



## **REPORT**

### **Outbreak of Highly Pathogenic Avian Influenza (H5N1) - Experiences in Imphal, Manipur.**

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#### **Background**

Indian Council of Agricultural Research (ICAR) Manipur Centre, Imphal, Lamphelpat is a research complex for north eastern hill region. The poultry unit of this centre was having a total of 940 birds kept in two sheds with a distribution of 560 birds in shed no 1 and 380 birds in the shed no 2. Out of the 380 birds 125 birds were shifted to Kishan Vikash Kendra, Churachandpur farm on 4/4/2015. On 5/4/2015 death of 16 birds were reported and another 67 birds died on 6/4/2015 in an unusual manner. The remaining 42 birds died on 7/4/15 and post mortem examination was conducted. On 6th April, 2015, five birds were found dead in the ICAR Manipur Centre, Imphal, Lamphelpat poultry unit farm. Dead birds from both centres were sent for post mortem examination at D.I Lab at State Veterinary Dept, Govt of Manipur and was reported as Ranikhet disease. Again on 15th April 357 birds died in ICAR Lamphelpat poultry unit and one dead bird was sent as a sample for confirmation to NIHSAD Bhopal on 17th April. The report was received from NIHSAD Bhopal on 18th April at 6.30 pm. The report declared that sample was positive for Highly Pathogenic Avian Influenza H5N1 virus by Real-time RT-PCR. On 19th April the outbreak of avian influenza was declared and 950 chicks, 7000 kg feeds and 1500 eggs were destroyed. Disinfection of farm and surrounding areas were carried out and sanitary measures including bleaching powder and lime was used in the farm area.

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## Deployment of the Central RRT at Imphal Manipur

On 21st April 2015 morning the central Rapid Response Team (RRT) reached Imphal on receiving information from Emergency Medical Relief, Ministry of Health & Family Welfare, Govt. of India, Dr Shibani Datta, Professor (Public Health) & Dr Nibedita Das, Microbiologist of All India Institute of Hygiene & Public Health, Kolkata and Dr Shyamalendu Chatterjee, Virologist, ICMR were the members of the Central RRT. Dr Shibani Datta acted as the team leader.

## Activities of The Central RRT

- First meeting was conducted with Director Health Services (DHS), State Surveillance Officer (SSO), Deputy Director, Epidemiologist of the State and stock of the situation was assessed.
- The State Health Officials were directed to prepare an area mapping of aerial 3 km radius from the epicentre. The population within this 3 km radius was also to be enumerated.
- State Health Officials were advised to start active surveillance of population at risk as early as possible.
- Subsequently area map was prepared and population was estimated to be 2,07,895.
- The area was divided into 19 sectors. The sectors were identified according to the geographical areas.
- Each sector had one surveillance team. The team was composed of Medical Officer, Pharmacist, ANM, Multi Purpose Workers, ASHAs and Driver.
- Active surveillance was started from 22/04/2015 and on the first day 18292 population was covered. The survey continued for next ten days. The details of the survey is given in Table 1.

**Table1: Distribution showing house to house survey.**

Date	Population surveyed. Daily(0-3km)	Population surveyed. Cumulative(0-3km)	Person with fever and URI	Person with fever and URI Cumulative	Person with fever and URI who handled dead/sick birds in last 7 days.
22/4/15	18292	18292	19	19	0
23/4/15	24611	42903	7	26	0
24/4/15	39405	82308	18	44	0
25/4/15	37485	119793	12	56	0
26/4/15	30832	150625	13	69	0
27/4/15	30621	181246	11	80	0
28/4/15	27123	208369	9	89	0

29/4/15	33917	242286	37	126	0
30/4/15	33330	275616	8	134	0
01/5/15	34004	309620	0	134	0

