Provincial workshop on all hazard health emergency risk assessment using Strategic Toolkit for Assessing Risks (STAR)

Report of the workshop in Sudurpashchim province
May 14 - 16, 2024

Provincial Government LOGO

FOREWORD

It gives me great pride to present this report on Provincial Workshop on All Hazard Health Emergency Risk Assessment using the Strategic Toolkit for Assessing Risks (STAR), held in Sudurpashchim province from May 14 -16, 2024. This workshop symbolizes a critical step in our pursuit of strengthened health emergency preparedness.

Sudurpashchim province, located in the far western region of Nepal, is known for its diverse topography, ranging from the plains of the Terai to the rugged hills and mountains. The province covers an area of approximately 19, 539 square kilometers. The unique geographical, environmental, and societal characteristics of Sudurpashchim, including its proximity to the Indian border and Tibetan plateau, necessitate a robust and adaptive approach to managing health emergencies.

The STAR methodology employed in this workshop provides a systematic and evidence-based framework for identifying, assessing, and prioritizing risks. This approach ensures that our preparedness and response strategies are both comprehensive and tailored to the specific needs and vulnerabilities of our communities.

I am deeply grateful to all participants, facilitators, and partner organizations, including the Ministry of Health and Population, WHO Nepal, USAID, for their invaluable contributions. The dedication and teamwork demonstrated during this workshop exemplify our shared vision of building a resilient province.

As we progress, it is essential to transform the workshops outcomes into strategic actions. By incorporating these findings into our provincial action plans and maintaining a multisectoral approach, we can significantly improve our capacity to respond to health emergencies and mitigate their impacts. Additionally, developing a comprehensive public health contingency plan will be crucial in guiding our efforts. This plan, aligned with global principles for health emergency prevention, preparedness, response, and resilience, will provide a structured and strategic framework for our ongoing and future initiatives.

I am confident that this report will be valuable resource for policymakers and relevant stakeholders involved in emergency preparedness and management. Let us continue working together for a safer and a healthier province.

PREFACE

The provincial Workshop on All-Hazard Health Emergency Risk Assessment, utilizing the Strategic Toolkit for Assessing Risks (STAR), represents a pivotal step in strengthening Sudurpashchim province's health emergency preparedness and response framework. This report captures the outcomes of the workshop, highlighting the collaborative efforts of various stakeholders in identifying and prioritizing health hazards specific to our province.

The workshop's aimed to promote the STAR methodology, engage provincial stakeholders, develop a province-specific risk profile, and formulate actionable recommendations. Through a participatory and data-driven approach, we successfully identified 21 specific hazards including earthquake, landslide, wildfire, road traffic accident, heat wave, rabies, flood, healthcare/industrial waste, substance abuse, covid-19, antimicrobial resistance, influenza, dengue, leishmaniasis, scrub typhus, mental health issues/suicide, cholera/AWD, tuberculosis, food borne/water borne disease, pesticide, and measles. Additionally, we also developed a seasonal risk calendar and a risk prioritization matrix. These outputs are crucial for informed decision making and resource allocation, ensuring that our preparedness and response strategies are both effective and efficient. Some of the priority actions developed by the

I would like to express my sincere appreciation to the Ministry of Health and Population, WHO Nepal, USAID, and all participants for their unwavering support and active participation. The insights and recommendations generated during this workshop are a testament to the power of collaboration and the importance of a multisectoral approach in health emergency management.

As we implement the recommendations and integrate them into our provincial action plans, it is essential to maintain the momentum and continue our efforts to enhance our health emergency preparedness and response capabilities. This report serves as a guiding document, providing a roadmap for future actions and reinforcing our commitment to protecting the health and well-being of our communities.

I am confident that the findings and recommendations outlined in this report will significantly contribute to our ongoing efforts to build a resilient and responsive health system in Sudurpashchim province. Let us work together to ensure that we are well-prepared to face any health emergencies that may arise, ultimately leading to a better health outcome for our population.

Contents

Acronyms

AMR	Antimicrobial Resistance
ARI	Acute Respiratory Infections
AWD	Acute Watery Diarrhea
EDCD	Epidemiology and Disease Control Division
EMT	Emergency Medical Teams
EWARS	Early Warning and Reporting Systems
IHR	International Health Regulations
JEE	Joint External Evaluation
MOHP	Ministry of Health and Population
MoSD	Ministry of Social Development
MoU	Memorandum of Understanding
NAPHS	National Action Plans for Health Security
NGO	Non-Governmental Organizations
PHD	Provincial Health Directorate
PHEOC	Provincial Health Emergency Operations Center
SOPs	Standard Operating Procedures
SORMAS	Surveillance Outbreak Response Management and Analysis System
STAR	Strategic Toolkit for Assessing Risks
WHO	World Health Organization

Executive Summary

The Provincial Workshop on All-Hazard Health Emergency Risk Assessment, utilizing the Strategic Toolkit for Assessing Risks (STAR), took place in Sudurpaschim Province from May 14 - 16, 2024. This workshop aimed to enhance the province's health emergency preparedness and response capabilities by identifying and prioritizing hazards, developing a seasonal risk calendar, and formulating actionable recommendations.

Nepal's vulnerability to various disasters and epidemic-prone diseases necessitates robust emergency preparedness and response strategies. Following the national-level Multi-hazard Risk Assessment workshop in April 2023, the Ministry of Health and Population (MoHP) initiated this process at the provincial-level replicating it across all provinces, including Sudurpashchim Province. The workshop aimed to advocate and orient stakeholders on the STAR methodology for risk assessment, engage provincial stakeholders, including non-health partners, in health emergency preparedness, identify and list hazards specific to Sudurpashchim Province, develop a province-specific risk profile based on the likelihood and impact of identified hazards, create a risk calendar for all identified hazards, and list key actions for inclusion in provincial contingency plans.

The workshop employed the STAR methodology, a step-by-step process involving hazard identification, likelihood evaluation, impact estimation, risk level determination, and the finalization of recommendations. Participants used the STAR data tool to document and rank hazards. The workshop successfully identified and assessed 21 specific hazards across five main types: Biological, Environmental, Hydro-meteorological, Societal, and Technological. The comprehensive all-hazards approach will enhance Sudurpashchim Province's ability to respond to health emergencies, leading to better health outcomes for its residents. The next steps involve implementing the recommendations, regularly updating the risk assessment, and maintaining a multisectoral approach to ensure a thorough and inclusive risk assessment.

