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Contents

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December 2016

The top ten diseases reported during December, 2016 are Haemorrhagic Septicaemia, Anthrax, Peste des petits ruminants, Sheep and Goat pox, Fascioliasis, Rabies, Enterotoxaemia, Classical Swine Fever, Black Quarter and Theileriosis. The following Pie chart shows the top ten diseases reported during the month of December, 2016 (Fig 1).

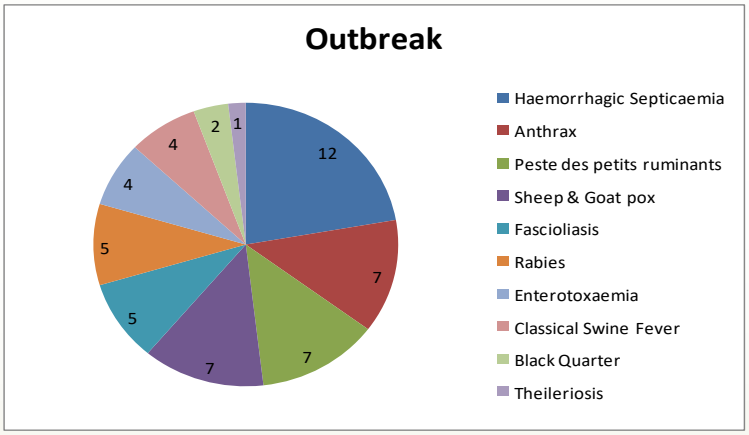

Fig. 1 Top ten diseases reported during December 2016
(Numbers in chart indicate outbreaks)

Haemorrhagic Septicaemia disease has been recorded from two states involving six districts. Maximum number of outbreaks has been recorded in Karnataka state. Madhya Pradesh is the other state that reported the disease (Fig 2).

Anthrax disease has been recorded from two states involving four districts. Maximum number of outbreaks has been recorded in Karnataka state. Andhra Pradesh is the other state that reported the disease (Fig 2).

Peste des petits ruminants has been recorded from three states involving five districts. Maximum number of outbreaks has been recorded in Karnataka and Rajasthan states. Kerala is the other state that reported the disease (Fig 3).

Sheep and Goat Pox disease has been recorded from two states involving six districts. Highest number of outbreaks has been recorded from Karnataka state. Assam is the other state that reported the disease (Fig 3).

Fascioliasis disease has been recorded form Rajasthan state and Puducherry Union Territory involving three districts. Puducherry Union Territory has reported maximum number of outbreaks.

Rabies disease has been recorded from Kerala state involving three districts. (Fig 3).

Enterotoxaemia disease has been recorded from two states involving four districts. Assam and Karnataka have reported equal number of outbreaks (Fig 2).

Classical Swine Fever disease has been recorded from three states involving four districts. Karnataka has reported maximum number of outbreaks. Assam and Punjab are the other states that reported the disease (Fig 3).

Black Quarter disease has been recorded from Karnataka state involving two districts (Fig 2).

Theileriosis disease has been recorded from three states involving three districts. Assam, Karnataka and Punjab have reported equal number of outbreaks.

