Koshi Province Government

Ministry of Health

Health Directorate

Health Office, Jhapa

Bhadrapur

REPORT

Japanese Encephalitis (JE) Outbreak Response and Vaccination Campaign 2083, Jhapa District

Item	Details
Period covered	30 June 2026 (onset of the first confirmed case) to 9 October 2026 (cumulative campaign progress)
Area	Jhapa District, Koshi Province: 15 local levels
Target population	All persons aged 30 years and above: 493,319
Prepared by	Health Office, Jhapa
Submitted to	Ministry of Health, Koshi Province; Health Directorate, Koshi Province; Family Welfare Division, District Immunization co-ordination committee

1. Executive Summary

In the monsoon of 2026, Jhapa District faced an unusual rise in Japanese Encephalitis (JE). The first confirmed patient fell ill on 30 June 2026. Within seven weeks, hospitals had notified 95 patients with Acute Encephalitis Syndrome (AES) from all 15 local levels. Thirteen of them were laboratory-confirmed as JE, and seven died.

The Health Office, Jhapa, formed a Surveillance & Outbreak Response Unit to investigate the cases in the field. The team examined patients, their households and their surroundings. It found a clear pattern: older farming adults, living beside rice fields and pigs, without any record of JE vaccination. The surveillance & outbreak response unit submitted its findings to the Province and to the Federal level for immediate action.

The decision was taken to conduct a JE vaccination campaign in Jhapa for all persons aged 30 years and above. Stakeholders of the district, the Provincial Ministry of Health and the Family Welfare Division met and agreed the way forward. The district then planned and prepared the campaign step by step. It oriented officials, health workers, volunteers, teachers and the media, and it supplied vaccines and materials to every local level. The campaign was inaugurated in Mechinagar on 5 Ashoj 2083, and nine local levels began vaccination on the first day.

The campaign at a glance

- Cases: 13 laboratory-confirmed JE cases; 7 deaths (case fatality about 54%).
- Target: 493,319 persons aged 30 years and above in 15 local levels.
- Vaccinated: 365,915 persons (74.2%) up to 4 p.m. on 23 Ashoj 2083.
- Vaccine received: 570,000 doses, about 115% of the target population.
- Start: 5 Ashoj 2083, inaugurated from Mechinagar; 9 local levels began on day 1.
- Independent monitoring by WHO-IPD: 149 session sites reviewed; 1,187 community members interviewed; 90.5% reported vaccination, 99.2% were aware of the campaign and 100% vaccinated persons received a card.

2. Background

2.1 A silent virus in the paddy field

Japanese Encephalitis is the leading vaccine-preventable cause of viral encephalitis in Asia. The virus travels in a quiet cycle that most people never see. Culex mosquitoes breed in flooded rice fields, canals and ponds. They feed on pigs and wading birds, which carry the virus in large numbers. When the same mosquitoes bite a human at dusk or dawn, the virus may reach the brain. People cannot pass JE to each other. They are a dead end for the virus.

Most infections are mild or silent. But about one in 250 infected persons develops severe disease, with high fever, headache, convulsions, confusion and coma. According to WHO, about 20–30% of such patients die. Of those who survive, a large share are left with lasting damage, such as paralysis, seizures or loss of speech. There is no specific treatment for JE. Vaccination is the only reliable protection.

2.2 Why Jhapa is vulnerable

Jhapa lies in the eastern Terai of Koshi Province. It is among the country's most productive rice-growing districts. Irrigated fields, canals, borrow pits and small ponds spread across all 15 local levels. Families keep pigs close to their homes. The monsoon, from June to September, brings water, heat and a surge in mosquitoes. Together, these conditions make Jhapa a long-established JE-endemic district. Its borders and its busy hospitals also bring a steady flow of patients from nearby areas.

2.3 The immunity gap among adults

JE vaccine in Nepal has been given mainly to children through routine immunization. Most adults aged 30 years and above were already past childhood when this protection reached their communities. None of them were vaccinated. They are the people who work in the fields, tend the animals and sleep in houses with open windows. They are also the people who have now become sick and died. This is the immunity gap that this campaign was designed to close.

