness among civic and popular leaders about disability issues.
- To advocate and promote effective service delivery to people with disabilities across all sectors.
- To promote collaboration between Govt. on delivery of services it disabled.
- To build capacity of people with disabilities, their families and communities for prevention and management of disabilities.
- To equip people with disabilities with skills so that they can participate in development activities.

Education: Possession of a master's degree with a major in counseling, rehabilitation counseling, or a counseling-related field such as psychology, social work, or special education.

Experience: Atleast one year professional experience in providing rehabilitation counseling services at designated health facility.

Computer Literacy: Essential

Note:- The provision of the requisite leave for contractual position of the professionals/para-professionals under PMR/PICU/Monitoring & Supervision/Sentinel Sites/Districts Counseling Centre etc. shall be in accordance with the State Govt. rules.

Annexure-21

*FORM No. GFR-19A

(NAME OF SOCIETY)

Utilization certificate for the year

S. No.	Sanction No & Date	Amount

1. Certified that out of Rs._____of grant in aid sanctioned during the year _____in favour of the_____(NAME OF SOCIETY) under the Ministry of Health and Family Welfare vide sanction numbers given hereunder and Rs._____on account of unspent balance of the previous year, and amount of Rs._____on account of miscellaneous receipts (including interest received on bank account) totaling to Rs. _____out of which an amount of Rs has been has been utilized for the purpose for which it was sanctioned and the balance of Rs. _____remaining unutilized at the end of the year has been surrendered to Government (vide D.D. No. dated)/ will be adjusted towards the grants-in-aid payable during the next year

2. Certified that the conditions on which the grant in aid was sanctioned have been fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose of which it was sanctioned.

i. All expenditures incurred are in accordance with the rules and regulations of SVBDCS/ and within the frame work of the GOI guidelines.

ii. The expenditure incurred is related to the programme activities.

iii. The expenditure is incurred with the proper resolution of the Society.

iv The expenditure incurred on the purchase of fixed assets or consumable good has been verified from the relevant stock register.

v No amount of the Grant in Aid or any receipt of the funds from other sources is deposited for gain or to generate income by way of interest other than bank interest.

vi Funds have been released to the NGO after their proper scrutiny and verification and strictly in conformity with the NGO guidelines formulated by the Directorate of National Vector Disease Control Programme.

Member Secretary

Chairperson

(Chartered Accountant)
Seal

Annexure-22

National Vector Borne Diseases Control Programme
State Health Society (NVBDCP)
Statement of Expenditure (SOE) for the financial year_____.

S,No.	Head of Account	Amount
1.	Opening Balance as on	
2.	Funds received from (a) GoI (b) State	
(i)	Domestic Budget Support (DBS)	
(ii)	Externally Aided Component (a) (b)	
(iii)	Decentralized Commodities	
3.	Other Income	
(i)	Bank Interest	
(ii)	Income from sale of LLINs	
	Total funds available (1+2+3)	
		Cumulative Expenditure
A	Domestic Budget Support(DBS)	
1.	**Malaria**	
(i)	ASHA Honorarium	
(ii)	Monitoring & Evaluation	
(iii)	IEC/BCC at State/District level	
(iv)	PPP/NGO	
(v)	Training	
(vi)	Zonal Ent. Unit	
2.	Procurement of decentralized items	
3.	Dengue & Chikungunya	
4.	Lymphatic Filariasis	
5.	Japanese Encephalits	
6.	Bank Charges	
7.	Funds refunded to NRHM Additionalities	
	Sub Total DBS (1+2+3+4+5+6+7)	
B	Externally Aided Components	
	(a) (b)	
	Grand Total (A+B)	
	Closing Balance as on _____ **Break-up**	
1.	Domestic Budget Support(DBS)	
2.	Externally Aided Component	
3.	Decentralized Commodities	
	Total Funds Available	

Annexure-23

Important activities and dates for external audit (as per NHM)

S. No	Activity	Date	Remarks
1	List of Chartered Accountant Firms from GOI to States/UTs	By 31st December of the year for which audit is to be done	
2	Contacting the Firms from the list provided by GOI	By 31st January of the year for which audit is to be	1. The firms will be contacted by sending request for proposal - including letters Done of Invitation and TOR) by registered post with acknowledgement. It should be made clear in the invitation letter that only 'Technical bids' will be accepted in a sealed envelope. No financial bid is to be provided by the CA Firms. 2. It should also be made clear at this that only the firm found most suitable in the evaluation of technical bid will be awarded the audit work. 3. The dates for opening the 'technical bid' will be clearly mentioned in the invitation letter. 4. It will also be mentioned in the invitation letter that the 'technical bid' will be opened in the presence of representatives of the willing chartered accountant forms who have applied. 5. A copy of the Term of Reference (TOR) should be given to each firm.
3	Last date for accepting the technical Bids	By 28/29th February of the year for which audit is to be done	
4	Date for opening the accepting bids.	Same date as of accepting the technical Bids	Within 7 days of last day of technical bids Evaluation etc. Give criterion of evaluation-Standard Evaluation Form.
5	Date for intimating the selected auditor	Within next fifiteen working days of opening the Technical Bids	The Technical Bids will be evaluated by a committee duly appointed by the Executive Body of the State SHS/DHS as per the Standard Evaluation.
6	Last Date for appointing the	By 31st March of the year for which audit is to be done.	The appointment letter will clearly mention the date on which the accounts of the SHS/DHS and district societies will be made available to the auditor for audit.
7	Completion and finalization	30th April of the following year	
8	Completion of	31st May of the	If the accounts of the SHS/DHS are not made

	audit of DHSs.	following year	available to the auditor, will be free to inform the GOI about the delay.
9.	Consolidation of Accounts of all DHSs with the accounts of SHS	15th June of the following year.	
10.	Completion of audit of SHS.	30th June of the following year	
11.	Submission of audit report to MoHFW along with management letter and society's comments on it and UCs	31st July of the following year	
12.	Signatories to audited Statement of Accounts		Mission Director/ SPOs for respective programme/ State Finance Manager and the auditor.