

Improvement of Maternal and Child Health Care Services and Adaptive Capacity in Nepal

Summary findings from health facility assessment in Jajarkot and Rautahat Districts



1 Background

Climate change and recurring disasters such as earthquakes, floods, heatwaves and cold waves have increasingly disrupted maternal and newborn health (MNH) service delivery in Nepal, particularly in vulnerable districts like Jajarkot and Rautahat. Despite national efforts to improve climate-resilient health systems, critical gaps remain in infrastructure, emergency preparedness, and service continuity, especially for women and girls who are disproportionately affected.

2 Overview

As part of a project funded by the Government of Japan, titled “Improvement of Maternal and Child Health Care Services and Adaptive Capacity in Nepal”, healthcare facility assessments incorporating climate change adaptation perspectives were conducted in April-May 2025. The assessments covered 20 healthcare facilities (HFs) across Jajarkot (Karnali Province) and Rautahat (Madhesh Province): Comprehensive Emergency Obstetric and Newborn Care (CEmONC), Basic Emergency Obstetric and Newborn Care (BEmONC), and Birthing Centres (BCs). This study addresses both clinical and engineering dimensions.

3 Methodology

1. Development of an assessment tool

For data collection, a structured questionnaire/checklist was developed, aligning with and adapting from standards and existing facility assessment tools to ensure standardized data collection from clinical and engineering perspectives. The standards and tools include:

- World Health Organization (WHO) Checklist to Assess Vulnerabilities of Health Care Facilities in the Context of Climate Change;
- WHO Service availability and readiness assessment (SARA) ;
- Ministry of Health and Population (MoHP)’s Minimum Service Standard (MSS);
- UNFPA EmONC Light Assessment Tool; and
- Nepal Health Facility Survey 2021 instruments.