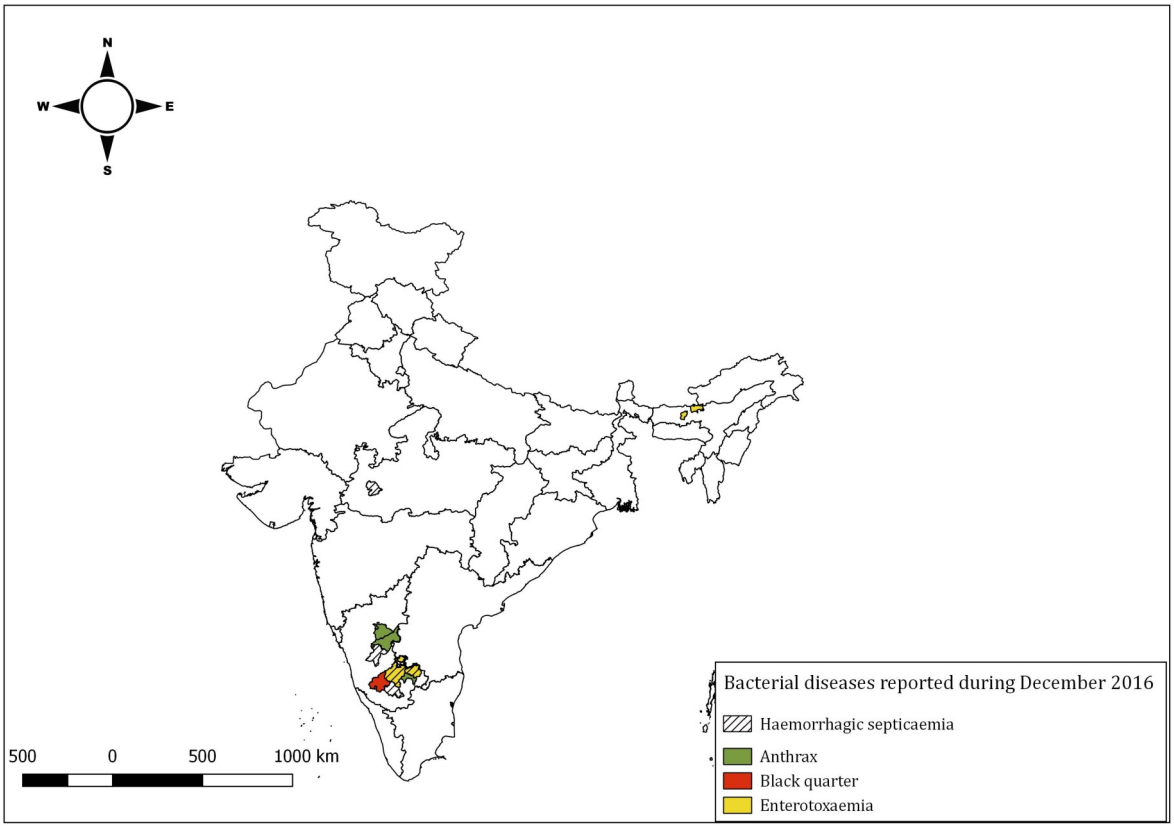

Fig. 2 Spatial distribution of bacterial diseases reported during December 2016

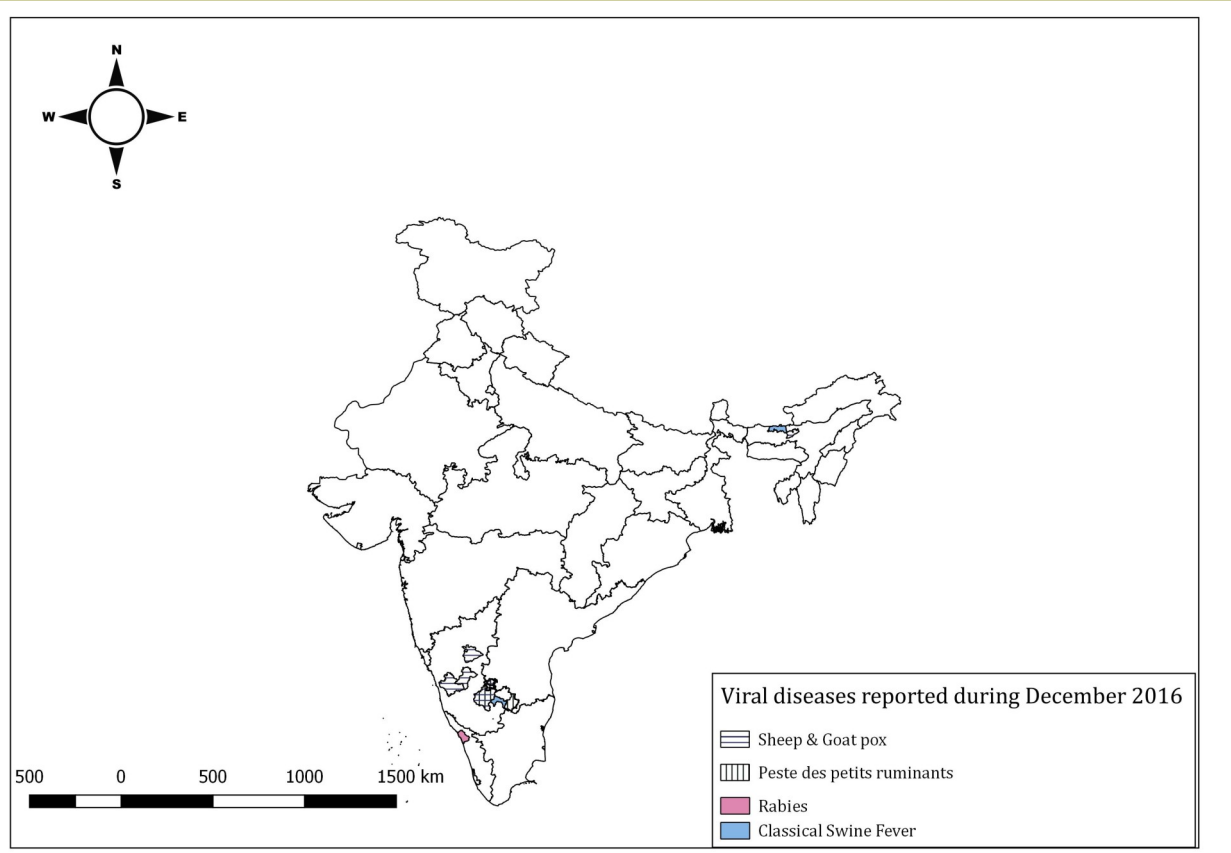

Fig. 3 Spatial distribution of viral diseases reported during December 2016

Table.1 State wise disease reports for December, 2016

State	Diseases Reported
Andaman & Nicobar Island	Theileriosis (Cattle)
Andhra Pradesh	Anthrax (Sheep)
Assam	Sheep & Goat pox (Sheep); Enterotoxaemia (Goat); Classical Swine Fever (Pig)
Karnataka	Anthrax (Sheep, Buffalo); Black Quarter (Cattle); Enterotoxaemia (Sheep); Haemorrhagic septicaemia (Cattle, Buffalo, Sheep, Goat); Peste des petits ruminants (Goat, Sheep); Sheep and Goat pox (Sheep, Goat); Classical Swine Fever (Pig)
Kerala	Peste des petits ruminants (Goat); Rabies (Canine, Buffalo, Goat)
Madhya Pradesh	Haemorrhagic septicaemia (Cattle, Buffalo)
Puducherry	Fascioliasis (Cattle)
Punjab	Classical Swine Fever (Pig)
Rajasthan	Peste des petits ruminants (Sheep, Goat); Fascioliasis (Cattle, Buffalo)

Note: * The livestock species in parentheses indicates the occurrence of the disease in those species of livestock during the reporting month in respective states

News

04 Dec 2016: Brucellosis spreads, 22 heads of cattle and 5 human affected, Karnataka
An outbreak of brucellosis, a highly contagious disease in cattle, in Kolar had triggered panic across the state a couple of months ago . The veterinary department had quarantined the infected livestock and ruled out further spread of the disease. However within a month, as revealed by the state government, the disease had silently spread to other parts of the state – and this time, not just among animals, but humans too. So far, five people have been infected by the bacterial disease in Bagalkot. In September, Brucellosis was first reported at a farm owned by Kolar MLA Varthur Prakash. According to sources in the veterinary department, the infected livestock were procured from a private farm in Baramati, Maharashtra. As many as 19 cattle heads out of the 915 were tested positive for the bacteria (ECTAD, Vol. 05, No. 49 08 December 2016)

