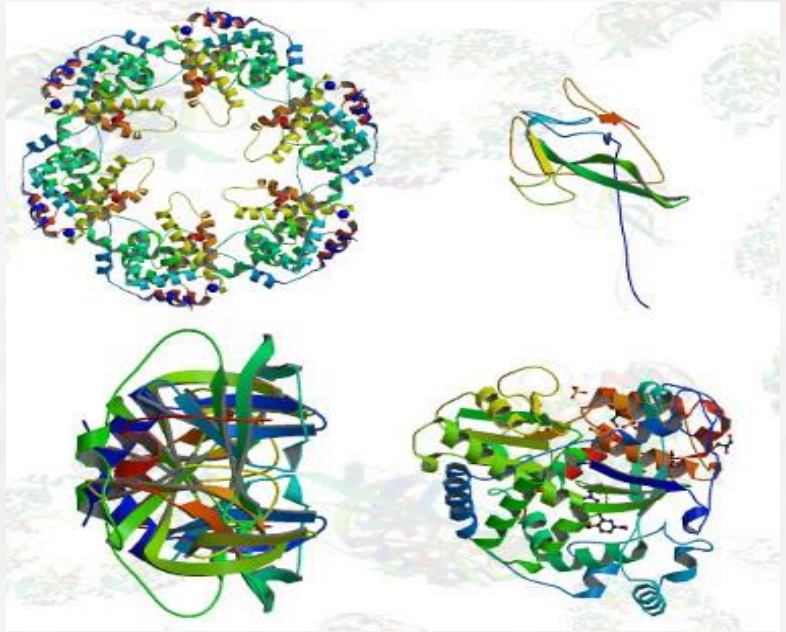
# SEROSURVEY OF KYASANUR FOREST DISEASE IN WESTERN GHATS: OUR JOURNEY

CLINICAL MEET

DEPT. OF COMMUNITY MEDICINE

# INTRODUCTION

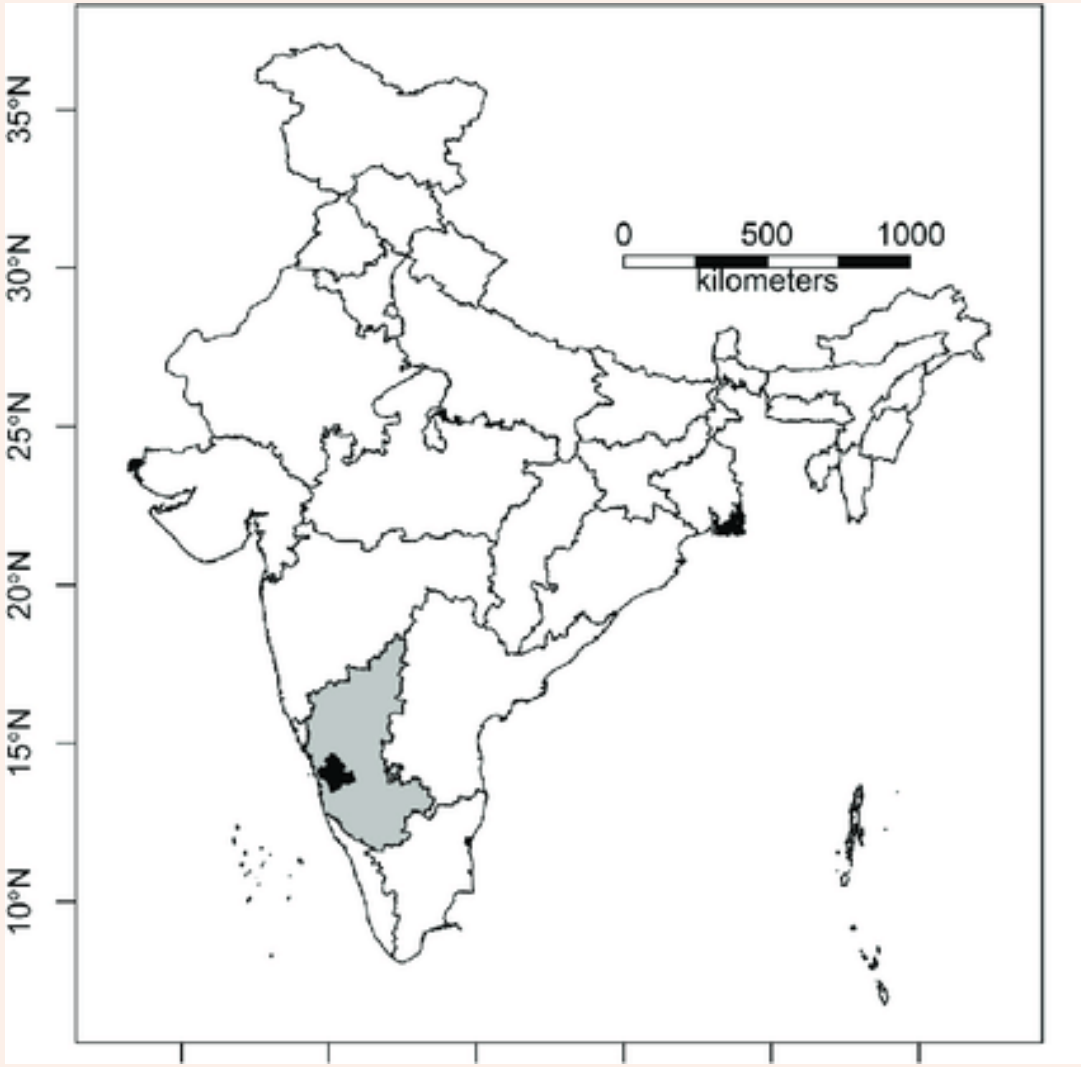
Heamaphysalis spinigera



Kyasanur Forest disease virus, Flavivirus family


RESERVOIR

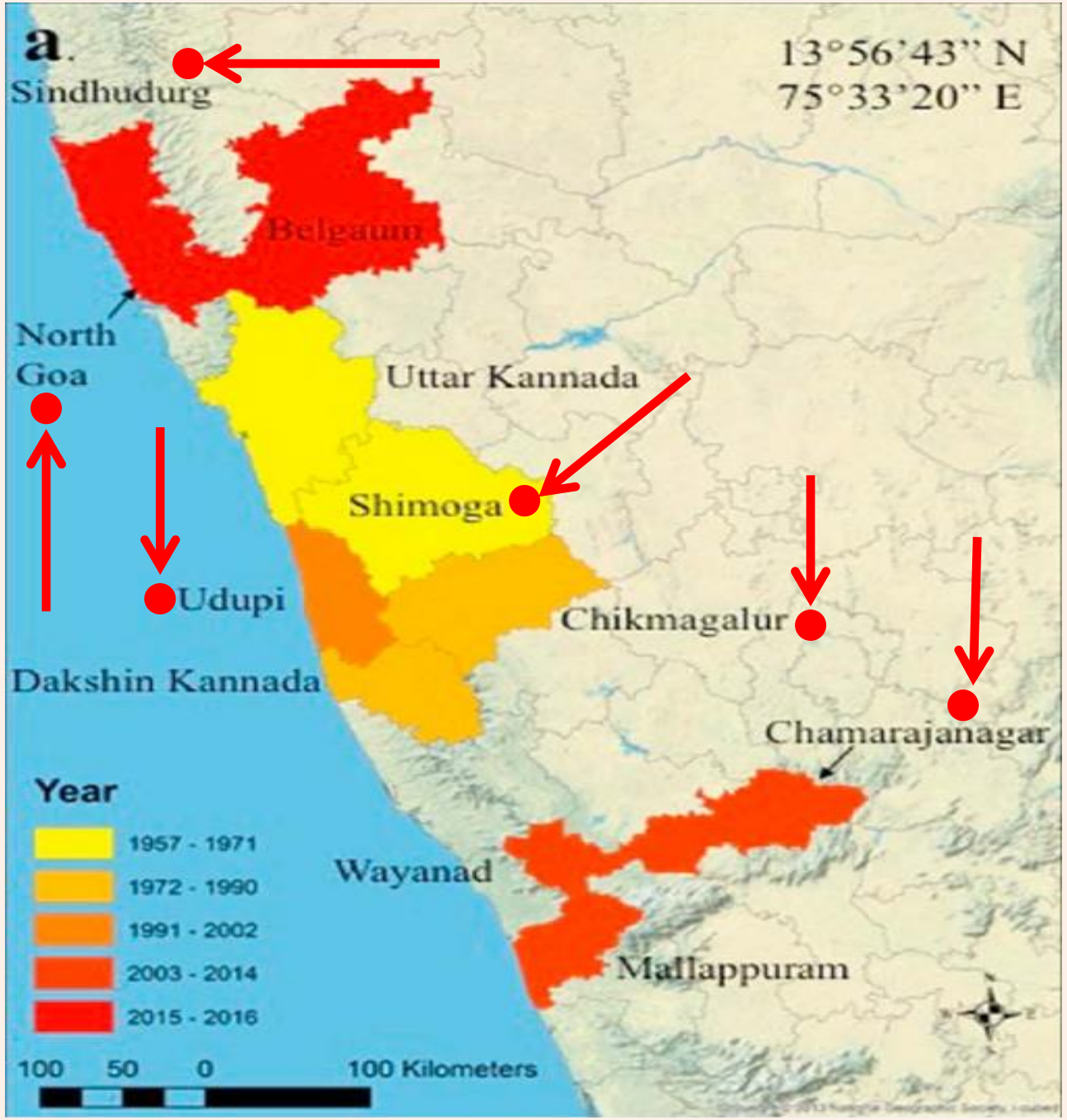
# HISTORY




**SORAB TALUKA, SHIVAMOGGA DISTRICT OF KARNATAKA IN 1957**

## Place of reporting of First monkey death in march 1957

## Autopsy on monkeys




**SOURCE:** Historical Expansion of Kyasanur Forest Disease in India From 1957 to 2017: A Retrospective Analysis
S. Chakraborty1 , F. C. D. Andrade2 , S. Ghosh3, J. Uelmen4, and M. O. Ruiz4

