

**2<sup>nd</sup> Annual HOMEOPROPHYLAXIS:**  
The Evidence Based Choice  
**CONFERENCE 2016**  
October 7-9  
Hilton St. Petersburg Bayfront Hotel



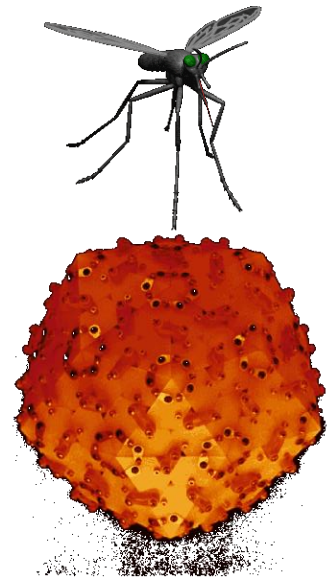
# Japanese Encephalitis Homeoprophylaxis in India

## **Dr. Srinivasulu Gadugu**

*M.B.S., M.D.,*  
Associate Professor,  
Department of Organon of Medicine,  
J.S.P.S. Government Homoeopathic Medical College,  
Ramanthapuram, Hyderabad 500013, India.  
Email: [srinivasulugadugu@gmail.com](mailto:srinivasulugadugu@gmail.com)

## **Prof. Shailendra K. Saxena**

*FAEB, FIVS, FBRS, FCMS, MNYAS (USA), MASM (USA), MASV (USA), PhD, DCAP,*  
Professor & Head  
Department of Stem Cell / Cell culture  
Centre for Advance Research (CFAR),  
King George's Medical University (KGMU), Lucknow - 226003, India.



# Epidemics

- Epidemics are no longer distant catastrophes but are tragic reality in poor and undeveloped countries.
- Epidemics are dramatic crises which cause fear and despair, but also give both individuals and societies a chance to change and improve.

# Epidemics

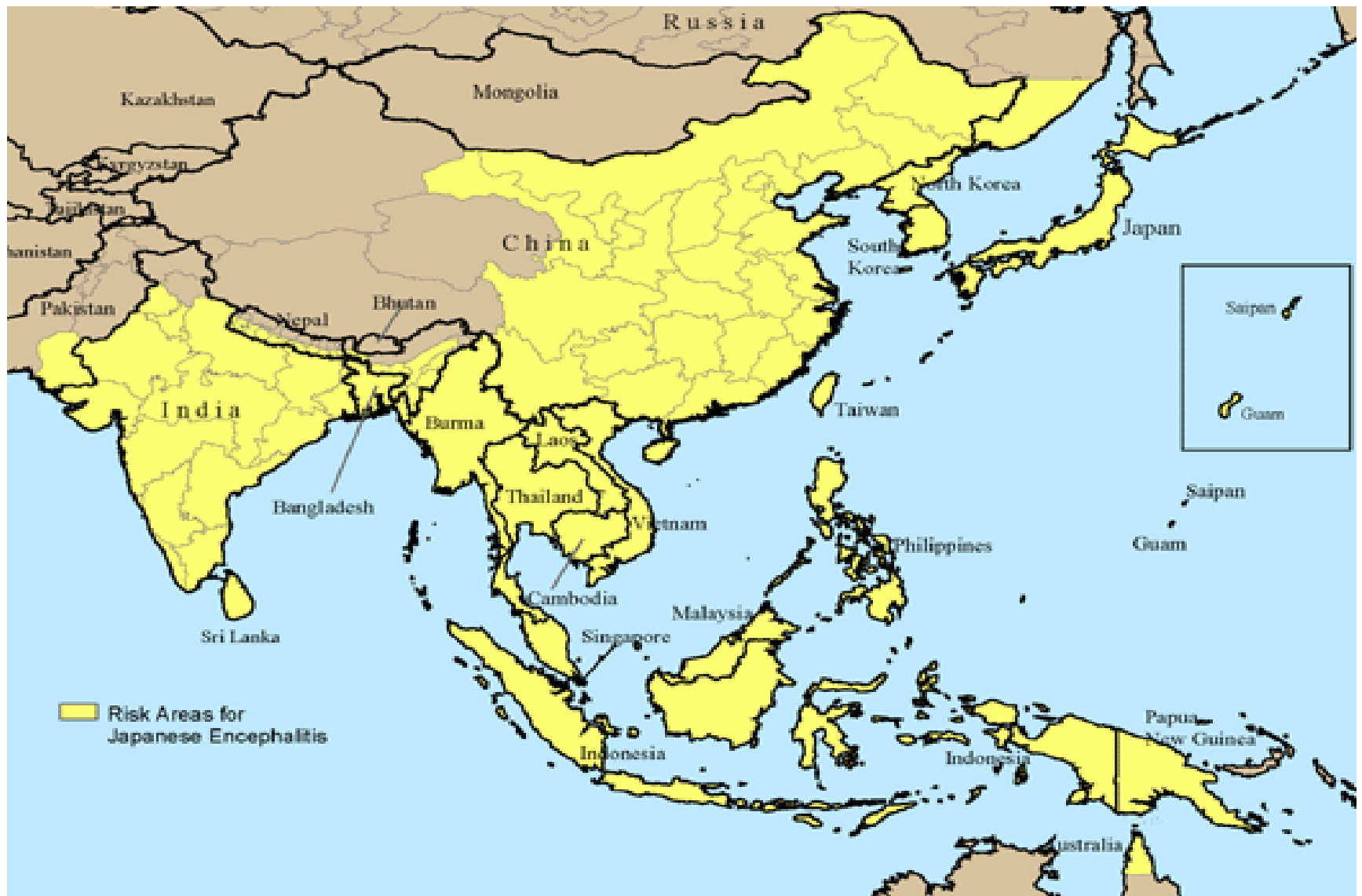
- The onslaught of the invisible viral epidemics are a sword of Damocles hanging over us and research is severely hampered.
- The global situation of epidemics needs concerted research from all systems of medicine. Everything is going global. Epidemics have no respect for the continental borders.

