



"Advancing Health Policy and System Research: Lessons for a Resilient Health System in Nepal"

Eighth National Summit of Health and Population Scientists in Nepal

10-12 April 2022, Kathmandu

Proceeding Report 2022



Government of Nepal
Nepal Health Research Council (NHRC)





Eighth National Summit of Health and Population Scientists in Nepal

**Advancing Health Policy and Systems Research: Lessons
for Resilient Health System in Nepal**

10 – 12 April 2022

Proceeding Report 2022

Government of Nepal

Nepal Health Research Council

Ramshah Path, Kathmandu

Eighth National Summit of Health and Population Scientists in Nepal

10 – 12 April 2022

Kathmandu, Nepal

Report prepared by

Dr. Meghnath Dhimal Dr. Dinesh Bhandari
Mr. Bihungum Bista Dr. Bishnu Prasad Marasini
Dr. Umesh Raj Aryal Dr. Nisha Rana
Mr. Bijay Kumar Jha Ms. Upama Ghimire
Ms. Sitasma Sharma

Published by

Nepal Health Research Council (NHRC)

Ramshah Path, Kathmandu Nepal

Tel.: 977 1 4254220, Fax: 977 1 4262469

E-mail: nhrc@nhrc.gov.np

Web: <http://nhrc.gov.np>

Advisory Committee

S.N.	Name	Organization
1	Prof. Dr. Mrigendra Raj Pandey	Emeritus Chairman, NHRC
2	Prof. Dr. Mathura Prasad Shrestha	Ex Chairperson
3	Prof. Dr. Gopal Prasad Acharya	Ex Chairperson, NHRC
4	Dr. Mahesh Kumar Maskey	Ex Chairperson, Nepal Health Research Council
5	Prof. Dr. Chop Lal Bhusal	Ex Chairperson, NHRC
6	Prof. Dr. Dharma Kant Baskota	Ex Chairperson, NHRC
7	Dr. Krishna Prasad Adhikari	Ex Chairperson, NHRC
8	Prof. Dr. Anjani Kumar Jha	Former Executive Chairman, Nepal Health Research Council
9	Prof. Dr. Dibya Shree Malla	Ex Vice Chairperson, Nepal Health Research Council
10	Prof. Dr. Buddha Basnyat	Ex Vice Chairperson, NHRC
11	Dr. Sudha Sharma	Past Secretary, MOHP
12	Dr. Praveen Mishra	Ex Secretary, MOHP
13	Dr. Senendra Upreti	Ex Secretary, MOHP
14	Dr. Kiran Regmi	Ex Secretary, MOHP
15	Prof. Dr. Jeevan Bahadur Sherchand	Coordinator, Research Laboratory Regulation, Monitoring, Expert Sub-Committee, NHRC
16	Prof. Dr. Madhu Ghimire	Ex Member Secretary, NHRC
17	Dr. Ram Prasad Upreti	Ex Member Secretary, NHRC
18	Dr. Bhojraj Joshi	Ex Member Secretary, NHRC
19	Prof. Dr. Sharad Onta	Ex Member Secretary, NHRC
20	Prof. Dr. Anil Mishra	Ex Member Secretary, NHRC
21	Dr. SP Singh	Ex Member Secretary, NHRC
22	Prof. Dr. Sri Krishna Giri	Ex Member Secretary, NHRC
23	Dr. Sarita Upadhyay	Ex Member Secretary, NHRC
24	Dr. Suniti Acharya	Baluwatar, Kathmandu
25	Dr. Tirtha Rana	Public Health Foundation
26	Dr. Baburam Marasini	Public Health Expert
27	Dr. Dirgha Singh Bam	Dirgha Jeevan Clinic, Kathmandu
28	Dr. Dharma S. Manandhar	Ex Vice Chairperson, Nepal Health Research Council