# PROBLEM STATEMENT

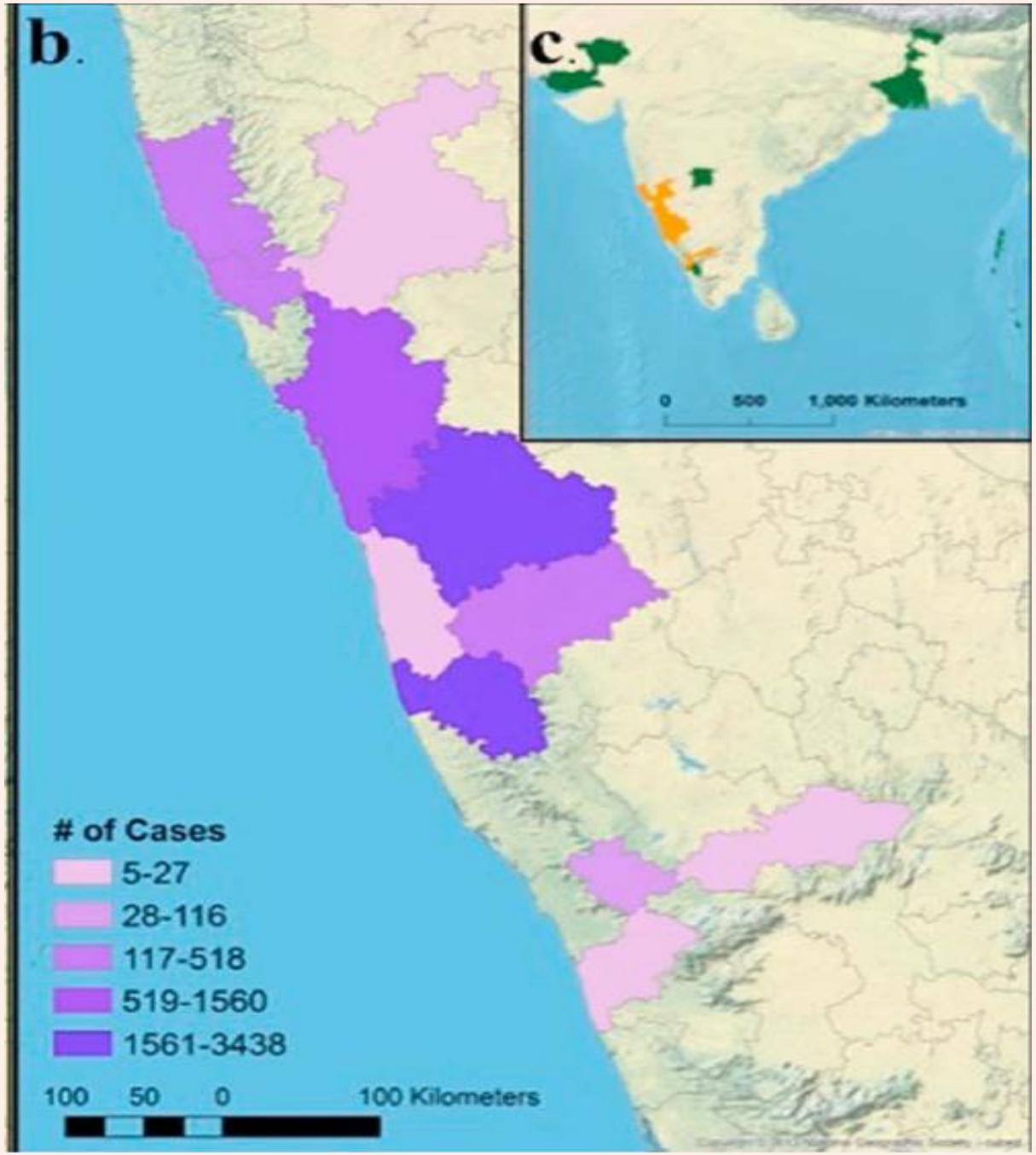



**Table 1**

*Characteristics of Kyasanur Forest Disease Cases in 16 Districts of India During the Period From 1957 to 2017*

| District | First year reported | Number of years with cases | Total number of cases | Number of monkey deaths (and no. of years) |
|---|---|---|---|---|
| Shimoga | 1957 | 38 | 3,336 | 318 (21) |
| Uttar Kannada | 1971 | 22 | 1,560 | 34 (4) |
| Dakshina Kannada | 1982 | 10 | 3,438 | Unknown |
| Chikmagalur | 1990 | 14 | 367 | Unknown |
| Udupi | 2002 | 2 | 27 | Unknown |
| Chamarajanagar | 2012 | 2 | 7 | 10 |
| Wayanad | 2013 | 4 | 116 | 114 (1) |
| Mallappuram | 2014 | 1 | 5 | 1 (1) |
| North Goa | 2015 | 3 | 265 | 41 (1) |
| Belgaum | 2016 | 1 | 16 | 28 (1) |
| Sindhudurg | 2016 | 2 | 456 | 61 (1) |
| Nilgiris | NA | 0 | 0 | 1 (1) |
| Palakkad | NA | 0 | 0 | Unknown |
| Kodagu | NA | 0 | 0 | Unknown |
| South Goa | NA | 0 | 0 | Unknown |
| Mysore | NA | 0 | 0 | Unknown |
| Gulbarga[a] | 2006 | 1 | 1 | 11 (1) |
| Parts in state of West Bengal[a,b] | 1962 | 1 | Not applicable | Unknown |
| Jalore & Barmer districts of Rajasthan[a,b] | 1979 | 1 | Not applicable | Unknown |
| Kutch district of Gujarat[a,b] | 1979 | 1 | Not applicable | Unknown |
| Andaman & Nicobar Islands[a,b] | 2002 | 1 | Not applicable | Unknown |
| Palakkad district of Kerala[a,b] | 2014 | 1 | Not applicable | 18(1) |

*Note*. NA = not applicable.
[a]Regions not part of the 16 districts Kyasanur Forest disease area of interest and thus not included in analysis.
[b]Reports of human haemagglutination inhibition antibody presence against Kyasanur Forest disease in humans.

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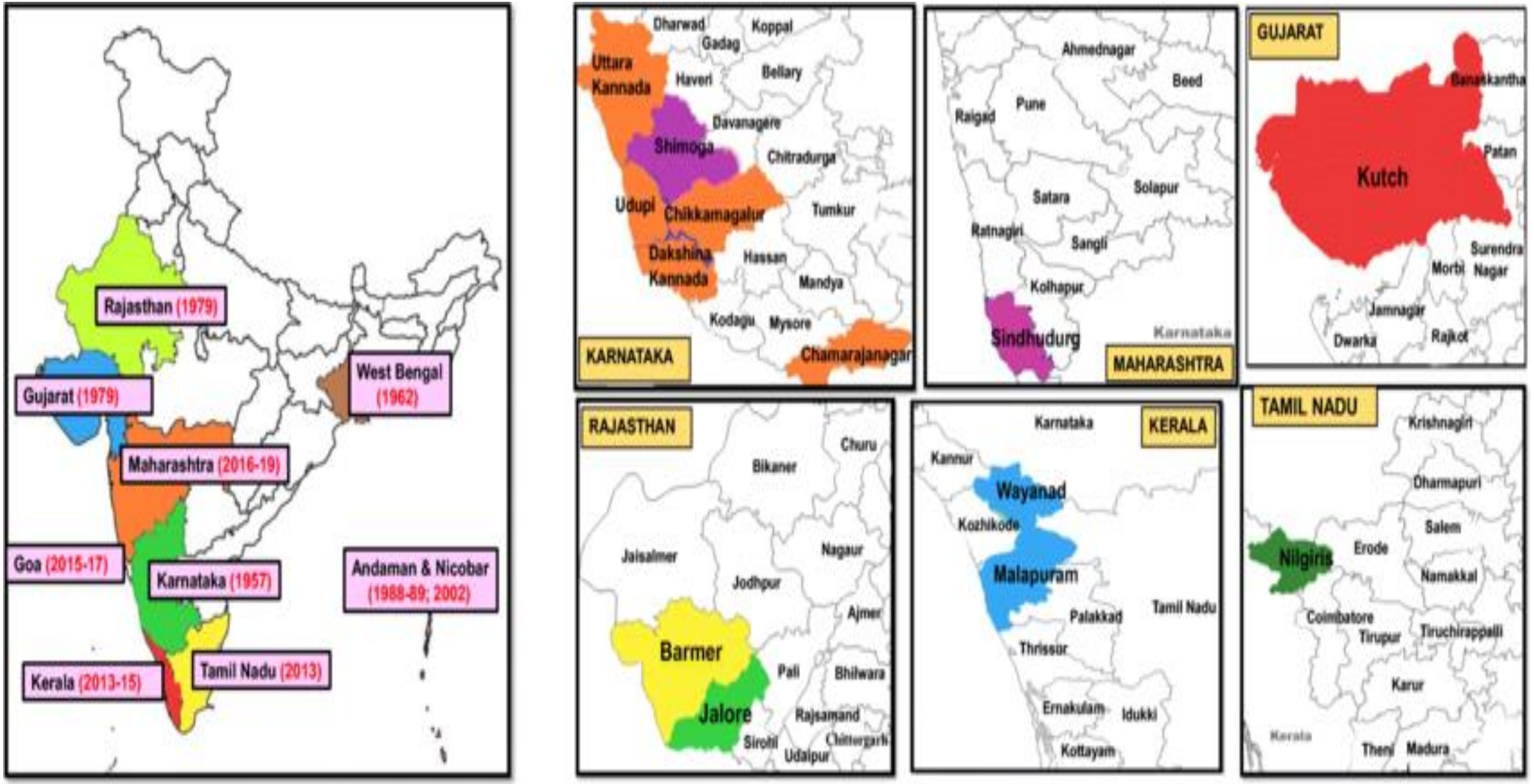