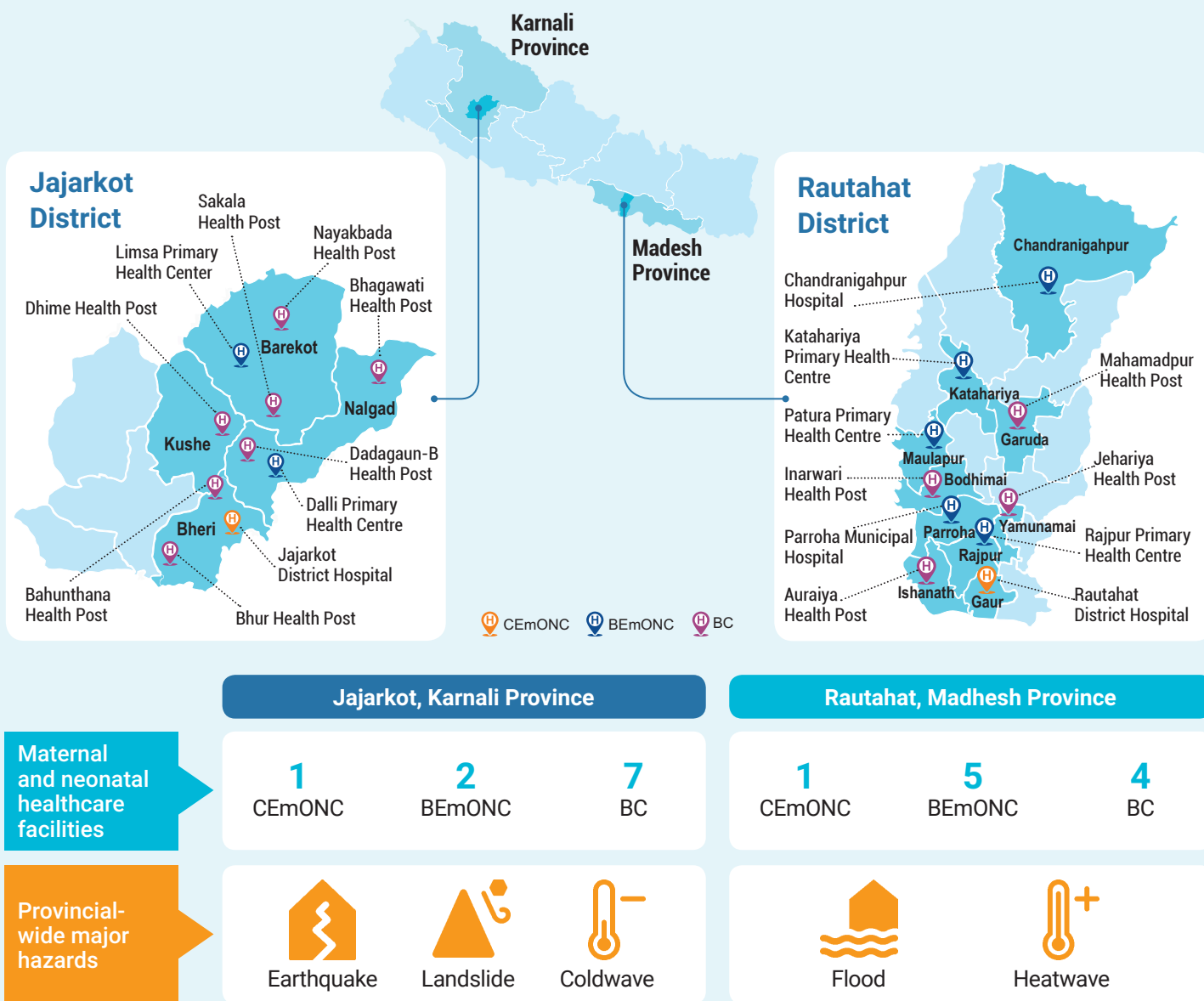
2. Sampling frame

The sampling for this assessment was guided by the objectives and operational scope of the project. The sampling frame was based on all available three levels of health facilities (CEmONC, BEmONC, and BC) in the two

districts. A total of twenty HFs, ten from Rautahat and ten from Jajarkot, were selected using a set of criteria agreed with the project technical advisory committee considering: (i) inclusion of all different facility types in each district

(CEmONC, BEmONC, BC); (ii) high service volume (number of deliveries and patients); and (iii) geographical distribution balance (representation from urban and rural municipalities, remoteness, such as distance from district-level hospitals).

3. Assessment sites



4 Findings from clinical assessments

1. Maternal and neonatal health service availability and provisions

1.1. Signal functions for EmONC and essential delivery services at BCs as per Nepal's Minimum Service Standard (MSS)

Assessed CEmONCs in both districts performed 8 out of 9 signal functions for CEmONCs, except for forceps delivery. One out of two BEmONCs in Jajarkot and two

out of five BEmONCs in Rautahat provided all 7, except for forceps delivery. Most reviewed BCs¹ demonstrated adequate capacity for routine maternal and newborn care. However, their capacity for emergency obstetric care, retained placenta treatment, and infection management remains limited.

¹ The services assessed at BCs included: (1) conducting normal and assisted vaginal deliveries; (2) providing immediate newborn care; and (3) administering uterotonic drugs (oxytocin). (Source: MoHP (2019). Minimum Service Standard.)

