Dissertation Training

At

Bal Raksha Bharat (Save the Children), New Delhi

Examining Disaster Preparedness in Health Facilities of a Hill State in India (Himachal Pradesh)

Examining Disaster Preparedness in Health Facilities of a Hill State in India (Himachal Pradesh): A Comprehensive Cross-Sectional Analysis

By

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PG/22/077

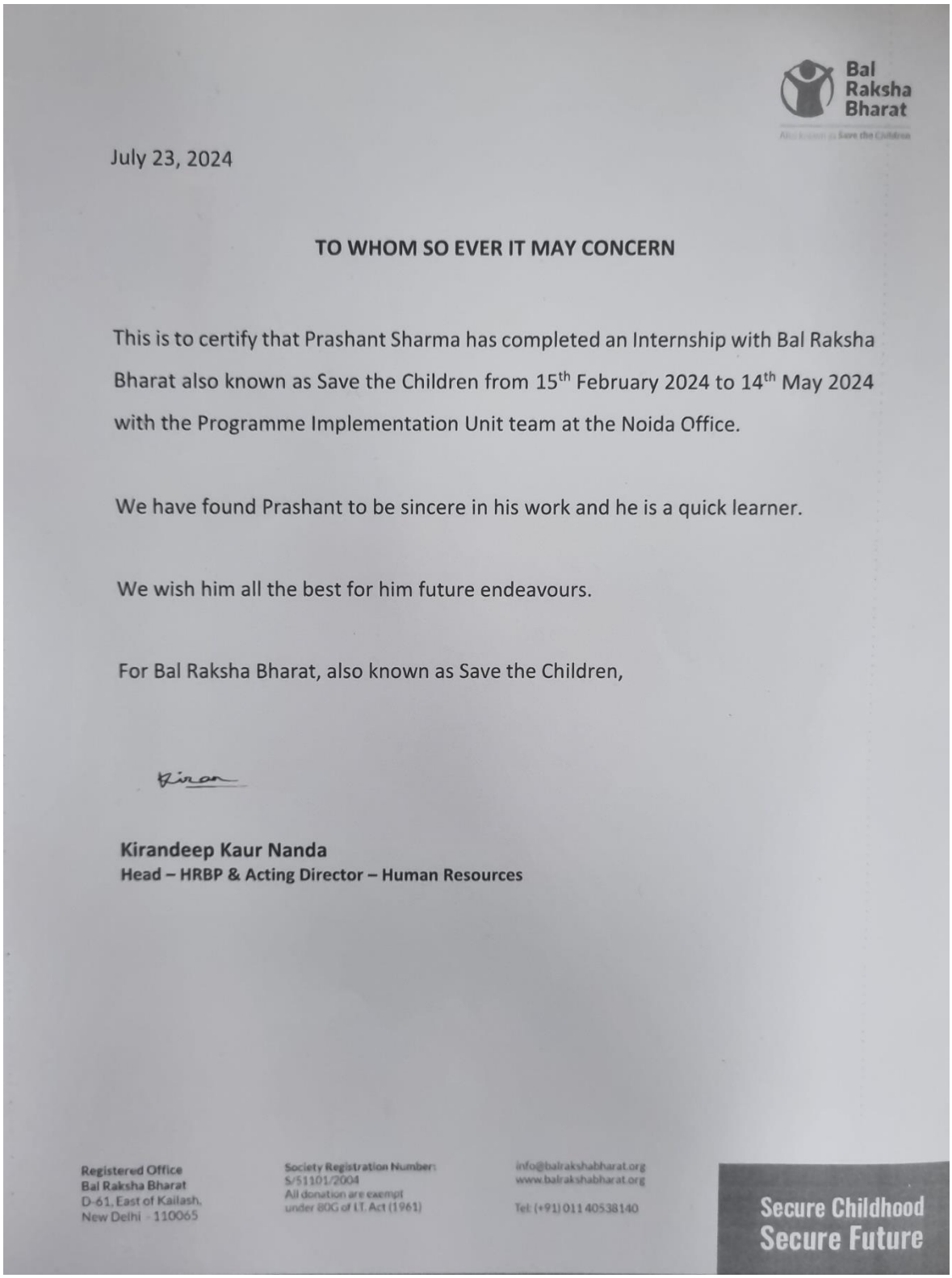
Under the Guidance of
Dr. Ratika Samtani

PGDM (Hospital & Health Management)
2022-24

International Institute of Health Management Research

New Delhi

DISSERTATION COMPLETION CERTIFICATE



Bal Raksha Bharat

July 23, 2024

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Prashant Sharma has completed an Internship with Bal Raksha Bharat also known as Save the Children from 15th February 2024 to 14th May 2024 with the Programme Implementation Unit team at the Noida Office.

We have found Prashant to be sincere in his work and he is a quick learner.

We wish him all the best for him future endeavours.

For Bal Raksha Bharat, also known as Save the Children,

Kirandeep Kaur Nanda
Head – HRBP & Acting Director – Human Resources

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Secure Childhood
Secure Future

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This is to certify that Prashant Sharma student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at Bal Raksha Bharat also known as (Save the Children), New Delhi from 15.02.2024 to 14.05.2024.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.

Dr. Sumesh Kumar

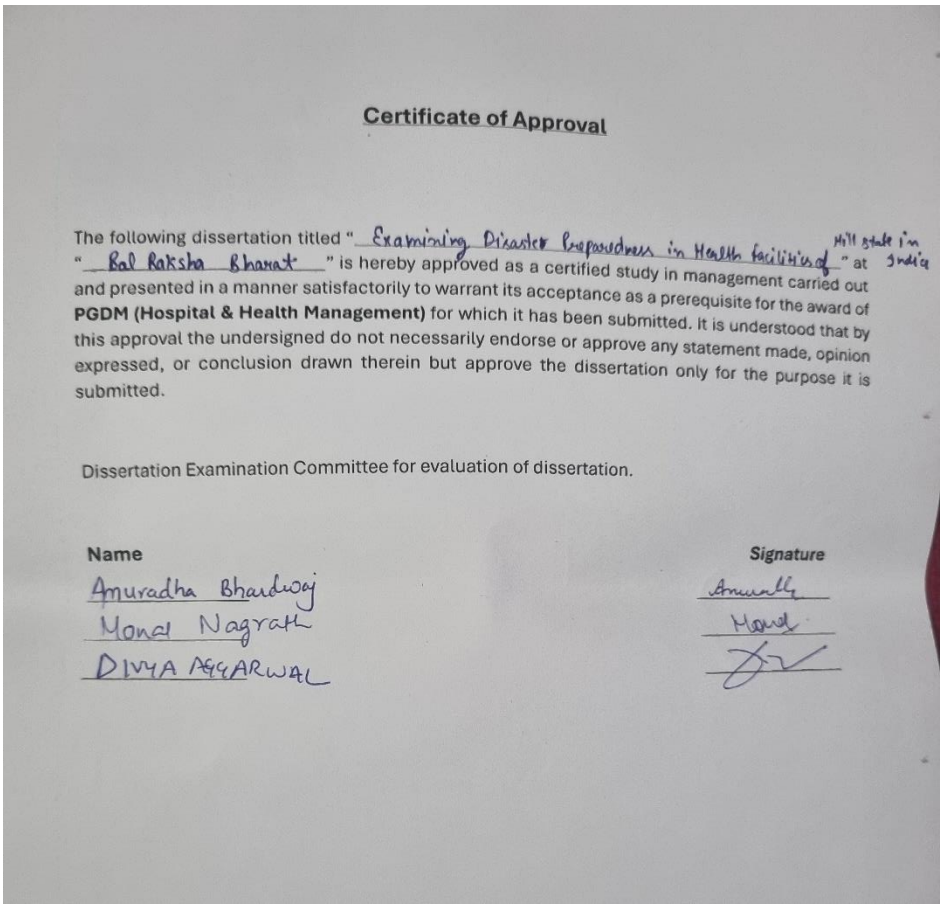
Associate Dean, Academic and Student Affairs

IIHMR, New Delhi

Mentor

IIHMR, New Delhi

CERTIFICATE OF APPROVAL



Certificate of Approval

The following dissertation titled "Examining Disaster Preparedness in Health facilities of Hill state in India" at "Bal Raksha Bharat" is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Anuradha Bhardwaj	Anuradha
Monal Nagrath	Monal
DIVYA AGGARWAL	

CERTIFICATE FROM DISSERTATION ADVISORY COMMITTEE

CERTIFICATE FROM DISSERTATION ADVISORY COMMITTEE

This is to certify that **Prashant Sharma,** a graduate student of the PGDM (Hospital & Health Management) has worked under our guidance and supervision. He is submitting this dissertation titled "**Examining Disaster Preparedness in Health Facilities of a Hill State in India (Himachal Pradesh): A Comprehensive Cross-Sectional Analysis**" at **"Bal Raksha Bharat also known as Save the Children"** New Delhi" in partial fulfillment of the requirements for the award of the PGDM (Hospital & Health Management).

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Institute Mentor Name: Dr. Ratika Samtani

Designation: Associate Professor

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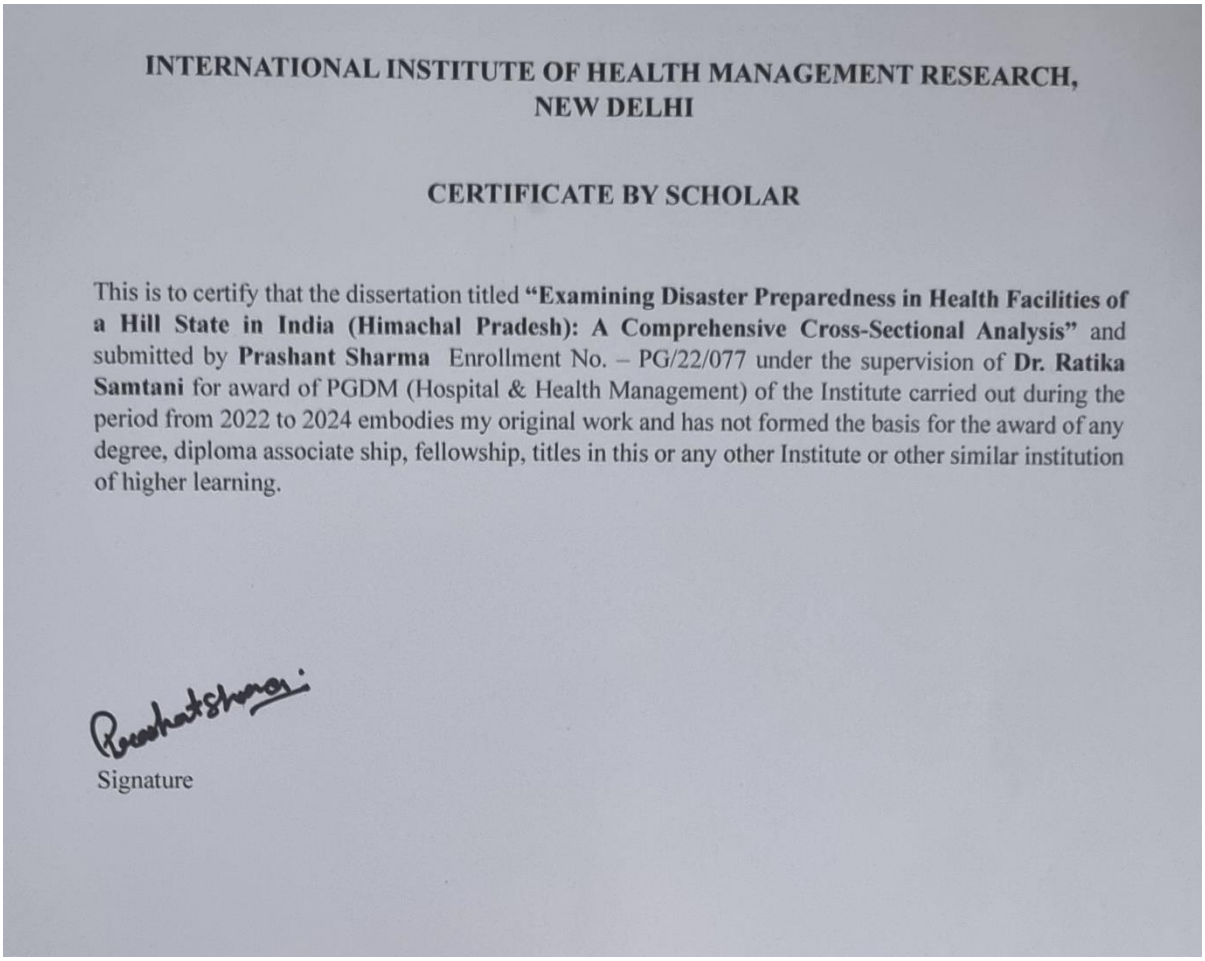
Designation: Manager

Organization: Bal Raksha Bharat

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR



INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,
NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **"Examining Disaster Preparedness in Health Facilities of a Hill State in India (Himachal Pradesh): A Comprehensive Cross-Sectional Analysis"** and submitted by **Prashant Sharma** Enrollment No. – PG/22/077 under the supervision of **Dr. Ratika Samtani** for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 2022 to 2024 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

FEEDBACK FORM

Name of the Student: Prashant Sharma

Name of the Organisation in Which Dissertation Has Been Completed: Bal Raksha Bharat (also known as Save the Children, India)

Area of Dissertation: Health in Emergencies with Disaster Preparedness

Attendance: 100%

Objectives achieved: He has completed all the given tasks

Deliverables: Made Disaster Management Plans, Evacuation Plans, Report writing, Data analysed, Project related work, made dissertation report.