Source: Negi, T., Kandari, L.S. & Arunachalam, K. Update on prevalence and distribution pattern of tick-borne diseases among humans in India: a review. *Parasitol Res* **120**, 1523–1539 (2021). https://doi.org/10.1007/s00436-021-07114-x

# MAHARASHTRA CASE LOAD

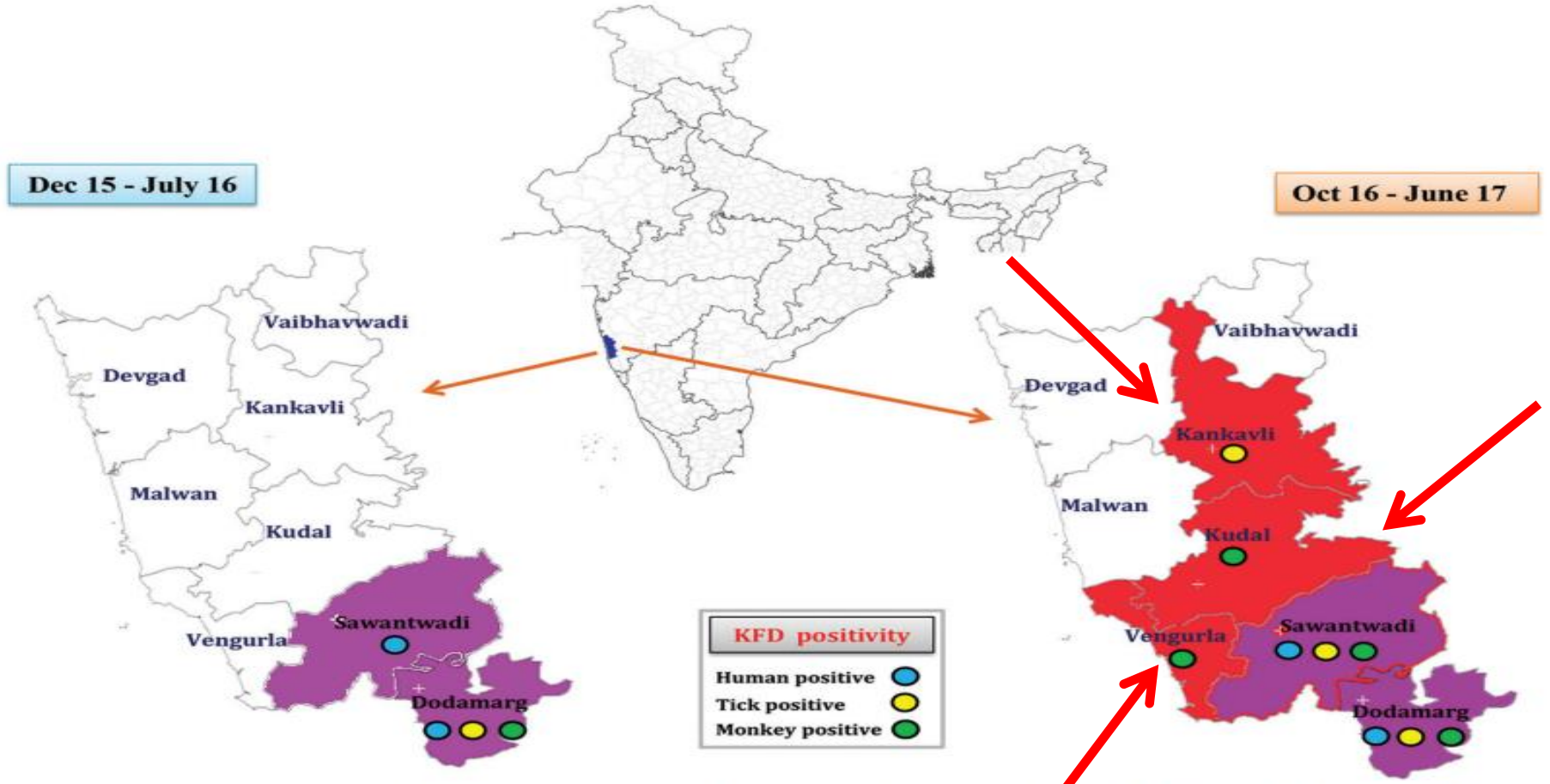



**Figure.** Kyasanur forest disease virus activity in human, ticks and monkeys in different *talukas* of Sindhudurg district of Maharashtra State, India (2015-2016 & 2016-2017).