The workshop led to the creation of a seasonal risk calendar, a risk prioritization matrix, and a database for prioritizing risks. Key actions and recommendations were developed for each hazard. Applying the results of the STAR workshop is essential for enhancing Sudurpashchim Province's health emergency preparedness and response capabilities. The comprehensive all-hazards approach derived from the workshop's findings will bolster the province's capacity to respond to health emergencies, ultimately leading to better health outcomes for its populations. The next steps involve implementing the recommendations and regularly updating the risk assessment as new hazards emerge or existing ones evolve. Maintaining a multisectoral approach and involving various provincial departments and ministries is crucial for a thorough and inclusive risk assessment. This report will aid decision-makers in allocating resources to address priority hazards, even with limited resources and competing priorities.

I.Introduction

Nepal is highly susceptible to various disasters and epidemic/pandemic prone diseases, underscoring the need to strengthen emergency response across multiple sectors through comprehensive preparedness and response activities. The urgency for such measures was highlighted during the Joint External Evaluation (JEE) workshop in November 2022, which served as a platform to assess Nepal's preparedness and response mechanisms. The workshop's recommendations emphasized the development of a multisectoral, multi-hazard health emergency management plan, including emergency risk assessments, readiness evaluations, and preparedness and response plans at both national and provincial levels. Thus, profiling the hazards existing in the country is essential for preparing effective contingency and action plans.

Following the national-level workshop on Multi-hazard Risk Assessment held in April 2023, the Ministry of Health and Population (MoHP) recognized the importance of replicating this process at the provincial level. This initiative aims to achieve comprehensive hazard profiling, including seasonality and risk matrices, by involving multiple stakeholders such as government agencies, Non-Governmental Organization (NGOs), and local communities. Utilizing the Strategic Toolkit for Assessing Risk (STAR) methodology, this provincial-level effort will provide localized insights into specific risks and vulnerabilities within different regions of the country.

The Strategic Toolkit for Assessing Risk, developed by the World Health Organization (WHO), is designed to help countries identify hazards and assess their risk levels. This tool supports evidence-based planning, policy development, strategy formulation, decision-making, and prioritization of activities associated with managing all-hazard health emergencies. It enables national, subnational, and local authorities to rapidly conduct strategic and evidence-based assessments of public health risks. Aligned with the International Health Regulations (IHR 2005) Monitoring and Evaluation Framework, STAR calls for countries to develop risk profiles to inform emergency preparedness and response planning.

The STAR methodology emphasizes the following key principles:

- **All-Hazards Approach**: Recognizes that diverse types of hazards pose similar threats to health and management functions, and that developing stand-alone response mechanisms for each unique hazard is neither efficient nor cost-effective.
- **Whole-of-Society Engagement**: Encourages the involvement and coordination of all essential players in health and other sectors at all levels of society.
- **Health System Focus**: Considers hazards and their dangers at all levels of the health system, including primary, secondary, and tertiary care.
- **Risk-Informed Evidence Compilation**: Utilizes primary and secondary data from various sources to inform risk assessments, such as research, surveillance, and reviews of past emergencies.

- **Transparency**: Ensures clear and open communication throughout the risk assessment process.

By adopting a risk-based approach to emergency management, we can minimize health risks and the consequences of various emergencies and disasters. This approach involves identifying, mapping, and describing risks within a given area to prioritize actions that drive planning and strengthen coping capacities. Identifying vulnerable groups is essential to ensure equitable and inclusive resource distribution, helping to mitigate both immediate and long-term impacts on the most affected populations.

The STAR toolkit is relevant to a broad range of stakeholders involved in emergency and disaster response management. It can be applied at all stages of the emergency response cycle and is recommended to be conducted at least every 2-3 years or during major emergency responses. Through this provincial-level initiative, the Epidemiology and Disease Control Division (EDCD) seeks to enhance its capacity to manage health emergencies effectively, fostering a more resilient response to various hazards and emergencies across the nation.

II.Objectives of the STAR workshop

1. To advocate and orient on the methodology for risk assessment (use of STAR tool) at the subnational level
2. To engage all provincial stakeholders for health emergencies preparedness including non- health partners
3. To identify and list down hazards specific for the province
4. To develop a province specific risk profile determining the risk level of the identified hazards based on the likelihood and impact
5. To develop a risk calendar for all identified hazards
6. To list down key actions based on identified hazards that provinces need to adopt in their respective contingency plans.

III.Risk profiling Methodology

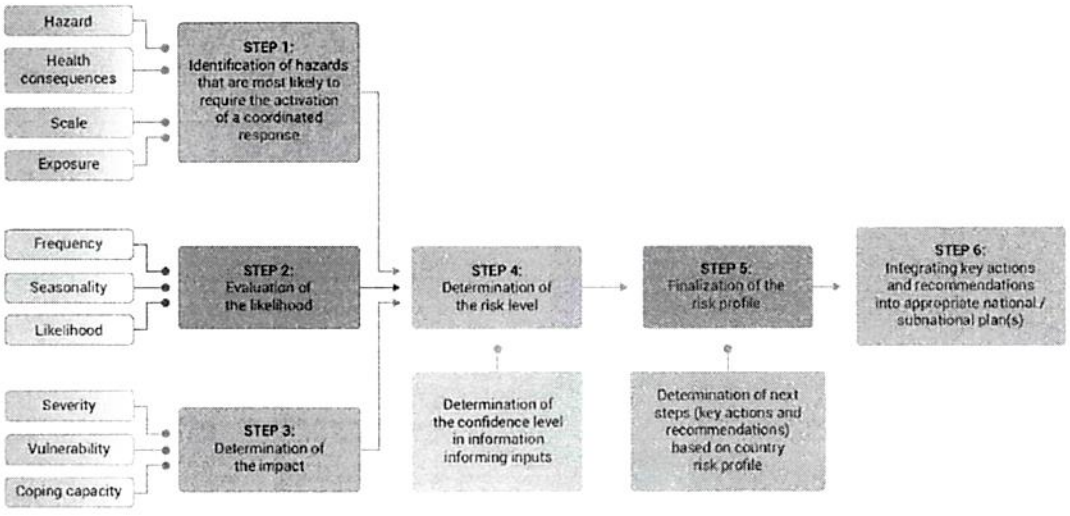
A. General overview of STAR methodology

In May 14-16, 2024, a three-day "Provincial Workshop on All Hazard Health Emergency Risk Assessment" was organized in Sudurpaschim province by Epidemiology and Disease Control Division and supported by WHO Nepal and USAID. It served as a crucial follow-up to the national workshop on all hazard health emergency risk assessment, utilizing the Strategic Toolkit for Assessing Risks. This province-level workshop aimed at assessing risks using the STAR tool, to formulate a comprehensive risk profile, seasonal calendar and priority actions specifically tailored for Sudurpaschim province, ensuring a more resilient and responsive healthcare system required for effective planning, adequate resource allocation, and prompt response mechanisms to mitigate health emergencies effectively within the region.