Number of HFs fully complying with signal functions for EmONC² or MSS



CEmONC
2 / 2



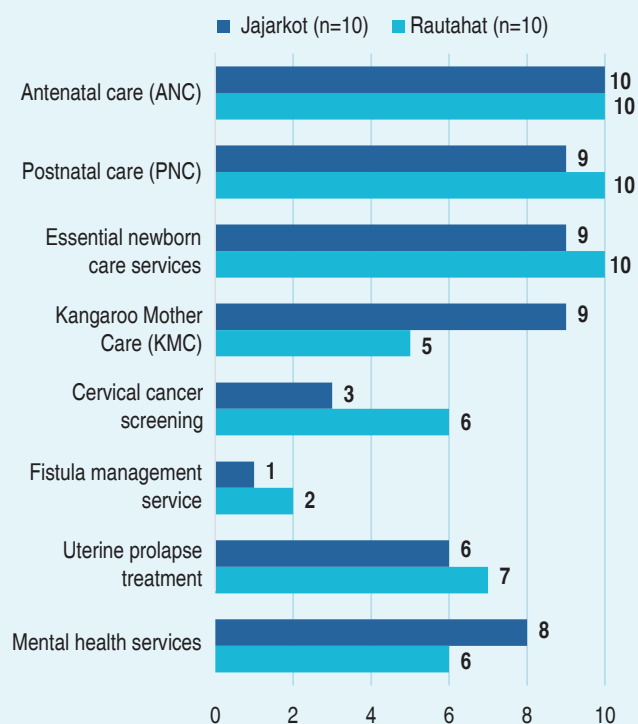
BEmONC
3 / 7



BC
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1.2. Service availability

Number of HFs with services related to maternal and neonatal health as per the MSS by service



Except for one BC in Jajarkot, all studied facilities provided essential newborn care. For Kangaroo Mother Care (KMC), nine facilities in Jajarkot and five facilities in

2 Signal functions of EmONC

BEmONC	CEmONC
(1) Administer parenteral antibiotics	Perform signal functions 1–7, plus:
(2) Administer uterotonic drugs (i.e. parenteral oxytocin)	(8) Perform surgery (e.g. caesarean section)
(3) Administer parenteral anticonvulsants for preeclampsia and eclampsia (i.e. magnesium sulfate).	(9) Perform blood transfusion
(4) Manually remove the placenta	
(5) Remove retained products (e.g. manual vacuum extraction, dilation and curettage)	
(6) Perform assisted vaginal delivery (e.g. vacuum extraction, forceps delivery)	
(7) Perform basic neonatal resuscitation (e.g. with bag and mask)	

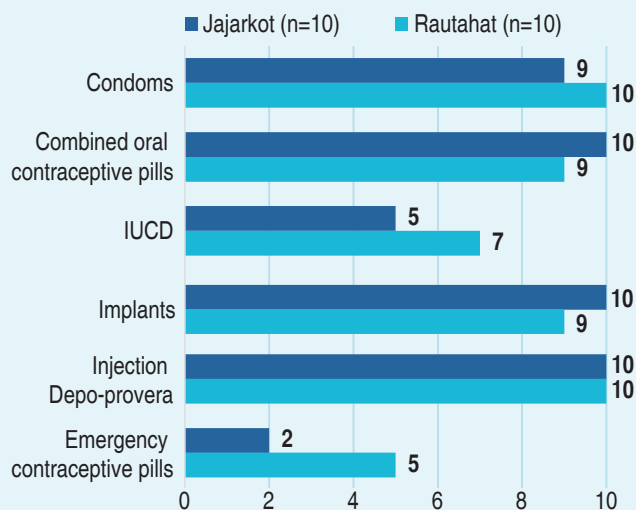
A BEmONC facility is one in which all functions 1–7 are performed. A CEmONC facility is one in which all functions 1–9 are performed.

(Source: WHO, UNFPA, UNICEF, and AMDD (2019). *Monitoring emergency obstetric care: a handbook*)

Rautahat offered the service. Compared to maternal and newborn care services, the availability of reproductive health services (e.g., cervical cancer screening, fistula management, uterine prolapse treatment) was limited among the assessed HFs.

1.3. Family planning

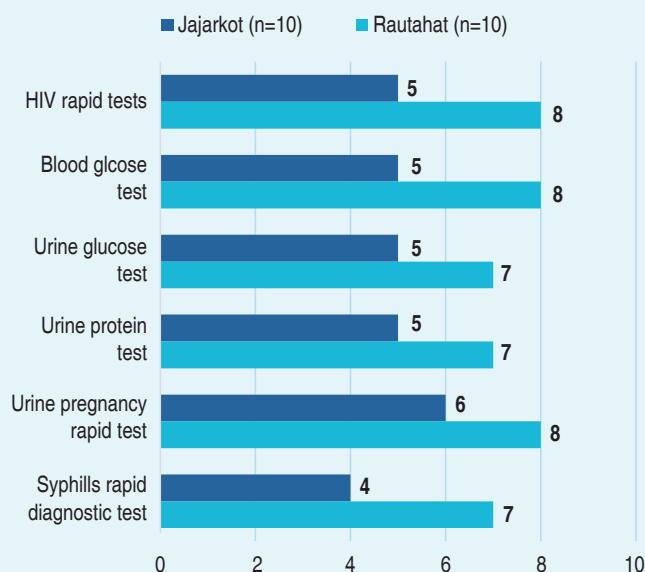
Number of HFs with family planning services by contraceptive method