**SOURCE** : Indian J Med Res 148, October 2018, pp 453-455 DOI: 10.4103/ijmr.IJMR_1292_17
Detection of Kyasanur forest disease in newer areas of Sindhudurg district of Maharashtra State

# CASE DISTRIBUTION IN MAHARASHTRA

Date – 6.05.2025

| State Maharashtra KFD Cases during Year 2012 to 2025 (till April 2025) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sr.No. | Year | District | Affected Villages | | Total No. of cases | | Total Cases in state |
| | | | Dodamarg | Sawantwadi | Dodamarg | Sawantwadi | |
| 1 | 2012 | Nill | | | | | |
| 2 | 2013 | Nill | | | | | |
| 3 | 2014 | Nill | | | | | |
| 4 | 2015 | Nill | | | | | |
| 5 | 2016 | Sindhudurg | 53 | 1 | 128 | 1 | 129 |
| 6 | 2017 | Sindhudurg | 26 | 13 | 86 | 122 | 208 |
| 7 | 2018 | Sindhudurg | 19 | 4 | 80 | 30 | 110 |
| 8 | 2019 | Sindhudurg | 21 | 6 | 74 | 9 | 83 |
| 9 | 2020 | Sindhudurg | 18 | 1 | 41 | 1 | 42 |
| 10 | 2021 | Sindhudurg | 4 | 0 | 7 | 0 | 7 |
| 11 | 2022 | Sindhudurg | 1 | 0 | 2 | 0 | 2 |
| 12 | 2023 | Sindhudurg | 0 | 0 | 0 | 0 | 0 |
| 13 | 2024 | Sindhudurg | 0 | 0 | 0 | 0 | 0 |
| 14 | 2025 | Sindhudurg | 2 | 1 | 2 | 1 | 3 |
| | | | | Total Cases-26 14 years | 420 | 164 | 584 |

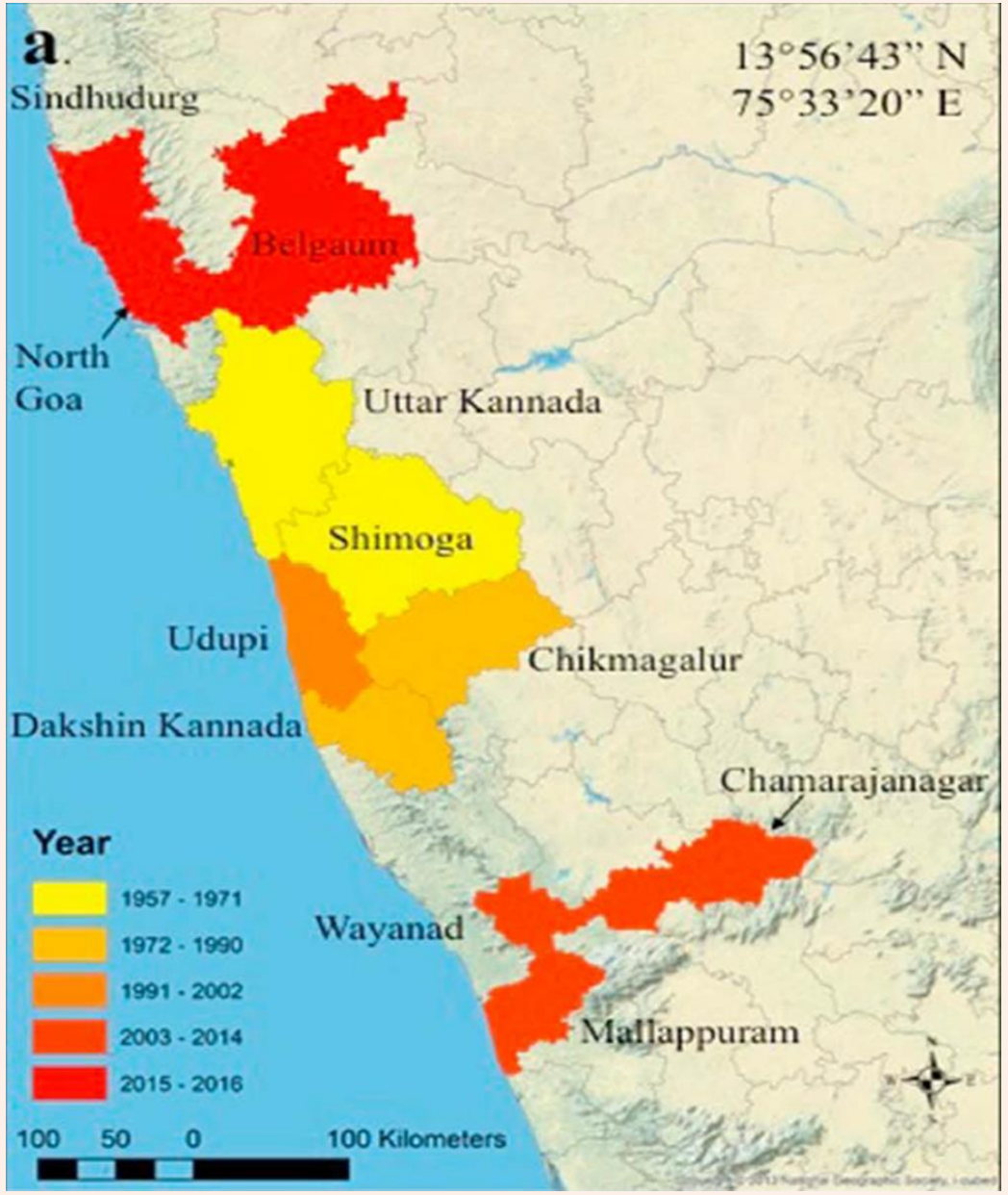
(Dr. Raju Sule)
State Surveillance Officer, IDSP
DHS Office - 2, Pune

**SOURCE** : https://nhm.maharashtra.gov.in/en/scheme/integrated-disease-surveillance-project-idsp/

# ICMR-NIE has launched a multi-centric study in Maharashtra, Karnataka, Tamil Nadu, Goa and Kerala.

**Department of Community Medicine, Dr. D. Y. Patil Medical College, Hospital and Research Centre is chosen as the nodal agency for the implementation of this study in Maharashtra.**