During the workshop, participants followed a step-by-step method to describe risks in the provincial setting, using a qualitative, participatory, and discussion-based approach to generate consensus amongst the larger group. The key steps in the risk assessment included:

Step 1: Identify hazards and describe the scenario most likely to require the activation of a coordinated response
Step 2: Evaluate likelihood
Step 3: Estimate the impact
Step 4: Determine the risk level
Step 5: Finalize recommendations and workshop report
Step 6: Integrate recommendations and priority actions into provincial action plans for sustainable capacity building (after the workshop).

Figure 1. Summary of strategic risk assessment using STAR



Participants used the STAR data tool, an MS Excel sheet which is a user-friendly data entry component with an automated risk calculation matrix, to document each step of the assessment and facilitate the ranking of hazards.

In the first step in STAR, hazards are selected and the scenario that is most likely to necessitate a provincial coordinated response is detailed. To identify the hazards most likely to necessitate a coordinated response, this requires analyzing previous risk assessments, surveillance reports, capacity assessment reports, and official databases. The scale and magnitude of the dangers should be documented and mapped, along with any negative effects on physical, psychological, social, economic, or environmental health that may emerge from them.

Step 2 involves evaluating the likelihood of the hazards identified in Step 1. This includes defining the frequency and seasonality of each hazard and using these outputs to determine the likelihood of the hazard occurring in the next 12 months. Seasonality is defined by identifying the months of the year during which the hazard is most likely to occur, and this is done on a green-red color scale.

Step 3 involves estimating the impact of the identified hazard. It includes three sub-steps: (a) assessment of severity, which requires information on transmission potential, negative consequences on the population, disruption to essential services, and effect on the health workforce; (b) assessment of vulnerability, which considers factors such as health status, social determinants of health, presence of vulnerable groups, and environmental factors; and (c) assessment of hazard-specific coping capacity, which measures how people, organizations, and systems use available skills and resources to manage adverse conditions, risks or disasters related to the identified hazard. The workshop participants need to consider the availability and functionality of coping capacity in relation to each identified hazard.

Step 4 involves determining the risk level of the identified hazards. This is done by determining the confidence level of the available data and information and using a risk matrix to rank the hazards based on their level of risk. The risk matrix is automatically populated within the tool based on inputs from the workshop discussions in Steps 1-4. The final output of Step 4 is the provincial emergency risk profile, which includes a display of risk ranking of hazards, visualization of the 5x5 risk matrix table, and qualitative information on the identified hazards.

Step 5 involves finalizing recommendations and the workshop report. In Step 5a, priority recommendations and actions are drafted based on the identified risks, with reference to the risk matrix and seasonal calendar. In Step 5b, a draft report is created based on the evidence compiled prior to the workshop and agreements among participants. In Step 5c, further discussion and validation of actions may be necessary to finalize and validate recommendations and next steps.

Step 6 of the STAR methodology involves integrating the recommendations and priority actions developed in Step 5 into provincial action plans for sustainable capacity building. The

workshop report helps decision-makers prioritize and plan readiness activities, mobilize and allocate resources, and strengthen provincial capabilities for mitigation, prevention, detection, response, and recovery. The recommendations should be integrated into relevant emergency response plans to provide a sustainable platform for implementation.

The STAR workshop will aid by producing these following three output:

- Seasonal calendar of Risk
- Risk prioritization, matrix, and database
- Key actions and recommendations

This will support equity-based planning and budgeting, and further strengthen the foundation in updating/developing contingency plans, strategic readiness and response plans, and national action plans. Data consolidation and further training needs to follow the workshop to ensure effective implementation of the STAR tool's outcomes in Nepal.

B. Provincial Profile: Sudurpashchim Context

Total Area: 19,539 Sq. Km (13.27 % of Nepal)
• **Districts:** 09
• **Local Governments:** 88
Sub Metropolitan City: 1
Municipalities: 33
Rural Municipalities: 54
• **Wards:** 1271

Sudurpashchim Province, covering an area of 19, 539 square kilometers, represents 13.27% of Nepal's total land area. The province is administratively divided into nine districts and 88 local governments, which include one sub-metropolitan city, 33 municipalities, and 54 rural municipalities.

Map of Sudurpashchim

Key Health Facts	
Maternal Mortality Ratio (per 100,000 live births)	130
Prevalence of stunting among children under five years of age	28.4
Number of FCHVs	6045
LMIS reporting status	99.5
Institutional Deliveries (%)	73
Cases of animal bites (in number)	11430
Cases of snake bites (in number)	322
Dengue cases (in number)	2095
Kalazhar cases (in number)	14
TB case notification rate (all forms of TB)/100,000 population	135
HIV/AIDS – number of new positive cases	218

Source: Government of Nepal, Ministry of Health and Population, Nepal Heath fact Sheets 2024

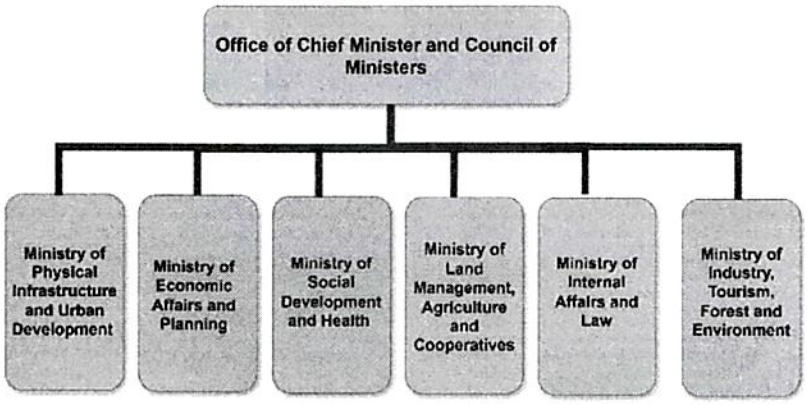


Figure 1. Sudurpashchim Province - Ministries of province

The health governance in Sudurpaschim Province is managed by several key provincial-level offices, including the Provincial Health Directorate, Provincial Public Health Laboratory, Provincial Health Logistic Management Center, and Provincial Health Training Center. The province boasts an extensive network of health facilities, comprising Basic Health Service Centers, Community Health Units, Government Hospitals, Health Posts, Primary Health Centers, Private Hospitals, and Urban Health Units.

Ministry of Social Development and Health Governance Structure	
Provincial level offices	• Health Directorate • Provincial Public Health Laboratory • Provincial Health Logistic Management Center • Provincial Health Training Center
Health Office	• 9 districts
Ayurved Office	• 9 Districts
Hospitals	• Seti provincial hospital (Hub) • Mahakali provincial hospital • District hospital Accham • District hospital Bajura • District hospital Doti • Dadeldhura hospital (Hub) • District hospital Baitadi • District hospital Darchula • District hospital Bajhang

Sudurpaschim Province faces several major hazards, including landslides, floods, disease outbreaks, earthquakes, and road traffic accidents. Since 2020, the province has responded to significant disasters such as landslides, foodborne disease outbreaks, earthquakes, and the ongoing COVID-19 pandemic. The damage and loss experienced from 2019 to May 2024 due to these hazards highlight the need for robust disaster preparedness and response mechanisms.

