Implementation Challenges and Facilitating Factors of Malaria Screening in Health Desks of Nepal-India Boarder of Lumbini Province, Nepal

Practicum Presentation

Ganga Marasini, MPH (IS) 2022-24)

Roll No – 011

IIHMR University Supervisor

Dr. Nutan Prabha Jain, Professor

SD Gupta School of Public Health

IIHMR University, Jaipur, India

Organization Supervisor:

Dr. Bishnu Prasad Marasini, Consultant
Nepal Health Research Council
Kathmandu, Nepal

September 16, 2024

Outline of the Presentation

- Introduction
- Rationale
- Problem Statement
- Literature Review
- Methodology
- Results
- Conclusion
- Recommendation
- Annexes
- References

INTRODUCTION

Malaria and Cross-border Challenges

Persistent Public Health Threat

Malaria remains a major health issue in cross-border regions between Nepal and India, especially in areas of high migration.

Global Malaria Elimination Strategy

WHO's Global Technical Strategy for Malaria 2016-2030 targets elimination in at least 10 countries by 2030.

Nepal's Malaria Elimination Goal

Nepal aims to eliminate malaria by 2026, but cross-border challenges complicate efforts.

RATIONALE

- Malaria transmission through cross borders especially in the Nepal-India borders, which is affecting the achievement of Nepal government's goal of eliminating malaria by 2026, it is important to strengthen screening services in the health desks.

- A report published by Nepal Health Research Council (2023) on possible actions for controlling and eliminating vector borne diseases also emphasized similar strategy. There is a need to incorporate other vector borne diseases which are communicable in nature into the screening system at health desks.

- Due to the lack of implementation research, it is difficult to analyze the current situation of the health desks and the barriers and facilitators in malaria screening service delivery.

PROBLEM STATEMENT

Items /Indicators	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-80 BS (2022-23 AD)
Total Population	11902650	10140450	10299169
Total Slide Examined (Slide and RDT)	156783	29493	468330
Total Positive Cases	377	491	533
Total Indigenous Cases	66	38	24
Total Imported Case	311	453	509
% of Indigenous Cases	17.5	7.7	4.5
% of Imported Case	**82.5**	**92.2**	**95.5**

Provincial Malaria Epidemiological trend of Last 3 Fiscal Year

Province	Annual Blood Examination Rate (ABER) of malaria at risk population			Malaria annual parasite incidence per 1,000 population			% of Pf cases among the total malaria cases			% of imported cases among positive cases of malaria			Slide positivity rate of malaria		
	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80
Koshi	1.64	2.48	4.52	0	0.01	0.01	0	20	50	100	100	100	0.02	0.02	0.03
Madhesh	1.05	2.4	2.99	0.01	0.04	0.06	27.3	13.6	29.69	90.9	100	100	0.05	0.18	0.21
Bagmati	0.71	4.64	8.10	0.01	0.02	0.03	70	51.2	40.63	86.5	100	96.88	0.05	0.05	0.05
Gandaki	0.42	1.08	2.64	0.01	0.01	0.02	25	23.1	26.92	86.5	100	100	0.25	0.11	0.09
Lumbini	2.71	3.58	5.77	0.04	0.1	0.11	30.9	38.9	37.57	91.7	97.5	99.45	0.16	0.27	0.20
Karnali	0.52	1.57	2.95	0.02	0.04	0.03	5.9	2.1	12.90	72.5	62.5	70.97	0.48	0.25	0.08
Sudurpaschim	1.52	3.02	3.84	0.08	0.07	0.06	4.48	11	13.33	82.5	91.2	92.67	0.53	0.24	0.16

Source: EDCD/HMIS/DoHS

Literature Review

Authors (Year)	Study title	Location	Salient features
Xiaohong Li, Robert W. Snow, Kim Lindblade, Abdisalan M. Noor, Richard Steketee, Regina Rabinovich, DeyerGopinath, ElkhanGasimov& Pedro L. Alonso (2023)	Border malaria: defining the problem to address the challenge of malaria elimination		Higher intrinsic transmission potential, the neglect of investment and development, the constant risk of malaria importation due to cross-border movement, the challenges of implementing interventions in complex environments and uncoordinated action in a cross-border shared transmission focus all contribute to the difficulties of malaria elimination in border areas.
Bhattarai, Shreejana et al.(2023)	Spatio-temporal patterns of malaria in Nepal from 2005 to 2018: A country progressing towards malaria elimination	Nepal	Using spatial variation in a temporal trend method, this study mapped trends in malaria prevalence. Though there is an increasing trend of imported malaria cases, yet overall trend is showing that the malaria burden was decreasing in Nepal, and need focused interventions in the endemic districts.
NirmalGautam, SampurnaKakchapati, Sarala Shrestha and WandeeWanishsakpong(2019)	Patterns and trends of malaria in 25 risk districts of Nepal from 2001 to 2017		This study analyzed malaria situation reported in the Annual Reports from 2001-2017 by the Government of Nepal. This analysis found a very upward and downward trends between 2001 to 2017. The higher rate of malaria reported in Dadeldhura, Kanchanpur, Kailali, Bardiya, and Jhapa districts.
Smith, J.L., Ghimire, P., Rijal, K.R. et al. (2019)	Designing malaria surveillance strategies for mobile and migrant populations in Nepal: a mixed-methods study	Nepal	This research attempts to identify link between the imported and indigenous cases by using a mixed-method approach. More than 50% of malaria cases were found imported between 2013-2016. This study found monthly indigenous cases and previous month's case importation rate.

Literature Review

Authors (Year)	Study title	Location	Salient features
Regmi, Pramod R et al. (2019)	The Health of Nepali Migrants in India: A Qualitative Study of Lifestyles and Risks.	India	Lack of basic amenities in accommodation, work-related hazards such as lack of safety measures at work or safety training, reluctance of employers to organize treatment for work-related accidents, occupational health issues such as long working hours, high workload, no/limited free time, discrimination by co-workers were identified as key problems.
Rijal, Komal Raj et al. (2018)	Epidemiology of Plasmodium vivax Malaria Infection in Nepal		This review of the epidemiology of P. vivax malaria infections as recorded by the national malaria control program of Nepal between 1963 and 2016 for vivax malaria is prevalent and dominated in Nepal in the last 50 years. Falciparum cases increased between 2005 to 2010 and the declined. This review also found an 18% increase in imported cases and 50% in 2016.
Yaobao Liu, Hugh J W Sturrock, Haitao Yang, Roly D Gosling, Jun Cao (2017)	The challenge of imported malaria to eliminating countries		China is on the path to malaria elimination with most areas of the country in the prevention of reintroduction phase. Other elimination settings face the same threat of malaria resurgence or re-introduction by imported cases such as Sri Lanka and Kyrgyzstan. In China and Nepal, the risk is due to returning labourers undertaking high-risk work outside with scarce awareness of self-protection in malaria endemic areas.

Literature Review

Authors (Year)	Study title	Location	Salient features
Dhimal, Meghnath et al. (2014)	Malaria control in Nepal 1963-2012: challenges on the path towards elimination.		This study found trends and differences in malaria indicators reported through the routine surveillance of health facilities between 1963-2012. This study revealed that there was an increasing trend of falciparum and imported cases in the last decade.
Sabine Schmid, Peter Chiodini, FabriceLegros, Stefania D'Amato, Irene Schöneberg, Conan Liu, RagnhildJanzon, Patricia Schlagenhauf (2009)	The Risk of Malaria in Travelers to India		This study identified risk of imported malaria cases to travelers in India. It found that vivax malaria is predominant among the travelers to India.

Research Question and Objective

What are the key challenges and enabling factors in implementing Malaria Screening at Health Desks of Lumbini Province Nepal?