# WHY IS THIS STUDY IMPORTANT?




**To study gaps in occurrence of KFD.**

**To know the spread and extent of KFD among people residing near forest areas.**

**To learn in depth about epidemiology of KFD.**

# HOW IS THE STUDY PLANNED?

**5 STATES**

Maharashtra

**5 DISTRICTS IN MAHARASHTRA**

Raigad

Satara

Sangli

Ratnagiri

Sindhudurg

**51 CLUSTERS**

in 5 districts

**31 CLUSTERS**

NON ENDEMIC ZONE

**20 CLUSTERS**

ENDEMIC ZONE

IN EVERY CLUSTER

**36 PARTICIPANTS**

randomly selected

**SAMPLE SIZE**

1836

# EXECUTION OF THE PROJECT

**Government of Maharashtra**
**Ministry of Public Health, Gokuladas Tejapal**
**Hospital Premises, Complex Building, 10th floor**
**Mumbai-400001, Telephone no.22617510**

email id:- us-arogya5@mah.gov.in

No.Sathro-1125/C.R.No.01/Communicable Disease - 2
Date:- 13 May, 2025

To,

Director,
ICMR- National Institute of Epidemiology,
Department of Health Research,
Ministry of Health and Family Welfare,
Government of India,
New Delhi.

Sub. :- Regarding ICMR study titled " Serosurvey for Kyasanur forest disease (KFD) in Western Ghats, India, 2024 "

Ref. :- Your letter dated 05.03.2025

Respected Sir,

According to the above mentioned letter dated 05.03.2025, the Government of Maharashtra has approved the implementation of the study 'Serosurvey for Kyasanur Forest Disease (KFD) in Western Ghats, India, 2024' to be conducted in the state of Maharashtra.

2. Also, information of Kyasanur Forest Disease (KFD) cases in Maharashtra is enclosed.

3. Dr. Babita Kamlapurkar, Joint Director, Health Services (7410522821), Pune shall be the nodal person to further assist in this regard.

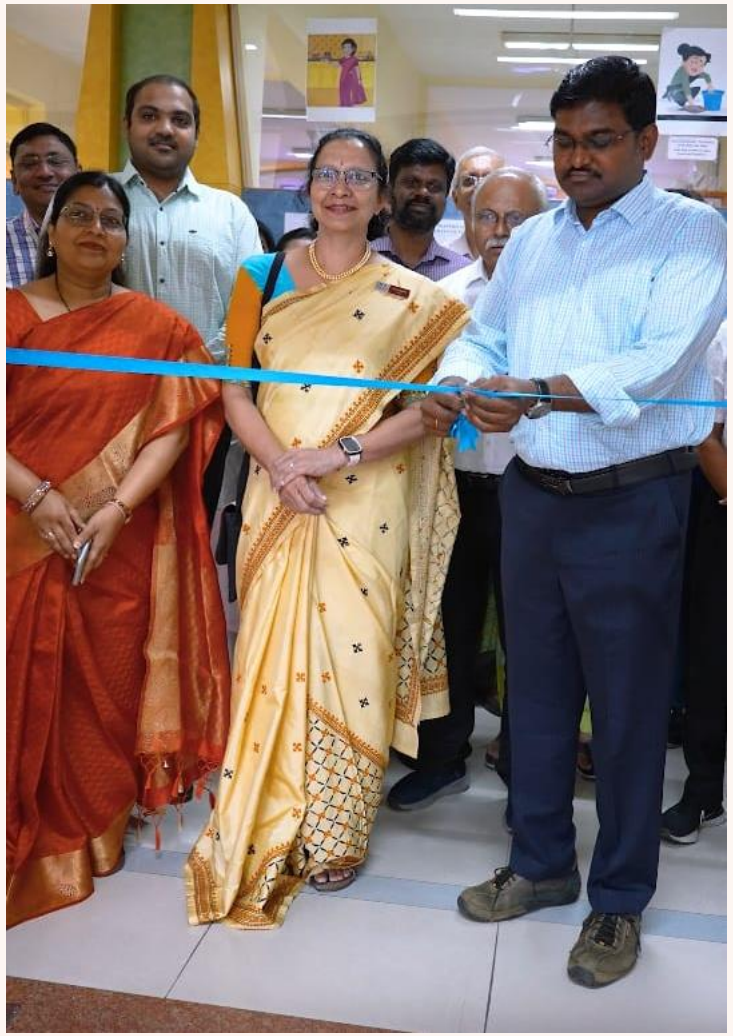
Your Sincerely,

Encl:- As above

(Vilas Bedre)
Deputy Secretary, Government of Maharashtra

Copy :- Dr. Babita Kamlapurkar, Joint Director, Health Services (M.F. & W.B.D.), Pune for kind information and necessary action.

# INAUGURATION




# TRAINING

# FIRST CLUSTER

# ADMINISTRATATIVE FLOW

**DHO**

**District Health Officer**

**THO**

**Taluka Health Officer**

**MO**

**Medical Officer**

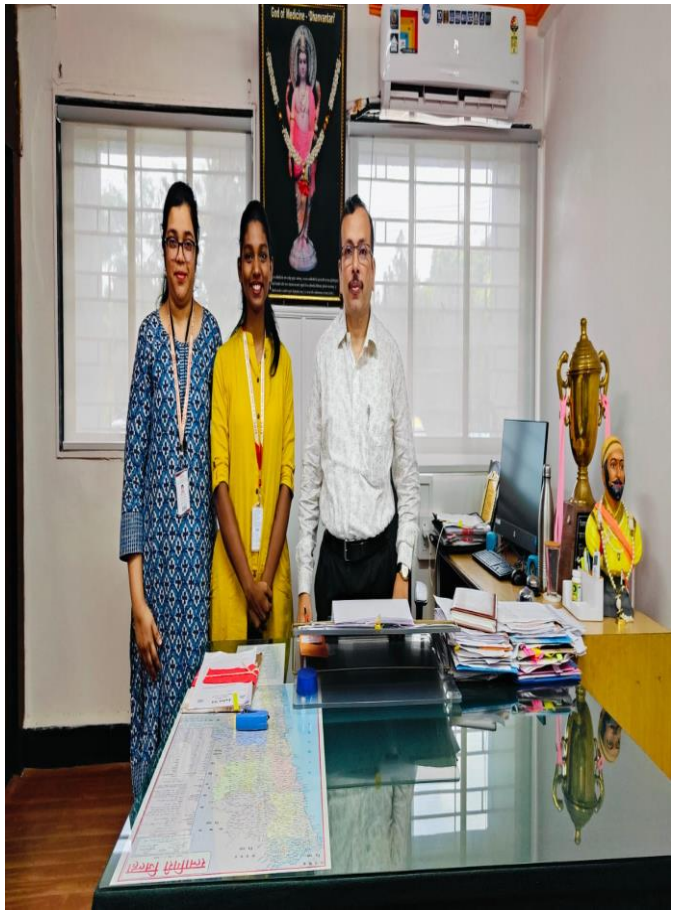
- ✓ **Health Assistants**
- ✓ **ASHA**
- ✓ **Anganwadi Workers**
- ✓ **Sarpanch**
- ✓ **Gram Sabha Members**