2.4 The 2026 situation

In late June 2026, hospitals in Jhapa began to see patients with high fever and altered consciousness. Doctors first recorded different diagnoses, such as meningoencephalitis, seizure disorder and unexplained fever. Samples were sent to the National Public Health Laboratory (NPHL), Kathmandu. By mid-July the first results returned positive for JE. The cases then continued through July and August, mainly in Mechinagar and Birtamod, with single fatal cases in several other local levels. This pattern called for an immediate, coordinated response.

3. Disease Surveillance and Case Notification

3.1 How cases reached the Health Office

Hospitals and health facilities notify patients with Acute Encephalitis Syndrome to the Health Office. Cerebrospinal fluid or blood samples were collected and sent to NPHL for a JE IgM test. The result was returned to the hospital and to the Health Office. The Health Office updates the district line list and shares the situation with the Province and the Federal level.

Eleven health facilities reported AES patients during the period. Two referral centres reported most of them: KIOCH Damak notified 35 patients and B & C Teaching Hospital notified 28. Others included Provincial Hospital Bhadrapur, Birat Medical College, BPKIHS, Om Sai Pathibhara Hospital and Mechinagar Basic Hospital.

3.2 Situation on 18 August 2026

On 18 August 2026, the district had recorded 95 AES patients from all 15 local levels. Of these, 11 were confirmed as JE and 6 had died. Mechinagar carried the heaviest burden, with 16 AES patients, 5 confirmed JE cases and 2 deaths. Birtamod followed with 9 AES patients, 2 confirmed cases and 1 death. Barhadashi, Haldibari and Arjundhara each lost a patient from a single confirmed case. Damak reported the largest number of AES patients (21), but none was confirmed as JE up to that date.

Local level	AES cases	JE confirmed	Deaths
Arjundhara	4	1	1
Barhadashi	1	1	1
Bhadrapur	10	0	0
Birtamod	9	2	1
Buddhashanti	6	0	0
Damak	21	0	0
Gauradaha	8	0	0
Gauriganj	8	0	0
Haldibari	1	1	1
Jhapa	1	0	0
Kachanakawal	2	1	0
Kamal	3	0	0
Kankai	2	0	0
Mechinagar	16	5	2
Shivasatakshi	3	0	0
Total	**95**	**11**	**6**

Table 1. AES cases, JE-confirmed cases and deaths by local level, as of 18 August 2026 (study period).

The 11 confirmed cases of the study period were later joined by two more, which are shown in Section 4.5.

4. The Surveillance & Outbreak Response Unit

4.1 Why the team was formed

By the end of July, several signals appeared together. Confirmed JE cases had appeared in different local levels. Deaths had occurred in most of them. Patients were mainly adults, and most were farmers. A single JE death in an endemic district is a warning. A cluster of deaths is an emergency. The Health Office, Jhapa, therefore activated a Rapid Response Team in line with national AES/JE outbreak response guidelines.

4.2 Formation and composition

The surveillance & outbreak response unit was formed under the leadership of the Health Office, Jhapa, with members from the Surveillance and Outbreak Response Unit and the concerned technical areas. The team was given a clear mandate: to verify the cases, find out why people were falling ill, and recommend what should be done.

4.3 Mandate and work of the team

Once mobilised, the surveillance & outbreak response unit worked in the field and in the hospitals. Its main tasks were as follows.

- Case verification: It reviewed hospital records, confirmed the diagnosis, and kept the district line list updated with onset dates, results and outcomes.
- Case investigation: It completed a standard AES/JE investigation form for each confirmed patient. The forms captured age, sex, occupation, vaccination history, clinical signs, travel in the previous weeks and possible links with other cases.
- Household visits: It visited the homes of 11 patients and assessed the environment around them. The team looked for rice fields, canals, ponds and borrow pits. It inspected for mosquito larvae. It recorded where pigs were kept, whether windows had mesh, whether vegetation touched the house, and how the family protected itself from mosquito bites.
- Laboratory coordination: It followed each sample to NPHL and measured how long results took. This showed where the response was being delayed.
- Analysis: It combined the line list, the investigation forms and the household assessments into one picture of person, place and time.
- Reporting: It wrote the initial report and submitted it to the Province and the Federal level for immediate decision.