8 December 2016: Avian flu outbreak: Migratory birds to be watched by NIV, NGO and Govt.
Given the recent global outbreak of bird flu, surveillance teams have upped the ante on the monitoring of migratory birds set to arrive at Pune's waterbodies soon. The Ela Foundation in coordination with the National Institute of Virology (NIV) will take part in the surveillance of these migratory birds in all the water bodies of the district. Tagging and ringing some birds to monitor movements, with requisite permissions from the forest department is also to be done. Tracheal and cloacal swabs of birds are also going to be analysed, along with serum and environmental samples (of the water they are in) focusing on certain families that have earlier tested positive for the disease. The species of birds will include Anatidae (ducks, geese, swans, etc.), Charadriidae (plovers, dotterels and lapwings), Scolopacidae (waders or shorebirds) and Phalacrocoracidae (cormorants, etc.), and some others (ECTAD, Vol. 05, No. 50, 15 December 2016)

19 December 2016: 24 Rabies cases detected in Mapusa in last 3 months, Goa
Of the 24 rabies cases detected in Bardez in the last three months, nine were detected in Mapusa itself. 2105 stray dogs were vaccinated in the Mapusa town limits, which is less than 70 per cent of the canine population. As per the information provided by a source at the Mission Rabies at Assagao, 90 per cent of the stray dogs in the vicinity of Mapusa market are vaccinated for rabies. The state government has plans to make Goa rabies free, and as such under Mission Rabies it has tied up with a UK-based NGO. The mission has as its centre in Assagao (ECTAD, Vol. 05, No. 51, 22 December 2016)

Avian influenza reported in different official and unofficial sources
On 28 Dec 2016, Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, New Delhi, India has reported and notified to OIE of highly pathogenic avian influenza, H5N1 in birds of Corvidae family in Keranga, Khordha, Orissa. 42 birds (Corvidae family) died from H5N1 in two different location in Keranga, Khordha, Orissa. Avian influenza was suspected in different part of Odisha. Bird flu scare has also hit Rourkela and Keonjhar districts of Odisha hard with administration issuing red alert to tackle the possible outbreak on 01 Jan 2017.
At least 200 poultry birds have died in the last two days in Kharinashi village under Mahakalapada forest block within Bhitarkanika National Park on 04 Jan 2017.

Following reports of avian influenza causing death of six birds in Mysore zoo in Karnataka state, the authorities have decided to close the zoo till February. Samples from the dead birds were sent for tests which confirmed avian influenza H5N8 (ECTAD, Vol. 06, No. 01 05 January 2017)

Asia International News

11 December 2016: Rabies case in a stray dog at Pasakha, Chhukha District , Bhutan
A rabies case in a stray dog was confirmed at Gurungdara, Pasakha under Sampheling geog on 11 December 2016. No human bite cases have been reported. Control measures are put in place (http://www.ncah.gov.bt/newsdetail.php?ID=297)

19 December 2016: Rabies scare in Orang VDC of Dolakha District, Nepal
The death of two villagers after showing symptoms of rabies such as hydrophobia and hallucinations in Orang VDC of Dolakha district caused scare in the district. Orang is located nearly 55 km north of Charikot at Nepal-China border. Accroding to a villager both the victim were been bitten by stray dogs and died a month ago. He said that nearly two dozen villagers were attacked by stray dogs in the last three months. Around 50 people from Orang VDC then arrived in Charikot, for treatment of rabies. Dr Binod Dangal at Charikot Hospital said that a woman who had been bitten by a dog three weeks ago was administered rabies vaccine and the other villagers were offered counseling about the disease as vaccinating them would have no effect at this point because they were bitten atleast a month ago (ECTAD, Vol. 05, No. 51, 22 December 2016)

30 Dec 2016: FMD outbreak alarms cattle farmers, Pakistan
Foot-and-mouth-disease (FMD) has broken out in dairy animals in the villages located alongside River Ravi in Kamalia district Toba TekSingh of Punjab Province. The outbreak has caused panic among cattle farmers who rely on milk as their livelihood. During a survey, cattle owners showed serious concern for the safety of their cattle because their cattle were falling sick at rapid rate. They demanded the Livestock Department to make arrangement to prevent its further spread. The District Officer (DO) Livestock said that the situation is being assessed in the affected area to deal with the disease (ECTAD, Vol. 06, No. 01 05 January 2017).