S.N.	Name	Organization
29	Prof. Dr. Ramkanta Makaju	Executive Director, Dulikhel Hospital, KU
30	Prof. Dr. Umesh Mandal	Director, Research Directorate, TU
31	Prof. Dr. Arati Shah	Medical Education Commission
32	Prof. Dr. Dilip Sharma	Medical Education Commission
33	Prof. Dr. Sanga Ratna Bajracharya	Medical Education Commission
34	Dr. Lochan karki	President, Nepal Medical Association
35	Dr. Sailesh Pradhan	Association of Clinical Pathologists of Nepal (ACPN)
36	Dr. Bhim Acharya	Society of Public Health Physician Nepal (SOPHYN)
37	Dr. Bimal Pandey	Association of Spine Surgeons of Nepal (ASSN)
38	Dr. Deewakar Sharma	Cardiac Society of Nepal (CSN)
39	Dr. Bharat Kumar Yadav	General Practice Association of Nepal (GPAN)
40	Dr. Ishwor Lohani	International College of Surgeons (ICS Nepal Section)
41	Dr. Jay Narayan Shah	Nepal Association of Medical Editors (NAME)
42	Dr. Madan Kumar Piya	Nepal Association of TB and Chest Physicians (NATBCP)
43	Dr. Suvit Maskey	Nepal Dental Association (NDA)
44	Dr. Jagadish Lal Baidya	Nepal Association of Urological Surgeons (NAUS)
45	Dr. Saroj Prasad Ojha	Nepal Epilepsy Association (NEA)
46	Dr. Y. P. Singh	Nepal Oncological Society (NEONS)
47	Dr. Rohit Saiju	Nepal Ophthalmic Society (NOS)
48	Dr. Rabindra Lal Pradhan	Nepal Orthopedic Association (NOA)
49	Dr. K.P. Bista	Nepal Pediatric Society (NEPAS)
50	Prof. Dr. Hensan Khadka	Nepal Radiologists Association (NRA Nepal)
51	Dr. Rajendra Agrawal	Nepal Society of Nephrology (NSN)
52	Dr. Ganesh Dangal	Nepal Society of Obstetricians and Gynecologists (NESOG)
53	Dr. Sanjay Lakhe	Nepalese Society of Critical Care Medicine (NSCCM)
54	Dr. Pradeep Vaidya	Nepalese Society of Gastroenterologists
55	Dr. Mohan Raj Sharma	Nepalese Society of Neurosurgeons (NESON)
56	Dr. Ambuj Karna	Nepalese Society of Therapeutic Radiation Oncology (NESTRO)

S.N.	Name	Organization
57	Dr. Prakash Sayami	Thoracic Society of Nepal
58	Dr. Kusum Lata Mishra	Perinatal Society of Nepal (PESON)
59	Dr. Sudarshan Narsingh Pradhan	Psychiatrists Association of Nepal (PAN)
60	Dr. Joju Nath Pokharel	Society of Anesthesiologists of Nepal (SAN)
61	Dr. Sudip Parajuli	Society of Dermatologists, Venerologists and Leprologists of Nepal (SODVELON)
62	Prof. Dr Arun Maskey	Society of Internal Medicine of Nepal (SIMON)
63	Dr. Narmaya Thapa	Society of Otolaryngologists of Nepal (SOL Nepal)
64	Dr. Bijay Kumar Sharma	Society of Surgeon of Nepal (SSN)
65	Prof. Dr. Prakash Ghimire	Nepalese Society of Microbiology
66	Dr. Ramesh Kumar Maharjan	Nepalese Society of Emergency Physicians (NSEP)
67	Dr. Rabindra Man Shrestha	Ortho Dentist Association Nepal (ODAN)
68	L.D. Maharjan	Infection Control Society of Nepal
69	Man Kumari Rai	Nursing Association Nepal
70	Dr. Sanjay Lakhe	Nepal Society of Critical Care Medicine
71	Dr. Ashesh Dhungana	Nepalese Respiratory Society
72	Dr. Bhagwan Koirala	Chairman, Nepal Medical Council
73	Dr.Mohan Krishna Shrestha	Nepal Health Professional Council
74	Prof. Sarala KC	Nepal Nursing Council
75	Dr. Santosh Kumar Thakur	Nepal Ayurvedic Medical Council
76	Dr. Krishna Kumar Oli	Nepalese Academy of Neurology
77	Mr Prajwal Jung Pandey	Nepal Pharmacy Council
78	Mr Basanta Adhikari	Nepal Public Health Association
79	Prof. Dr. Ramesh Prasad Acharya	Medical Education Commission
80	Dr. Bhojraj Kafle	Medical Education Commission
81	Prof. Dr. Ramesh Prasad Acharya	Medical Education Commission
82	Prof. Dr. Pramod Kumar Chhetri	Nepal Society of Nephrology (NSN)