Objective :

To identify barriers and facilitators in implementing malaria screening in health desks at cross boarder setting of Lumbini Province

METHODOLOGY

Research Design : Mixed Method Explanatory Sequential Research Design

Quantitative Method

Service records at Health Desks (2020-2023)

Sampling Technique : Purposive sampling

Qualitative Methods

- 3 IDI with Service Provider at Health Desk
- 3 KII from respective Municipality
- 3 KII from Respective District Health Office (Vector borne Disease focal person)
- 1 KII from NTD and Vector Borne Focal person of Lumbini Province
- 3 FGD with Migrants crossing border
- 3 Observation (Each health Desks)

Study Setting

Jamunaha Health Desk

Municipality : Nepalgunj Sub Metropolitan City, District : Banke

Belahiya Health Desk

Municipality : Sidhdharthanagar Municipality

District : Rupandehi

Krishnanagar Health Desk

Municipality : Krishnanagar Municipality

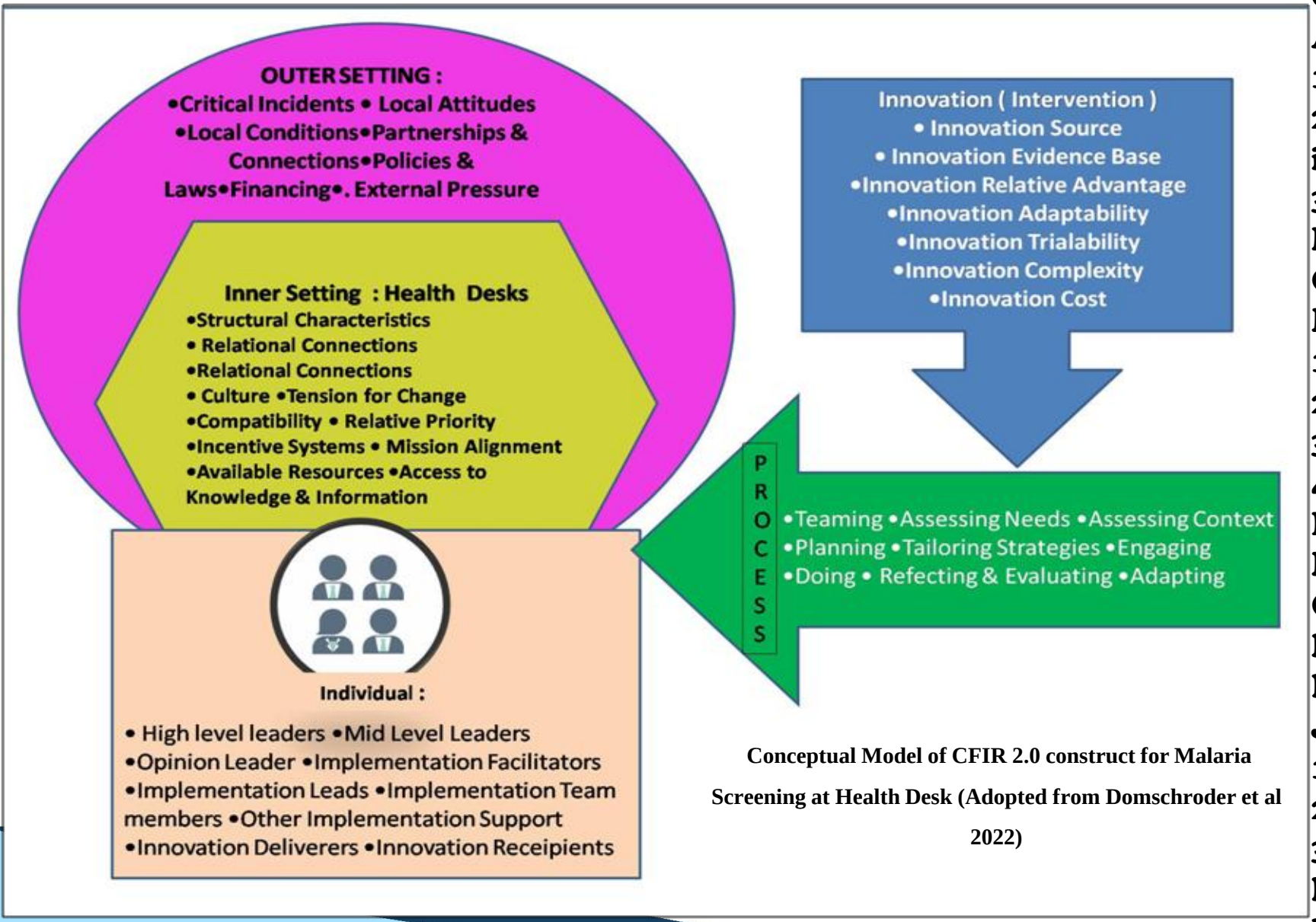
District : Kapilvastu

CFIR FRAMEWORK

CFIR 2.0 refers to an updated version of the Consolidated Framework for Implementation Research, which is a widely used framework designed to help researchers and practitioners understand and analyze the contextual factors that influence the implementation of interventions.

This framework includes 48 constructs and 19 Sub-constructs organized into five key domains, enabling a comprehensive evaluation of implementation processes and outcomes.

IR FRAMEWORK



Conceptual Model of CFIR 2.0 construct for Malaria Screening at Health Desk (Adopted from Domschroder et al 2022)

Inner Setting Domain Constructs

A. Structural Characteristics
1. Physical Infrastructure
2. Information Technology infrastructure
3. Work Infrastructure
B. Relational Connections
C. Communications
D. Culture
1. Human Equality-Centeredness
2. Recipient-Centeredness
3. Deliverer-Centeredness
4. Learning-Centeredness
E. Tension for Change
F. Compatibility
G. Relative Priority
H. Incentive Systems
I. Mission Alignment
J. Available Resources
1. Funding
2. Space
3. Materials & Equipment
K. Access to Knowledge & Information

Data Analysis

- Services statistics data from the three selected health desks was entered in **Microsoft excel** by las three fiscal year by year.
- Observation based data was analyzed separately to support the service statistics and data collected qualitatively.
- The **thematic analysis** of the qualitative data was done using **Excel software.**

Ethical Consideration

- **Ethical approval** was obtained from Ethical Review Board (#121_2024),Nepal Health Research Council
- **Permission** was obtained from Health Directorate, Lumbini Province
- Written informed consent was obtained from the participants

Stakeholder analysis

Stakeholder	Contact person	Interest	Power to Influence	Importance	Contribution to the program	Any negative affect to the program	Matrix classification	Matrix strategy
Epidemiology and Disease Control Division, Department of Health Service,Kathmandu Nepal	www.edcd.gov.np Section Chief Vector Borne Disease control Section	High	High	Monitoring of diseases through health desks present at point of entries at international ground crossing point	Provide support to Ministry of Health and Population for drafting national laws, policies, and strategies related to Communicable diseases and Infectious disease, including VBDs . -Develop guidelines - Monitoring and Evaluation - Budgeting	The priorities may change from Malaria Elimination to other health issues; Less or no reliability on the findings; focus on pandemic or endemic problem - not allocating sufficient budget	Champion	Manage Closely
Province Directorate, Ministry of Health , Lumbini Province	https://mohp.lumbini.gov.np/ Focal Person /Vector borne disease and NTD	High	High	Program Implementation	- Monitoring Supervision - Logistic Management	By not monitoring frequently Lack of communication - poor logistic management	Champion	Manage Closely
Health Office	Vector Borne Disease Control Inspector ,	High	Low	Implementation of VBD control program within the district	-Monitoring and evalustion - co-ordinattion between central, province and local government - Logistic Management	lack of interest as they donothv budget at district for health desk managent	Avoider	Keep Satisfied
Local Municipality	Health Section Co-ordinator	High	Low	Implementation of VBD control program within the municipality	-Monitoring and evalustion - co-ordinattion between central, province and local government and health desk - Logistic Management	lack of interest as they donothv budget at district for health desk managent	Silent Booster	Keep onside, Monitor interest
Health Desk (POE)	Incharge	High	Low	Disease Screening,Isolationquarantine testing and treatment management coordination	Infectious Disease Control, Early diagnosis and treatment	Overall management of Health desk will be affected and results in poor quality	Silent Booster	Keep onside, Monitor interest
Service Providers (Health Desk)	Paramedics ,Nurse and Lab staffs	High	Low	Disease Screening,Isolationquarantine testing and treatment	Infectious Disease Control, Early diagnosis and treatment helps for malaria elimination	Lack of knowledge, skill for service delivery	Silent Booster	Keep onside, Monitor interest
Nepal Police	Inspector	Low	High	Referring migrants to health desk for screening	Service Coverage will increase	Lack of Interest in health program	Champion	Manage Closely
Armed Police Force		Low	Medium	Referring migrants to health desk for screening	Service Coverage will increase	Lack of Interest in health program	Champion	Manage Closely
Costom Offices	Government Officer	Low	Medium	Co-ordination with health desk	Service Coverage will increase	Lack of Interest in health program	Champion	Manage Closely
Tourist Police		Low	Low	Referring migrants to health desk for screening	Service Coverage will increase	Lack of Interest in health program	Champion	Manage Closely
Local NGO – KIDS	Lab Staffs	High	Low	Screening of Tuberculosis and help for malaria screening	Service Coverage will increase	Project duration ending	Uncertain	Minimal effort
Save The Children	Health Workers appointed from SCF	High	Low	Malaria Screening	Service Coverage will increase	Ending project	Uncertain	Minimal effort
Other NGOS – MaitiNepal,KIN	Social Workers	Low	Low	Increase awareness and refer	Increased awareness	Lack of Interest in health program	Blocker	Keep informed

Stakeholder Analysis

Champions

EDCD and the Health Directorate of Lumbini Province were identified as the champions due to their pivotal roles in policy development and disease monitoring.