4.4 What the team found

Finding	Meaning for the response
10 of 11 cases had no record of JE vaccination. The status of one was unknown. None had a proven vaccine record.	Vaccination was the strongest preventable factor. This supported a vaccination campaign.
8 of 11 cases were aged 54 years or more. One was a 7-month-old infant. 10 of 11 worked in agriculture.	Older adults in farming are the main risk group. This supported targeting persons aged 30 and above.
All 11 homes were close to rice fields. 10 had irrigation canals nearby. Larvae were found at 3 homes.	Every case lived in a breeding area for the vector.
Pigs were kept within 500 metres of all 11 homes, often in poor conditions.	Pigs amplify the virus. Pig shelter management is part of control.
All 11 homes reported bed net use. None had mesh on windows. All had bushes touching the house.	Bed nets alone did not protect. People are bitten at dusk and dawn, outdoors and in the fields.
Repellent or coils were used in 6 of 11 homes.	Personal protection messages are needed for farmers.
No patient had travelled. Infection was acquired locally.	Transmission was taking place inside Jhapa.
Laboratory results took 4 to 15 days. The earliest cases waited the longest.	Faster testing is needed to trigger a response earlier.

Table 2. Key findings of the surveillance & outbreak response unit study and their meaning for the response.

4.5 Final list of confirmed cases

The surveillance & outbreak response unit study covered 11 confirmed cases and 6 deaths. After the study, two more cases were notified: a 65-year-old woman from Mechinagar, who survived, and an 8-year-old boy from Bhadrapur, who died. The final count is therefore 13 confirmed cases and 7 deaths.

S.N.	Age / Sex	Local level	Notified by	Outcome
1	69 yrs / M	Barhadashi	Om Sai Pathibhara Hospital	Died

2	7 months / M	Kachanakawal	KIOCH Damak	Alive
3	23 yrs / F	Mechinagar	Om Sai Pathibhara Hospital	Alive
4	57 yrs / F	Haldibari	Om Sai Pathibhara Hospital	Died
5	73 yrs / F	Arjundhara	B & C Teaching Hospital	Died
6	54 yrs / F	Mechinagar	B & C Teaching Hospital	Died
7	40 yrs / F	Mechinagar	Provincial Hospital Bhadrapur	Alive
8	73 yrs / M	Birtamod	B & C Teaching Hospital	Died
9	74 yrs / M	Birtamod	B & C Teaching Hospital	Alive
10	64 yrs / F	Mechinagar	B & C Teaching Hospital	Died
11	65 yrs / F	Mechinagar	B & C Teaching Hospital	Alive
12	55 yrs / M	Mechinagar	B & C Teaching Hospital	Alive
13	8 yrs / M	Bhadrapur	Provincial Hospital Bhadrapur	Died

Table 3. Confirmed JE cases, Jhapa District. Shaded rows show deaths. Cases 11 and 13 were added after the study.

- Mechinagar recorded 6 of the 13 cases, with 2 deaths. Birtamod recorded 2 cases and 1 death.
- Barhadashi, Kachanakawal, Haldibari, Arjundhara and Bhadrapur had one case each. Four of these five patients died.
- Nine of the 13 patients were aged 54 years or more. There were 7 women and 6 men.
- Seven of the 13 patients died, a case fatality of about 54%.

4.6 Significance of the surveillance & outbreak response unit's work

The surveillance & outbreak response unit turned scattered hospital reports into evidence. It showed who was at risk, where they lived, and why they had been missed by earlier immunization. This evidence gave the Province and the Federal level a firm basis for approving a campaign, and it gave the district a clear target group. The household assessments also gave the Health Office a practical list of vector-control actions that continue to be needed.

5. Reporting and Decision

The surveillance & outbreak response unit's initial report was submitted to the Ministry of Health, Koshi Province, and to the Federal level, through the Family Welfare Division and the Epidemiology and Disease Control Division. It asked for immediate implementation of preventive measures, including a vaccination response.

After review, the decision was made to conduct a JE vaccination campaign in Jhapa District for all persons aged 30 years and above.