# Epidemics

- India is going through a period of transition, both epidemiological and demographic transition.
- Infectious disease is still persisting as major health problems in spite of national programs for the control of these diseases for almost half a century now.

# Epidemics

This paper focusses on the prevention of the Japanese Encephalitis through homeopathic medicines and the results of disease surveillance before and after the Homoeopathic Prophylaxis intervention in Andhra Pradesh a state in India.



At risk areas for Japanese Encephalitis (source CDC)

# Japanese Encephalitis (JE)

- One of important viral encephalitis world-wide
- Emerging disease in India
- Primarily affects children under age 15 years
- Cause of acute viral encephalitis
- Leading cause of Acute Encephalitis Syndrome (AES) in Asia

# Japanese Encephalitis

- 70% of those who develop illness either die or survive with a long term neurological debility.
- Since the first case of JE was documented in the late 19th century, the disease has spread beyond its early domain - traveling as far as Australia by the year 2000.
- Over the past 60 years, it has been estimated that JE has infected 10 million children globally, killing 3 million and causing long-term disability in 4 million.



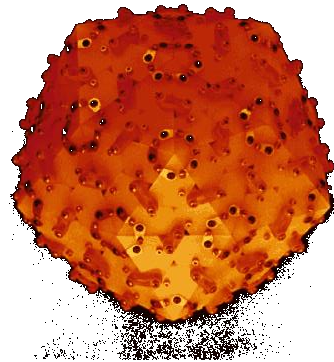
# Japanese Encephalitis

- Countries have not been able to generate adequate JE surveillance data because of the difficulty in making a clinical recognition of the disease.
- Reporting and the lack of sufficient laboratory support has also been a problem.
- Even in countries with adequate surveillance data, there are only a few interventions that countries can adopt to control the disease.

# Japanese Encephalitis

- Despite the fact that 68 percent of the babies born in Asia are at risk for JE, there remain major gaps on JE reporting, effecting decision making purposes.
- Historically, vector control has been the mainstay of JE control, but it has had a limited impact and requires large resources because the vector breeds in paddy fields.

# The JE Virus



# JE Virus

- The JE virus (JEV) is a member of the genus Flaviviridae, together with the Yellow Fever virus and Dengue Virus.
- The JE virus belongs to the same serological group as the West Nile virus (WNV) and the St. Louis Encephalitis Virus (SLEV).
- With the help of genome sequencing studies, it has been possible to determine the various genotypes of JEV in circulation in different geographic areas.
- The two Indian isolates [GP78 and Vellore P20778] show genetic similarity to the Chinese SA14 and Beijing genotypes.