# VISIT TO DISTRICT HEALTH OFFICER


SANGLI

RAIGAD


SATARA



RATNAGIRI

# VISIT TO TALUKA HEALTH OFFICER


CHIPLUN, RATNAGIRI

# VISIT TO MEDICAL OFFICER

PHC JAMBHULPADA

# VISIT TO ASHA AND ANGANWADI WORKER


PHC JAMBHULPADA

PHC SHIRGAO

# CLUSTER VERIFICATION

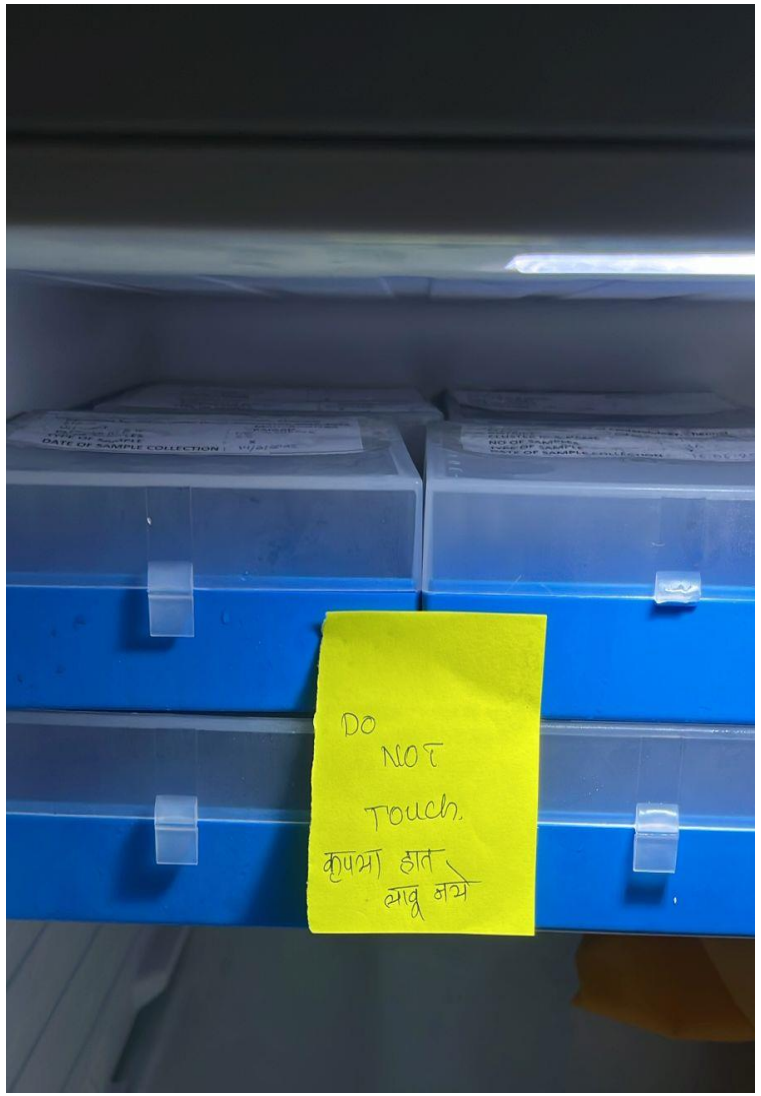
GONDAV


JAMBHALI

# CLUSTER ENUMERATION & ENROLMENT

# SAMPLE COLLECTION AND PROCESSING

# SAMPLE STORAGE




# Field Challenges and Learnings during execution of the project

# 1. Transportation and Connectivity Issues

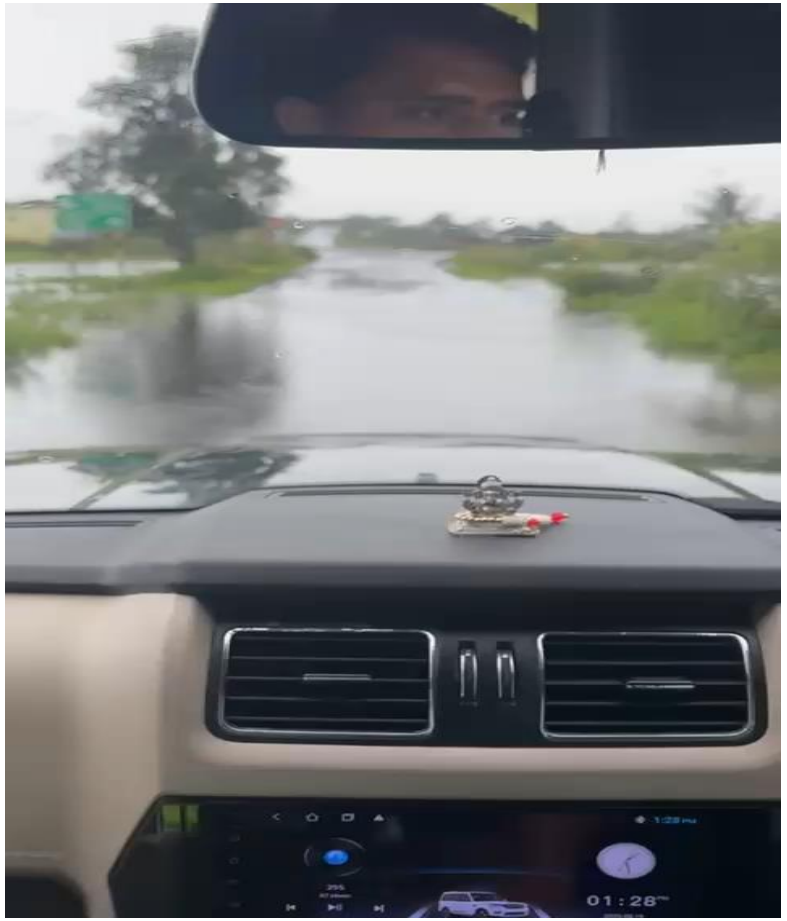
**Road Cave-In at one cluster**

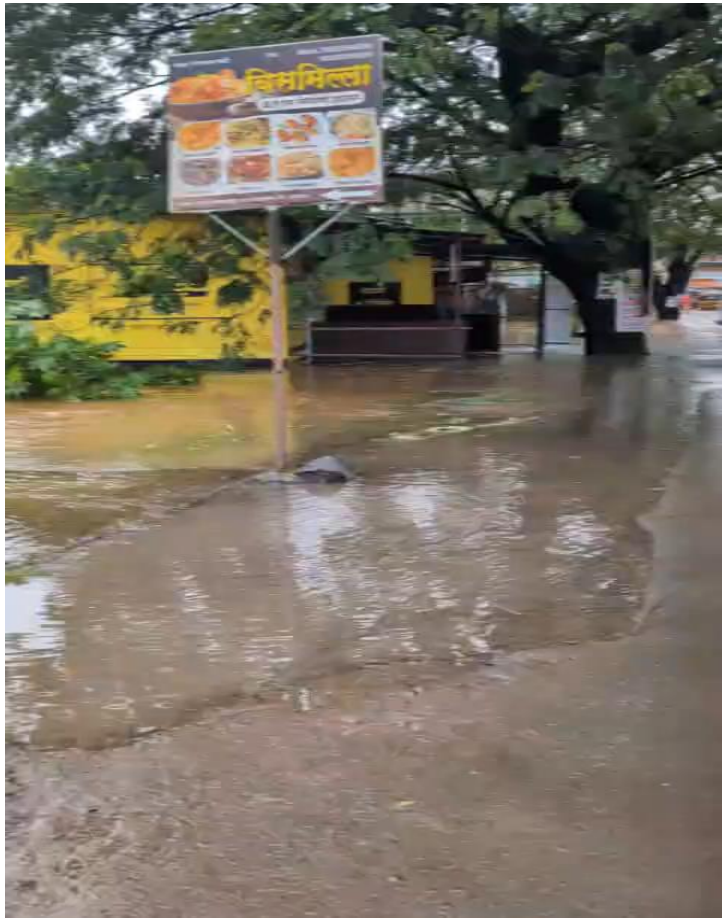

**Slippery Roads**

**Tyre burst in Forest Area**

# 2.Difficult Terrain

# 3. Adverse Weather Conditions





# 4.Health and Safety Risks


# 5.Workload and Time Constraints

**Extended Working Hours:** On some days, the team began at 4:00 AM in Pune and concluded work at 11:00 PM or more after long travel and field tasks.

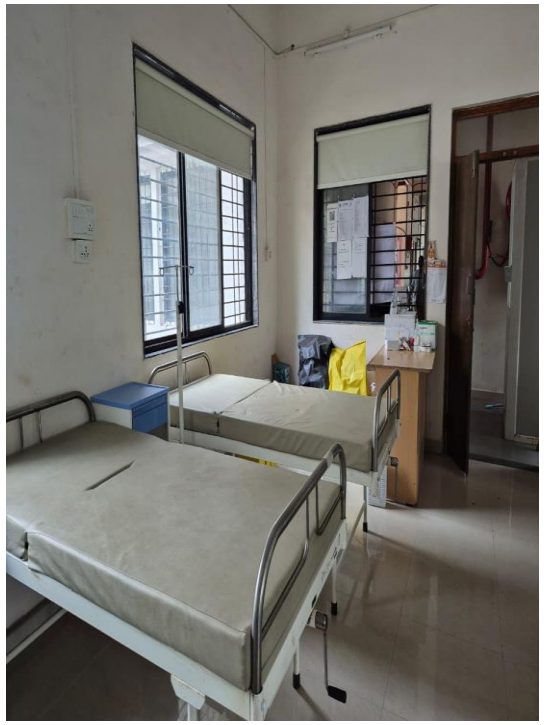
# 6. Community and Operational Challenges

**Ghost Villages:** Villages like *Narali* existed in records but were not found in real time, complicating cluster validation and list of villages from the Government database.

**Community Refusal:** Entire village initially refused participation (e.g., Wave Sarpanch declined stating villagers won’t even consent for skin prick), requiring a shift to Walan village.

**Religious Functions:** Sudden schedule changes were necessary due to local events disrupting planned visits.

# 7. Accommodation and Logistic Constraint



# 8.Consent Refusal at a later stage

# 8.Administrative Challenges

Change in Nodal Officers ,District Health Officers