Health incident information in the province is collected through various methods, including health offices, local health units, the Early Warning and Reporting System (EWARS), and the Surveillance Outbreak Response Management and Analysis System (SORMAS). The province has established emergency response teams at various levels, including Rapid Response Committees and Teams, Emergency Medical Teams (EMTs), and the Provincial Health Emergency Operation Center (PHEOC).

Disease surveillance and response efforts in Sudurpaschim Province have been focused on monitoring and managing diseases reported in SORMAS since January 2023. These include COVID-19, acute respiratory infections (ARI), dengue, scrub typhus, and others. The province's comprehensive health governance and disaster response capabilities are crucial in addressing the ongoing and emerging health challenges.

C. Provincial workshop

Day 1: Inauguration and Technical Sessions

The workshop began with an inaugural session designed to set the stage for three days of collaborative learning and practical application. Key stakeholders from the Ministry of Social Develop (MoSD), the World Health Organization (WHO), provincial authorities, and other sectors participated in the session, having participation of approximately 50 participants. Distinguished guests included Mr. Chakrapani Pandey, Secretary of MoSD, Sudurpaschim, Dr Bhusan Mishra, Acting Director of Provincial Health Directorate (PHD) Sudurpaschim, and Dr Guna Nidhi Sharma, Section Chief, Epidemiology and Disease Control Division (EDCD).

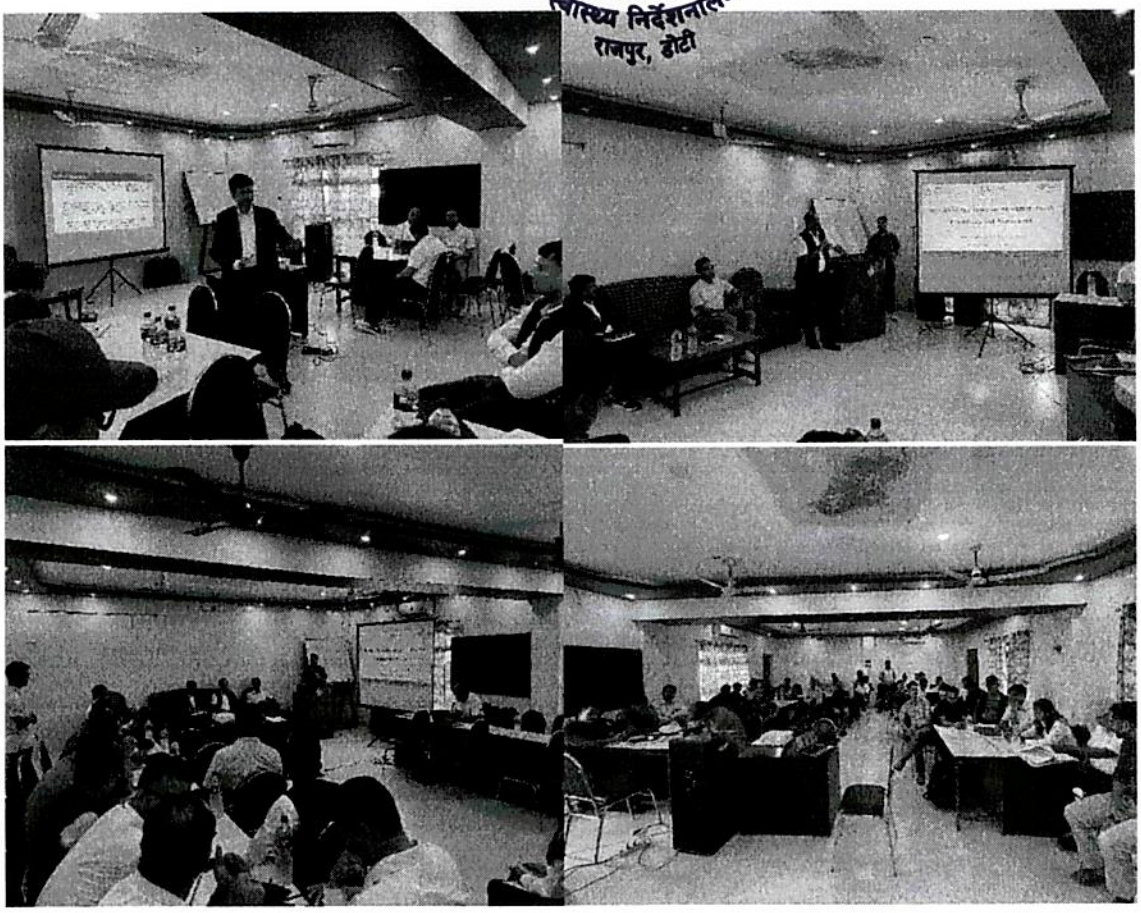
Welcome Remarks and Keynote Speeches

The inaugural remarks underscored the growing challenges posed by natural and man-made hazards in Sudurpaschim Province. Mr. Shivraj Sunar, Senior Public Health Administrator at MoSD, stressed the importance of evaluating health hazards and disaster risks to enhance response strategies. He highlighted the collaborative nature of the workshop, which aims to bring together expertise from various sectors to develop comprehensive plans.

Mr. Chakrapani Pandey, Secretary of MoSD, noted that while the data in the database might not fully reflect the actual risks, the tools and expertise from different sectors would help identify these risks more accurately. He emphasized that this approach would aid in better planning and budgeting for future actions. He expressed his expectation for a more refined risk profile to emerge from the workshop.

The workshop's primary objective is to prioritize hazards in Sudurpaschim Province and develop a roadmap for addressing these emergencies. The Secretary underscored the importance of multisectoral engagement, stating that significant improvements in health outcomes require close collaboration among all actors from various sectors. He assured that the support from the MoSD would always be available to help the province take the necessary steps in developing and implementing the plans identified during the workshop.

The session concluded with a call for proactive collaboration among stakeholders to enhance response mechanisms, ensuring rapid and efficient action during emergencies. The workshop aims to produce a well-coordinated plan that will significantly improve the province's ability to implement these plans effectively when needed. Through collaborative efforts, the workshop seeks to create a robust framework that ensures Sudurpaschim Province can act swiftly and efficiently in times of crisis.



Workshop Overview and Objectives

Dr. Guna Nidhi Sharma, Epidemiology and Disease Control Division (EDCD), Section Chief delivered a comprehensive overview of the workshop's goals, methodologies, and anticipated outcomes. The workshop aimed to equip participants with the skills to conduct strategic risk assessments, identify and prioritize hazards, and develop actionable recommendations aligned with global frameworks such as the International Health Regulations (IHR) and the Sendai Framework for Disaster Risk Reduction.