# Communicability and transmission

- The JE virus is transmitted by the Culex mosquitoes particularly of the Culex vishnui group (Cx. tritaeniorhynchus).
- Water birds and pigs play a major role as amplifying hosts.
- Humans get infected following a bite by an infected mosquito.
- However, as human are dead end hosts, further spread from human to human does not take place

# **JE Epidemiology**

## **Current Scenario in India**

# JE in India

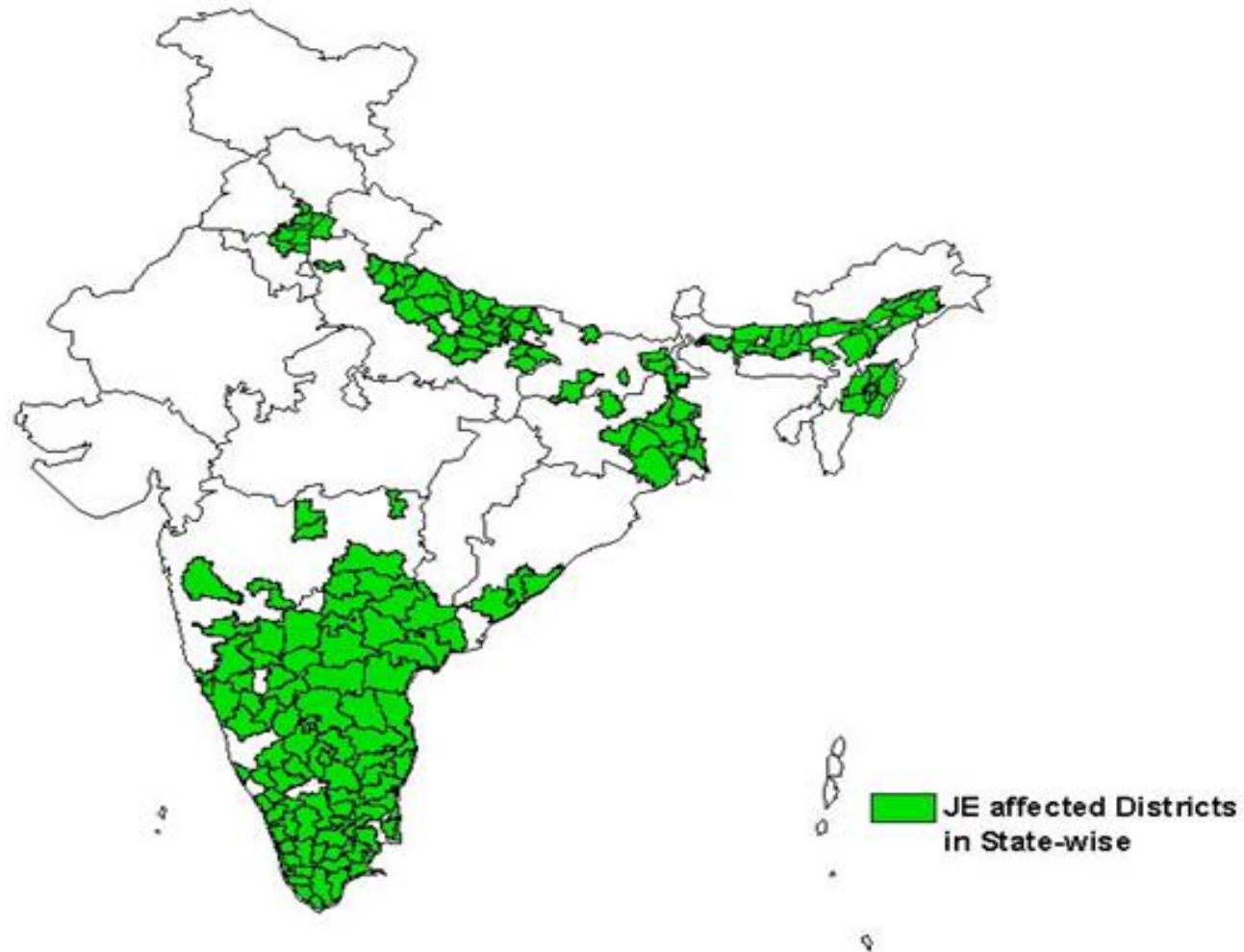
- The transmission of the JE virus has been widespread in India.
- The first evidence of the presence of the JE virus dates back to 1952 in the Nagpur subdivision of Maharashtra.
- JE was clinically diagnosed for the first time in 1955 at Vellore in the North Arcot district of Tamil Nadu.
- In subsequent years, outbreaks have occurred in various States and UTs in the country.