Strengths: Good communication and technical skills, dedication towards work

Suggestions for Improvement: Keep up the good work and best of luck for other assignments.

Pradeep Kumar

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date:22/07/2024

Place: New Delhi

ABSTRACT

Examining Disaster Preparedness in Health Facilities of a Hill State in India

Background: In 2023, the Indian state of Himachal Pradesh, particularly the Solan and Mandi districts, experienced severe flash floods and cloudbursts, causing significant loss of life, property, and damage to critical health infrastructure. To address these challenges, Bal Raksha Bharat (BRB) launched the India Flood Response 2023 project to strengthen primary health facilities in the affected areas. The project focused on infrastructure improvements, enhancing preparedness, and delivering essential medical supplies, including using drones for hard-to-reach locations. BRB collaborated with district administrations, healthcare officials, and both national and international partners to meet immediate needs and build long-term resilience. Key activities included assessing needs, repairing facilities, planning for preparedness, conducting risk assessments, and implementing disaster management plans. The project aims to provide insights into the effects of disasters on health facilities in hilly regions and contribute to future strategies for disaster preparedness and response. This study examined 15 health facilities in Himachal Pradesh, with 10 in the Solan District and 5 in the Mandi District, demonstrating a proactive and collaborative effort to address both immediate and long-term healthcare challenges in disaster-prone areas.

Methods: Data collection will utilize BRB's project report as the main source for a descriptive analysis, detailing activities, outcomes, distribution, and impact assessments. The analysis will extract key data on health facility infrastructure, including physical condition, availability of consultation and exam rooms, private consultation areas, electricity, waste separation, gender-segregated toilets, water facilities, and washing stations, as well as preparedness measures, medical supply distribution, and impact assessments. Quantitative findings will be supplemented with qualitative insights from the report's narratives on project implementation, challenges, and stakeholder collaboration. These findings will then be compared with existing literature on disaster response and health facility management in hill regions to identify similarities, differences, and areas for improvement.

Results: The assessment of health facilities revealed varying conditions and resource availability. Facilities like HWC Khera, HWC Kotla, and HWC Dhang are in poor overall physical state, requiring urgent maintenance, while HWC Nandpur and HWC Matuli are relatively better. Most buildings are in average condition, with some rated poor, affecting patient perception and trust. HWC Dhang lacks sufficient consultation and exam rooms, leading to overcrowding, and both HWC Kotla and HWC Dhang lack private consultation areas, compromising patient confidentiality. Electricity is government-supplied across all facilities but varies in reliability, essential for uninterrupted medical services. HWC Kotla also lacks an on-site water supply, critical for sanitation and medical procedures. All facilities depend on tap water, emphasizing the need for quality assurance. Most lack gender-segregated toilets, except HWC Khera, affecting privacy and

cultural sensitivity. While waste management materials and protocols are present in all facilities, some lack hand washing stations and soap, vital for infection prevention. These findings underscore the need for targeted improvements in infrastructure and resource allocation to enhance healthcare service delivery.

Conclusion: In conclusion, the assessment of health facilities reveals significant disparities in physical condition, infrastructure, and essential utilities, highlighting an urgent need for targeted improvements. Prioritizing upgrades for facilities in poor condition, enhancing building maintenance, expanding consultation spaces, ensuring patient privacy, and improving the reliability of essential utilities such as electricity and water are critical steps towards providing equitable and effective healthcare services. Addressing these deficiencies will not only improve patient trust and comfort but also enhance the overall quality and accessibility of healthcare in the community.

Hill state health facilities lack infrastructure and preparedness, hindering disaster response. Analyzing current strategies, the study offers solutions to fortify healthcare and disaster management. Upgrades, reliable utilities, and better supply chains are key for resilience.

ACKNOWLEDGEMENT

To begin with, I would like to express my sincere and heartful gratitude to CEO Bal Raksha Bharat also known as Save the Children, New Delhi, Mr. Sudarshan, for giving me the opportunity to do this project at BRB Delhi.

I am extremely thankful to Mr. Pradeep Kumar (Manager-Program Implementation unit) for guiding me through each step of this project.

My deepest gratitude to my mentor, Dr. Ratika Samtani, for his valuable time, guidance and support throughout. Without his guidance and encouragement, it would not have been possible.

I would also like to acknowledge my gratitude to Mr. Saurav Aman (Assistant Program Manager), Mr. Naveen Shukla and the entire staff at the Bal Raksha Bharat office for their timely support and assistance.

I would like to extend my gratitude to my institute, IIHMR Delhi, and all the faculty members of IIHMR.

Prashant Sharma

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

CHC- Community Health Centre

PHC- Primary Health Centre

HSC- Health sub-center

HWC- Health Wellness Centre

MCI- Management of childhood illness

NCDs- Non-communicable diseases

IYCF- Infant and Young Child Feeding

ANM- Auxiliary Nurse Midwife

CHO- Community Health Officer

MPW- Multipurpose worker

ASHA- Accredited Social Health Activist

BRB- Bal Raksha Bharat

ORGANIZATION PROFILE

At Bal Raksha Bharat, nurturing children is nurturing the promise of India. Since 2004, we have been dedicated to transforming childhoods nationwide through compassion, care, and relentless efforts. Our mission is to build a secure childhood and thus a secure future for India's children.

Our holistic approach addresses numerous aspects of childhood: access to health and nutrition, quality education, protection from harm, psychosocial support, and overall development. By ensuring protection from exploitation and equal opportunities, we help children thrive as the nation's future architects.

Collaboration is key to our impact. We work with communities, government, on-ground workers, policymakers, and donors to create an ecosystem where children can flourish. In the past 15 years, we have reached over 1 crore children through our programs. From April 2022 to March 2023, we supported 13.8 lakh children across 15 states with essential resources and opportunities.

Our initiatives are deeply rooted in community needs, providing healthcare, education, and humanitarian aid. In 2022-23, we assisted over 3.3 lakh children with education, provided healthcare to 3.4 lakh children, and reached 6.2 lakh children with urgent aid and long-term rehabilitation in disaster-hit zones. Our COVID-19 response included relief for migrant workers and facilitating vaccination access.

We have built strong ties with communities, government bodies, donors, and supporters to create an enabling ecosystem for children. By listening to community needs, co-designing local initiatives, shaping national policy, and forging partnerships, we pursue holistic child development.

We pledge to reach more children in need and ensure no child is left behind. Join us in bridging the gap between the childhood some children endure and the one they deserve. Your contribution can empower children with education, health, safety, and opportunities. Together, let's shape India's tomorrow. Donate now to Save the Children India to create lasting change—child by child.

INTERNSHIP REPORT

Introduction: Internship after completion of the second year is an important part of our PGDHM program where we are required to understand, observe and learn the working of the organization. Being an intern at the Bal Raksha Bharat also known as Save the Children, New Delhi gave me the opportunity to get to understand and experience of administration and management roles at an organization.

Objectives of Internship

- To understand the working of the organization.
- To understand the departments (programs) of the organization.
- To understand the staffing of the organization.
- To understand the documentation procedures at the organization.
- To understand the mannerism of existing employees.
- To learn the culture of the organization.
- To the dissertation project with the organization.

TITLE: Examining Disaster Preparedness in Health Facilities of a Hill State in India (Himachal Pradesh): A Comprehensive Cross-Sectional Analysis

INTRODUCTION:

In 2023, Himachal Pradesh, India, encountered a formidable crisis triggered by flash floods and cloudbursts, significantly impacting the Solan and Mandi districts. These catastrophic events inflicted severe damage to lives, property, and crucial health infrastructure, underscoring the urgent need for enhanced disaster preparedness within the region's healthcare system. The study at hand delves into the disaster preparedness of health facilities in Himachal Pradesh, focusing on the aftermath of the 2023 floods and the subsequent response efforts. This examination is centered on the India Flood Response 2023 project spearheaded by Bal Raksha Bharat (BRB), an organization devoted to child welfare in India. The project not only aimed to address the immediate ramifications of the disaster but also sought to bolster the long-term resilience of primary health facilities, thereby highlighting a dual focus on immediate relief and sustainable preparedness.

A comprehensive cross-sectional analysis forms the backbone of this study, facilitating an evaluation of the current condition of primary health facilities in the affected districts. The analysis also assesses the intervention strategies deployed by BRB, identifying the strengths and weaknesses of these approaches in real-world scenarios. By scrutinizing BRB's efforts, the study reveals the myriad challenges faced in maintaining the functionality of health facilities during and after emergencies. The insights gained from this evaluation are indispensable for understanding how health facilities can better prepare for and respond to natural disasters, particularly in geographically vulnerable hill regions like Himachal Pradesh.

The findings of this study offer a valuable perspective on disaster preparedness and response strategies tailored to the unique needs of hill regions. They provide a roadmap for policymakers, NGOs, and healthcare practitioners aiming to fortify healthcare resilience against the backdrop of increasing natural disasters fueled by climate change. The research underscores the critical importance of integrating disaster preparedness into the healthcare infrastructure, ensuring that primary health facilities can withstand and swiftly recover from the impacts of such calamitous events. This proactive approach is vital not only for the immediate protection of public health but also for the sustained well-being of communities in disaster-prone areas.

As climate change continues to escalate the frequency and severity of natural disasters, the resilience of healthcare infrastructure in regions like Himachal Pradesh becomes ever more crucial. The recommendations derived from this study advocate for a multifaceted strategy that includes robust infrastructure planning, community engagement, and continuous training for healthcare professionals. By embracing these strategies, stakeholders can significantly enhance the capacity of primary health facilities to respond to emergencies, thereby safeguarding public health and ensuring a more resilient future for vulnerable populations.

Rationale:

The rising frequency and intensity of natural disasters in hill regions underscore the critical need for robust healthcare infrastructure. This study seeks to evaluate the current condition of primary health facilities after disasters, assess the effectiveness of disaster response strategies in restoring and upgrading these facilities, and identify challenges in maintaining healthcare services during and after emergencies. By adding to the knowledge base on disaster preparedness and response in difficult geographical contexts, this study aims to guide future policies and practices to strengthen healthcare resilience in vulnerable hill states.

Aim of the study:

This research aims to evaluate disaster preparedness in Himachal Pradesh's health facilities, specifically examining their condition after the 2023 floods, the success of BRB's restoration efforts, and the challenges in sustaining functionality during emergencies. The study will offer recommendations to improve healthcare resilience and disaster management in hill states.

Objectives/Key Research Questions

- The objective of the study is to comprehensively evaluate the disaster response and health facility management in the hill region. The study will utilize a multi-faceted methodology as follows.
    - What are the current conditions of primary health facilities concerning disaster preparedness in hill states following natural disasters?
    - How effective were the strategies implemented by BRB in restoring and upgrading health facilities post-disaster?
    - What are the challenges faced by health facilities in hill regions in maintaining functionality during and after emergencies?