A meeting was then held among the stakeholders of Jhapa District, the Provincial Ministry of Health and the Family Welfare Division at the Federal level. The meeting agreed on the target group, the supply of vaccine and materials, and the roles and responsibilities of each level. With this agreement, the district began detailed planning.

6. Campaign Planning and Preparation

6.1 Objective and strategy

The objective was to raise protection against JE among the people most at risk, and so to prevent further illness and deaths. The strategy rested on four pillars: a clear district plan, trained people at every level, enough vaccine and materials in the right place, and strong communication with the public.

6.2 Roles of each level

Level	Role in the campaign
Federal (Family Welfare Division)	Approval, technical guidance and support for vaccine and other necessary supplies.
Province (Ministry of Health, Health Directorate)	Technical support, logistic supply, monitoring, feedback, follow-up and support to the district.
District Immunization Coordination committee	Date approval for campaign and sharing information to all local levels and stakeholders. Monitoring the campaign.
District (Health Office, Jhapa)	Planning, orientation, logistics, supervision, monitoring and reporting.
Local levels (15)	Local planning, coordination committees, session sites and delivery of vaccination.
Partners (WHO-IPD, media, teachers, FCHVs)	Technical support and assessment, public awareness and community mobilisation.

Table 4. Roles of each level.

6.3 District-level meetings and orientations

The Health Office held a series of district-level events before the campaign. Each had a clear purpose.

- 22 Bhadra 2083: District Immunization Coordination Committee meeting and orientation of communicators.
- 24–27 Bhadra 2083: District-level planning meeting and orientation. About 200 participants from all 15 local levels attended. They included section chiefs, chiefs of health institutions and Health Office officials.
- 31 Bhadra 2083: Orientation of media persons from various media houses, in coordination with the Federation of Nepali Journalists.
- 31 Bhadra 2083: Orientation of the district AEFI team, which handles adverse events following immunization.

6.4 Local-level orientations

From 31 Bhadra, orientation events began in Mechinagar, Kamal and Buddhashanti. The other local levels followed on the days that suited them. Each local level conducted:

- A one-day orientation of vaccinators and health workers.
- Orientation of the local Immunization Coordination Committee and stakeholders.
- Orientation of teachers, ward-level Immunization Coordination Committees and stakeholders.
- Orientation of Female Community Health Volunteers (FCHVs).

Mechinagar, Kamal and Buddhashanti completed all planned events by 3 Ashoj. The remaining local levels planned to complete them by the same date.

6.5 Logistics

From 1 Ashoj 2083, the Health Office began to send vaccine, registers and tally sheets, immunization cards, AEFI kit and other necessary supplies to all local levels. The district received the following supplies from Provincial Health Logistics Management Center.

Item	Unit	Quantity received
JE vaccine	Dose	570,000
JE vaccine diluent (2.5 ml)	Dose	570,000
Diluent syringe (5 ml)	Piece	124,800

Syringe (0.5 ml)	Piece	629,600
Safety box	Piece	7,525

Table 5. Vaccine and materials received.

The vaccine received was about 115% of the target population. This allowed every eligible person to be offered a dose.

6.6 Pre-vaccination monitoring

On 4 Ashoj 2083, a day before the launch, the Health Office carried out pre-vaccination monitoring. This checked that local levels were ready.

7. Campaign Implementation

The campaign was inaugurated in Mechinagar on 5 Ashoj 2083. Nine local levels began vaccination on the first day. The others started in the following days. Vaccination was provided at health facilities, schools, outreach sites and other community sites.

- The Health Office provided continuous supportive monitoring throughout the campaign.
- FCHVs, teachers, ward committees and the media carried the campaign message to the people.
- Vaccinated persons received a vaccination card, and sites recorded doses in registers and on tally sheets.
- WHO-IPD, Damak, conducted its own independent assessment of the campaign.

8. Results

Table 6 shows cumulative progress from 5 to 23 Ashoj 2083, up to 4 p.m.