Avoider

Health offices and municipalities , while showing interest, lack the authority and resources to effectively manage health desks

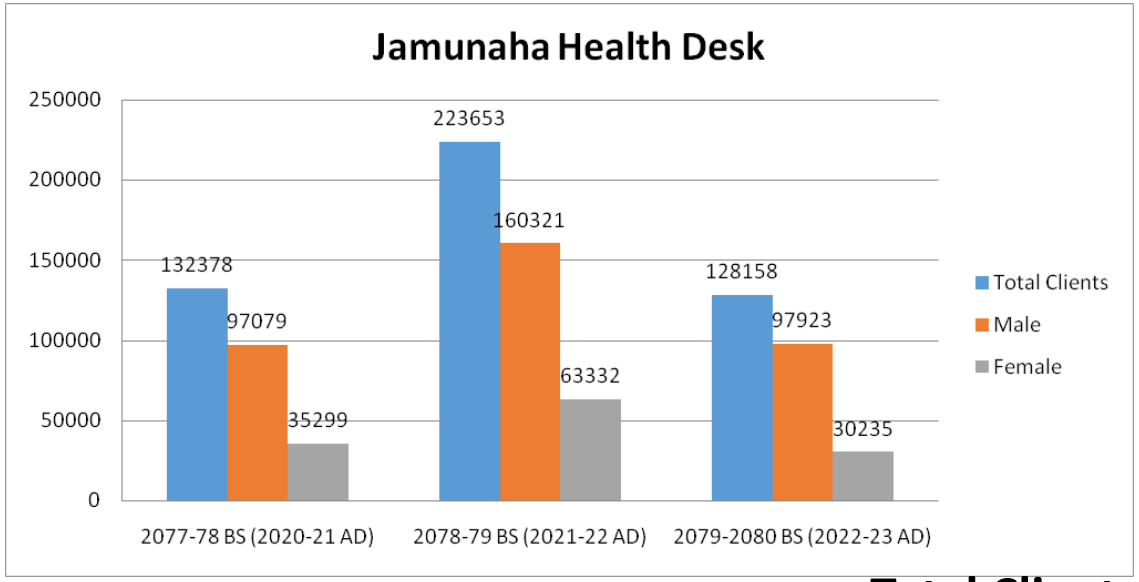
Silent Booster

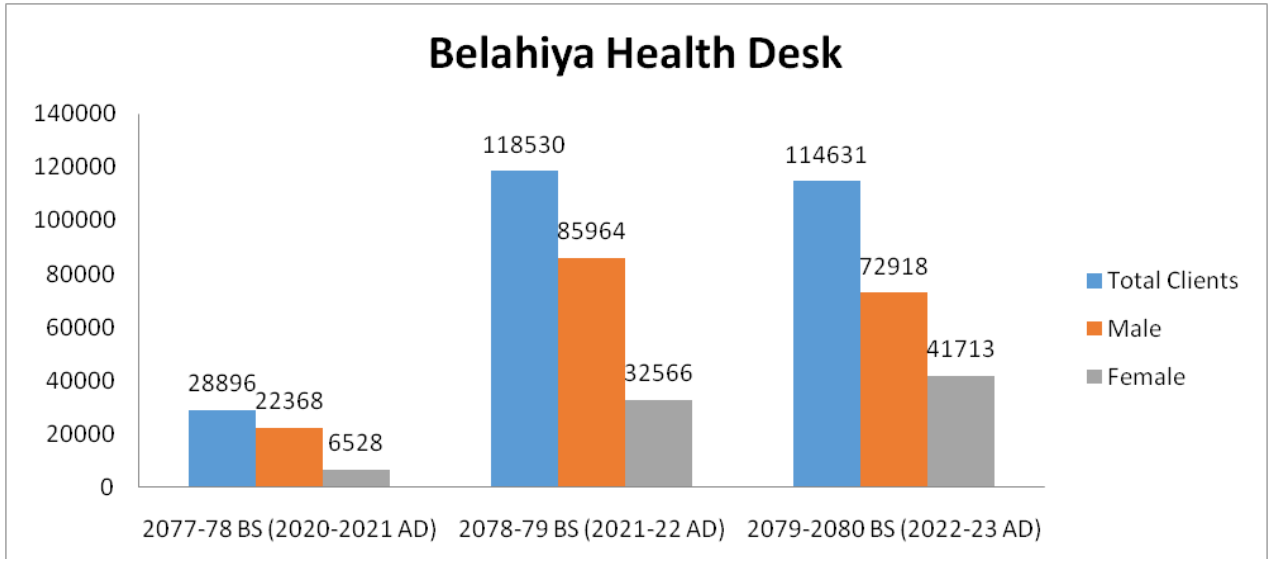
Health desk staff, classified as 'Silent Boosters,' continue to provide essential services despite numerous operational challenges.

RESULTS:

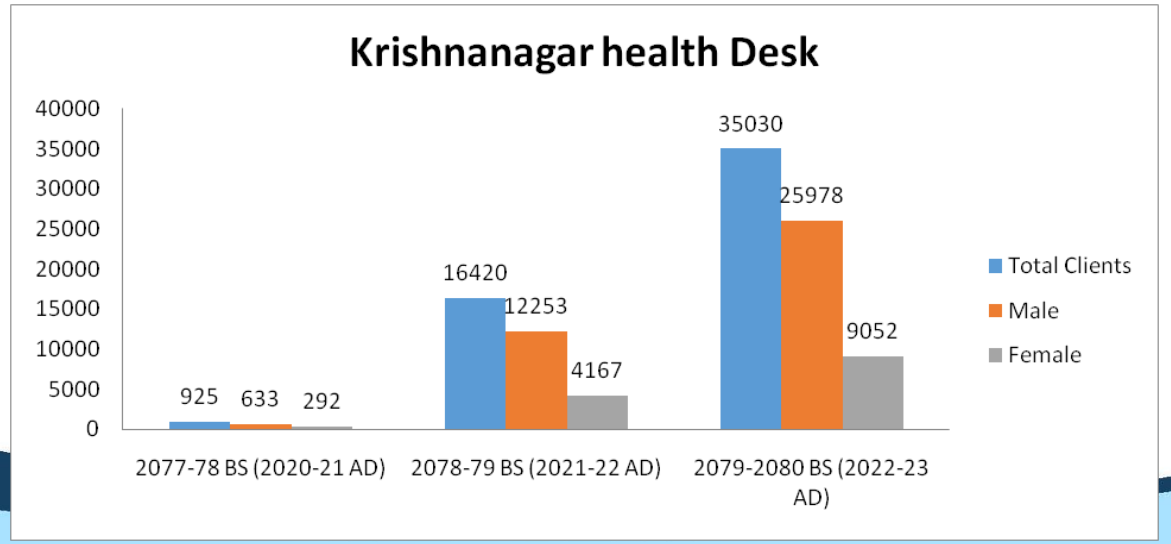
- Service statistics
- Observational Results
- Qualitative Findings

Service statisticss at Health Desks (2020-2023)





Total Clients Screened (Number)



Screening Service Utilization, by Health Desks and Year

	Jamunaha			Belahiya			Krishnanagar		
	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-2021 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)
Total Client	**132378**	**223653**	**128158**	**28896**	**118530**	**114631**	**925**	**16420**	**35030**
Male	**97079**	**160321**	**97923**	**22368**	**85964**	**72918**	**633**	**12253**	**25978**
%	**73.33**	**71.68**	**76.41**	**77.41**	**72.53**	**63.61**	**68.43**	**74.62**	**74.16**
Female	35299	63332	30235	6528	32566	41713	292	4167	9052
%	**36.36**	**39.50**	**30.88**	**29.18**	**37.88**	**57.21**	**46.13**	**34.01**	**34.84**
Fever Screening	Not recorded	26	14	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded

Malaria Screening and Testing

	Jamunaha			Belahiya			Krishnanagar		
	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-2021 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)
RDT conducted for Malaria	**6981**	**8570**	**2793**	**168**	**2681**	**2436**	**5**	**0**	**565**
P. Vivax +ve cases	0	3	0	0	1	0	0	0	1
P. Falciparum +ve cases	0	0	1	0	0	0	0	0	0

Other Services Provided by Health Desk

	Jamunaha			Belahiya			Krishnanagar		
	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-2021 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)	2077-78 BS (2020-21 AD)	2078-79 BS (2021-22 AD)	2079-2080 BS (2022-23 AD)
COVID-19 Screening	**9642**	**76743**	**32123**	**5484**	**77710**	**54428**	**63**	**401**	**4917**
+ve cases	274	1097	397	131	1429	1560	13	104	213
-ve cases	9368	75646	31726	5353	76281	52868	50	297	4704
TB	36	1303	864	0		595		4	242
Sputum +ve cases	0	11	5	0					1
HIV counselling		89		0				20	484
HIV Testing		51		0				10	119

Blank : Data not available

Observation Findings

Parameters	Krishnanagar	Jamunaha	Belahiya
Laboratory			
Lab Technician Availability	Partial	Partial	Partial
Blood Microscopy for Malaria	Not being done, Microscope not available	Not being done, Microscope not available	Not being done, Microscope not available
RDT for Malaria (Antigen)	Bivalent (Pv/Pf)	Bivalent (Pv/Pf)	Bivalent (Pv/Pf), conducted randomly
Training of LTs in past three years on Malaria	Yes	No	Yes
Resource Availability			
a) Functional Microscope	No	No	No
b) Reagents	No	No	Yes
c) Glass Slides	No	Yes	Yes
d) Lancets	No	Yes	Yes
e) Hollow/Injection Needles used for Finger Prick	Yes	Yes	Yes
f) RDTs for Malaria	Yes	Yes	No
Availability of arrangement **for segregation of BMW at the session site.**	Yes	No	No
OPD and Service Provision Area			
IEC Related to Malaria displayed in Facility	No	No	No
Display of treatment guidelines for Malaria	No	No	No
Provision for temperature measurement of Fever Cases			
a) Thermometer	Yes	Yes	No
b) Temperature being Measured	Yes	No	No
Recording and reporting of Fever Cases (Check registers/ask Providers)	No	Not being done (only if necessary)	No
Drug Dispensing			
Drug Availability			
a) Chloroquine Tablets	Yes	Yes	No
b) Primaquine Tablets	No	No	No
c) Artesunate Combination Therapy	No	Yes	No
d) Injection Artesunate	No	Yes	No
e) Quinine Tablets	No	Yes	No
f) Quinine Injection	No	Yes	No
g) Ambulance Availability	No	Yes	No

Key Observations

- Lab Technician was partially available in all three health desks
- Microscope is not available in all the three health desks,
- Bivalent (Pv/PF) RDT are available in all health desks
- IEC (Information, Education and Communication) materials were unavailable in all the three health desks
- Only Chloroquine found in Two health desks whereas no malaria medicine found at Belahiya .

Qualitative Findings : Themes Emerged

(i) Poor governance of health desks affecting screening services

(ii) Lack of screening protocol

(iii) Border dynamics weakening prioritizing health screening

(iv) Inadequate human resources, unclear roles and responsibilities of service providers affecting screening

(v) Lack of sufficient material resources for screening

(vi) Operational challenges affecting screening

Thematic analysis (Qualitative Data)

(i) Poor governance of health desks affecting screening services	(ii) Lack of screening protocol	(iii) Border dynamics weakening prioritizing health screening
•Specific barriers: •Health desks are governed by federal government, less power to municipality and Province •Poor relationship between health desks and higher authorities •Communication barrier in reporting the challenges to higher authorities •No feedback from municipality on monthly reports •Lack of acknowledgement by higher authorities on the services provided in the health desks •Exclusion of health desks in border issues/Health is not perceived as important like border security	•Specific barriers: •Absence of standard screening protocol/guideline •Absence of protocol due to lack of attention of health desks by higher authorities •Absence of protocol due to difficult to follow International Health Regulation •Absence of protocol leading to performing in public place or in vehicle •Absence of protocol leading to properly screen and identify malaria positive cases	•Specific barriers: •Unable to screen everyone due to high number of individuals in the border, positive cases may goes missing due to not screening everyone •Health desks is not located in the direction of individuals entering Nepal from India •Migrants disobey/neglect health desks care providers •Less importance of health after COVD by the border police •No full support is received from border police in directing migrants for health screening in health desks •Avoidance of screening by migrants due to hurry and excitement to reach home •Self-perceived health of being healthy led to migrants not being screened •Migrants are unaware of health desks and its services other than COVID

•(iv) Inadequate human resources, unclear roles and responsibilities of service providers affecting screening	•(v) Lack of sufficient material resources for screening	•(vi) Operational challenges affecting screening
•Specific barriers: •Untimely contract renewal leading to high turnover •Shortage of staff led to the appointment of NGO staff in screening services in health desks •Less attention to retaining staff. High staff turnover affecting screening •Untimely salary demotivating staff in health desks •Shortage of staff considering staff and beneficiary ratio •Multitasking nature of tasks among staff in health desks •Lack of capacity building and health desks staff were excluded from periodic government training	•Specific barriers: •Inadequate building infrastructure including insufficient space •Lack of timely supply of RDT Kit in adequate number •Lack of malaria specific IEC materials for counselling •Lack of microscope resulting in no microscopic examination •Inadequate recording and reporting forms/registers •Unavailability of common medicines	•Specific barriers: •No allocation of fund and its availability for transportation. •Using own vehicle or salary for meeting transportation cost to bring RDT kit and related materials needed for screening. •No operational cost available for drinking water facility, paying electricity bill

Summary Malaria screening Implementation Challenges using CFIR 2.0

Structural Characteristics	• **Location of Health desk is problematic(Not Suitable)** • **Absence of standard screening protocol and treatment guideline** • **Lack of attention of health desks by higher authorities** • **Difficult to follow International Health Regulation** • **Absence of protocol** • **Inadequate building infrastructure including insufficient space Inadequate recording and reporting forms/registers** • **Human Resource Constraints** • **Unclear Roles and responsibility**
Relational Connections	• Health desks are governed by federal government, less power to municipality and Province. • No clear roles and responsibilities among three tier Government (the federation, the province and the local level) • Poor communication between health workers and upper authority. • Inadequate involvement of key stakeholders, including local authorities and community leaders • Not involved in cross border meeting
Communications	• Communication barrier in reporting the challenges to higher authorities (no feedback on report from upper authorities) • Feeling of isolation of health desk while COVID cases came down
Culture	• Lack of Supportive Environment: The organizational culture does not promote innovation or adaptability in overcoming implementation challenges.
Compatibility	• Absence of standard screening protocol/guideline • Absence of protocol leading to properly screen and identify malaria positive cases • Absence of protocol due to lack of attention of health desks by higher authorities • Absence of protocol leading to performing in public place or in vehicle

Barriers

Summary Malaria screening Implementation Challenges using CFIR 2.0

Relative Priority	• Relatively high priority for COVID screening • Staff sense a lack of urgency or priority for malaria screening from authorities.
Incentive Systems	• Delay in salary disbursement demotivate health desks staff • Contracts of staff have not renewed for mid-December 2023
Funding	• *No dedicated allocation of fund* • *No operational cost available for drinking water facility, paying electricity ,transportation*
Space	*Inadequate space for different services*
Materials & Equipment	• *Inadequate Screening Tools* • *Equipment Deficiency* • *Lack of timely supply of RDT Kit in adequate number, Stock out time to time* • *No microscope available, which impacted the accuracy of malaria diagnosis.* • *Lack of malaria specific IEC materials for counselling* • *There was no ambulance available for emergency responses at any of the health desks..* • *The unavailability of critical items like malaria-specific drugs (e.g., chloroquine, primaquine) at some health desks*
Access to Knowledge & Information	• Inadequate training in malaria screening procedures. • No focused training on health desk operation • Lack of capacity building and health desks staff were excluded from periodic government training

Summary Malaria screening Implementation Facilitators using CFIR 2.0

CFIR Domain: INNER SETTING FACILITATORS	
Structural Characteristics	• Construction of one health desk (Physical infrastructure) • Availability of Computer or Laptop and internet in all health desk (IT infrastructure) • Timely reporting (daily and Monthly basis) • Availability dedicated Lab staff (Work infrastructure) • NGO and INGO support for human resource
Relational Connections	Co-ordination with border police and APF
Culture	Work as a team, Motivated Staff
Compatibility	Screening of infectious disease at PoE
Relative Priority	Recognition of malaria screening importance due to Nepal's goal of eliminating malaria by 2026
Mission Alignment	Aligned
Available Resources	RDT kit can detect both Pv and Pf Use of Alternative Energy Sources
Access to Knowledge & Information	half day orientation by donor agency

CONCLUSION

Imported malaria cases threaten Nepal's malaria elimination efforts and SDG 3.3, which targets ending malaria by 2030

Key Barriers to Malaria Screening at Health Desks:

- Poor governance and management of health desks.
- Lack of a clear screening protocol.
- Complexities of border dynamics.
- Unclear roles and responsibilities of service providers.
- Insufficient material resources.
- Operational challenges.