The objectives and key research questions outlined in the proposed study aim to provide a comprehensive understanding of the status of health facilities in Himachal Pradesh post-disaster, assess the effectiveness of intervention strategies, and identify challenges and opportunities for improving healthcare resilience in hill regions facing similar vulnerabilities.

REVIEW OF LITERATURE

Himachal Pradesh, a picturesque hill state in India, is highly susceptible to natural disasters. Flash floods, cloudbursts, earthquakes, and landslides pose a significant threat to life and property. This section reviews existing literature on the frequency and impact of natural disasters in hill states, focusing on Himachal Pradesh, to understand the specific challenges faced by healthcare facilities in the region.

Frequency and Impact of Natural Disasters in Hill States

- **Flash Floods and Cloudbursts:** These events are particularly common in the Himalayas, including Himachal Pradesh. Studies by [Singh & Jain, 2014] and [Henryon et al., 2013] highlight the increasing frequency and intensity of these events due to climate change. The sudden nature of flash floods and cloudbursts leaves little time for preparation, leading to devastating consequences.
- **Earthquakes:** Himachal Pradesh falls in seismic zones III to V, indicating moderate to very high earthquake risk [National Disaster Management Authority, 2020]. The 1905 Kangra earthquake serves as a stark reminder of the vulnerability of the region [Rastogi, 2001].
- **Landslides:** Steep slopes and heavy rainfall make Himachal Pradesh prone to landslides. [Bahuguna et al., 2012] identified several factors contributing to landslides, including deforestation and improper construction practices. Landslides can disrupt essential services like transportation and communication, further hindering disaster response.

Challenges for Health Facilities

The unique geographical features of Himachal Pradesh present specific challenges for disaster preparedness in health facilities:

- **Accessibility:** Many health facilities are located in remote areas, making them difficult to access during disasters when roads and bridges are damaged.
- **Infrastructure:** The mountainous terrain poses challenges to constructing earthquake-resistant infrastructure. Furthermore, existing healthcare facilities might not be adequately equipped to withstand extreme weather events.
- **Resource Constraints:** Rural health facilities in Himachal Pradesh often face shortages of staff, equipment, and essential supplies. These limitations are further exacerbated during disasters.

Role of the Literature (ROL)

Understanding the specific types and frequency of natural disasters in Himachal Pradesh, along with the unique challenges faced by healthcare facilities in the region, is crucial for this dissertation. This review provides the necessary context to:

- Design a research methodology that addresses the specific needs of Himachal Pradesh.

- Interpret the findings of the research within the broader context of disaster preparedness in hill states.
- Develop recommendations tailored to improve disaster preparedness in healthcare facilities of Himachal Pradesh.

METHODOLOGY

Study Design:

This research utilizes a cross-sectional survey design, which involves collecting data at a single point in time to examine the current status of disaster preparedness and healthcare infrastructure in selected health facilities.

Study Period:

The study was conducted over a four-month period from March to June 2024. This timeframe was selected to allow for comprehensive data collection and analysis, ensuring that the findings are up-to-date and relevant.

Study Area and Population:

The focus of this study is on the hill regions of Himachal Pradesh, specifically targeting areas affected by the 2023 floods. The districts of Solan and Mandi were chosen due to their significant impact during the floods, providing a critical context for assessing the preparedness and resilience of health facilities in disaster-prone areas.

Fig. 1

Study Areas:

- **Solan District:** Ten health facilities –
  - HWC Khera (Solan)
  - HWC Nandpur (Solan)
  - HWC Kotla (Solan)
  - HWC Dhang (Solan)
  - HWC Matuli (Solan)
  - HWC Gadon (Solan)
  - HWC Jaman Da Dora (Solan)
  - HWC Baglehar (Solan)
  - HWC Rampur (Solan)
  - HWC Nahar Singh (Solan),

were selected from this district. Solan, being one of the prominent districts in Himachal Pradesh, provides a diverse representation of healthcare challenges in hilly and flood-affected regions.

Fig. 2

Mandi District: Five health facilities were chosen from this district. Mandi's inclusion ensures a broader understanding of the healthcare infrastructure across different geographic and socio-economic contexts within Himachal Pradesh.

Target Population:

The target population for this study includes the selected health facilities and the residents who depend on these primary health services. The facilities include a mix of primary health centers, community health centers, and Health and Wellness Centres (HWCs), ensuring a comprehensive overview of various levels of healthcare provision. The residents in these disaster-affected areas form a crucial part of the study as their experiences and reliance on these facilities provide essential insights into the effectiveness and gaps in the healthcare system.

Fig. 3

Data Collection Methods:

Given the cross-sectional nature of the study, data was collected through various methods to ensure a thorough and multifaceted analysis:

Facility Assessments: Physical inspections and assessments of the infrastructure and resources available at each health facility.

Secondary Data Review: Examination of existing records and reports related to healthcare delivery and disaster impact in the selected districts. This included reviewing health facility performance reports, inventory logs, and training records.

Data Analysis:

The collected data was systematically analyzed to identify patterns, gaps, and areas for improvement. Quantitative data from surveys and facility assessments were statistically analyzed, providing measurable insights into the status of healthcare facilities. Data from interviews offered contextual insights, enriching the understanding of operational challenges and strengths within the health facilities. This combination of data sources ensured a comprehensive analysis, highlighting critical areas needing attention and facilitating informed decision-making for future interventions.

Ethical Considerations:

This study adhered to ethical guidelines for research, ensuring confidentiality and informed consent from all participants. Approval was obtained from relevant local health authorities to conduct assessments and surveys in the selected health facilities.

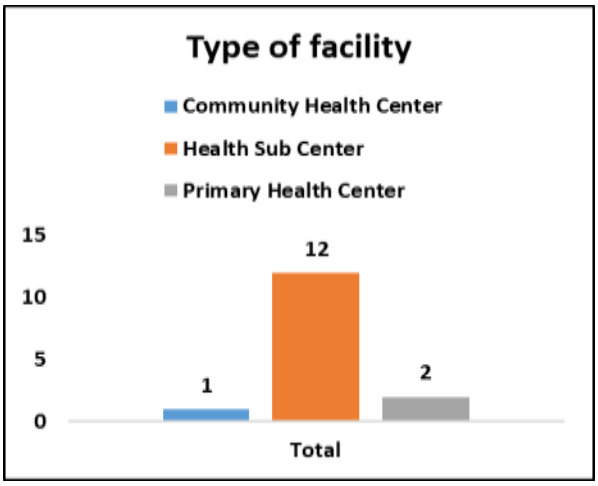
RESULT

Section-01: Health Facility Basic Information

Health Facility Distribution:

In Solan District, a total of 10 health facilities were identified, while in Mandi District, 5 health facilities. Among these, there is 1 Community Health Centre (CHC) and 2 Primary Health Centres (PHCs) in Mandi District, and the remaining are Health and Wellness Centres.

All health facility name with district given below.



Name of the Health Facility

HWC Khera (Solan)	HWC Nandpur (Solan)	HWC Kotla (Solan)	HWC Dhang (Solan)	HWC Matuli (Solan)
HWC Gadon (Solan)	HWC Jaman Da Dora (Solan)	HWC Baglehar (Solan)	HWC Rampur (Solan)	HWC Nahar Singh (Solan)
PHC Dhalwan (Mandi)	PHC Gopalpur (Mandi)	CHC Baldawara (Mandi)	HWC Kalthar (Mandi)	HWC Bhambla (Mandi)

Management of this Facility

All the 15 health facilities are managed by the public/government sector.

This analysis highlights the government's emphasis on establishing a network of public health facilities at various levels to cater to the healthcare needs of the local population. The predominance of HWCs suggests a focus on preventive and primary care, while the inclusion of PHCs and a CHC ensures access to secondary and tertiary care services in the region.

S.no.	Health Facility Name	Management of this facility
1	HWC Khera	Public/ Government
2	HWC Nandpur	Public/ Government
3	HWC Kotla	Public/ Government
4	HWC Dhang	Public/ Government
5	HWC Matuli	Public/ Government
6	HWC Gadon	Public/ Government
7	HWC Jaman Da Dora	Public/ Government
8	HWC Baglehar	Public/ Government
9	HWC Kalthar	Public/ Government
10	HWC Bhambla	Public/ Government
11	PHC Dhalwan	Public/ Government
12	PHC Gopalpur	Public/ Government
13	CHC Baldawara	Public/ Government
14	HWC Rampur	Public/ Government
15	HWC Nahar Singh	Public/ Government

Section-02: Health Service Availability

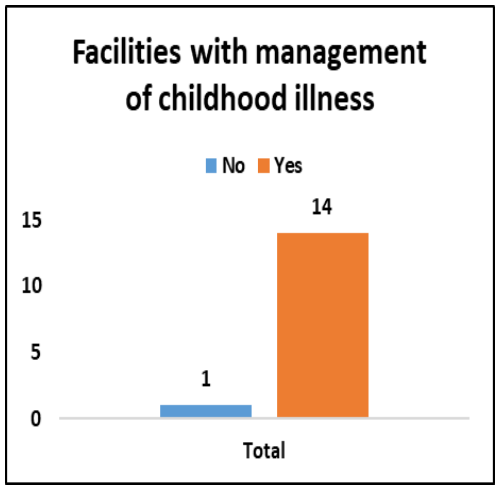
Outpatient Services

In general, an outpatient service is any medical care given to patients outside of a hospital. However, certain services performed within hospitals are still classified as outpatient. These include outpatient surgical centers, imaging services, and observation status within a hospital. Here are some health facilities that have been assessed and screened by the project team workers.

This data suggests that the majority of the facilities in the given context are equipped to handle and provide care for childhood illnesses. Having a significant number of facilities with this capability can potentially improve access to healthcare services for children in the region, ensuring timely diagnosis, treatment, and management of various childhood ailments.

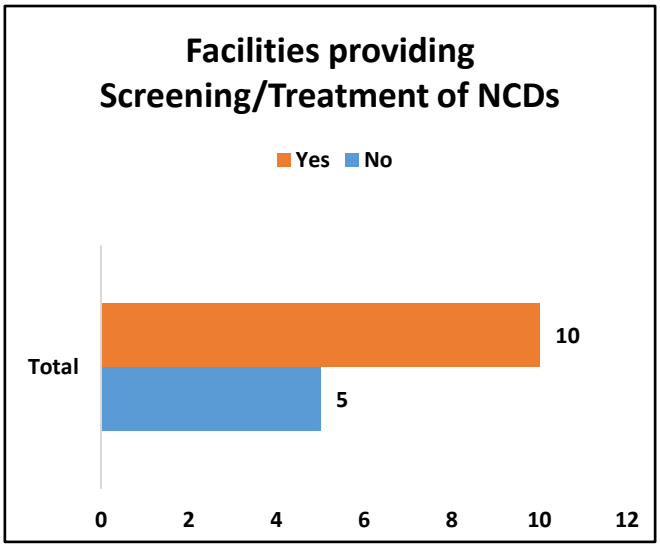
Management of childhood illness (IMCI)
Vaccination
Treatment for non-communicable diseases (NCDs)
Treatment for TB
Treatment for HIV
Treatment for Mental Health
Institutional Delivery
Emergency Obstetric Care (BEmONC or CEmONC)
Safe abortion care
Family planning
Treatment for STIs
Infant and Young Child Feeding (IYCF)
In-patient management of acute malnutrition with medical complications

However, the presence of one facility (HWC Kotla) lacking the ability to manage childhood illnesses may indicate a gap in healthcare coverage, potentially leaving a specific population or area underserved in terms of pediatric care. Addressing this gap by enhancing the capabilities of the remaining facility or establishing additional resources could be a priority to ensure comprehensive healthcare services for children in the region.



The gap in pediatric care at HWC Kotla may stem from an uneven distribution of resources and trained personnel, logistical and budgetary constraints, and insufficient prioritization in healthcare planning. Additionally, low local demand for pediatric services, difficulties in recruiting specialized healthcare workers, and broader systemic issues like inefficient management and insufficient funding contribute to this gap. Addressing these factors through targeted investments and improved resource allocation is essential for ensuring comprehensive healthcare coverage for children in the region.