Courage was not the absence of fear, but the triumph over it. The brave person is not one who does not feel afraid, but one who conquers that fear.

- *Nelson Mandela* -

# Support Received

**At Institute Level** :

Dean Dr. Arcot Rekha

Dr. Hetal Rathod Hod Department of Community Medicine

Dr. Shailaja Mane Hod Department of Paediatrics

Dr. Parag Ratnakar Sir Head of CCL

Accounts and Purchase Dept

Department of Community Medicine

# Support Received

**At Administrative Level** :

Nodal Officer Dr.Babita Kamlapurkar ,Dr. Sandeep Sangle

District Health Officers

Taluka Health Officers

Medical Officers

**On Field** :

Health Assistants – helped with cluster validation

Asha Workers – helped with food arrangement and community mobilisation

Prashasak(Vinhere) – helped with accommodation in PWD guesthouse

# 23/51

# Conclusion

- Kyasanur Forest Disease remains a significant disease in endemic regions.
- Early diagnosis and preventive measures can reduce morbidity and mortality.
- Continued research and awareness are essential to control the disease effectively.

**“These are the efforts for few lines in a textbook”**

# References


- Park’s Textbook of Preventive and Social Medicine
- https://www.cdc.gov/kyasanur/about/index.html
- https://pmc.ncbi.nlm.nih.gov/articles/PMC6206778/
- Dr. Yogesh Gurav NIE KFD articles

# Thank You!