The specific objectives were to:

1. Orient stakeholders to the STAR methodology, focusing on risk identification, assessment, and prioritization.
2. Enhancing collaboration across sectors, integrating non-health stakeholders into health emergency preparedness efforts.
3. Develop critical outputs, including a seasonal risk calendar and a risk prioritization matrix.

Dr. Sharma began the session by setting the scene for understanding emergency and disaster risk management. He emphasized the importance of recognizing the key components: hazards, exposure, vulnerabilities, and coping capacities. This foundational knowledge is crucial for developing effective strategies to manage and mitigate risks.

He then introduced the concept of Strategic Risk Assessment, explaining its primary purpose. The STAR approach is designed to develop a comprehensive risk profile that enables national and subnational governments to prioritize preparedness and readiness actions based on evidence. This method supports strategic and operational planning by linking to International Health Regulations tools such as SPAR, JEE, and IHR-MEF. Dr. Sharma highlighted that the STAR toolkit is adaptable and flexible, making it suitable for various local contexts and focus areas. It employs a multi-sectoral, whole-of-society approach and relies on participatory methods and available data from all sectors.

Dr. Sharma discussed the application of the provincial risk profile, tailored to meet specific objectives and needs. This profile helps prioritize National Action Plans for Health Security (NAPHS) and capacity-building for health emergencies. It also enhances surge capacity mechanisms, addresses concurrent emergency risks, and aids in developing or revising policies and legislation. Identifying gaps in knowledge and needs for further assessment is another critical aspect of this process.

Dr. Sharma detailed the steps involved in conducting strategic risk assessments:

1. Identifying hazards likely to trigger a provincial response.
2. Evaluating the likelihood of these hazards.
3. Determining the potential impact.
4. Assessing the overall risk level.
5. Finalizing the risk profile.
6. Integrating key actions into appropriate plans and operations.

He presented the outputs of the STAR process, which include provincial risk profiles, seasonal calendars of risk, key actions and recommendations, and risk prioritization matrices. These tools help visualize risks in terms of likelihood and impact, facilitating better preparedness and response planning.

Dr. Sharma provided examples of priority actions based on the risk profile. These actions include reviewing and updating contingency plans, developing Standard Operating Procedures (SOPs) and Memorandums of Understanding (MOUs), increasing social awareness, and reviewing early warning systems and health infrastructure. These steps are essential for ensuring continuity of essential health services and mitigating risks effectively. He emphasized the importance of gathering relevant data in advance to support the STAR exercise. This data includes health information, non-health information, and population

dynamics. Collecting this data helps create a comprehensive risk profile and supports informed decision-making.

Dr. Sharma concluded the session by highlighting key considerations for the effective implementation of the STAR tool. Drawing from past experiences, he stressed the importance of a participatory approach, the use of available data, and the need for flexibility and adaptability in applying the toolkit.

Identification of hazard that will trigger provincially coordinated emergency response

The session commenced with a presentation on the identification of hazards that could necessitate a provincially coordinated emergency response. During the technical discussion, participants were introduced to the concept of a hazard, which refers to a process, phenomenon, or human activity that may result in loss of life, injury, property damage, social and economic disruption, or environmental degradation (UNGA 2016, WHO 2009). The session also covered various types of hazards, including biological, geophysical, weather-related, societal, environmental, hydro-meteorological, and technological hazards.

Group Work: Hazard Identification

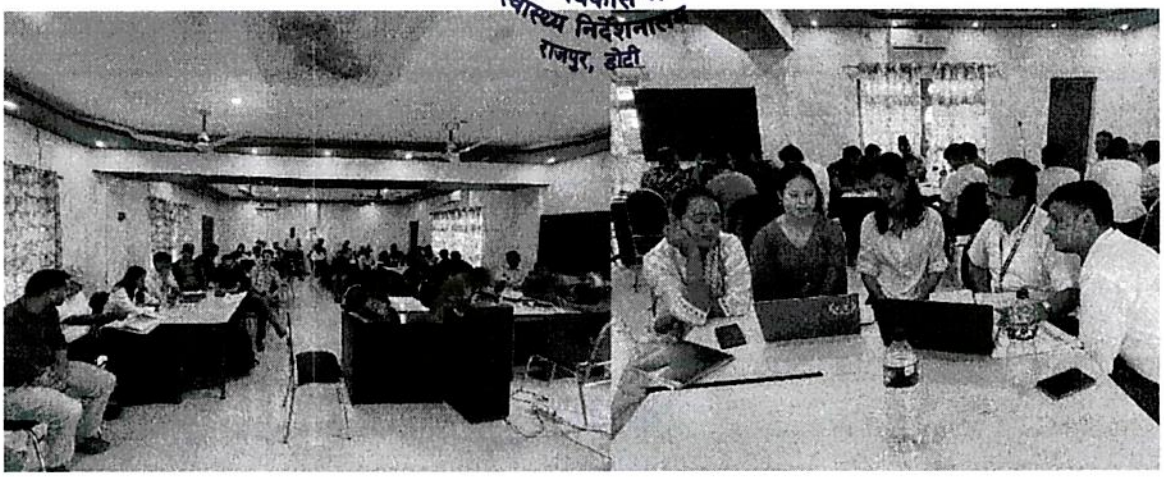
Participants worked in groups to identify hazards relevant to Sudurpaschim province, guided by STAR's structured criteria followed by an interactive exercise in plenary for selection of hazards. Participants were provided with a long list of reference for all-hazard types, including biological, geophysical, hydro-meteorological, technological, societal, environmental, and extra-terrestrial hazards and encouraged to select only the hazards that would likely result in activation of a provincial coordinated response mechanism. Participants were provided with key points to consider, which included whether the hazard had recently been experienced in the province, whether it was experienced within the last 5-10 years, whether risk assessments (all-hazards or hazard-specific/vertical) or risk models available had been reviewed, whether there were potential cross-border risks or risks from neighboring province/countries, and whether the hazard would likely trigger a provincial response mechanism. A total of 21 hazards were identified, during the hazard identification exercise (See annex 1).Participants were then divided into five thematic groups based on specific hazard types.

Through the discussion, it was noted that hazards that have similar or the same consequences can be grouped together. Some hazards, such as altitude sickness, lumpy skin disease. Drought, avalanche, sickle cell anemia, lightening, drowning was removed from the list after the discussions as participants stated it does not require a provincial coordinated response.

The exercise helped in active collaboration among participants, highlighting the importance of diverse perspectives in comprehensively assessing provincial risks.