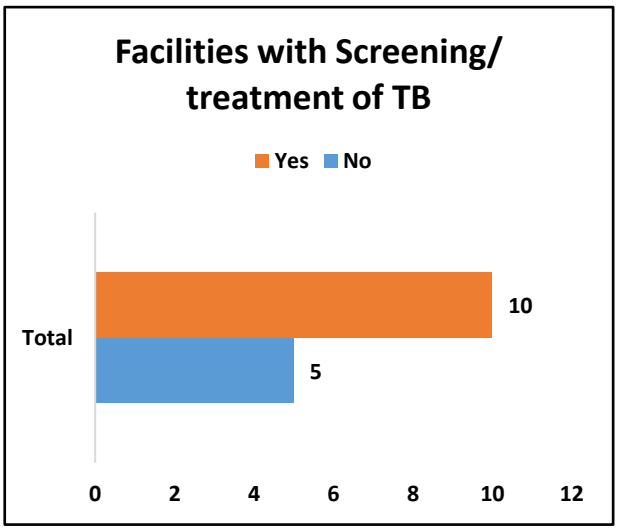
Screening of Non-Communicable Disease



Non-communicable diseases disproportionately affect people in low- and middle-income countries. The Leading Cause of Death. Non-communicable diseases (NCDs), such as heart disease, cancer, chronic respiratory disease, and diabetes, are the leading cause of death worldwide and represent an emerging global health threat.

This data suggests that the majority of the facilities in the given context are equipped to handle and provide the screening and handle the non-communicable disease. Having a significant number of facilities with this capability can potentially improve access to healthcare services. After screening conducted by our project team, it was found that 10 out of the 15 health facilities provide treatment for Non-Communicable Diseases (NCDs).

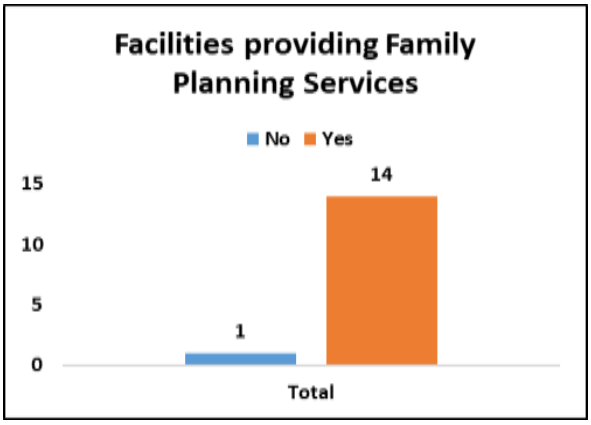
Screening of TB



Tuberculosis (TB) is a serious illness that mainly affects the lungs. Tuberculosis can spread when a person with the illness coughs, sneezes or sings. This can put tiny droplets with the germs into the air. Another person can then breathe in the droplets, and the germs enter the lungs.

The data shows that most surveyed facilities (10 out of 15) provide tuberculosis (TB) treatment, while 5 facilities do not. This highlights a gap in TB treatment availability. Expanding services or establishing referral mechanisms could ensure comprehensive TB management. Raising awareness and providing training on TB diagnosis and treatment within these facilities could enhance their capacity and contribute to TB control in the community.

Family Planning Services



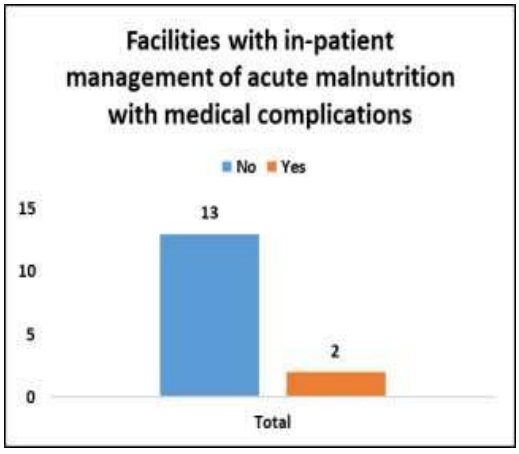
Family planning services provide guidance on reproductive health and contraception, supporting informed choices for individuals and couples. Crucial for maternal and child health, they prevent unintended pregnancies and STIs while empowering reproductive decision-making. Available in healthcare facilities, community programs, and clinics, ensuring comprehensive and confidential care. The provided data presents a snapshot of family planning services across 15 health facilities. Among these facilities, 11 offer family planning services, while 4 do not. This indicates that the majority of the facilities surveyed provide family planning services, suggesting a relatively comprehensive coverage in the region. However, the absence of these services in four facilities underscores potential gaps in access to family planning resources for residents in those areas. Addressing this discrepancy through targeted interventions or resource allocation could enhance the overall accessibility and inclusivity of family planning services in the region.

Management of Acute Malnutrition with Medical Complications

Children who are <-3SD weight-for-age may be stunted (short stature) but not severely wasted. Stunted children who are not severely wasted do not require hospital admission unless they have a serious illness.

The main diagnostic features are:

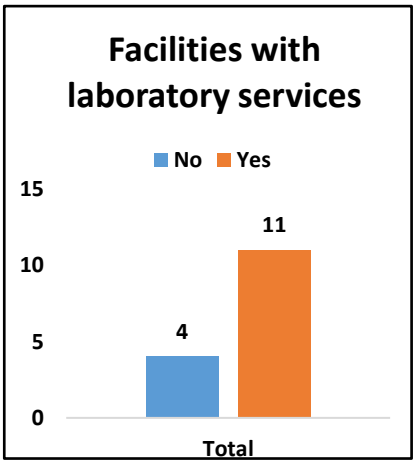
- weight-for-length/height < -3SD (wasted) or
- mid-upper arm circumference < 115 mm or
- oedema of both feet (kwashiorkor with or without severe wasting).



Out of 15 surveyed health facilities, only HWC Khera and PHC Gopalpur provide in-patient management for acute malnutrition with medical complications. This highlights a significant gap in specialized care across the surveyed facilities. Enhancing existing facilities or establishing specialized centers could improve access to critical care. Additionally, training healthcare staff in identifying and managing acute malnutrition could enhance overall capacity to provide comprehensive care for this vulnerable population.

Diagnostic Services

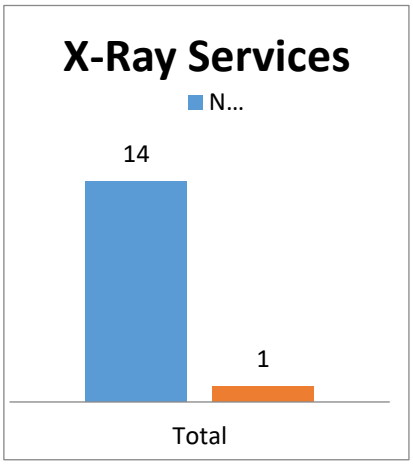
Diagnostic Services facilitates the provision of timely, cost-effective, and high quality diagnostic care in safe and secure environments. It includes the clinical services of Pathology and Laboratory Medicine, Radiology, and Nuclear Medicine.



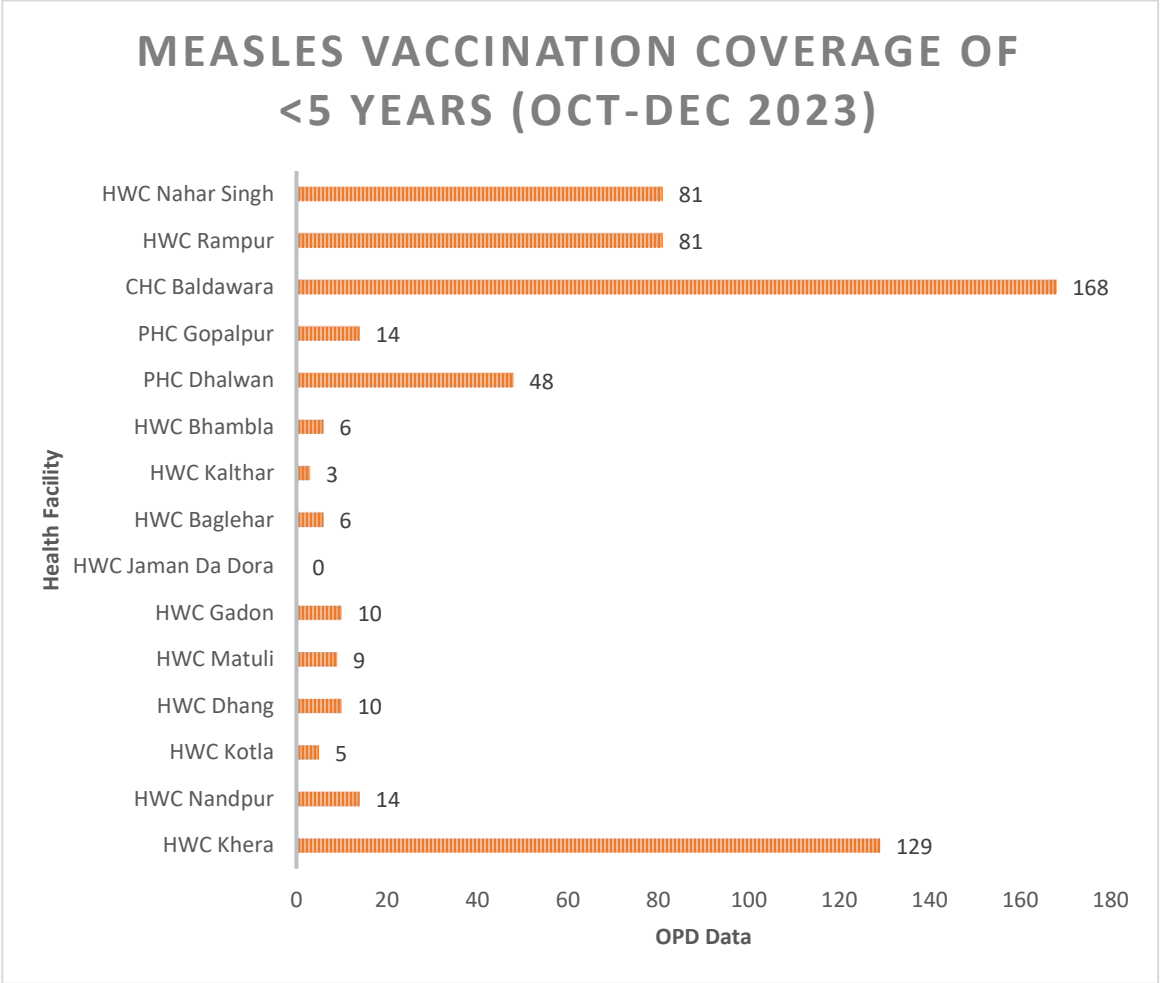
The data indicates that out of the 15 surveyed health facilities, 11 facilities provide laboratory services while 4 facilities do not. Conversely, HWC Nandpur, PHC Gopalpur, HWC Rampur, and HWC Nahar Singh do not offer laboratory services. This variation in the availability of laboratory services across the surveyed facilities indicates a potential gap in diagnostic capabilities in certain areas. Ensuring access to laboratory services in all health facilities, either by equipping existing facilities with laboratory infrastructure or establishing referral mechanisms to nearby facilities with such services, is crucial for comprehensive healthcare delivery.

X-ray Services

The data shows that only CHC Baldwara out of the 15 surveyed health facilities provides X-ray services, indicating a significant gap in availability. Access to X-ray services is crucial for diagnosing various medical conditions like fractures and pulmonary diseases. This highlights a limitation in diagnostic capabilities in the region. Addressing this gap by equipping existing facilities with X-ray infrastructure or establishing referral mechanisms to nearby facilities offering X-ray services is essential for comprehensive healthcare delivery and improved diagnostic capacities. Additionally, investing in training for X-ray technicians and ensuring the availability of necessary equipment and supplies are vital steps toward enhancing healthcare outcomes for the local population.