# JE in India

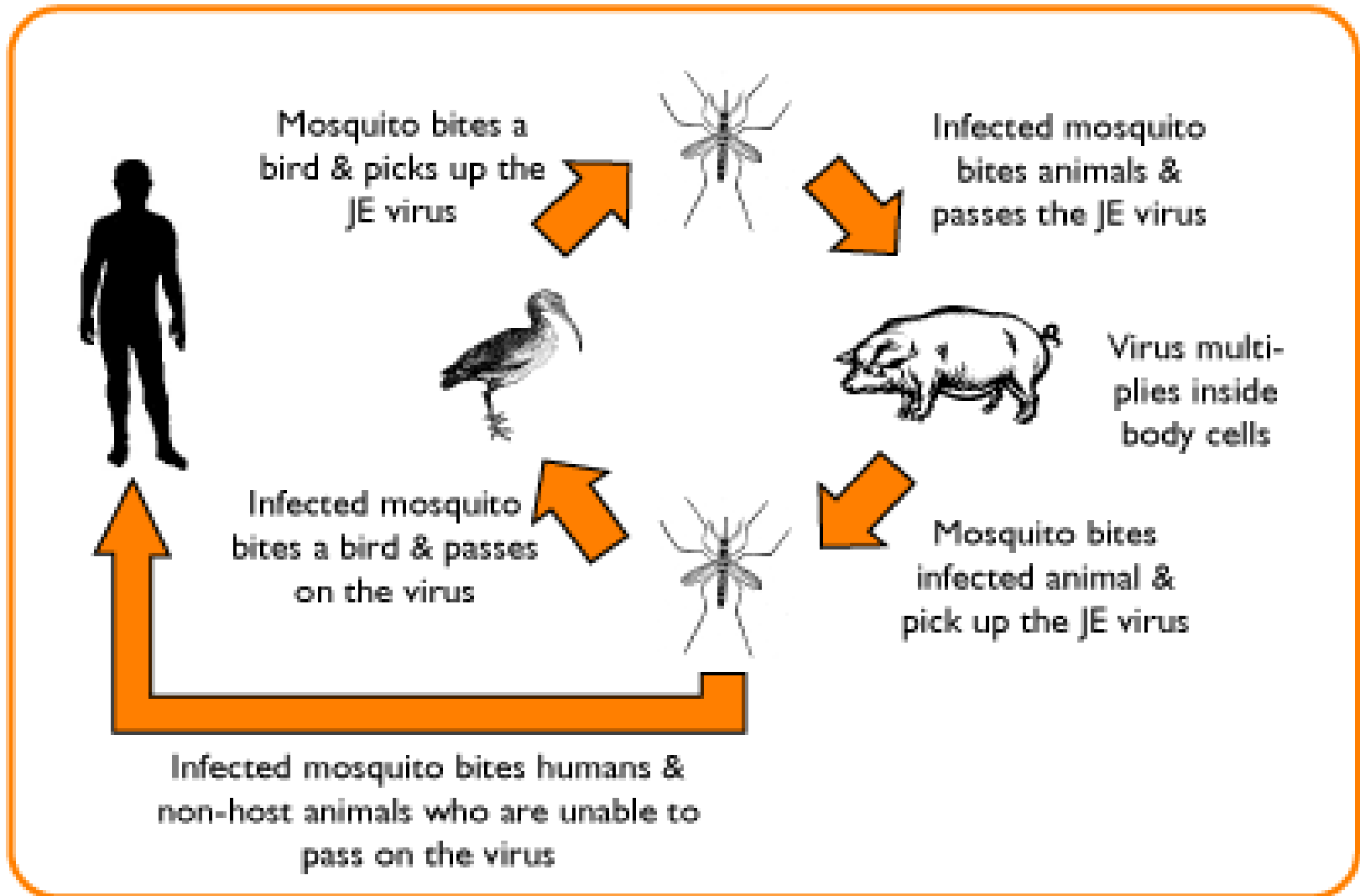
- The first major JE epidemic was reported from the Burdwan and Bankura districts of West Bengal in 1973 followed by another outbreak in 1976.
- Outbreaks have been reported from states like Uttar Pradesh, West Bengal, Assam, Andhra Pradesh, Karnataka, Bihar, Tamil Nadu, Haryana and other states through the years.



# JE affected Districts in India



# JE Transmission



# **Signs and Symptoms of JE**

# Signs and Symptoms of JE

- JE virus infection presents classical symptoms similar to any other virus causing encephalitis.
- JE virus infection may result in febrile illness of variable severity associated with neurological symptoms ranging from headache to meningitis or encephalitis.
- Symptoms can include headache, fever, meningeal signs, stupor, disorientation, coma, tremors, paralysis (generalized), hypertonia, loss of coordination, etc.