Session on describing the Health Consequences, Scale and Exposure

This session focused on equipping participants with the skills to describe the health consequences, scale, and exposure associated with identified hazards. After which the session moved on to group work where the focus was on the utilization of the STAR tool, the tool was provided to all the groups, it was ensured every group had one laptop with them. The group worked on the tool by working on it with their own knowledge, experience and online data source, the participants were able to assess the scale of each hazard and identify potential risks more accurately.



Overall, the exercise highlighted the need for improved surveillance in health sectors and provincial level response readiness due to the nature of the hazards.

Day 2: Technical Sessions and Group Work Continuation

The second day commenced with a recap of Day 1, reinforcing the key takeaways, and ensuring alignment among participants and emphasizing the need for continuity and thoroughness in the discussions.

Session on describing seasonality, frequency and likelihood

During the session, participants concentrated on the potential occurrence of specific hazards that would necessitate a provincial-level response, with a particular focus on Sudurpaschim Province. They utilized a variety of data sources, including hazard-specific information, meteorological reports, early warning data, historical emergencies, and vaccine uptake rates or interruptions in regular immunization services, along with their expert judgment.

They evaluated the scenario by comparing it with historical data and existing models to estimate the frequency of the hazard. They also considered the seasonality of the hazard, identifying the months when it is most likely to occur based on past patterns. Using the available data, participants assessed the likelihood of the hazard occurring within the next 12 months, which would require a coordinated provincial response.

During the working group session, members made informed judgments based on all relevant hazard-specific data and their collective expertise. By identifying the seasonality of hazards, especially in Sudurpaschim Province, professionals can better plan for surge capacity, prioritize actions, and deploy timely and appropriate risk-reduction measures.

Session on describing Severity, Vulnerability, and Coping Capacity

The day's second session introduced participants to the third step of the STAR methodology: assessing the severity, vulnerability, and coping capacity of identified hazards. Facilitators from WHO explained these concepts in detail, providing practical frameworks for analysis:

1. **Severity Assessment:**

The process began with assessing severity using the severity algorithm, which is crucial for prioritizing resources, implementing mitigation measures, and managing potential health

crises effectively. This involved evaluating the gravity of health outcomes resulting from exposure to identified hazards, including the severity and duration of illnesses, potential mortality rates, and long-term health implications. For biological hazards, it also included assessing the ease and speed of transmission within the population. Additionally, the assessment considered the disruption to essential health services.

Participants evaluated the health consequences of each hazard, focusing on morbidity, mortality, and the disruption of essential services. Factors such as transmission potential and the hazard's impact on vulnerable populations were also discussed. The working group concluded the severity of the 21 hazards are as follows: *Very high: 2, High: 11, Moderate: 5, and Low: 3.*

2. **Vulnerability Analysis:**

Next, the presentation discussed describing vulnerability, which refers to the characteristics and circumstances that make individuals, communities, systems, or assets susceptible to the damaging effects of a hazard. Vulnerability factors include age, gender, health status, socioeconomic status, disability, and access to resources and support networks. The assessment categorized vulnerability into individual, community, system, and infrastructure levels. Socioeconomic factors like poverty, employment status, and literacy levels, as well as environmental factors such as climate change and environmental degradation, were also considered. The Cochrane Methods Equity Progress-Plus Model was highlighted as a framework for analyzing health equity and identifying health inequities.

Using the Progress Plus model, participants examined socio-economic determinants, geographic disparities, and marginalized groups' exposure to risks.

3. **Coping Capacity Evaluation**:

Finally, the presentation covered assessing coping capacity, which measures how people, organizations, and systems use available skills and resources to manage adverse conditions, risks, or disasters. This included evaluating governance and coordination, health sector capacities, non-health sector capacities, and community capacities. Governance and coordination involved existing plans, legal frameworks, multisectoral coordination, and political will. Health sector capacities included the functionality of health services, health workforce readiness, surveillance systems, and supply chain functionality. Non-health sector capacities encompassed socio-economic support, private sector engagement, telecommunications, and logistics capacities. Community capacities involved knowledge, attitudes, practices, social support mechanisms, and community health worker programs.

Participants assessed the readiness of governance systems, healthcare infrastructure, and community networks to manage and mitigate the impacts of each hazard. They considered factors such as early warning systems, resource availability, and community resilience.

In the latter part of the day, participants began drafting actionable recommendations for hazards allotted to each group. This involved outlining responsibilities, setting timelines, and identifying resource requirements. With this, day 2 was wrapped up with concluding the session.

Day 3: Final Discussions and Outputs

The third day focused on consolidating the insights and outputs generated during the workshop. The morning session began with a review of the previous day's work, followed by discussions aimed at refining the drafted priority actions.

Refinement of Risk Assessments

Participants revisited their risk assessments, incorporating feedback from facilitators and peers. Adjustments were made to ensure that risk levels accurately reflected the province's context.

Plenary Presentations and Stakeholder Feedback

In the plenary session, each group presented their finalized priority actions, receiving constructive feedback from participants. Recommendations focused on enhancing the feasibility and alignment of proposed actions with provincial capacities. Examples included:

- Maintaining a buffer stock of logistics and allocating an emergency fund are necessary steps in regard to response to earthquake.
- The Public Health Service Act should be enforced to prevent haphazard antibiotic use.




Key Outputs

1. **Seasonal Risk Calendar:** A detailed timeline highlighting high-risk periods for prioritized hazards, enabling targeted preparedness efforts.

Specific Hazard	Risk Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influenza	Very high												
Earthquake	Very high												
Antimicrobial resistant microorganism	High												
Landslide	High												
Wildfires/Fire	High												
Flood	High												
Heat wave	High												
Dengue	High												
Scrub typhus	High												
Malaria	High												
Rabies	High												
Cholera	High												
Foodborne/waterborne diseases	High												
COVID-19	Moderate												
Tuberculosis	Moderate												
Transportation accidents	Moderate												
Pesticides	Moderate												
Hospital waste hazard	Moderate												
Measles	Low												
Drug/Substance abuse	Low												
Leishmaniasis	Low												

2. **Risk Prioritization Matrix:** A comprehensive categorization of hazards based on their severity, vulnerability, and coping capacity.

Impact	Very unlikely	Unlikely	Likely	Very Likely	Almost certain
Critical				• Earthquake	
Severe			• Cholera	• AMR • Dengue	• Influenza
Moderate			• COVID-19 • Tuberculosis • Pesticides	• Scrub Typhus • Rabies • Malaria	• Landslide • Wildfires/ Fire • Food-borne/waterborne Disease • Flood • Heatwave
Minor		• Measles	• Drug/ Substance abuse • Leishmaniasis		• Transportation accidents • Hospital waste hazards
Negligible					

Likelihood

3. **Actionable Recommendations:** Tailored strategies for each high-priority hazard, complete with lead agencies, implementation timelines, and estimated budgets.