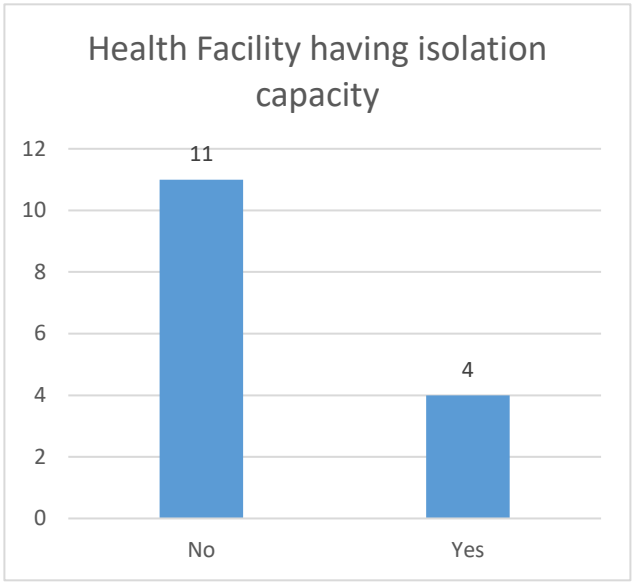


Outbreak Prevention & Control



The data provided indicates the measles vaccination coverage for children under 5 years of age (Oct-Dec 2023) across 15 surveyed health facilities. The coverage ranges from 0 to 168, with varying levels of vaccination reported. Notably, CHC Baldwara has the highest coverage with 168 vaccinations, followed by HWC Khera with 129 vaccinations, and HWC Rampur and HWC Nahar Singh with 81 vaccinations each. On the other hand, some facilities, such as HWC Jaman da Dora, HWC Kotla, HWC Matuli, HWC Gadon, HWC Kalthar, and HWC Bhambla, reported lower vaccination numbers ranging from 0 to 10. This discrepancy in vaccination coverage highlights potential gaps in immunization efforts across different health facilities. Addressing these gaps by strengthening vaccination campaigns, increasing community outreach efforts, and ensuring adequate vaccine supply and accessibility can help improve measles vaccination coverage and contribute to overall public health outcomes in the region. Additionally, monitoring and evaluating vaccination programs regularly are crucial for identifying areas for improvement and ensuring effective vaccine delivery to all eligible children.

Facility have Isolation Capacity



The data reveals that only four health facilities, located in Mandi district (HWC Bhambla, PHC Dhalwan, PHC Gopalpur, and CHC Baldwara), have isolation capacity. Conversely, the remaining 11 facilities in both Solan and Mandi districts lack this capability. This disparity highlights potential challenges in managing contagious diseases and isolating patients with infectious illnesses, particularly in Solan district where no facilities possess isolation capacity. Addressing this gap is crucial for effective response and containment during health emergencies. Strengthening isolation facilities, providing necessary resources, and conducting training for healthcare personnel on infection control are essential steps to improve public health preparedness. Additionally, establishing coordination mechanisms between facilities with and without isolation capacity can facilitate timely patient management during health crises.

Section-03: Human Resources

S.no.	Health Facility Name	Medical Doctor	Nurse	ANMs	Medical Assistant	Lab Technician	Other(Specify)
1	HWC Khera	0	0	0	0	0	1 CHO
2	HWC Nandpur	0	0	0	0	0	2(MPW,CHO)
3	HWC Kotla	0	0	0	0	0	1 (MPW)
4	HWC Dhang	0	0	0	0	0	2 (MPW,CHO)
5	HWC Matuli	0	0	1	0	0	0
6	HWC Gadon	0	0	1	0	0	0
7	HWC Jaman Da Dora	0	0	1	0	0	0
8	HWC Baglehar	0	0	1	0	0	2(MPW,CHO)
9	HWC Kalthar	0	0	1	0	0	2(MPW,CHO)
10	HWC Bhambla	0	0	1	0	0	1CHO
11	PHC Dhalwan	1	0	1	1 Pharmacist	0	0
12	PHC Gopalpur	1	0	0	0	0	0
13	CHC Baldwara	5	10	2	1	0	0
14	HWC Rampur	0	0	1	0	0	0
15	HWC Nahar Singh	0	0	1	0	0	0

The provided data outlines the staffing structure of various health facilities, detailing the number of medical doctors, nurses, ANMs (Auxiliary Nurse Midwives), medical assistants, lab technicians, and other staff members. Across the surveyed facilities, there is notable variability in staffing composition. CHC Baldwara emerges as the most staffed facility, with a significant number of medical doctors, nurses, ANMs, and other staff members. Other facilities, such as PHC Dhalwan and HWC Bhambla, have a medical doctor on staff, while most facilities primarily employ ANMs and multipurpose workers (MPWs) or CHOs (Community Health Officers). This diversity in staffing reflects different approaches to healthcare delivery and resource allocation across the surveyed facilities. Further analysis could delve into the impact of staffing composition on service provision, patient outcomes, and overall healthcare delivery effectiveness within these health facilities. Understanding these staffing dynamics is essential for optimizing workforce planning, ensuring adequate staffing levels, and enhancing the quality of healthcare services provided to the community.

Staff received training within the last 6 months

The data reveals that 12 out of 15 surveyed health facilities conducted staff training within the last 6 months. Facilities like, HWC Kalthar, HWC Rampur, and HWC Nahar Singh did not conduct any staff training in the specified timeframe. Regular training is crucial for maintaining high-quality healthcare services and keeping professionals updated on best practices. Further analysis could focus on identifying specific training needs and evaluating training program effectiveness to address any gaps in staff training across these facilities.

S.no.	Health Facility Name	Staff received training within the last 6 months.
1	HWC Khera	Yes
2	HWC Nandpur	Yes
3	HWC Kotla	Yes
4	HWC Dhang	Yes
5	HWC Matuli	Yes
6	HWC Gadon	Yes
7	HWC Jaman Da Dora	Yes
8	HWC Baglehar	Yes
9	HWC Kalthar	No
10	HWC Bhambla	Yes
11	PHC Dhalwan	Yes
12	PHC Gopalpur	Yes
13	CHC Baldwara	Yes
14	HWC Rampur	No
15	HWC Nahar Singh	No

Section-05: Infrastructure

S.no.	Health Facility Name	Good condition (new facility or facility that has been rehabilitated /undergoing rehabilitation. (No damage)	Relatively good condition (needs small repairs/light rehabilitation, or has some wear and tear visible that doesn't significantly affect overall quality of care)	Functional (light damage/facility not well-maintained, needs more significant rehabilitation support for things such as flooring, doors, windows, etc.)	Partial destruction/damaged (lack of/unusable/partially damaged doors, windows, flooring, ceiling/roof)	Significant destruction (no roof but walls still intact, physical structure could be used with significant rehabilitation)
1	HWC Khera	No	No	Yes	No	No
2	HWC Nandpur	No	Yes	No	No	No
3	HWC Kotla	No	No	No	Yes	No
4	HWC Dhang	No	No	Yes	No	No
5	HWC Matuli	No	Yes	No	No	No
6	HWC Gadon	No	Yes	No	No	No
7	HWC Jaman Da Dora	No	Yes	No	No	No
8	HWC Baglehar	No	Yes	No	No	No
9	HWC Kalthar	Yes	No	No	No	No
10	HWC Bhambla	No	No	Yes	No	No
11	PHC Dhalwan	Yes	No	No	No	No
12	PHC Gopalpur	Yes	No	No	No	No
13	CHC Baldwara	Yes	No	No	No	No
14	HWC Rampur	No	No	No	Yes	No
15	HWC Nahar Singh	No	No	No	Yes	No

Physical Infrastructure- Overall Physical State of Health Facility Structure

The data provided offers an assessment of the condition of various health facilities, categorizing them based on their physical state and need for rehabilitation. Among the 15 surveyed health facilities, HWC Kalthar, PHC Dhalwan, PHC Gopalpur, and CHC Baldwara are identified as being in good condition, either as new facilities or having undergone recent rehabilitation with no visible damage. Conversely, HWC Kotla, HWC Dhang, HWC Bhambla, HWC Rampur, and HWC Nahar Singh show signs of partial destruction or damage, particularly in doors, windows, flooring, and ceiling/roof. The majority of the facilities, including HWC Nandpur, HWC Matuli, HWC Gadon, HWC Jaman da Dora, HWC Baglehar, and others, are in relatively good condition but may require small repairs or light rehabilitation to address wear and tear. Understanding the condition of these health facilities is crucial for prioritizing resource allocation and planning rehabilitation efforts to ensure that they meet the standards necessary to provide quality healthcare services to the community. Further analysis could focus on identifying specific rehabilitation needs and developing strategies for addressing them effectively across the surveyed health facilities.

Present Condition of the Building

S.no.	Health Facility Name	Apparent quality of construction	Apparent condition of the building	Maintenance	Presence of water seepage	Does the building possess seismic retrofitting strengthening in past	Presence of concrete spalling	Building has visible significant structural damage
1	HWC Khera	Average	Average	Average	Yes	Yes	Yes	No
2	HWC Nandpur	Average	Average	Poor	Yes	No	Yes	Yes
3	HWC Kotla	Poor	Poor	Poor	Yes	No	Yes	Yes
4	HWC Dhang	Poor	Poor	Good	Yes	No	No	Yes
5	HWC Matuli	Average	Average	Poor	Yes	No	Yes	No
6	HWC Gadon	Average	Average	Poor	Yes	No	Yes	No
7	HWC Jaman Da Dora	Average	Average	Poor	Yes	No	Yes	No
8	HWC Baglehar	Average	Average	Average	Yes	No	Yes	Yes
9	HWC Kalthar	Good	Good	Average	No	No	No	No
10	HWC Bhambla	Poor	Poor	Poor	Yes	No	Yes	Yes
11	PHC Dhalwan	Good	Good	Good	No	No	No	No
12	PHC Gopalpur	Good	Good	Good	No	No	No	No
13	CHC Baldawara	Good	Good	Good				
14	HWC Rampur	Average	Average	Average	No	No	No	Yes
15	HWC Nahar Singh	Average	Average	Average	No	No	No	Yes

The provided data offers an assessment of the apparent quality of construction, condition of the building, maintenance status, and structural integrity of various health facilities. Facilities like HWC Kalthar, PHC Dhalwan, PHC Gopalpur, and CHC Baldwara exhibit good apparent quality of construction and building condition, with satisfactory maintenance and no visible significant structural damage. Conversely, HWC Kotla, HWC Dhang, HWC Matuli, HWC Gadon, HWC Jaman Da Dora, HWC Bhambla, and HWC Nahar Singh display poor to average quality of construction and building condition, along with maintenance issues and visible structural damage. Additionally, HWC Nandpur, HWC Baglehar, and HWC Rampur show a mix of average to poor quality construction and condition, with varying levels of maintenance and structural concerns. Notably, seismic retrofitting strengthening is observed in several buildings, particularly those experiencing water seepage and concrete spalling, indicating efforts to enhance structural resilience. Understanding these aspects of health facility infrastructure is crucial for prioritizing maintenance efforts, implementing necessary repairs, and ensuring the safety and functionality of these facilities for delivering quality healthcare services to the community. Further analysis could focus on identifying specific areas requiring attention and developing strategies for improving the overall structural integrity and maintenance of these health facilities.

Exposure to Hazard

S.no.	Health Facility Name	Landslide	Rockfall	Flash Flood	Cloud Burst	Wind Storm	Avalanche	Forest Fire	Lightening	Others	NA
1	HWC Khera	No	No	No	No	No	No	No	No	No	Yes
2	HWC Nandpur	No	No	No	No	No	No	No	No	No	Yes
3	HWC Kotla	No	No	No	No	No	No	No	No	No	Yes
4	HWC Dhang	No	No	No	No	No	No	No	No	No	No
5	HWC Matuli	Yes	Yes	No	No	No	No	No	No	No	No
6	HWC Gadon	Yes	Yes	No	Yes	No	No	No	No	No	No
7	HWC Jaman Da Dora	Yes	Yes	No	Yes	No	No	No	No	No	No
8	HWC Baglehar	Yes	No	No	No	No	No	No	No	No	Yes
9	HWC Kalthar	Yes	No	No	Yes	No	No	No	No	No	Yes
10	HWC Bhambla	Yes	No	No	Yes	No	Yes	No	No	No	No
11	PHC Dhalwan	No	No	No	No	No	No	No	No	No	Yes
12	PHC Gopalpur	No	No	No	No	No	No	No	No	No	Yes
13	CHC Baldawara	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No

14	HWC Rampur	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No
15	HWC Nahar Singh	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No

The provided data outlines the vulnerability of various health facilities to different natural disasters, including landslides, rock falls, flash floods, cloud bursts, wind storms, avalanches, forest fires, lightning, and other events. Among the surveyed health facilities, HWC Matuli, HWC Gadon, HWC Jaman da Dora, HWC Baglehar, HWC Kalthar, HWC Bhambla, CHC Baldwara, HWC Rampur, and HWC Nahar Singh are identified as prone to multiple types of natural disasters, including landslides, rock falls, flash floods, cloud bursts, and wind storms. Conversely, some facilities such as HWC Dhang, PHC Dhalwan, and PHC Gopalpur appear to be less susceptible to these events. Notably, HWC Rampur stands out as being exposed to the widest range of natural disasters, including rock falls, flash floods, cloud bursts, wind storms, and forest fires. Understanding the vulnerability of these health facilities to natural disasters is crucial for disaster preparedness and response planning. Further analysis could focus on identifying mitigation measures and strengthening infrastructure to enhance resilience and ensure the continuity of healthcare services during such events.