Local level	Target	Age 30–60 vaccinated	Age 60+ vaccinated	Total vaccinated	%
Mechinagar	65,525	35,822	11,604	47,426	72.4
Buddhashanti	26,185	15,112	5,046	20,158	77.0
Arjundhara	42,666	24,486	8,232	32,718	76.7
Kankai	26,247	14,596	5,139	19,735	75.2
Shivasatakshi	36,499	18,967	7,011	25,978	71.2
Kamal	26,468	14,346	5,292	19,638	74.2
Damak	55,344	29,863	9,226	39,089	70.6

Gauradaha	30,031	15,109	5,977	21,086	70.2
Gauriganj	17,134	10,058	3,091	13,149	76.7
Jhapa	19,055	11,616	2,886	14,502	76.1
Barhadashi	18,323	10,912	3,447	14,359	78.4
Birtamod	59,747	37,456	9,090	46,546	77.9
Haldibari	15,708	10,513	3,225	13,738	87.5
Bhadrapur	34,680	17,039	4,850	21,889	63.1
Kachanakawal	19,706	11,898	4,006	15,904	80.7
Total	**493,319**	**277,793**	**88,122**	**365,915**	**74.2**

Table 6. Vaccination progress by local level.

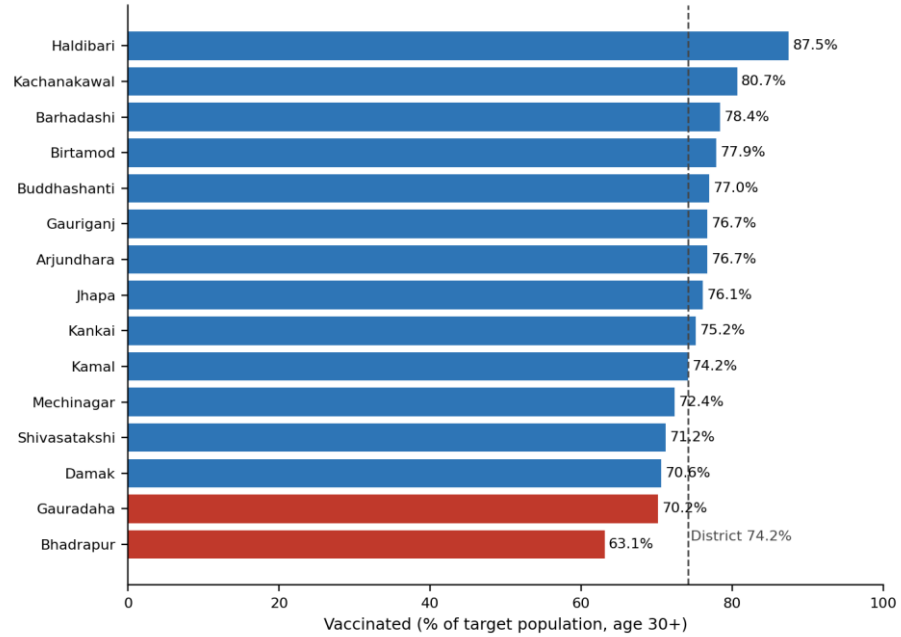


Figure 1. Coverage by local level (red: below 70.6%). The dashed line is the district average of 74.2%.

8.1 Interpretation

- A total of 365,915 of 493,319 persons were vaccinated, giving 74.2% coverage.
- A total of 955 vaccination centers were established, with 1,830 vaccinators and 3,659 volunteers mobilized to support the vaccination campaign.
- 277,793 persons aged 30–60 years and 88,122 persons aged 60 years and above were vaccinated.
- 206,904 women (57%) and 159,011 men (43%) were vaccinated.

- Haldibari reached the highest coverage (87.5%), followed by Kachanakawal (80.7%) and Barhadashi (78.4%).
- Bhadrapur had the lowest coverage (63.1%). Gauradaha (70.2%), Damak (70.6%) and Shivasatakshi (71.2%) were also below the district average.
- About 127,404 persons in the target group remained unvaccinated at the time of reporting.

8.2 Why 100% was not expected (assumptions)

The campaign aimed to leave no one unreached as possible among the target population. Full coverage was not realistic, for these reasons:

- Pregnant women were not recommended for vaccination. They make up about 5% of persons aged 30 years and above.
- About 10–12% of men in Jhapa were assumed to be out of district for different opportunities.
- Some people with chronic disease condition fear side effects and decline vaccination.
- Penta-1 coverage in Jhapa is 82.18%, which shows the usual reach of immunization services.