To address the risks associated with various hazards, the participants finalized the following key actions:

Hazard	Narrative
Earthquake	• A review meeting should be conducted to revise and upgrade existing procedures, guidelines, and acts with the engagement of various stakeholders.

	• Regular simulation exercises are essential to ensure readiness. • Capacity building of security forces and health workers is crucial, along with strengthening preparedness measures and plans. • Maintaining a buffer stock of logistics and allocating an emergency fund are necessary steps. • An awareness campaign should be launched to educate the public about earthquake safety.
Landslide	• A review meeting should be conducted to revise and upgrade existing procedures, guidelines, and acts with stakeholder engagement. • Regular simulation exercises are essential. • Capacity building of security forces and health workers • Strengthening preparedness measures and plans, maintaining a buffer stock of logistics, and allocating an emergency fund • An awareness campaign should be launched to educate the public about landslide risks and safety measures.
Forest and wildfire	• A review meeting should be held to revise and upgrade existing procedures, guidelines, and acts with stakeholder engagement. • Regular simulation exercises are important for preparedness. • Building the capacity of security forces and health workers • Strengthening preparedness measures and plans, maintaining a buffer stock of logistics, and allocating an emergency fund • An awareness campaign should be conducted to inform the public about wildfire prevention and safety.
Road Traffic Accident	• An awareness campaign and regular monitoring should be implemented. • Ad hoc checks for alcohol consumption among drivers should be conducted. • Maintenance and repair of roads are crucial to prevent accidents.
Heat wave	• Public awareness campaigns should be conducted to educate people about heat wave risks. • Local governments should endorse proper laws to regulate work and school hours, potentially allowing breaks during the hottest part of the day (12-2 PM).
Measles/Rubella	• Enhanced surveillance should continue, especially in hard-to-reach areas, through systems like SORMAS and EWARS.
Tuberculosis	• Efforts to expand TB-free zones should be intensified. • TB testing (Gene Xpert) spots should be expanded. • TB treatment protocols should be updated, and capacity for case management should be enhanced.

	• Community participation should be encouraged to improve compliance with DOTS (Directly Observed Treatment, Short course).
Antimicrobial Resistance	• AMR (Antimicrobial Resistance) surveillance sites should be expanded to all district hospitals with improved lab capacity. • The One Health Secretariat should be strengthened with collaborative surveillance and research. • The Public Health Service Act should be enforced to prevent haphazard antibiotic use. • Supervision and monitoring should be conducted regularly.
Malaria	• Cross-border reviews should be conducted. • Malaria-free ward declarations should be initiated in high/moderate micro-stratification wards. • Long-lasting insecticide-treated nets should be provided to vulnerable populations. • Malaria awareness programs should be conducted for seasonal migrants. • Testing and treatment should be intensified.
Dengue	• Health workers' capacity should be enhanced. • Logistics for testing and case management should be ensured. • Free treatment for dengue cases should be provided. • Pre-monsoon, during monsoon, and post-monsoon search and destroy operations for Aedes mosquito larvae should be conducted in high-risk areas. • Dengue vector surveillance should be strengthened in urban areas. • Surveillance systems (SORMAS, data information at health facility, palika, and national levels) should be strengthened. • Legal frameworks and their implementation at the local level should be developed. • A dengue response mechanism should be established.
Pesticide	• The government should implement a scheduled monitoring system for vegetables and fruits in markets. • Public awareness campaigns should be conducted to educate people about the appropriate use of pesticides in crops. • Local governments should motivate farmers by providing fair prices for their produce.
Scrub Typhus	• Logistics for testing and case management should be ensured. • Media mobilization and production of IEC (Information, Education, and Communication) materials should be conducted.
Substance Abuse	• Strict laws and policies should be endorsed to control drug supply from borders and within districts.

	• Various training and awareness programs should be conducted to encourage and motivate youths. • Strict monitoring of pharmacies for sedatives and narcotics is necessary.
Leishmaniasis	• Orientation programs for kala-azar should be conducted in high-risk areas. • Testing and treatment should be intensified.
Healthcare Waste Hazard	• Hospital waste management guidelines should be implemented. • Training should be provided to health workers and waste management staff. • A waste management officer should be appointed in each hospital. • Coordination with local levels for proper disposal of waste should be ensured. • Segregation of hospital waste should be enforced. • Health and safety provisions, including immunization and insurance for people handling waste, should be ensured.
Flood	• Preparedness and response plans should be prepared and updated at the provincial, district, and local levels, along with contingency plans. • Sufficient budgeting for gabion walls should be allocated at all levels. • Strengthening the existing early warning system. • Strict laws should be endorsed to regulate the extraction of sand and stones from major rivers. • Public awareness regarding flood risks should be raised. • Drills and simulations should be conducted at all levels to ensure readiness.
Rabies	• Vaccines and immunoglobulins should be made available in strategic locations. • Pre-exposure prophylaxis should be provided to people in high-risk areas. • Dog population surveys should be conducted. • Mass vaccination of dogs should be carried out. • Awareness campaigns should be launched. Animal birth control campaigns should be conducted. • Trials of oral vaccines in wild animals should be initiated.
Cholera/Acute Watery Diarrhea	• Provincial-level water-related acts and policies should be developed. • Water quality surveillance should be conducted. • Medical supplies (testing kits and therapeutic supplies) should be ensured. • Awareness campaigns should be launched. • A coordination mechanism with water and food sectors should be set up. • Water sanitation and hygiene activities should be implemented.
Food borne disease	• Food safety guidelines should be implemented. • Food laboratory facilities should be improved.

	• Awareness campaigns should be conducted. • Monitoring of hotels and street food vendors should be carried out. • Coordination with FTQCO (Food Technology and Quality Control Office) should be established. • A provincial-level food quality/hygiene control agency and system should be developed. • A food-borne diseases surveillance system should be established. • Information sharing mechanisms between health, water, and food sectors should be developed.
COVID-19	• Crucial to continue indicator and event-based surveillance reporting through EWARS and SORMAS, with regular training sessions to keep the system updated. • Increasing immunization coverage and administering booster doses are essential steps to enhance immunity in the population. • Strengthening and building the capacity of Rapid Response committees and teams at the district and local municipal levels is necessary for quick and efficient responses. • Improving the management of ground crossings, health desks, and holding centers in Sudurpaschim Province will help control the spread of the virus.
Influenza	• One Health coordination is required. • Continuing integrated indicator and event-based surveillance reporting through EWARS and SORMAS, with regular training, ensures timely detection and response. • Strengthening and building the capacity of Rapid Response committees and teams at the district and local municipal levels is essential. • Improving the management of ground crossings, health desks, and holding centers in Sudurpaschim Province will help in controlling the spread of influenza. • Enhancing provincial research and development activities related to influenza using a health approach is important for better understanding and management. • Raising awareness through risk communication about safe poultry handling to farmers and meat sellers will help prevent the spread of influenza from animals to humans.