Overall Physical State of Health Facility

S.no.	Health Facility Name	Good Condition(Overall,equipment is fully functional and or new)	Partial damage/ Light disrepair	Full damage/Complete disrepair	Looted/Stolen/Missing
1	HWC Khera	Yes	No	No	No
2	HWC Nandpur	No	No	No	No
3	HWC Kotla	No	Yes	No	No
4	HWC Dhang	Yes	No	No	No
5	HWC Matuli	Yes	No	No	No
6	HWC Gadon	Yes	No	No	No
7	HWC Jaman Da Dora	Yes	No	No	No
8	HWC Baglehar	No	Yes	No	No
9	HWC Kalthar	Yes	No	No	No
10	HWC Bhambla	Yes	No	No	No
11	PHC Dhalwan	Yes	No	No	No
12	PHC Gopalpur	Yes	No	No	No
13	CHC Baldawara	Yes	No	No	No
14	HWC Rampur	Yes	No	No	No
15	HWC Nahar Singh	Yes	No	No	No

The data indicates the condition of various health facilities across the surveyed areas. Most of the facilities, including HWC Khera, HWC Dhang, HWC Matuli, HWC Gadon, HWC Jaman Da Dora, HWC Kalthar, HWC Bhambla, PHC Dhalwan, PHC Gopalpur, CHC Baldawara, HWC Rampur, and HWC Nahar Singh, are reported to be in good condition, with all equipment fully functional or new. However, some facilities like HWC Nandpur, HWC Kotla, and HWC Baglehar show signs of partial damage or light disrepair. Notably, there are no facilities reported to be in full damage or complete disrepair, and there are no reports of equipment being looted, stolen, or missing across all surveyed facilities. Ensuring the maintenance and upkeep of these facilities is crucial for providing quality healthcare services to the community. Regular inspections, timely repairs, and proper inventory management of equipment can help sustain the functionality and overall condition of these health facilities.

Electricity

The data reveals that most surveyed health facilities rely on government electricity supply, with varying levels of availability. Facilities like HWC Khera, HWC Nandpur, and HWC Kotla report continuous electricity, while others have good availability. HWC Kalthar and HWC Bhambla operate 24X7 without interruptions. Electricity availability is crucial for medical equipment functionality, communication, and lighting in healthcare settings. Further analysis could address potential issues like power outages and backup solutions to ensure uninterrupted healthcare delivery, particularly during emergencies.

Excreta Disposal

Latrine/Toilet						
S.no.	**Health Facility Name**	Male	Female	Distance from facility in meters	Distance from water source in meters	Functioning
1	HWC Khera	1	1	NA	NA	Yes
2	HWC Nandpur	NA	NA	NA	NA	No
3	HWC Kotla	NA	NA	NA	NA	No
4	HWC Dhang	NA	NA	NA	NA	No
5	HWC Matuli	NA	NA	NA	NA	No
6	HWC Gadon	NA	NA	NA	NA	No
7	HWC Jaman Da Dora	NA	NA	NA	NA	No
8	HWC Baglehar	NA	NA	NA	NA	No
9	HWC Kalthar	NA	NA	NA	NA	No
10	HWC Bhambla	NA	NA	NA	NA	No
11	PHC Dhalwan	1	1	NA	NA	Yes
12	PHC Gopalpur	1	1	NA	NA	Yes
13	CHC Baldwara	1	1	NA	NA	Yes
14	HWC Rampur	NA	NA	NA	NA	No
15	HWC Nahar Singh	NA	NA	NA	NA	No

The data provided offers insights into the availability and functionality of latrine/toilet facilities at various health facilities. Among the surveyed facilities, only three - PHC Dhalwan, PHC Gopalpur, and CHC Baldwara - report having functioning latrine/toilet facilities for both males and females. These facilities are equipped with one latrine/toilet each for males and females. However, the remaining facilities, including HWC Khera, HWC Nandpur, HWC Kotla, HWC Dhang, HWC Matuli, HWC Gadon, HWC Jaman da Dora, HWC Baglehar, HWC Kalthar, HWC Bhambla, HWC Rampur, and HWC Nahar Singh, do not have functioning latrine/toilet facilities. Moreover, details regarding the distance from the facility and water source are not available for any of the surveyed facilities where latrine/toilet facilities are not functioning. Access to proper sanitation facilities is essential for maintaining hygiene standards and preventing the spread of diseases, highlighting the need to address this gap in the surveyed health facilities to ensure adequate sanitation for staff and patients.

Waste Management

S.no	Health Facility Name	Is there a demarcated, fenced off waste area?	Is there a pit for organic waste?	Is there a functioning incinerator?	Is there a pit for sharps?	Is there separation between ordinary and medical waste?	Are segregated waste bins available in all areas where patients are treated?	Are sharps bins available in all areas where patients are treated?	Are waste management IEC materials available?	Are there waste management protocols/ guidelines available for staff?
1	HWC Khera	Yes	No	No	Yes	Yes	No	No	Yes	Yes
2	HWC Nandpur	No	No	No	No	No	Yes	Yes	Yes	Yes
3	HWC Kotla	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes
4	HWC Dhang	Yes	No	No	Yes	No	Yes	No	Yes	Yes
5	HWC Matuli	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
6	HWC Gadon	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
7	HWC Jaman Da Dora	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
8	HWC Baglehar	No	No	No	No	No	Yes	Yes	No	Yes
9	HWC Kalthar	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	HWC Bhambla	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
11	PHC Dhalwan	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
12	PHC Gopalpur	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	CHC Baldwara	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	HWC Rampur	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	HWC Nahar Singh	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The data provided offers insights into the waste management practices at various health facilities. Among the surveyed facilities, most have some waste management infrastructure in place, albeit with variations in the extent of implementation. Notably, facilities such as HWC Khera, HWC Kotla, HWC Dhang, HWC Matuli, HWC Gadon, HWC Jaman Da Dora, HWC Bhambla, PHC Dhalwan, PHC Gopalpur, and CHC Baldawara have demarcated and fenced-off waste areas, pits for organic waste, and pits for sharps. Additionally, facilities like HWC Matuli, HWC Gadon, HWC Jaman Da Dora, HWC Baglehar, HWC Kalthar, HWC Bhambla, PHC Dhalwan, PHC Gopalpur, and CHC Baldawara have segregated waste bins and sharps bins available in all patient treatment areas. However, some facilities, like HWC Nandpur, HWC Rampur, and HWC Nahar Singh, lack certain waste management infrastructure elements, such as demarcated waste areas,

pits for organic waste, and functioning incinerators. Moreover, while most facilities have waste management protocols/guidelines available for staff, some, like HWC Nandpur and HWC Rampur, do not have waste management IEC (Information, Education, and Communication) materials available. Overall, ensuring comprehensive waste management infrastructure and adherence to waste management protocols is crucial for maintaining hygiene standards and preventing the spread of infections within healthcare facilities. Further improvements and standardization across all facilities could enhance waste management practices and contribute to better overall healthcare outcomes.

Handwashing Facilities

S.no.	Health Facility Name	Are there functioning hand washing stations available near the latrines/toilets?	Are there functional handwashing stations in every area where health care is delivered?	Is there soap available at the hand washing stations?	Are there handwashing IEC materials available?
1	HWC Khera	Yes	No	Yes	Yes
2	HWC Nandpur	Yes	No	Yes	Yes
3	HWC Kotla	No	No	No	No
4	HWC Dhang	No	No	Yes	Yes
5	HWC Matuli	No	No	Yes	No
6	HWC Gadon	No	No	Yes	No
7	HWC Jaman Da Dora	No	No	Yes	No
8	HWC Baglehar	No	No	No	Yes
9	HWC Kalthar	Yes	Yes	Yes	Yes
10	HWC Bhambla	Yes	Yes	Yes	Yes
11	PHC Dhalwan	Yes	Yes	Yes	Yes
12	PHC Gopalpur	Yes	No	Yes	Yes
13	CHC Baldwara	Yes	Yes	Yes	Yes
14	HWC Rampur	No	No	No	No
15	HWC Nahar Singh	No	No	Yes	Yes

The data provided sheds light on the availability and functionality of handwashing facilities at various health facilities. Among the surveyed facilities, it is observed that the majority have functioning handwashing stations near the latrines/toilets. However, fewer facilities have handwashing stations in every area where healthcare is delivered. Notably, facilities such as HWC Khera, HWC Nandpur, HWC Kalthar, HWC Bhambla, PHC Dhalwan, PHC Gopalpur, and CHC

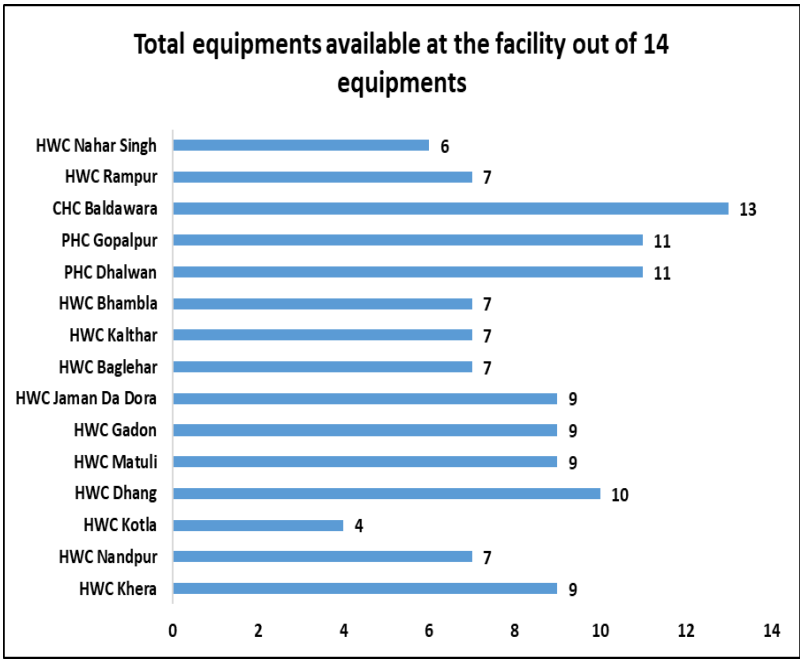
Baldwara demonstrate good compliance in this aspect. Additionally, while most facilities have soap available at handwashing stations, there are some exceptions, like HWC Kotla, HWC Rampur, and HWC Nahar Singh. Furthermore, handwashing IEC materials are available in many facilities, though not universally. Ensuring the availability and functionality of handwashing stations with soap at all necessary areas within health facilities is crucial for promoting hand hygiene among staff and patients, thereby reducing the risk of infection transmission. Further efforts may be needed to ensure consistent provision and maintenance of handwashing facilities across all health facilities surveyed.