In both districts, most common family planning commodities were available at the selected HFs. However, the access to emergency contraceptive pills was limited, especially at studied HFs in Jajarkot.

1.4. Laboratory services

Number of HFs with laboratory services by test type



Most basic diagnostic tests were available at most of reviewed HFs in Rautahat. In Jajarkot, one CEmONC and one BEmONC delivered all the basic tests. However, selected BCs had the least consistent access to laboratory services, particularly in Jajarkot, where only two to four BCs offered each type of test. Consequently, Jajarkot had fewer facilities with laboratory services than Rautahat, partly due to the higher proportion of BCs included in the Jajarkot sample.

1.5. Basic amenities



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had **all furniture, basic equipment, medicines, supplies and commodities** mandated by the Minimum Service Standards (MSS)



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(4: Jajarkot, 6: Rautahat) had **refrigerators for temperature-sensitive medications**

Furniture, basic equipment, medicines, supplies and commodities stipulated by the MSS were reasonably available at all selected facilities, but all lacked some mandated items respectively. Delivery, cesarean, suture and episiotomy sets, suction apparatus, and incubators were fewer than those required for a CEmONC facility in both districts. Only half of assessed facilities had refrigerators available for temperature sensitive medicines, indicating a risk to the potency of temperature-sensitive medicines like oxytocin, especially critical in Rautahat.



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(4: Jajarkot, 8: Rautahat) had **ambulances** for emergency transport



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(7: Jajarkot, 3: Rautahat) had **maternity waiting rooms**

Facilities such as ambulances and conducive maternal waiting rooms are essential especially for high-risk pregnancy. However, only four HFs in Jajarkot and eight HFs in Rautahat had ambulances. Availability of maternity room was low. Only seven HFs in Jajarkot and three in Rautahat had maternity waiting rooms.

2. Leadership and governance for climate resilience

2.1. Community engagement



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(8: Jajarkot, 4: Rautahat) had **active Health Facility Operations and Management Committees (HFOMCs)/Hospital Management Committee or local disaster management committees** during past disasters



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(8: Jajarkot, 9: Rautahat) organised **meetings for the Health Mothers' Group (HMG)**

All twenty facilities had Health Facility Operations and Management Committees (HFOMCs) or Hospital Management Committees. They met at least once within last six month of the assessment. Sixteen facilities in both districts mentioned that there was a local committee at the municipality level for disaster management or emergency preparedness and response. However, all HFOMCs and the local committees did not necessarily play active roles in emergency preparedness and response. Seventeen healthcare facilities organised Health Mothers' Group (HMG) meetings, which are crucial for health education, birth preparedness, and early danger-sign recognition.

2.2. Preparedness and response system



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(2: Jajarkot; 1: Rautahat) developed **Emergency Preparedness and Response Plans (EPREPs)**



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had **Standard Operating Procedure (SOP)** for managing patient flow during emergencies

Only three HFs (two CEmONCs and one BEmONC) developed Emergency Preparedness and Response Plans (EPREPs). All three EPREPs included emergency communications and management system of backup medicines and supplies. However, contingency on transport, staffing and laboratory services were rarely discussed in the plans. The Standard Operating Procedure (SOP) for managing patient flow during emergencies was established at only one HF.