Recommendations

Resource Allocation

Ensuring Regular supply of RDT and Microscope as well as other essential material

Cross Boarder Collaboration

Joint efforts with India to reduce border malaria

Governance and Training

Improving Governance and staff training will enhance service delivery and support the 2026 Malaria Elimination Goal

BELAHIYA HEALTH DESK

SD GUPTA
SCHOOL *of* PUBLIC HEALTH

Jamunaha Health Desk

Krishnangar Health Desk

World Health Organization

For research on diseases of poverty

UNICEF - UNDP - World Bank - WHO

World Health Organization

World Health Organization

SD GUPTA
SCHOOL *of* PUBLIC HEALTH

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 1646

28 March 2024

Ms. Ganga Marasini
Principal Investigator
IIHMR University
India

Ref: Approval of thesis protocol

Dear Ms. Marasini,

This is to certify that the following protocol and related documents have been reviewed and granted approval through the expedited review process for its implementation.

Protocol Registration No/ Submitted Date	121_2024 4 March 2024	**Sponsor Protocol No**	NA
Principal Investigator/s	Ms. Ganga Marasini	**Sponsor Institution**	NA
Title	Implementation Challenges and Facilitating Factors of Malaria Screening in Health Desks of Nepal-India Boarder of Lumbini Province, Nepal		
Protocol Version No	NA	**Version Date**	NA
Other Documents	1. Data collection tools 2. Informed Consent Form 3. University letter 4. Recommendation letter from the supervisor 5. Support letter 6. Conflict of Interest (CoI) 7. Ethics Training Certificate 8. Work plan	**Risk Category**	Minimal risk
Co-Investigator/s	1. Dr. Bishnu P. Marasini 2. Prof. Nutan Prabha Jain		
Study Site	Lumbini Province, Nepal		
Type of Review	√ **Expedited** ☐ Full Board **Review Date:** 28 March 2024	**Timeline of study** 28 March 2024 to September 2024 **Duration of Approval** 28 March 2024 to 24 March 2025 **This approval will be valid for one year**	**Frequency of continuing review** NA

Tel: +977 1 4254220, Ramshah Path, PO Box: 7626, Kathmandu, Nepal
Website: http://www.nhrc.gov.np, E-mail: nhrc@nhrc.gov.np

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 1646

Total budget of research	**Self-funded**
Ethical review processing fee	**NRs 10,000.00**

Investigator Responsibilities

- If you do not start the project within 3 months of this letter, please contact the Ethical Review M & E Section at NHRC
- Any amendments shall be approved from the ERB before implementing them
- Submit progress report every 6 months
- Submit final report after completion of protocol procedures at the study site
- Comply with all relevant international and NHRC guidelines
- Abide by the principles of Good Clinical Practice and ethical conduct of the research

If you have any questions, please contact the Ethical Review M & E Section at NHRC.

Thanking you,

Dr. Pramod Joshi
Member Secretary

Tel: +977 1 4254220, Ramshah Path, PO Box: 7626, Kathmandu, Nepal
Website: http://www.nhrc.gov.np, E-mail: nhrc@nhrc.gov.np

Ethical Approval Letter

प्रदेश सरकार
स्वास्थ्य मन्त्रालय
स्वास्थ्य निर्देशनालय
राप्ति उपत्यका देउखुरी नेपाल

फोन नं ०८२५९०४३४
ईमेल:hd prov5@gmail.com
वेवसाईट:
www.hd p5 gov.np

पत्र संख्या :०८०/०८१
चलानी नं.:१५८४

मिति २०८०।११।०९

श्री जो जस संग सम्वन्ध छ।

विषयः अध्ययन अनुसन्धानको लागी अनुमति सम्वन्धमा।

प्रस्तुत विषयमा IIHMR University Rajasthan India मा MPH विषयमा अध्ययनरत छात्रा गंगा मरासीनी ले यस लुम्विनी प्रदेश अन्तर्गतका भारतिय सिमा नाका जमुनाह,कृष्णनगर र बेलहिया मा संचालित हेल्थ डेक्स मा औलो सम्वन्धि अध्ययान अनुसन्धान गर्न माग गरेकोले निजको माग वमोजिम सेवाग्राही हरुमा असर नपर्ने गरी अध्ययन अनुसन्धानको लागी अनुमती दिईएको छ।

.....
डा.विनोद कुमार मरासिनी
निदेशक

"राज्यको सवै तहमा स्वास्थ्य सेवाको पूर्वाधार, गुणस्तरीय र जनमुखी स्वास्थ्य सेवा, सम्वृद्धि एवम दिगो विकासकोआधार"

Permission From Province

Government of Nepal
Nepal Health Research Council (NHRC)
Estd. 1991

Ref. No.: 470

Date: 9th Sep, 2024

TO WHOMSOEVER MAY CONCERN

This is to certify that Ms. Ganga Marasini, student of Master of Public Health (Implementation Science) Program offered by IIHMR University, Jaipur has undergone Practicum Training at Nepal Health Research Council, Kathmandu from date 15th Dec 2023 to 8th Sep 2024.

The candidate has successfully carried out the study on **"Implementation Challenges and Facilitating Factors of Malaria Screening in Health Desks of Nepal-India Boarder of Lumbini Province, Nepal"** during practicum training and her approach to the study has been sincere, scientific and analytical. She worked under supervision of **Dr. Bishnu P. Marasini,** Senior Research Officer/Consultant.

The Practicum Training is in fulfilment of the course requirements. I wish her success in all her future endeavours.

Sincerely,

Dr. Pramod Joshi
Member-Secretary
(Executive Chief)

Practicum Completion Letter

In Depth Interview

IN-DEPTH INTERVIEW QUESTIONNAIRE
(For Nurse/Paramedics at Health Desk)

General Information
Your Sex .....
(लिंग):.....
Age (in years): .....
उमेर (वर्षमा) : .....
Level of education: .....
शिक्षा: .....
Designation: .....
पद : .....
Areas of expertise: .....
विशेषज्ञताकाक्षेत्रहरू: .....
Total years of service: .....
सेवाकोकुलवर्ष: .....

General Background:
Q. Can you provide an overview of your role and responsibilities as aservice provider in malaria screening at this health desk?
केतपाईंयसहेल्थडेस्कमामलेरियास्क्रिनिङकार्यमाआफ्नोभूमिकारजिम्मेवारीहरूकोबारेमा जानकारी प्रदानगर्नसक्नुहुन्छ?

Knowledge and Training:
Q. Can you describe the training you received regarding malaria screening and treatment?
मलेरियास्क्रिनिङरउपचारकोसम्बन्धमातपाईंलेप्राप्तगर्नुभएकोतालिमकोवर्णनगर्नसक्नुहुन्छ?

Q. In general, what kind of training have you received regarding malaria screening and its importance? and specifically, what specific training have you received for malaria screening in a cross-border setting?
सामान्यतया, मलेरियास्क्रिनिङरयसकोमहत्त्वकोसम्बन्धमातपाईंलेकस्तोप्रकारकोतालिमप्राप्तगर्नुभएकोछ? रविशेषगरी, यस हेल्थ डेस्कसेटिङमामलेरियाजाँचकोलागितपाईंलेकुनैविशेषप्रशिक्षणप्राप्तगर्नुभएकोछ?

Q. Are there specific aspects of the training that you found particularly helpful or challenging?
केत्यहाँप्रशिक्षणकाविशेषपक्षहरूछन्जुनतपाईंलेविशेषगरीउपयोगीवाचुनौतीपूर्णपाउनुभयो?

Q. Are you aware of the current protocol? How comfortable do you feel with the current cross border screening protocols and procedures?
केतपाईँहालकोप्रोटोकलबारेसचेतहुनुहुन्छ?
हालकोक्रसबोर्डरस्क्रिनिङप्रोटोकलरप्रक्रियाहरूसँगतपाईँकत्तिकोसहजमहसुसगर्नुहुन्छ?