On this reasoning, a final coverage of about 75% among the target population was regarded as a successful campaign implementation.

9. Monitoring and Assessment

9.1 Rapid Community Monitoring (as of 28 September 2026)

Immunization field monitors interviewed 1,187 community members. This is a quick check of community experience. It does not replace the coverage figures.

Indicator	Result
Reported JE vaccination	90.5% (1,147 of 1,187)
Aware of the campaign	99.2% (1,178 of 1,187)
Vaccinated persons who received a card	100%
Not vaccinated	40 persons (9.5%)
Reason: fear of side effects	70.0% (28 of 40)
Reason: absent at the time of the campaign	27.5% (11 of 40)
Any discomfort after vaccination	2.6% (30 of 1,147)
Needed medical assistance	None

Table 7. Main results of Rapid Community Monitoring.

- FCHVs, together with social and digital media, were the main sources of information.
- The commonest discomforts were muscle or joint pain (16), fever (5) and nausea (4).

9.2 Session site monitoring (WHO-IPD, 29 September 2026)

A total of 149 vaccination session sites were monitored in more than ten municipalities. These included health facilities, schools, outreach sites and community sites.

Working well: All monitored sites had vaccine, syringes, vaccination cards and cold-chain supplies. Tally sheets, cold-chain practice with vaccine vial monitor checks, and the correct route and site of injection were largely in place.

Gaps found:

- A visible campaign banner was present at only 83.9% of sites.
- The reconstitution date and time was written on the vial at 92.6% of sites.

10. Strengths and Challenges

Strengths

- Early recognition of the outbreak and a quick field response through the surveillance & outbreak response unit.
- Evidence-based decision and good coordination among the district, the Province and the Federal level.
- Thorough orientation of officials, health workers, volunteers, teachers and the media before the launch.
- Adequate vaccine and supplies, with nine local levels starting on the first day.
- Public awareness and no reports of major side effects.

Challenges

- Fear of side effects was the main reason for not being vaccinated.
- Many men were away for work, and some people were absent during visits.
- Coverage remained low in Bhadrapur and in some wards.

11. Recommendations

- Vector control: Continue source reduction in canals, borrow pits and pond margins in Mechinagar, Birtamod, Barhadashi, Haldibari and Arjundhara. Clear vegetation around homes, install window mesh and improve pig shelters.
- Personal protection: Promote repellent use by farmers at dusk and dawn.
- Surveillance: Strengthen AES and JE surveillance. Collect samples on the day of admission. Establish a faster pathway to the laboratory. Hold a weekly case review with the hospitals.
- Routine immunization: Review routine JE immunization in children, especially in the high-risk wards.

12. Conclusion

The JE campaign in Jhapa shows how surveillance, field investigation and prompt decision-making can work together. A small number of hospital notifications led to surveillance & outbreak response unit investigation. The investigation led to a clear finding that unvaccinated older farmers were at greatest risk. That finding led to a district-wide vaccination campaign for persons aged 30 years and above.

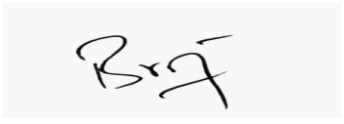
By 23 Ashoj 2083, 365,915 persons (74.2%) had been vaccinated. Monitoring showed a well-run and safe campaign, with strong awareness. The Health Office, Jhapa, thanks Ministry of Health- Koshi Province, Health Directorate- Koshi Province, Family Welfare Division, District Immunization Coordination committee, District administration office, all local levels, partners, health workers, volunteers, teachers, the media and the people of Jhapa for their support.

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Annex


















आधारभूत स्वास्थ्य सेवा केन्द्र

















राष्ट्रिय खोप कार्यक्रम
जापानिज इन्सेफलाईटिस विरुद्धको खोप अभियान २०८३
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तथा सुक्ष्म योजना तयारी गोष्ठी

























श्याम सुन्दर प्रतिष्ठान