3. Health workforce capacity

In terms of staff availability, both assessed CEmONC facilities in Jajarkot and Rautahat showed that they had one sanctioned post each for an obstetrician/gynecologist and an anesthesiologist, but these were filled in Rautahat only. In Jajarkot, a General Practitioner (GP) employed through a local contract and one Medical Officer trained as an Advanced Skilled Birth Attendant (SBA) were available. For other positions, such as health assistants, Auxiliary Nurse and Midwives (ANMs), Auxiliary Health Workers (AHWs) and lab technicians/assistants, most sanctioned positions were inadequately filled in both CEmONC sites, with a considerable number temporarily filled through local contracts.

A similar pattern was observed in the assessed BEmONCs and birthing centers in both districts, with inadequately filled sanctioned posts and a heavy reliance on local contracts.

Regarding training, of the total 112 nursing staff (staff nurses, ANMs and senior ANMs) in the assessed HFs in both districts, 61 had received SBA training, with 37 from Jajarkot and 24 from Rautahat. Training in newborn care practices was provided to 35 staff in Jajarkot and

14 in Rautahat. 17 staff members (Jajarkot: 10, Rautahat: 7) received training in the management of reproductive morbidities such as fistula, cervical cancer, and uterine. This reflects a modest but essential skill set for addressing complex reproductive health issues in both districts.



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(4: Jajarkot, 0: Rautahat) had HF staff who received **training on emergency response or disaster management**

A striking finding was that, while Jajarkot facilities reported having 37 staff trained in rapid crisis or emergency response, no staff in Rautahat had received such training. In terms of mental health and counseling, 29 staff members were trained (Jajarkot: 18, Rautahat: 11). These skills are critical for holistic maternal care, especially in postnatal and gender-based violence (GBV) contexts. Finally, only nine staff members were reported to be trained to manage GBV cases (Jajarkot: 5, Rautahat: 4), highlighting a gap in service readiness for survivors of violence, particularly in lowerlevel facilities.



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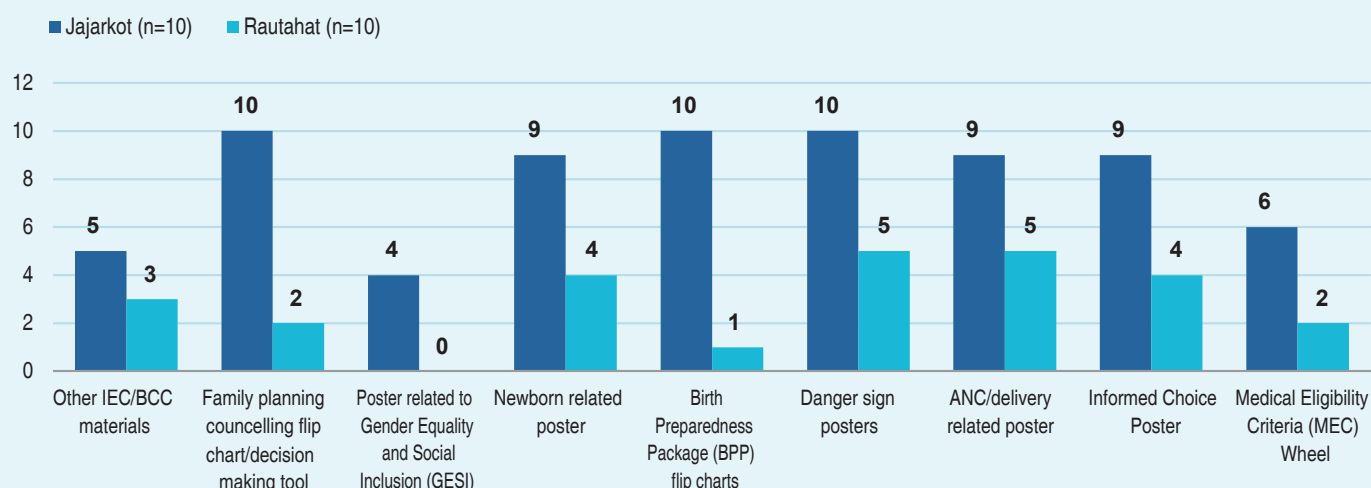
had HF staff who received **training for preparing, responding, recovering from climate-health shocks** in the past year

Capacity building on climate-health linkages was not yet integrated into health worker training at most selected HFs. While only one HF received training on how to prepare, respond and recover from climate-health shocks, none of HFs received capacity building opportunities to learn how to identify health threats worsened by climate change and reduce associated morbidities, which are essential for addressing climate-related health risks.