Q. What are some of the challenges faced by you (health desk personnel) in conducting malaria screening?
मलेरियास्क्रिनिङसञ्चालनगर्दातपाई (स्वास्थ्यडेस्ककाकर्मचारीहरू) लेसामनागर्नुपरेकाकेहि समस्या र चुनौतीहरूकेकेछन्?

Operational Challenges:
Q. Can you describe the typical workflow of screening (in general and specifically of malaria) at the health desk?
केतपाईँहेल्थडेस्कमास्क्रिनिङकोसामान्यकार्यप्रवाह (सामान्यरविशेषगरीमलेरियाको) वर्णनगर्नसक्नुहुन्छ?

Q. What logistical challenges do you face in implementing malaria screening procedures in thishealth desk?
यसहेल्थडेस्कमामलेरियास्क्रीनिंगप्रक्रियाहरूलागूगर्नमातपाईंलेके-कस्ताचुनौतीहरूसामनागर्नुहुन्छ?

Q. How do you address these challenges to ensure consistent and effective screening services?
निरन्तररप्रभावकारीस्क्रिनिङसेवाहरूसुनिश्चितगर्नयीचुनौतीहरूलाईकसरीसम्बोधनगर्नुहुन्छ?

Resources and Facilities:
Q. Do you have access to all the necessary equipment and supplies for malaria screening?
OR are there any resource limitations, such as infrastructure, staffing, equipment, or supplies, transportation that hinder the efficient implementation of malaria screening?
केतपाईँसँगमलेरियास्क्रीनिंगकोलागिसबैआवश्यकउपकरणरआपूर्तिहरूमापहुँचछ?
वा
केत्यहाँकुनैस्रोतसीमितताहरूछन्, जस्तैपूर्वाधार, कर्मचारी, उपकरण, वाआपूर्ति, यातायातजसलेमलेरियास्क्रीनिंगकार्यको प्रभावकारीकार्यान्वयनमाबाधापुर्‍याउँछ?

Q. How do these resource constraints impact the quality and coverage of malaria screening services?
यीस्रोतअवरोधहरूलेमलेरियास्क्रीनिंगसेवाहरूकोगुणस्तररकभरेजलाईकसरीअसरगर्छ?

Q. How do you address these challenges to ensure consistent and effective screening services?
निरन्तररप्रभावकारीस्क्रिनिङसेवाहरूसुनिश्चितगर्नयीचुनौतीहरूलाईकसरीसम्बोधनगर्नुहुन्छ?

Cross-Border Dynamics:
Q. How does this cross-border setting affect the implementation of malaria screening? Are there unique implementation challenges in this cross-border setting for malaria screening?
योसीमापारसेटिङलेमलेरियास्क्रिनिङकोकार्यान्वयनलाईकसरीअसरगर्छ?
केत्यहाँमलेरियास्क्रीनिंगकोलागियोसीमापारसेटिङमाअद्वितीयकार्यान्वयनचुनौतीहरूछन्?

Q. Are there legal or regulatory barriers that affect your ability to carry out malaria screening activities at this health desk?
केत्यहाँकानुनीवानियामकअवरोधहरूछन्जसलेयसस्वास्थ्यडेस्कमामलेरियास्क्रीनिंगगतिविधिहरूसञ्चालनगर्नेतपाईंकोक्ष मतालाईअसरगर्छ?

Coordination with Border Authorities:
Q. Can you describe the level of coordination with Nepal border authorities and other relevant stakeholders (like NGOs etc.) for malaria screening?
मलेरियास्क्रिनिङकालागिनेपालसीमाअधिकारीहरूरअन्यसम्बन्धितसरोकारवालाहरू (जस्तैगैरसरकारीसंस्थाहरूआदि) सँगकोसमन्वयकोस्तरवर्णनगर्नसक्नुहुन्छ?

Q. What challenges have you encountered in collaborating with different agencies or authorities?
विभिन्ननिकायवाअधिकारीहरूसँगसहकार्यगर्दाकेकस्ताचुनौतीहरूसामनागर्नुभएकोछ?

Q. How do you address these challenges to ensure consistent and effective screening services?
निरन्तररप्रभावकारीस्क्रिनिङसेवाहरूसुनिश्चितगर्नयीचुनौतीहरूलाईकसरीसम्बोधनगर्नुहुन्छ?

Data Collection and Reporting:
Q. Can you share insights into the process of data collection and reporting for malaria program in this health desk?
केतपाईंयसहेल्थडेस्कमामलेरिया कार्यक्रमकोलागिडाटासङ्कलनररिपोर्टिङकोप्रक्रियाको जानकारी दिन सक्नुहुन्छ?

Q. Have you encountered any challenges in accurately recording and reporting cases?
केतपाईंलेकेसहरूकोसहीरेकर्डिंगररिपोर्टिङमाकुनैचुनौतीहरूकोसामनागर्नुभएकोछ?

Q. How do you address these challenges to ensure effective recording and reporting?

In Depth Interview guide

प्रभावकारीरेकर्डिङरिपोर्टिङसुनिश्चितगर्नयीचुनौतीहरूलाईकसरीसम्बोधनगर्नुहुन्छ?

Community Perceptions and Beliefs:
Q. How do the individuals crossing the border perceive malaria and its screening in this cross-border setting?
सीमापारगर्नेव्यक्तिहरूलेयसहेल्थ डेस्कमामलेरियारयसकोस्क्रीनिंगकसरीबुझछन्?

Q. Have you observed any cultural/religious beliefs or misconceptions that affect the acceptance of malaria screening services?
केतपाईंलेमलेरियास्क्रीनिंगसेवाहरूकोस्वीकृतिलाईअसरगर्नेकुनैसांस्कृतिक/धार्मिकविश्वासवागलतधारणाहरूहेर्नुभएको छ?

Network and Communication:
Q. How would you describe the level of collaboration and communication among healthcare staff involved in the malaria program?
मलेरियाकार्यक्रममासंलग्नस्वास्थ्यकर्मीहरूबीचकोसहकार्यरसञ्चारकोस्तरलाईतपाईंकसरीवर्णनगर्नुहुन्छ?

Q. Are there any challenges or barriers in communicating with other healthcare professionals or upper authorities?
केयहा काम गर्नेस्वास्थ्यसेवाकर्मचारीहरूवामाथिल्लो निकायहरूसँगसञ्चारमाकुनैचुनौतीवाअवरोधहरूछन्?

Q. Are your working relationships with your colleagues affects in implementing malaria screening?
केतपाईंकासहकर्मीहरूसँगकोतपाईंकोकामकोसम्बन्धलेमलेरियास्क्रिनिङकार्यान्वयनमाअसरगर्छ?

Relative Priority
Q. Are there any high priority initiatives already happening that reduces prioritizing malaria screening at this health desk?
केयसहेल्थडेस्कमामलेरियास्क्रिनिङकोप्राथमिकतालाईकमगर्नेकुनैउच्चप्राथमिकताका पहलहरूपहिलेनैभइरहेकाछन्?

Q. Describe activities or initiatives that (appear to) have highest priority for you?
तपाइको बिचारमा उच्चप्राथमिकतागतिविधिहरूवापहलहरूके के हुन् ? तपाइको विचार रखिदिनुहोस ?
- o What kind of pressure are you feeling to accomplish this? Where is it coming from? Why?
  योपूरागर्नतपाईंकस्तोप्रकारकोदबाबमहसुसगर्दैहुनुहुन्छ? योकहाँबाटआउँदैछ? किन?

Q. To what extent might the malaria screening take a backseat to other high-priority initiatives going on now?
मलेरियास्क्रिनिङलेअहिलेचलिरहेकाअन्यउच्चप्राथमिकताकापहलहरूलाईकतिहदसम्मपछाडिलैजानसक्छ?

- o How important do you think malaria screening is compared to the other priorities initiatives/activities?
  अन्यप्राथमिकताकापहलहरू/क्रियाकलापहरूकोतुलनामामलेरियाजाँचलाईकत्तिकोमहत्त्वपूर्णठान्नुहुन्छ?

Implementation Climate
Q. What is the general level ofacceptability in implementing the malaria screening activities in this health desk?
यसहेल्थडेस्कमामलेरियास्क्रिनिङकार्यान्वयनमास्वीकार्यता / ग्रहणशीलताकोकस्तोछ?