# Signs and Symptoms of JE

- Prodromal stage may be abrupt (1-6 hours), acute (6-24 hours) or more commonly sub acute (2-5 days). In acute encephalitic stage, symptoms noted in prodromal phase convulsions, alteration of sensorium, behavioral changes, motor paralysis and involuntary movement supervene and focal neurological deficit is common.
- Usually lasts for a week but may prolong due to complications.
- Amongst patients who survive, some lead to full recovery through steady improvement and some suffer with stabilization of neurological deficit.

# Signs and Symptoms of JE

- Convalescent phase is prolonged and vary from a few weeks to several months. Clinically it is difficult to differentiate between JE and other viral encephalitis.
- JE virus infection presents classical symptoms similar to any other virus causing encephalitis.

# Laboratory Tests for JE

Several laboratory tests are available for JE virus detection which include:

- Antibody detection: Hemagglutination Inhibition Test (HI), Complement Fixation Test (CF), Enzyme Linked Immuno-Sorbent Assay (ELISA) for IgG (paired) and IgM (MAC) antibodies, etc.
- Antigen Detection: RPHA, IFA, Immunoperoxidase etc.

# Laboratory Tests for JE

- Genome Detection - RTPCR
- Isolation - Tissue culture, Infant mice, etc.
- In view of the limitations associated with various tests, IgM ELISA is the method of choice provided samples are collected 3-5 days after the infection.



# JE Vaccination – Difficulties

- The most promising preventive tool is JE vaccine.
- It has been available since 1941, but because of small production capacity and its relatively high cost, the vaccine has remained out of reach for most countries.
- Fortunately in recent times, the development and increasing availability of new vaccines is making the control of JE more of a reality.

# JE Vaccination – Difficulties

- With the advent of modified and improved JE Vaccines, JE prevention program is now going on in full swing throughout the globe, particularly in South-East Asian countries where the disease is highly prevalent.
- However recent unswerving studies indicated that we should not satisfy ourselves with the belief that we could be able to stop the spread of this dreaded disease in future.

# JE Vaccination - Difficulties

- This is because as much as 40% infected children was found vaccinated questioning the efficacy of the vaccine itself, which are currently in use and frequent failures to access the deep rural areas, and in the vast forest areas by the dedicated trained vaccination team due to uninterrupted seasonal and other natural catastrophes which becomes a major setback in the program.

# JE Vaccination - Difficulties

- Thus although almost all developing countries in the endemic zones have accepted the control program by vaccination, but the outcome of such an elaborate and difficult protocol appears gloomy.
- It is true that a spectacular encouraging approach may not be practically feasible in a wide scale vaccination program considering the unreachable vast tropical rural areas and taming a gigantic inadequately educated population from aversion in participation in such a vaccination program.

.

# JE Vaccination - Difficulties

- There are also failures of vaccination of the JE reservoirs too.
- Thus it becomes a worthless approach when we try to vaccinate a pig population due to their extremely rapid growing population in a herd.
- Controlling the vectors is also an uphill task which appears totally frustrating due to difficult natural scenario of the vector breeding areas in the endemic zones.

# JE Vaccination - Difficulties

- All these aspects straightforwardly indicate that we should search all other possibilities in controlling this problematic disease taking a toll of young lives and creating a sizable diseased population in the society.

# **Health Economics of Prevention of JE**

# Prevention of JE

- An estimated 160million population is at the risk of J.E. in 12 states/Union Territories in India.
- It may cost the country more than 460million US dollars to immunize against the JE.
- To protect children in hyper endemic districts 18 million doses of J.E. vaccine ( costing 52 million US Dollars ) are required and this has to be followed by boosters every 2 years, which has enormous cost and operational implications.



# Prevention of JE

- Government cannot allot such huge amounts for the recurring problem of J.E. Epidemics.
- Despite intensive research and continuing efforts to eradicate infectious diseases ,modern medicine has failed to control and contain many infectious diseases which were thought to be easy to overcome with advances in medical science and technology.
- In fact infectious diseases poses a challenge in public health considerations for 21st century.

# Homoeopathy in Epidemics: Evidence Based Medicine

- Samuel Hahnemann first mentioned the use of the law of similar for prevention of Scarlet Fever in 1801.
- Ever since Hahnemann, Homoeopathy has time and again been able to successfully prevent epidemics with a small number of remedies.
- The field of epidemics provides an excellent example of how homoeopathy can be beneficially implemented in today's world.