4. Information, Education and Communication (IEC) and Behaviour Change Communication (BCC)

In Jajarkot, various Information, Education and Communication (IEC) materials on maternal health, family planning and gender inclusion were reasonably available at assessed facilities. Rautahat lagged significantly, especially at the BEmONC and BC levels.

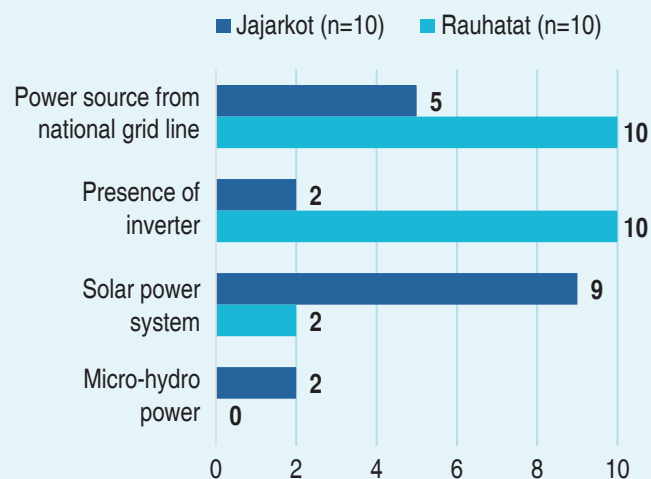
Number of HFs which had IEC/BCC materials by type



5 Findings from engineering assessments

1. Power supply

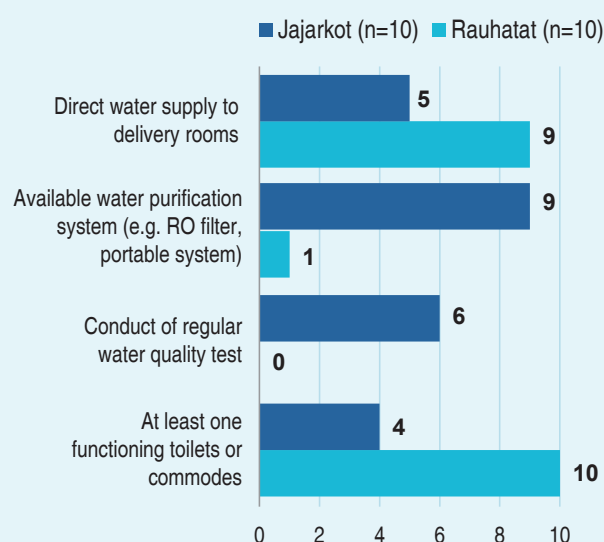
Number of HFs with power supplies by source



While all facilities in Rautahat had power supplies from the national grid lines with inverters, only five facilities in Jajarkot could access the lines. However, only nine facilities in both districts had functioning inverters. Facilities without access to the national grid relied on solar power systems or locally managed electric distributions or micro-hydro power systems. However, engineers evaluated that solar backup systems in only seven HFs were reliable. Most of selected HFs in Jajarkot installed solar panels. In Rautahat, only two HFs used solar power and all relied on the national grid lines.

2. WASH

Number of HF which had WASH facilities and practices by type



Five facilities in Jajarkot and nine in Rautahat had direct water supply to delivery rooms. In Jajarkot, nine HFs had water purification systems and six HFs conducted regular water quality test. In Rautahat, only one HFs in Rautahat used water purification systems. None of HF in Rautahat regularly checked water quality. When it comes to toilets, while all facilities in Rautahat had at least one functioning and hygienic toilets or commodes, only four in Jajarkot had them.