Epidemiology concept

Distribution of disease events in time and space

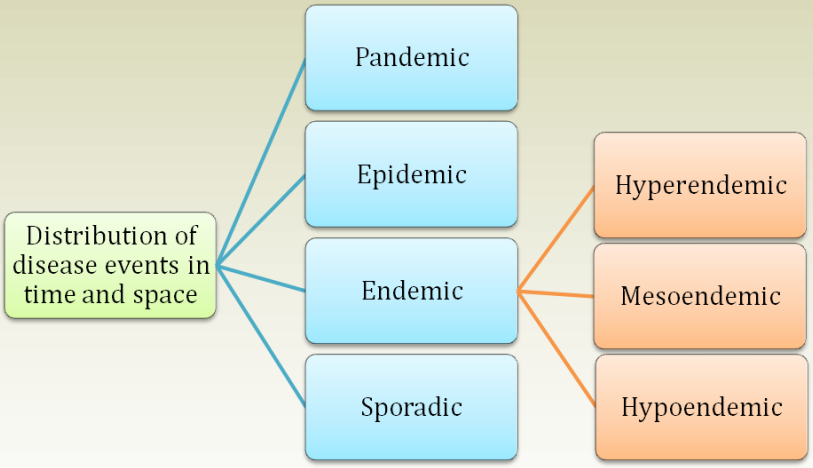

Fig 4: Chart showing distribution of disease events in a population in time and space

The distribution of disease events in populations in time and space can be described by three basic descriptive terms (Fig 4)–

- ⇒ Pandemic
- ⇒ Epidemic
- ⇒ Endemic
- ⇒ Sporadic

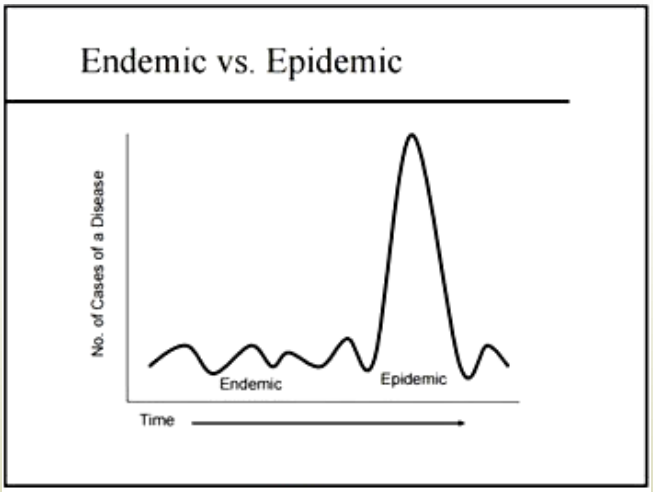

Fig 5

Pandemic disease– A disease is said to be Pandemic if it occurs in many countries or continents. It can be referred to as a large epidemic.

Epidemic disease: A disease is said to be epidemic if it occurs in a population in excess of its normally expected frequency of occurrence. In an epidemic disease, disease events are clustered in time and space. A disease is referred to as epidemic even if it occurs in low frequency in a population if it occurs in excess of its expected frequency (Fig 5).

Endemic disease: A disease is said to be endemic if it occurs in a population with predictable regularity and with only minor deviations from its expected frequency of occurrence. In endemic diseases, disease events are clustered in space but not in time. A disease may be endemic in a population at any frequency level, provided that it occurs with predictable regularity (Fig 5).

Based on frequency of occurrence, they are classified into

- ⇒ Hyperendemic: Disease that affects high proportion of the population at risk.
- ⇒ Mesoendemic: Disease that affects moderate proportion of population at risk.
- ⇒ Hypoendemic: Disease that affects a small proportion of the population at risk.

Sporadic disease: A disease is said to be sporadic if it is normally absent from a population but which can occur in that population, although rarely and without predictable regularity.

Source of the data: The data for the **EpiNET.India** was obtained from the database of National Animal Disease Referral Expert System (NADRES), ICAR-NIVEDI. Any reproduction or representation of the data from this e-bulletin should be done only with prior permission from Director, ICAR-NIVEDI.

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