Section-06: Equipment, Drugs and Supplies

Equipment

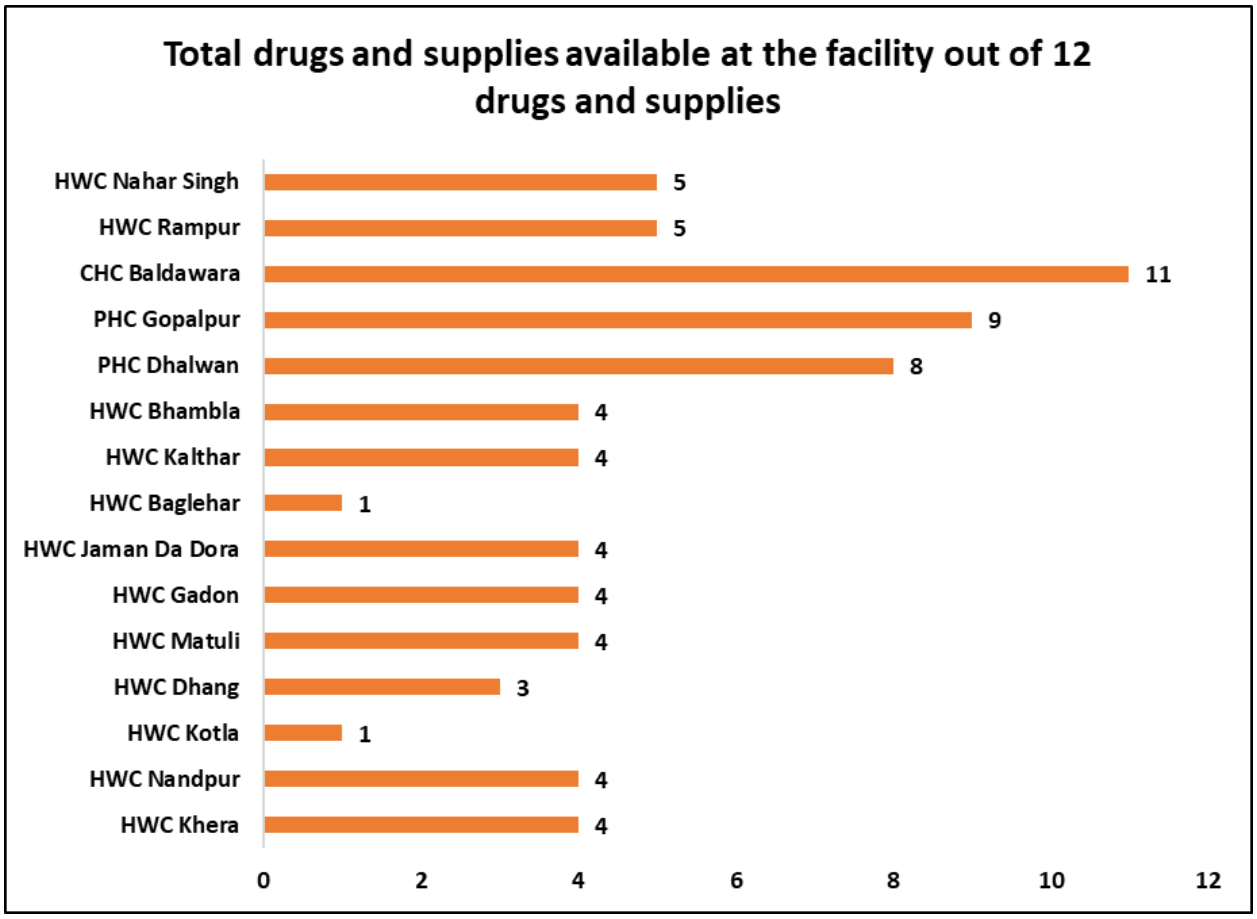
S. no.	Health Facility Name	Examination beds	Adult weighing scale	Child weighing scale	Infant weighing scale	Thermometer	Stethoscope	Blood pressure cuff	Neonatal resuscitation equipment	Delivery bed	Vacuum aspiration kits	Autoclave	PPE for staff	Functioning cold chain?	Functioning refrigerator or cold box
1	HWC Khera	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No
2	HWC Nandpur	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No
3	HWC Kotla	No	No	No	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes
4	HWC Dhang	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes
5	HWC Matuli	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes
6	HWC Gadon	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes
7	HWC Jaman Da Dora	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes
8	HWC Baglehar	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes
9	HWC Kalthar	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
10	HWC Bhambla	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	No
11	PHC Dhalwan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes

12	PHC Gopalpur	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
13	CHC Baldawara	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
14	HWC Rampur	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No
15	HWC Nahar Singh	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No



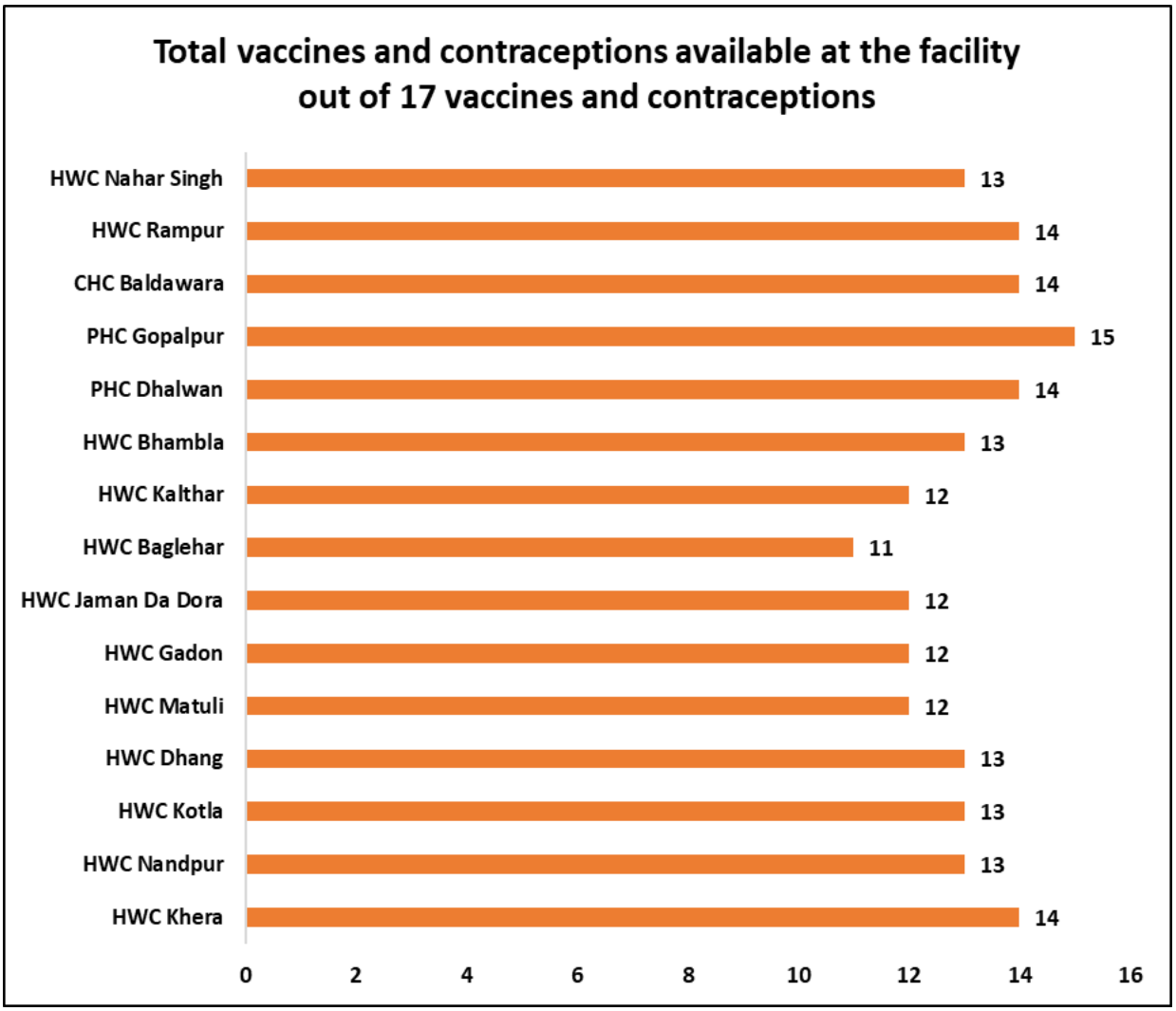
The data provided offers insights into the availability of essential medical equipment across various health facilities. Examination beds, adult weighing scales, child weighing scales, infant weighing scales, thermometers, stethoscopes, and blood pressure cuffs are generally available in most surveyed facilities. However, there are variations in the availability of other equipment such as neonatal resuscitation equipment, delivery beds, vacuum aspiration kits, autoclaves, and personal protective equipment (PPE) for staff. Facilities like HWC Kotla, HWC Bhambla, HWC Rampur, and HWC Nahar Singh exhibit some gaps in equipment availability. Additionally, while most facilities have a functioning cold chain, some, like HWC Khera, HWC Nandpur, and HWC Kotla, lack a functioning refrigerator or cold box. Ensuring the availability and functionality of essential medical equipment is crucial for delivering quality healthcare services, especially in diagnosing and treating patients effectively. Further efforts may be needed to address equipment gaps, ensure maintenance of existing equipment, and strengthen cold chain infrastructure in certain facilities to improve overall healthcare delivery and patient outcomes.

Drugs and Supplies-



The bar chart displaying the total number of drugs and supplies available at different healthcare facilities, out of a total of 12 items. According to the data, CHC Balderawa has the highest availability with 11 out of 12 drugs and supplies, followed by HWC Nahar Singh and HWC Rampur, both with 5 items available. Several facilities, including HWC Gadon, HWC Matuli, HWC Dhang, and HWC Jaman Da Dora, have 4 items available. The facility with the lowest availability is HWC Baglehar and HWC Kotla, with only 1 item out of 12.

Vaccines-



The bar chart displaying the total number of vaccines and contraception's available at various healthcare facilities out of a total of 17 items. According to the data, PHC Gopalpur has the highest availability with 15 out of 17 vaccines and contraception's, followed by CHC Baldwara, HWC Rampur, and PHC Dhalwan, all having 14 items available. Several facilities, including HWC Nahar Singh, HWC Bhambla, HWC Kotla, and HWC Nandpur, have 13 items available. The facility with the lowest availability is HWC Bagichar, with 11 items out of 17.

Discussion:

The cross-sectional analysis of health facilities in Himachal Pradesh, particularly in the Solan and Mandi districts, provides key insights into disaster preparedness and healthcare infrastructure in this mountainous region. The condition of these facilities varies widely, with some being well-maintained and others partially damaged, highlighting a disparity in infrastructure quality and the need for targeted improvements. Many facilities lack critical infrastructure such as proper waste management systems, functional toilets, and handwashing stations, compromising hygiene and safety and necessitating urgent upgrades. Dependence on an unreliable government electricity supply further affects consistent healthcare delivery. Basic equipment like weighing scales and blood pressure cuffs is generally available, but there is a significant shortage of specialized equipment such as neonatal resuscitation kits and autoclaves, which critically affects the quality of care, especially in emergency and maternal healthcare. The availability of drugs and supplies varies greatly across facilities, posing a significant challenge to comprehensive healthcare delivery, although vaccines and contraceptives are more consistently available, indicating somewhat better supply chain management. Staffing and training are also significant issues, with a noticeable shortage of medical doctors and nurses, particularly in Health and Wellness Centres (HWCs), affecting the provision of adequate and timely care. Despite this, many facilities reported recent staff training, reflecting ongoing efforts to maintain and enhance skills. Disaster vulnerability is a major concern, with many facilities at risk from natural disasters such as landslides, flash floods, and cloudbursts. The lack of seismic retrofitting raises concerns about the structural integrity of these facilities during earthquakes. Waste management and hygiene practices require significant improvement, as inconsistent implementation across facilities poses health risks. Inadequate handwashing facilities further compromise infection control. Overall, the analysis highlights the urgent need for comprehensive improvements in infrastructure, equipment, staffing, disaster preparedness, and hygiene practices to strengthen the healthcare delivery system in Himachal Pradesh's mountainous regions.

Conclusion:

The study shows that despite efforts to improve healthcare infrastructure and disaster preparedness in Himachal Pradesh's hill regions, significant gaps remain. The variation in facility conditions, equipment availability, and staffing across different health centers highlights an uneven distribution of resources. The vulnerability of many facilities to natural disasters, coupled with inadequate disaster-proofing measures, poses a serious risk to healthcare continuity during emergencies. However, the relatively good availability of vaccines and ongoing staff training programs are positive aspects of healthcare delivery.