3. Waste management



Jajarkot

10 HFs

All Jajarkot HFs had **color-coded waste segregation bins in every room**, while none of Rautahat did

Rautahat

0 HFs



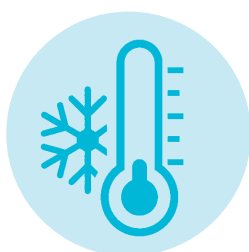
0 HFs

in both districts had **secured and closed pits** for collected wastes

While all selected facilities in Jajarkot performed waste segregation using color-coded dust bins in every room, those in Rautahat had available such bins in limited rooms. All facilities in both districts had open waste collection pits which were not secured against environmental hazards or had unauthorised accesses.

4. Optimal temperature management

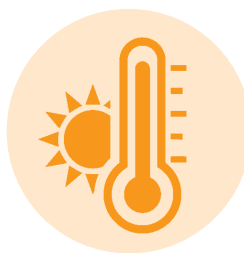
4.1. Availability of heater in facilities in Jajarkot



In Jajarkot, which suffers from cold waves during winter, only three BCs had heaters. However, two of them either lacked a sufficient number of heaters or had heaters that were not functioning. In addition, most HFs had poorly

constructed roofs, and water leakages from ceilings were observed in seven HFs. Such poor roofing makes it difficult to maintain optimal indoor temperatures.

4.2. Availability of AC and fans in facilities in Rautahat



In Rautahat, where extreme heat is common during summer, only one HF had an air conditioner (AC) in the delivery room and operation centre, while the others had only ceiling fans in delivery rooms. No wall-mounted fans were

observed any of the assessed HFs. Only five facilities had proper ventilation systems. The availability of ACs, fans, and ventilation systems directly impacts maternal and neonatal services during heatwaves.

5. Other physical features



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(6: Jajarkot; 4: Rautahat) had **disability-friendly entrances or ramps**



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had only one **fire extinguisher**.

6 Interview of health workers and community members in Jajarkot and Rautahat



“

There are always people nearby. Other patients waiting, relatives standing around. There is no separate room, no private space. Mothers wait in hot, crowded rooms, and sometimes they leave without receiving counselling.”

– A Female Community Health Volunteer (FCHV) in Rautahat



“



I noticed that the number of vectors, such as mosquitoes, as well as vector-borne diseases, has increased, even in my municipality, which traditionally has a cold climate. However, limited awareness and understanding of climate change and health linkages lead to the low prioritization on interventions related to climate adaptation.”

– A nursing staff in Jajarkot

“



I feel difficulty in explaining the concept of climate change and its impacts on health to our community members. I think we need training and practical tools to raise awareness on climate change and health.”

– A FCHV in Jajarkot

7 Conclusions

The assessment revealed that most of studied HFs did not meet the MSS. Similarly, there was a significant gap in relation to climate adaptation. Key gaps include newborn care, emergency preparedness, and climate adaptation. Many primary-level facilities lack essential functions such as emergency maternal and neonatal care, and contingency planning for climate-related emergencies. Governance mechanisms like HFOMCs are in place, but their integration with local disaster response systems remains weak. Overall, the assessment

showed that there is the urgency of targeted investments in workforce development, emergency readiness, and climate-adaptive infrastructure. From an engineering perspective, waste collection at closed, secured pits and optimal temperature management remain common areas for improvement. In Jajarkot, the health facilities studied had to rely on renewable energy due to a lack of access to the electricity grid. In Rautahat, the absence of backup power sources and limited access to safe water need to be addressed.

Key policy recommendations

1

Strengthen compliance with the MSS and EmONC signal functions to ensure the availability of essential and emergency cares.

4

Enhance local emergency preparedness and response through action plans, guidelines, cross-sector coordination, and climate-adaptive infrastructure.

2

Expand the availability of comprehensive SRHR, GBV, and mental health services as per the MSS.

5

Ensure essential furniture, equipment, amenities, and supplies are available to maintain services during crises.

3

Build the capacity of healthcare workers on SRHR, MNH, GBV, and climate–health linkages.

Scan here to read the project brief of “Improvement of Maternal and Child Health Care Services and Adaptive Capacity in Nepal”