Compatibility
Q. How does the malaria screening fit with the existing work processes and practices in this health desk?
यसहेल्थडेस्कमाअवस्थितकार्यप्रक्रियारअभ्यासहरूसँगमलेरियाजाँचकसरीमिल्छ?

Barriers to Program Implementation:
Q. In your experience, what are the main barriers to the successful implementation of the malaria screening at this health desk?
तपाईंकोअनुभवमा, योहेल्थडेस्कमामलेरियास्क्रिनिङकोसफलकार्यान्वयनमामुख्यबाधाहरू के के हुन्?

Q. Are there any systemic issues or policies that hinder your ability to provide effective malaria screening and treatment?
केत्यहाँकुनैप्रणालीगतसमस्याहरूवानीतिहरूछन्जसलेप्रभावकारीमलेरियास्क्रिनिङरउपचारप्रदानगर्नेतपाईंकोक्षमतामा बाधापुर्‍याउँछ?

Q. Are the incentive/rewards posing as a barrier to the malaria screening? Are you motivated in carrying out your role and responsibilities?
केप्रोत्साहन/पुरस्कारलेमलेरियास्क्रिनिङमाबाधापुर्‍याइरहेको छ?
केतपाईंआफ्नोभूमिकारजिम्मेवारीहरूपूरागर्नउत्प्रेरितहुनुहुन्छ?

Suggestions for Improvement:
Q. Based on your experience, what suggestions do you have for improving the malaria screening program at this health desk?
तपाईकोअनुभवकोआधारमा, योहेल्थडेस्कमामलेरियास्क्रीनिंगकार्यक्रमसुधारगर्नतपाईसँगकेसुझावछ?

Q. Are there any specific interventions or changes that you believe would enhance the effectiveness of the program?
केत्यहाँकुनैविशेषहस्तक्षेपवापरिवर्तनहरूछन्जुनतपाईंलाईविश्वासछकिकार्यक्रमकोप्रभावकारिताबढाउनेछ?

FGD Guide

Focus Group Discussion Guide

(For Community – Nepali Citizens Crossing the Border from India to Nepal)

General Understanding and Awareness:
Q. What is your understanding of malaria and its transmission?
मलेरियारयसकोप्रसारणबारेतपाईकोज्ञानकेछ?

Q. What is your understanding of Malaria Prevention?
मलेरिया रोकथाम कसरि गर्न सकिन्छ ? हजुरको विचार राखिदिनुहोला ।

Q. How aware are you of the importance of malaria screening, especially when crossing the Nepal-India border?
विशेषगरीनेपाल-भारतसीमानाकापारगर्दामलेरियापरीक्षणकोमहत्त्वबारेतपाईकत्तिकोसचेतहुनुहुन्छ?

Travel Patterns and Behaviors:
Q. Can you describe your typical travel patterns between Nepal and India?
तपाई भारत बाट नेपाल र नेपालबाट भारत कसरि यात्रा गर्नुहुन्छ ,वर्णनगर्नसक्नुहुन्छ?

Q. How frequently do you cross the border, and for what reasons?
तपाई बर्षमा कतिपटकसीमापारगर्नुहुन्छ, रकेकारणले?

Knowledge and Perception of Malaria Screening:
Q. Have you ever undergone malaria screening when traveling between Nepal and India?
केतपाईंलेनेपालरभारतबिचयात्रागर्दामलेरियाजाच गराउनुभएकोछ?

Q. What are your perceptions of malaria screening services available at the border entry point?
सीमाप्रवेशबिन्दुमाउपलब्धमलेरियासेवाबारेतपाईंकोधारणाकेछ?

Barriers to Malaria Screening:
Q. What factors discourage you from undergoing malaria screening at the border?
सीमानामामलेरियाजाँचगराउनबाटकुनकुरालेतपाईंलाईनिरुत्साहितगर्छ?

Q. Are there any barriers that hinder access to malaria screening services at the border and/or at your community/residence in Nepal?
केत्यहाँकुनैअवरोधहरूछन्जसलेसीमामार/वानेपालमातपाईंकोसमुदाय/निवासमामलेरियाजाँचसेवाहरूमापहुँचमाबाधापुर्याउँछ?

Facilitators of Malaria Screening:
Q. What factors encourage you to participate in malaria screening at the border?
कुनकारकहरूलेतपाईंलाईसीमामामलेरियापरीक्षणमाभागलिनप्रोत्साहनदिन्छ?

Perceived Risk and Importance of Screening:
Q. How concerned are you about the risk of contracting malaria during your cross-border travels?
तपाईंआफ्नोसीमापारयात्राकोक्रममामलेरियासंकुचितहुनेजोखिमकोबारेमाकत्तिकोचिन्तितहुनुहुन्छ?

Q. Do you believe malaria screening is essential for protecting your health and the health of your community (in Nepal)?
केतपाईआफ्नोस्वास्थ्यरतपाईकोसमुदाय (नेपालमा) कोस्वास्थ्यजोगाउनकोलागिमलेरियाजाच आवश्यकछभन्नेविश्वासगर्नुहुन्छ?

Accessibility and Availability of Services:

Q. Are malaria screening services readily available and accessible at the Nepal-India border entry points?(affordable /staff behaviour/time consume)
केनेपाल-भारतसीमाप्रवेशबिन्दुहरूमामलेरियाजाँचसेवाहरूसजिलैउपलब्धरपहुँचयोग्यछन्?

Q. What challenges do you face in accessing these services?
यीसेवाहरूकोपहुँचमातपाईंलेकेकस्ताचुनौतीहरू सामनागर्नुहुन्छ?

Communication and Information Dissemination:
Q. How didyou receive information about malaria screening services at the border?
सीमामामलेरियाजाँचसेवाकोबारेमाजानकारीकसरीलिनुभयो?

Q. Are there any gaps in communication that need to be addressed to ensure awareness and understanding of screening protocols?
स्क्रिनिङप्रोटोकलहरूकोजागरूकतारसमझसुनिश्चितगर्नकोलागिसम्बोधनगर्नआवश्यकसंचारमाकुनैकमीहरूछन्?

Cultural and Social Factors:
Q. Are there any cultural beliefs or social norms that influence your attitude towards malaria screening?
केत्यहाँकुनैसांस्कृतिकविश्वासवासामाजिकमान्यताहरूछन्जसलेमलेरियाजाच प्रतिकोतपाईंकोमनोवृत्तिलाईअसरगर्छ?

Q. How do social networks and community influences shape decisions regarding health-seeking behaviors?
सामाजिकसञ्जालरसमुदायलेस्वास्थ्यखोज्नेव्यवहारसम्बन्धीनिर्णयहरूलाईकसरीप्रभावपार्छ?

Previous Experiences and Feedback:
Q. Have you previously utilized malaria screening services at the border?
केतपाईंलेसीमामामलेरियापरीक्षणसेवाहरूप्रयोगगर्नुभएकोछ?

Q. What were your experiences, and do you have any feedback or suggestions for improving these services?
तपाईंकोअनुभवहरूकेथिए, रयीसेवाहरूसुधारगर्नतपाईंसँगकुनैप्रतिक्रियावासुझावहरूछन्?

Perceptions of Border Health Policies:
Q. What are your opinions on the current border health policies and regulations related to malaria screening?
मलेरियास्क्रिनिङसम्बन्धीहालकोसीमास्वास्थ्यनीतिरनियमहरूमातपाईंकोरायकेछ?

Q. Do you believe these policies adequately address the health needs of individuals traveling between Nepal and India?
केतपाईंयीनीतिहरूलेनेपालरभारतबीचयात्रागर्नेव्यक्तिहरूकोस्वास्थ्यआवश्यकतालाईपर्याप्तरूपमासम्बोधनगर्दछभन्नेविश्वासगर्नुहुन्छ?

KII Interview Guide

Key Informant Interview Guide

(Health Section head of Municipality and Vector control Focal Person in Health Officeand Lumbini Province)

General Information

Your Sex .....
(लिंग):.....
Age (in years): .....
उमेर (वर्षमा) : .....
Level of education: .....
शिक्षा: .....
Designation: .....
पद : .....
Areas of expertise: .....
विशेषज्ञताकाक्षेत्रहरू: .....
Total years of service: .....
सेवाकोकुलवर्ष: .....

Q. What is the role of the Province / health Office in overseeing and supporting malaria screening activities in this region?
यसक्षेत्रमामलेरियास्क्रीनिंगगतिविधिहरूकोनिरीक्षणरसमर्थनगर्नस्वास्थ्यकार्यालय / प्रदेश स्वास्थ्य कार्यालयको के भूमिका रहेको छ ?