# Prevention of Japanese Encephalitis in Andhra Pradesh

- The state of Andhra Pradesh has got 23 districts with a population of 40 million children.
- 15 districts witness periodical outbreaks of JE during the months of August to November every year during the rainy seasons.
- Andhra Pradesh witnessed this disease for the first time in 1979 in Anantapur district and subsequently almost every year until 1986.

# Prevention of Japanese Encephalitis in Andhra Pradesh

- The case fatality and morbidity rate was very high. Homoeopathic medicines were distributed in those endemic areas in a small way by the doctors with good results. The disease continued to appear every year. But there was no consensus in the drug of choice.
- Some doctors advocated Opium, Helleborus, Stramonium etc as preventives. Dr.G.L.N.Sastry, a pioneer in the public health through homoeopathy sought a consensus among homoeopaths and emphasized the need for a radical approach towards this disease.

# Prevention of Japanese Encephalitis in Andhra Pradesh

- Though the Japanese Encephalitis epidemic temporarily came down with some homoeo medicines but in the subsequent years it continued to show its virulence.
- Since 1990 it had become an unmanageable problem.
- Between 1993 and 1999 recorded J.E. cases were 5308, and 1511 children died.
- In spite of vaccination it continued unabated and the Government sought the help of homeopaths in combating this epidemic in 1999.

# Study Method

- Tri Phasic Remedies: B.C.T. Since the Genus Epidemicus viz., Belladonna, Opium, Hellbeorus and Opium were giving temporary relief.
- The epidemic started recurring in the Rayalaseema districts and started spreading to other areas in the state.
- At that point of time Dr.G.L.N.Sastry viewed this disease from the holistic point of view and explained the tendency of recurrence of J.E.

# Study Method

- From the miasmatic angle and advocated a unique way of prescribing the Belladonna on 1,2,3 days one dose each, Calcarea Carb 200 on 10th day and Tuberculinum 10 M on 25th day were administered in a phased manner to all children in the age group of 0-15 years in the month of August every year for three consecutive years.
- Symptom similarity, complementary relationship, virulence and underlying miasms were taken into consideration while selecting these drugs.

# Study Method

- This project was named as B.C.T. This is the first ever large scale administration of homoeopathic medicines for the prevention of an epidemic viral disease.
- Japanese Encephalitis, covering 20million children in the state of Andhra Pradesh.
- Doubtful efficacy of vaccines and enormous cost of immunizing the children had prompted the government to choose homoeopathic prophylaxis in the year 1999.



# Results

- After its commencement in 1999 the mortality and morbidity rates of J.E. fell drastically. 343 cases were reported in 2000 with 72 deaths, in 2001 only 30 cases with 4 deaths, in 2002 only 18 cases but no deaths, in 2003 and 2004 no cases were recorded.
- The Government had acknowledged the efficacy of homeopathy.
- This is the first major involvement of homeopathy in the field of prevention of epidemic diseases in our country.