RECOMMENDATIONS

- **Upgrade Poor-Condition Facilities:** Prioritize maintenance and resource allocation for facilities like HWC Khera, HWC Kotla, and HWC Dhang to bring them up to a standard that ensures safe and reliable healthcare services.
- **Enhance Building Conditions:** Implement regular inspections and necessary repairs to improve the apparent condition of facilities, especially those rated as poor, to boost patient trust and comfort.
- **Increase Consultation and Exam Rooms:** Expand and optimize consultation and exam room spaces in facilities that are currently insufficient, such as HWC Dhang, to reduce overcrowding and waiting times.
- **Ensure Privacy in Consultations:** Establish private consultation areas in facilities lacking them, like HWC Kotla and HWC Dhang, to maintain patient confidentiality and comfort.
- **Improve Essential Utilities:** Guarantee consistent electricity supply and reliable on-site water supply across all facilities. Additionally, ensure the availability of functioning hand washing stations with soap, and provide gender-segregated toilets to enhance sanitation and meet cultural needs.

Limitations of the Study

The study is focused on health facilities in Himachal Pradesh, specifically in Solan and Mandi districts affected by the 2023 floods, which limits its direct application to other hill states or regions facing different types of natural disasters.

Conducting a cross-sectional survey from March to June 2024 offers a current snapshot but may not capture long-term trends or changes in disaster preparedness and facility conditions over time.

With a sample size of 15 health facilities from Solan and Mandi districts, the study's findings may not fully represent the diversity of health facilities across Himachal Pradesh or account for differences in preparedness among various types of facilities.

The reliability of data concerning facility conditions, resource availability, and disaster preparedness relies heavily on self-reporting or survey responses, which can vary in accuracy and completeness among different facilities, impacting the reliability and comparability of the findings.

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ANNEXURE

I. Emergency Health Facility Assessment Form- Need Assessment Tool

Emergency Health Facility Assessment Form	
Section 1: Health Facility Basic Information	
Assessment date(s)	
Name and location details of health facility being	
GPS Coordinates of Health Facility	
Name of Head of health facility (Health official)	
Designation of the Health Official	
Contact No of Health official	

Type/level of health facility	☐ Community Health Center
	☐ Health Sub Center
	☐ Primary Health Center
	☐ Other:

Management of this Facility	☐ Public/Government
	☐ Other:

Is the facility currently supported by any other organisations (NGO, UN etc)? ☐ Yes ☐ No

Population covered by this health facility (Total before the crisis):	Male_____Female_____Boys_____ Girls _____
Total after crisis:	Male_____Female_____Boys_____ Girls _____
Total displaced population:	Male_____Female_____Boys_____ Girls _____

Hours of operation	☐ 24 hours
	☐ Daytime only
	☐ Others: _____
Days of operation	☐ 7 days per week
	☐ < 7 days per week: _____
	☐ Others: _____
Distance in km and time (mins/hrs) that the target population on average travels to access the facility	

Nearest Referral Health Facility	
Name:	
Type of facility:	
Distance in Km:	
Are there vehicles or other means of transport available for referrals?	

Section 2: Health Service Availability		
Outpatient services		
Management of childhood illness (IMCI)	☐ Yes ☐ No	
Vaccination	☐ Yes ☐ No	
Treatment for non-communicable diseases (NCDs)	☐ Yes ☐ No	
Treatment for TB	☐ Yes ☐ No	
Treatment for HIV	☐ Yes ☐ No	
Treatment for Mental Health	☐ Yes ☐ No	
Institutional Delivery	☐ Yes ☐ No	
Emergency Obstetric Care (BEmONC or CEmONC)	☐ Yes ☐ No	
Safe abortion care	☐ Yes ☐ No	
Family planning	☐ Yes ☐ No	
Treatment for STIs	☐ Yes ☐ No	
Infant and Young Child Feeding (IYCF)	☐ Yes ☐ No	
In-patient management of acute malnutrition with medical complications	☐ Yes ☐ No	
Average number of outpatient consultations Per Month (For Oct_dec)		

Inpatient services			
Does this facility have inpatient services?	☐ Yes ☐ No		
If Yes; What inpatient wards and how many beds are available in this facility?	Maternity Ward: Number of beds: _____		
	Paediatric Ward: Number of beds: _____		
	General Ward: Number of beds: _____		
Diagnostic services			
Laboratory services	☐ Yes ☐ No	Average Monthly tests: (Oct-Dec'23	
X-ray services	☐ Yes ☐ No	Average Monthly tests: (Oct-Dec'24	
Ultrasound	☐ Yes ☐ No	Average Monthly tests: (Oct-Dec'25	

Please list the diagnostic services available	
Outbreak prevention and control	
Is there a surveillance system in place for disease of epidemic potential ()? How regularly is this data reported?	
What is the Measles vaccination coverage of <5 years?	Oct - Dec 23_____

Does the facility have isolation capacity? ☐ Yes ☐ No		
Community health services		
Are community based health services delivered in the catchment area of this health facility?		☐ Yes ☐ No
If Yes	How many?	Summary of services provided
☐ ANM		
☐ ASHA		
☐ AWW		
☐ CHOs		
☐ Others: _____		
Are there outreach services available in this health catchment area?		☐ Yes ☐ No
Explain:		

Section 3: Human Resources			
How many staff currently work at the facility?			
Job title	# Male staff	# Female staff	
Medical Doctor			
Nurse			
ANMs			
Medical Assistant			
Lab Technician			
Other (specify)			
Are job aides/protocols/guidelines available and accessible to staff?		Yes / No	
Have staff received training within the last 6 months? On what topics?		Yes / No	
List down the topics here:			

Section 4: Morbidity and mortality data		
Mortality		
Number of deaths reported in the last 3 months	Total:	Top 3 causes of death:
Men		
Women		
Maternal Deaths		
Children 5-18		
Children <5 years		
Have there been reports of a rapid/unusual increase in illness or rumours of outbreaks? (6 months)		
☐ No		
☐ Yes		
If YES, explain: _____		
Has evidence been reported of psychosocial trauma within the affected population?		
☐ No		
☐ Yes		

If YES, explain: _____
What are the main health concerns reported by clinical staff?
What systems are in place for data recording and reporting?

Section 5: Infrastructure	
Physical structure	
What is the overall physical state of the health facility structure?	
Comments:	☐ Good condition (new facility or facility that has been rehabilitated/undergoing rehabilitation. No damage)
	☐ Relatively good condition (needs small repairs/light rehabilitation, or has some wear and tear visible that doesn't significantly affect overall quality of care)
	☐ Functional (light damage/facility not well-maintained, needs more significant rehabilitation support for things such as flooring, doors, windows, etc.)
	☐ Partial destruction/damaged (lack of/unusable/partially damaged doors, windows, flooring, ceiling/roof)
	☐ Significant destruction (no roof but walls still intact, physical structure could be used with significant rehabilitation)

Present condition of the building	1. Apparent quality of construction: ☐ Good ☐ Average ☐ Poor 2. Apparent condition of the building: ☐ Good ☐ Average ☐ Poor 3. Maintenance: ☐ Good ☐ Average ☐ Poor 4. Presence of water seepage: ☐ Yes ☐ No 5. Does the building possess seismic retrofitting strengthening in past: ☐ Yes ☐ No 6. Presence of concrete spalling: ☐ Yes ☐ No 7. Building has visible significant structural damage: ☐ Yes ☐ No
Exposure to hazard:	☐ Landlife ☐ Rock fall ☐ Flash flood ☐ Cloud burst ☐ Windstorm ☐ Avalanche ☐ Forestfire ☐ Lightening ☐ Others

Facility has sufficient number of consultation and examination rooms for patients volume?	☐ Yes ☐ No
Facility has private areas for consultation?	☐ Yes ☐ No

Equipment

What is the overall physical state of the health facility equipment?	
Comments:	☐ Good condition (overall, equipment is fully functional and/or new)
	☐ Partial damage/light disrepair (some equipment either received light damage or has not been well maintained. Most equipment is still functional, though may require some work and does not consistently function well)
	☐ Full damage/complete disrepair (most/all equipment has been damaged to the point that it is not functional, or is in complete disrepair and does not work)
	☐ Looted/Stolen/Missing

Electricity

Is there electricity available at the facility?
Source:
Availability:

Water

Is there a water supply within the health facility compound? ☐ Yes ☐ No ☐ Not functional
If No, how far away is the nearest water supply?
What is the primary water source in the health facility? ☐ Tap water ☐ Borehole ☐ Protected Handdug well ☐ Unprotected handdug well

Is there water storage capacity at this facility?	
If yes, what is the water storage capacity (litres)	

Excreta Disposal

Type of latrine/toilet	# Male	# Female	Distance from facility in metres	Distance from water source in metres	Functioning
Pit Latrine					☐ Yes ☐ No ☐ Needs Rehab
Latrine (Commode)					☐ Yes ☐ No ☐ Needs Rehab
Flush Toilet					☐ Yes ☐ No ☐ Needs Rehab
Are the toilets separated by male and female?		☐ Yes ☐ No			
Are there toilets specifically for staff?		☐ Yes ☐ No			
Are there toilets that are handicap accessible?		☐ Yes ☐ No			

Waste Management

Is there a demarcated, fenced off waste area?	☐ Yes ☐ No
Is there a pit for organic waste?	☐ Yes ☐ No
Is there a functioning incinerator?	☐ Yes ☐ No
Is there a pit for sharps?	☐ Yes ☐ No
Is there separation between ordinary and medical waste?	☐ Yes ☐ No
Are segregated waste bins available in all areas where patients are treated?	☐ Yes ☐ No
Are sharps bins available in all areas where patients are treated?	☐ Yes ☐ No
Are waste management IEC materials available?	☐ Yes ☐ No

Are there waste management protocols/guidelines available for staff?	☐ Yes ☐ No

Handwashing Facilities	
Are there functioning hand washing stations available near the latrines/toilets?	☐ Yes ☐ No
Are there functional handwashing stations in every area where health care is delivered?	☐ Yes ☐ No
Is there soap available at the hand washing stations?	☐ Yes ☐ No
Are there handwashing IEC materials available?	☐ Yes ☐ No

Section 6: Equipment, Drugs and Supplies

Equipment

	Available	Comments
Examination beds	☐ Yes ☐ No	
Adult weighing scale	☐ Yes ☐ No	
Child weighing scale	☐ Yes ☐ No	
Infant weighing scale	☐ Yes ☐ No	
Thermometer	☐ Yes ☐ No	
Stethoscope	☐ Yes ☐ No	
Blood pressure cuff	☐ Yes ☐ No	
Neonatal resuscitation equipment	☐ Yes ☐ No	
Delivery bed	☐ Yes ☐ No	
Vacuum aspiration kits	☐ Yes ☐ No	
Autoclave	☐ Yes ☐ No	
PPE for staff	☐ Yes ☐ No	
Does the facility have a functioning cold chain?	☐ Yes ☐ No	
Facility has functioning refrigerator or cold box	☐ Yes ☐ No	

Drugs and supplies

Antibiotics	☐ Yes ☐ No	ORS	☐ Yes ☐ No
IV Fluids	☐ Yes ☐ No	Oxytocin Injection	☐ Yes ☐ No
Mag Sulphate	☐ Yes ☐ No	Anti-malarials	☐ Yes ☐ No
Analgesics	☐ Yes ☐ No	Nutrition supplies	☐ Yes ☐ No
Anticonvulsant	☐ Yes ☐ No	TB Meds	☐ Yes ☐ No
Anti-hypertensives	☐ Yes ☐ No	Diabetic meds	☐ Yes ☐ No

Vaccines

BCG	☐ Yes ☐ No	Polio	☐ Yes ☐ No	PCV	☐ Yes ☐ No
Pentavalent	☐ Yes ☐ No	Measles	☐ Yes ☐ No	DPT	☐ Yes ☐ No
TD	☐ Yes ☐ No	Rotavirus	☐ Yes ☐ No		

Contraception

Male Condoms	☐ Yes ☐ No	Female Condoms	☐ Yes ☐ No
OCP	☐ Yes ☐ No	Injectable	☐ Yes ☐ No
Implant	☐ Yes ☐ No	IUD	☐ Yes ☐ No
Emergency Contraception		☐ Yes ☐ No	
During the last six months, have there been stock outs of essential drugs?			☐ Yes ☐ No
Facility has adequate and secure area for storing drugs, commodities and consumables?			☐ Yes ☐ No

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