Q. How have you been dealing with Malaria program in this province/district/ Municipality?
यस प्रदेश /जिल्ला/नगरपालिकामामलेरियाकार्यक्रमलाईकसरीव्यवहारगरिरहनुभएकोछ ?

Q. How do you encourage screening of Malaria among in-and out cross border migrants in this district through health desk?
हेल्थडेस्कमार्फतयसजिल्लामाभित्रिनेरबाहिरकाआप्रवासीहरूलाईमलेरियाजाँचगर्नकसरीप्रोत्साहनदिनुहुन्छ?

If yes, can you please explain how?
यदिहोभने, कृपयाकसरीव्याख्यागर्नुहोस्?

If not, can you please explain why?
यदिहोइनभने, कृपयाकिनव्याख्यागर्नसक्नुहुन्छ?
Can you please explain what are the mechanism for malaria screening, in this province/district/ Municipality?
यस प्रदेश/जिल्ला/नगरपालिकामामलेरियाजाँचगर्नेप्रक्रियाकेहोभनीबताउनसक्नुहुन्छ?

How often you monitor health desk? Do you have monitoring and feedback system at health desk? Can you please explain the mechanism?
कतिपटकहेल्थडेस्कअनुगमनगर्नुहुन्छ ?केतपाईसँगहेल्थडेस्कमाअनुगमनरपृष्ठपोषण व्यवस्था /योजना छ? कृपयाव्याख्यागर्नसक्नुहुन्छ?

What barriers do you find for Malaria screening at health desk in your province/district / Municipality?
तपाईको प्रदेश/जिल्ला/नगरपालिकामारहेकोहेल्थडेस्कमाऔलोपरीक्षणकालागितपाईलाईकेवाधा अवरोधहरूछन्?

Q. What are the enabling factors in Malaria screening at health desk in your province/district / Municipality?
तपाईको प्रदेश/जिल्ला/नगरपालिकामारहेकोहेल्थडेस्कमामलेरियाजाँचगराउने सकारात्मक कारकहरूकेहुन्?

Q. How is coordination maintained with health authorities on the Indian side of the border regarding malaria screening activities? Are there any challenges or opportunities for collaboration across the border?
मलेरियास्क्रीनिंगगतिविधिहरूकोसम्बन्धमासीमाकोभारतीयपक्षमास्वास्थ्यअधिकारीहरूसँगकसरीसमन्वयराखिएकोछ?
सीमापारसहकार्यकालागिकुनैचुनौतीवाअवसरहरूछन्?

Q. Based on your insights, what recommendations would you make to address the identified challenges and enhance the success of malaria screening activities in Lumbini Province along the Nepal-India border?
तपाईंकोविचारमा,पहिचानगरिएकाचुनौतिहरूलाईसम्बोधनगर्नरनेपाल-भारतसीमामारहेकोलुम्बिनीप्रदेश
माऔलोपरीक्षणगतिविधिहरूकोसफलताबढाउनके-कस्तासुझावहरूदिनुहुनेछ?

How is the effectiveness of malaria screening activities assessed and monitored in Lumbini Province? What mechanisms are in place to evaluate the impact of screening efforts on malaria control?
लुम्बिनीप्रदेशमामलेरियापरीक्षणगतिविधिहरूकोप्रभावकारिताकसरीमूल्याङ्कनरअनुगमनगरिन्छ?मलेरियानियन्त्रणमाक्रिनिङप्रयासहरूकोप्रभावमूल्याङ्कनगर्नकुनसंयन्त्रहरूछन्?

Malaria Elimination Program

Health Facility Name:
Address:
Chief Of the Facility :
Date of data collection:
Data collected by:

	2077-78 BS (2020-21 AD)	2078-79 BS(2021-22 AD)	2079-2080 BS (2022-23 AD)	Remarks
I .General services:				
Total Clients				
Total Clients				
Nepali Citizen				
Indian Citizen				
Gender wise				
Male				
Female				
Ethnic group				
1 Dalit				
2. Janajati				
3.Madhesi				
4.Muslim				
5.Bramhin/Kshetri				
6.Others				
Total Children <5				
Male				
Female				
II. Malaria				
A. Microscopy				
1.Total Blood Smear Examined for Malaria				
2.Malaria (Microscopy -P Vivax Test +ve)				
3. Malaria (Microscopy -P Falciparum Test +ve)				
4. Malaria(Mixed)				
B. Malaria RDT				
1. RDT conducted for Malaria				
2.Malaria RDT Conducted P Vivax Test +ve)				
3.Malaria RDT Conducted P Falciparum Test +ve)				
4.Malaria RDT Conducted(Both)				
C. Malaria Treatment				
1. Patients Treated on Outpatient Basis for Malaria				
2. Patients admitted with Malaria				
3. Probable/clinical suspected malaria cases				
4. Deaths Due to Malaria				
5. Referred cases				

Dissagregated Data on Malaria Cases	M	F	M	F	M	F	
SEX (Male /Female)							
Caste/Ethnic Group							

Provisions & Organization of Services (Observation and Assessment Checklist)

A	Laboratory	Options			Remarks
				NA	
1	**Lab Technician Availability**	24x7 ☐	Partial ☐	Not Available ☐	
2	Blood Microscopy for Malaria	Being Done ☐	Not Being Done ☐	If Not Done Specify Reason _____	
3	Maximum Testing Load for Malaria (Per Day)	Specify number of Slides _____			
4	Reporting of Blood Test for Malaria				
	a) Usual Time taken to give report (Ask the technician)	--------- Hrs			
	b) Documentation (Check the register for few reported cases for time taken				
5	RDT for Malaria (Antigen)	Bivalent (Pv/Pf) ☐	Pv and / or Pf ☐	Conditions for Doing RDT All ☐ Selective ☐	
7	Training of LTs in past threeyears onMalaria	Yes ☐	No ☐	Remarks _____	
8	Resource Availability		*Supply Issues / Stockouts in Past (Ask)*		
	a) Functional Microscope	Yes ☐ No ☐	Yes ☐ No ☐		
	b) Reagents	Yes ☐ No ☐	Yes ☐ No ☐		
	c) Glass Slides	Yes ☐ No ☐	Yes ☐ No ☐		
	d) Lancets	Yes ☐ No ☐	Yes ☐ No ☐		
	e) Hollow/Injection Needles used for Finger Prick	Yes ☐ No ☐	Yes ☐ No ☐		
	f) RDTs for Malaria	Yes ☐ No ☐	Yes ☐ No ☐		
9	There is arrangement for segregation of BMW at the session site.	Yes ☐ No ☐			

B	OPD and Service Provision Area				
1	IEC Related to Malaria displayed in Facility	Yes ☐ No ☐			
2	Display of treatment guidelines for Malaria	Yes ☐ No ☐			
3	Provision for temperature measurement of Fever Cases				
	a) Thermometer	Yes ☐ No ☐			
	b) Temperature being Measured	Yes ☐ No ☐			
4	Recording and reporting of Fever Cases (Check registers/ask Providers)				Describe Briefly:
C	**Drug Dispensing**				
1	**Drug Availability**	**Availability**	***Supply Issues / Stockouts in Past (Ask)***		
	a) Chloroquine Tablets	Yes ☐ No ☐	Yes ☐ No ☐		
	b) Primaquine Tablets				
	c) Artesunate Combination Therapy	Yes ☐ No ☐	Yes ☐ No ☐		
	d) Injection Artesunate	Yes ☐ No ☐	Yes ☐ No ☐		
	e) Quinine Tablets	Yes ☐ No ☐	Yes ☐ No ☐		
	f) Quinine Injection	Yes ☐ No ☐	Yes ☐ No ☐		
D	**Other**				
	Ambulance Availability	Yes ☐ No ☐			

References

- Government of Nepal, Ministry of Health and Population, Department of Health Services . Annual Health Report 2079/80. Kathmandu (Nepal): Government of Nepal; 2023.
- Government of Nepal, Nepal Health Research Council. A Call for Actions for Controlling and Eliminating Emerging and Re-emerging Vector-borne Diseases in Nepal. Accessed from https://nhrc.gov.np/wp-content/uploads/2019/07/Vector-borne-diseases-policy.pdf on 24 December 2023.

World Health Organization

TDR For research on diseases of poverty
UNICEF - UNDP - World Bank - WHO

Thank You

SD GUPTA
SCHOOL *of* PUBLIC HEALTH

IIHMR UNIVERSITY