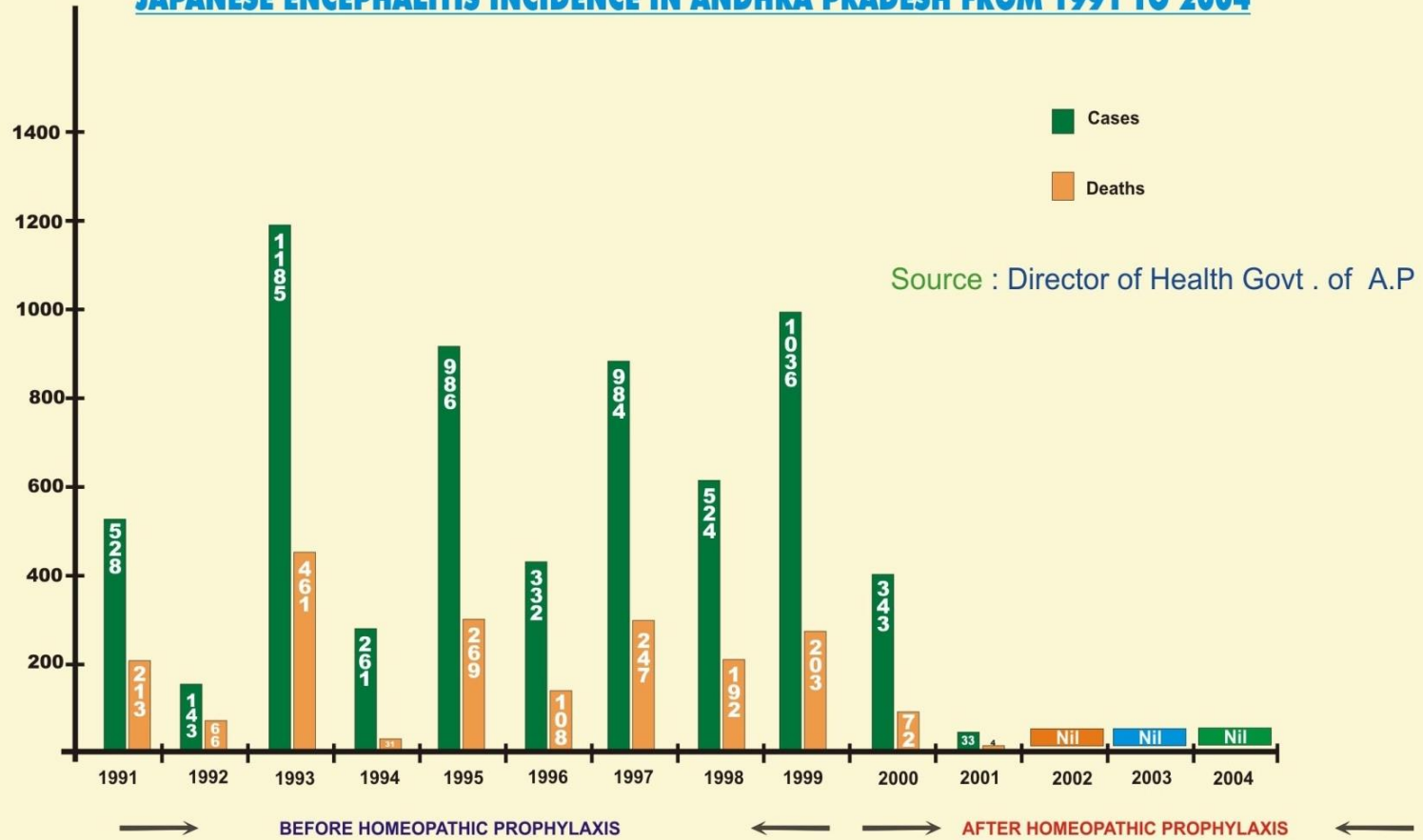
# Results

- Neighboring states which have not adopted this method continued to show higher incidence of JE cases.
- After witnessing the decline in India other states and nations are showing keen interest in this innovative method.
- This first ever large scale study of homoeo prophylaxis had attracted the attention of both government and the scientists.

# Results

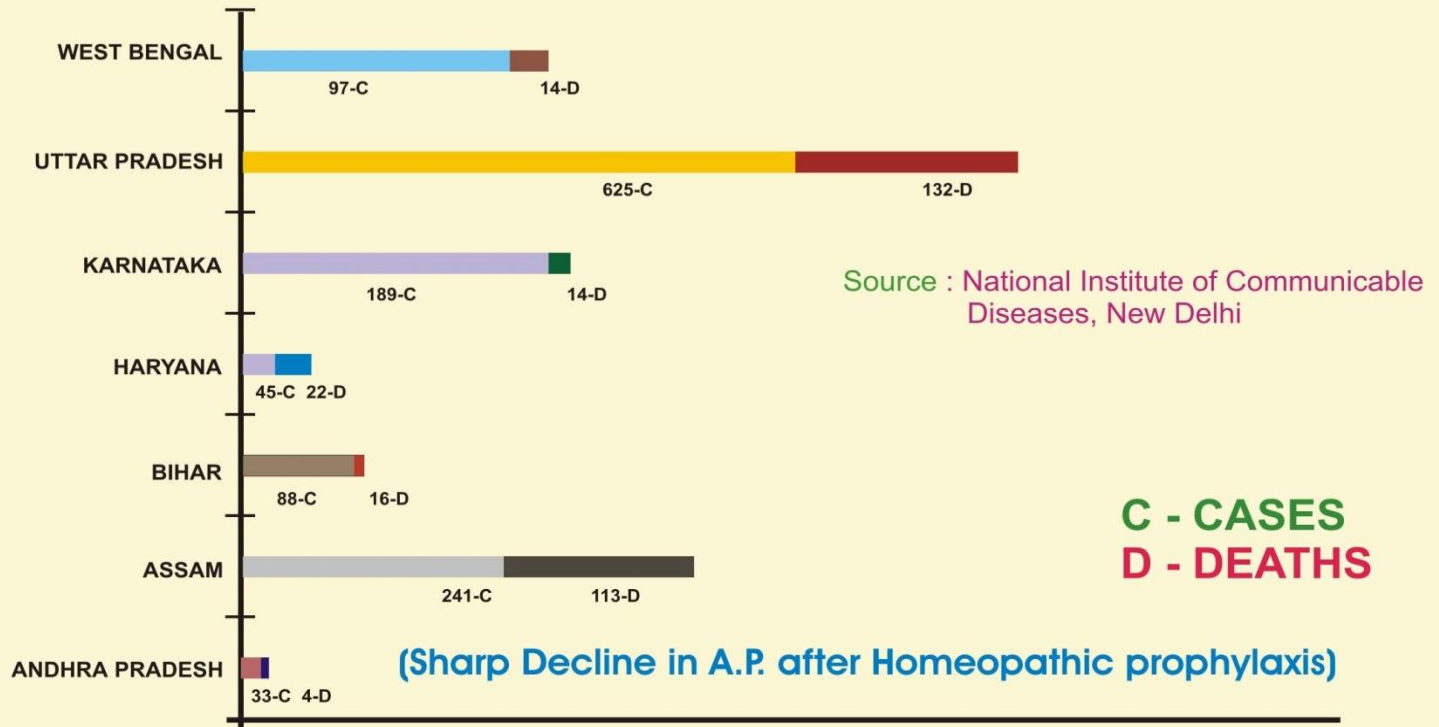
- Though this study did not satisfy the scientific community and the allopathic counterparts, the results could not be rejected.
- Subsequently the Central Council for Research in Homoeopathy took up the task of in-depth research on this work.