- The micro plan was drafted and handed over to the state officials.
- The State Rapid Response Team (RRT) members were identified and the guidelines for their responsibility was shared.
- During active surveillance if a suspected case was detected the patient had to be immediately transferred to the designated isolation ward.
- A suspected case should have the following:
  1. Fever (Body temperature of 380C or higher)  
and
  2. One of the following symptoms- muscle ache, cough, abnormal breathing or suspected of pneumonia by physician, or influenza  
and
  3. History of direct contact with infected or dead birds in past 7 days or occurrence of unusual death of birds in the community within the past 14 days or contact with pneumonia patient or another patient suspected of Avian Influenza.
- Once a suspected case is identified the Microbiologist of the State RRT takes the sample (Nasopharyngeal swab) which is transferred in the Viral Transport Media (VTM) and sent to NCDC, New Delhi/ NIV, Pune after proper packaging using the standard Triple Packaging System (WHO) maintaining the cold chain at 2-80C.
- The designated Isolation wards in Manipur are identified as Regional Institute of Medical Sciences ( RIMS) Imphal , and Jawaharlal Nehru Institute Of Medical Sciences (JNIM) Prompat.
- The isolation wards of both the hospitals were set up with separate beds for males and females with separate toilet facilities, ventilator, oxygen cylinder, emergency medicines, PPE, hand washing facilities, bio-safety bins , separate changing room for the health personnel, Oseltamivir tablets and suspensions, and a duty rosters for the designated doctors and nurses.

## Activities at Intersectoral levels

- On 19th April, 2015 the Directorate of Veterinary & A.H . Services of Manipur had started the culling operation within 1km radius around the epicentre.
- The culling continued upto 24th April. The mopping and combing operation continued for two subsequent days. The details of the culling is given in table 2.

**Table2: Distribution showing culling activities**

Date	Birds culled (daily)	Birds culled (cumulative)	Eggs destroyed(daily)	Eggs destroyed (cumulative)	Feed destroyed
19/4/15	906	906	1550	1550	1050kg
20/4/15	122	1028	0	1550	200kg
21/4/15	1353	2381	109	1659	1008kg
22/4/15	6289	8670	264	1923	376kg
23/4/15	9943	18613	307	2230	880kg
24/4/15	1955	20568	45	2275	1845kg
25/4/15	278	20846	60	2335	400kg
26/4/15	15	20861	30	2365	Nil

- Combing, cleaning and sanitisation of the infected area was carried out from 27th to 29th April.
- There were total 8 culling teams each comprising of 5 members.
- The cullers were quarantined for ten days after the last day of culling in the Directorate office. They had regular medical check up and Tamiflu tablets were given to them.
- The culled birds were buried in two separate burial grounds, one at Lamphelpat and another at Kripsa. The burial pits were later filled with lime and bleaching powder. Fencing was put around the burial site. One signboard has been put up in the same place in local language specifying that the said area cannot be used for any purpose for next one year.

## RECOMMENDATIONS BY THE CENTRAL RRT

- The State RRT expressed their grievance regarding sending of samples by flight which they experienced during their last episode of Swine Flu. Almost all the flights refused to carry the samples to the referral laboratories. In this connection, the Central RRT requested the Director, EMR to take up the matter seriously and earmark the Airlines

in consultation with the Civil Aviation Authority to avoid such type of problems in future.

- The isolation wards in the designated hospital of the State i.e. RIMS and JNIMS were not properly maintained . So they were advised to prepare it properly to serve the suspected cases if any.
- The State requires more 500 PPE and 100 N95 masks which can be sent to them at the earliest.
- The State Health Authority was directed to send the daily report in format to EMR.
- For upgradation of isolation wards the following items should be supplied to JNIMS-
  1. Ventilator-2
  2. Oxygen cylinder-2
  3. PPE- 100
  4. N95 Masks- 100
  5. Tamiflu tablets-500
  6. Tamiflu suspensions-500

**Acknowledgement: The Central RRT acknowledge the support and cooperation from the Principal Secretary, DHS, DC, State RRT, State IDSP cell, State Veterinary Dept. and Regional Director, Imphal Manipur.**



**Photo1.: Central RRT conducting a meeting with State Health Officials, Govt. of Manipur.**



**Photo2: Central RRT at Control Room of Dept. Of Veterinary, Imphal, Manipur.**

## References

1. Contingency plan for management of human cases of avian Influenza, Directorate General of Health Services, Ministry of Health and Family Welfare, Govt. of India, Nirman Bhawan, New Delhi, December 2005.
2. Avian Influenza, including Influenza A (H5N1) in humans: WHO Interim Infection Control Guideline for Health Care Facilities. World Health Organization, 10th May 2007.