Closing Remarks

The workshop concluded with a ceremony acknowledging the contributions of all participants. Dr Bhusan Mishra, Acting Director, PHD Sudurpaschim, expressed that the action plan prepared during this workshop was a significant step towards enhancing our preparedness and response capabilities. I assured everyone that this plan would be communicated with the ministry to ensure its effective implementation. Together, we could make a substantial difference in mitigating risks and improving health outcomes in our province. Thank you all for your active participation and valuable contributions.

Conclusion

The Sudurpaschim Province STAR workshop successfully identified and assessed 21 specific hazards. These hazards were further categorized into five main types: Biological, Environmental, Hydro-meteorological, Societal, and Technological. This was achieved through a step-by-step process that incorporated a participatory approach and existing data. The workshop led to the creation of a seasonal risk calendar, a risk matrix, and a database for prioritizing risks. Key actions and recommendations were developed for each hazard. Applying the results of the STAR workshop is essential for enhancing Sudurpaschim Province's health emergency preparedness and response capabilities. The comprehensive all-hazards approach derived from the workshop's findings will bolster the province's ability to respond to health emergencies, ultimately leading to better health outcomes for its residents.

Next steps involve implementing the recommendations and regularly updating the risk assessment as new hazards emerge or existing ones evolve. Maintaining a multisectoral approach and involving various provincial departments and ministries is crucial for a thorough and inclusive risk assessment. The STAR workshop report should be disseminated to all relevant sectors, partners, and donors to support decision-making, prioritize readiness activities, and strengthen health emergency and disaster risk management capacities. This report will aid decision-makers in allocating resources to address priority hazards, even with limited resources and competing priorities.

Annex:

Annex 1: Identification of Hazards

S. N	Subgroup of Hazards	Specific Hazard	Main type of hazard
1	Geophysical	Earthquake	Hydro-meteorological
2	Geophysical	Landslide	Hydro-meteorological
3	Environmental	Wildfire	Environmental
4	Technological	Road Traffic Accident	Technological
5	Environmental	Heat Wave	Environmental
6	Animal-human contact (zoonosis)	Rabies	Biological
7	Weather Related	Flood	Hydro-meteorological
8	Environmental	Healthcare/Industrial waste	Environmental
9	Societal	Substance abuse	Societal
10	Respiratory pathogens	COVID-19	Biological
11	Other infectious hazards	Antimicrobial resistance	Biological
12	Environmental	Influenza	Environmental
13	Vector-borne diseases	Dengue	Biological
14	Vector borne disease	Leishmaniasis	Biological
15	Blood borne	Scrub typhus	Biological
16	Societal	Mental Health Issues/Suicide	Societal
17	Feco-Oral disease	Cholera/AWD	Biological
18	Respiratory Pathogens	Tuberculosis	Biological
19	Feco-oral disease	Food borne/Water borne disease	Biological
20	Technological	Pesticide	Technological
21	Respiratory Pathogens	Measles	Biological

Annex 2: List of Participants

S. N	Name	Position	Organization
1	Chakra pari Pandey	Secratary	MOSD
2	Ganesh Bahadur B.K	Under-Secratary	MOSD
3	Dr Bhusan Mishra	Medical Officer	PHD
4	Dr.Gunnidhi Sharma		
5	Prasiddhi Pokheral	MTO	UNDP SUPER
6	Dr Mukesh Poudel	Consultant, Section Chief Epidemiology & Outbreak Management Section (EoMS)	EDCD
7	Bishan Datta Bhatta	SI	Nepal Police
8	Pradeep Dhoj Budhathoki	Major	Nepal Army
9	Roshan Joshi	Insp.	APF
10	Mahesh Chand	PHO	Health Office, Bajura
11	Jhanak Raj Dhungana	Sr.PHO	Health Office Achham
12	Ramesh Kunwar	Sr.PHO	Health Office, Darchula
13	Dr Chetraj Joshi	Ayurvedic Physician	MOSD
14	Dr Khagendra Bam	Ayurvedic Physician	MOSD
15	Kishor Prasad Shrestha	Medical Recorder	Seti Provincial Hospital
16	Asha Bam Shahi	Medical Recorder	Nisarga Hospital
17	Siddha Raj Bhatta	MIO	Health Officer, Kanchanpur
18	Mohan Dev Bhatta	S.O	PHD
19	Keshar Bahadur Saud	PHO	Health Office, Dadeldhura
20	Khem Raj Joshi	NRCS Kailali Member	NRCS
21	Krishna Bahadur Bohara	Sr.Health Officer	DSMC
22	Dal Bahadur Saud	APF	PEOC
23	Nabin Poudel	AMR and OH Specialist	FAO Nepal
24	Gauri lal Budhathoki	IM Officer	PEOC
25	Jagadish Joshi	Section Officer	OCMCM
26	Shiva Raj Joshi	Admin Officer	DAO Kailali
27	Shivaraj Sunar	Sr.PHO	MOSD
28	Hemraj Khadka	Sr.HEO	MOSD
29	Laxmi Dhakal	Technical Assistant	Food Technology and Quality Control
30	Bipin Lekhak	Stat.Officer	Health Office Baitadi
31	Lal Bahadur Dhami	PHO	Health Office Bajhang
32	Bhoj Raj Joshi	PHI	Health Directorate
33	Dr Pramod Upadhaya	Veterinary Officer	Veterinary Lab
34	Surendra Shahi	Veterinary Technician	Veterinary Lab
35	Min Bahadur Dhami	HA	HO Kailali
36	Dr Shivraj Paneru	Sr.Orthopedic Surgeon	SPH
37	Abhishek Raj Joshi	Pharmacy Officer	PHLMC
38	Tulasha Bharati	Program Analysist	UNFPA

39	Mukesh Pant	Communication Lead	World Vision
40	Deepak Bhandari	DRR focal Person	DSMC
41	Hem Raj Joshi	VCSO	PHD Doti
42	Tark Raj Bhat	BMLT	PPHL
43	Sujata Kunwar	Lab Technician	PPHL
44	Ramesh Malashi	Senior PHO	Health Office,Doti
45	Prakash Raj Bhatta	PHO	Health Directorate, Doti
46	Gauri Joshi	Stat Officer	Health Office,Kailai
47	Udaya Ram Joshi	IMO	DECO,Kailali
48	Dr Nishant Thakur	FMO	WHO
49	Dr Avinash Kayastha	HEIO	WHO
50	Dr Sujan Adhikari	FMO	WHO/PHEOC Sudurpaschim
51	Sandhaya Bogati	ESA	WHO/PHEOC Sudurpaschim
52	Puran Bohara	IMA	WHO/PHEOC Sudurpaschim

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