## JAPANESE ENCEPHALITIS INCIDENCE IN ANDHRA PRADESH FROM 1991 TO 2004



**JE Incidence before and after B.C.T. Administration**

## JE Cases & CFR in 2001 in some states of India



JE Incidence in other states

# Research on Belladonna and JE

# Belladonna and JE

- To test the real efficacy of the Belladonna in prevention of the Japanese Encephalitis, the Indian Govt. granted an extra mural research project to the Dept.of Microbiology, Virology Unit, School of Tropical Medicine,Kolkata.
- Dr.Bhaswati Bandyopadhyay had conducted experiments on two models – JE pock formation on Chick Chorioallantoic Membrane (CAM) and JE infection of suckling mice by intracerebral route where mother of the litter was treated with Belladonna.

# Belladonna and JE

- Both experiments conclusively indicated that Belladonna got a definite role in preventing JE.
- However the mechanism is still unknown and further studies are required in this direction.



# Discussion

- As with most vector borne diseases, the risks of Japanese Encephalitis infection are multifactorial and comprise environmental, economical, social and host factors.
- Therefore control measures including education, vector control, sanitation and protective homoeopathic immunization should be well integrated.
- The homoeo prophylactic intervention was strongly associated with a drastic reduction of disease incidence resulting in complete control of the epidemic since 1999.

# Discussion

- The other parts of the country continued to show higher incidence of J.E. where they have not administered any homoeopathic prophylactics.
- The results support the use of homoeopathic prophylactic B.C.T. (Belladonna, Calcarea Carb and Tuberculum) as a feasible strategy to help control epidemic situations.
- Scientific rigor and responsibility should direct further research and application of Homoeopathic Prophylaxis.

# Conclusion

- Homoeopathic Medicines proved effective in the prevention of J.E. and their use helped check child mortality rate.
- The utility of homoeopathy is multidimensional in preventive, prophylactic and curative areas and it should be harnessed properly.
- It is not antagonistic to the existing health care, and it definitely complements or supplements the same if correct approach is evolved.



## **Dr. Srinivasulu Gadugu**

*M.B.S., M.D.,*

Associate Professor,

Department of Organon of Medicine,

J.S.P.S. Government Homoeopathic Medical College,

Ramanthapuram, Hyderabad 500013, India.

Email: [srinivasulugadugu@gmail.com](mailto:srinivasulugadugu@gmail.com)

## **Prof. Shailendra K. Saxena**

*FAEB, FIVS, FBRs, FCMS, MNYAS (USA), MASM (USA), MASV (USA), PhD, DCAP,*

Professor & Head

Department of Stem Cell / Cell culture

Centre for Advance Research (CFAR),

King George's Medical University (KGMU), Lucknow - 226003, India.