Steering Committee

S.N.	Name	Organization
1	Prof. Dr. Gehanath Baral	Chairman, Nepal Health Research Council
2	Prof. Dr. Gaurav Dhakal	Vice Chairman, NHRC
3	Dr. Sunil Babu Shrestha	Vice Chancellor, NAST
4	Dr. Bishnu Raj Uprety	Executive Chairman, Policy Research Institute
5	Dr. Dipendra Raman Singh	Director General, DOHS
6	Dr. Shyam Sundar Yadav	Chief Specialist, MoHP
7	Dr. Guna Raj Lohani	Chief Specialist, MOHP
8	Prof. Dr. Bandana Khanal	Board Member, NHRC
9	Dr. Ram Aadhar Yadav	Board Member, NHRC
10	Dr. Awadhesh Tiwari	Board Member, NHRC
11	Dr. Santosh Shakya	Board Member, NHRC
12	Prof. Dr. Bhagwan Koirala	Chairman, Nepal Medical Council
13	Prof. Dr. Shrikrishna Giri	Vice Chairman, Medical Education Commission
14	Dr. Madan Kumar Upadhyaya	Representative, MoHP
15	Dr. Kiran Rupakheti	Joint Secretary, NPC, Board Member NHRC
16	Prof. Dr. Dibya Singh	Research Committee, IoM
17	Mr. Ishwori Prasad Aryal	Joint Secretary, MoF, Board Member NHRC
18	Prof. Dr. Ramesh Kant Adhikari	ERB, Chairman, NHRC
19	Prof. Dr. Shankar Man Rai	Chief Editor, JNHRC
20	Dr. Pramod Poudel	Research Director, University Grant Commission
21	Dr. Basudev Upadhyay	Director General, Department of Ayurveda, Ministry of Health and Population
22	Mr. Bharat Bhattarai	DG, DDA
23	Dr. Rajesh Sambhajirao Pandav	WHO Representative, WHO Country Office Nepal,
24	Ms. Latika Maskey Pradhan	UNFPA
25	Ms. Sabita Tuladhar	USAID
26	Mr. Prajwal Jung Pandey	Chairman Nepal Pharmacy Council
27	Dr. Pradip Gyanwali	Executive Chief, NHRC

Scientific Committee

S.N	Name	Organization
1	Dr. Pradip Gyanwali	Executive Chief, Nepal Health Research Council (Coordinator)
2	Dr. Krishna Prasad Poudel	Chief, Policy, Planning and Monitoring Division, MoHP
3	Dr. Sangeeta Mishra	Chief, Health Coordination Division, MoHP
4	Dr. Madan Kumar Upadhyaya	Chief, Quality Standard and Regulation Division, MoHP
5	Prof Dr. Rameshwor Adhikari	RECAST, TU
6	Prof. Dr. Janak Koirala	Consultant, NHRC
7	Prof. Madhusudan Subedi	Patan Academy of Health Science (PAHS)
8	Prof. Dr. Shiva Raj Adhikari	HOD, Central Department of Economics, TU
9	Prof. Dr. Abhinav Vaidya	Department of Community Medicine, Kathmandu Medical College
10	Prof. Dr. Sabina Shrestha	Ophthalmologist and ERB Member, NHRC
11	Prof. Dr. Saroj Prasad Ojha	Institute of Medicine
12	Prof. Dr. Lochana Shrestha	Nepalese Army Institute of Health Sciences
13	Prof. Dr. Sujan Babu Marahatta	Manmohan Memorial Institute of Health Sciences
14	Prof. Dr. Ramesh Singh Bhandari	IOM
15	Prof. Dr. Rajeev Shrestha	Head of Research Department, Kathmandu University
16	Prof. Dr. Nisha Jha	KIST Medical College
17	Prof. Dr. Neeti Singh	HOD, Community Medicine and Public Health, KISTMCTH
18	Prof. Dr. Dhana Ratna Shakya	BPKIHS
19	Assoc. Prof. Dr. Ramesh Kumar Maharjan	HOD, Department of Emergency Medicine, IOM, TU
20	Assoc. Prof. Dr. Binod Kumar Yadav	Institute of Medicine
21	Assoc. Prof. Dr. Khem Bahadur Karki	Head, Department of Community Medicine, IOM
22	Assoc. Prof. Dr. Apsara Pandey	Nursing Campus, Birgunj
23	Assoc. Prof. Dr. Archana Shrestha	Epidemiologist, KU
24	Assoc. Prof. Dr. Premit Pokharel	Associate Professor, Department of OMFS

S.N	Name	Organization
25	Assoc. Prof. Dr. Umesh Gupta	Pokhara University
26	Assoc. Prof. Megha Raj Banjara	Central Department of Microbiology, TU
27	Assoc. Prof. Dr. Narayan Bahadur Mahotra	Department of Clinical Physiology, IOM, TU
28	Assoc. Prof. Dr. Samir Singh	Associate. Prof. KIST Medical College
29	Assoc. Prof. Dr. Rajendra Gyawali	Kathmandu University
30	Assoc. Prof. Dr. Ajaya Kunwar	Biomedical Expert
31	Dr. Md Khurshid Alam Hyder	Public Health Administrator, Who
32	Dr. Guna Nidhi Sharma	Chief, Policy and Planning Section, MOHP
33	Dr. Suresh Tiwari	Public Health Expert
34	Dr. Sushil Chandra Baral	Executive Director, HERD International
35	Mr. Anil Thapa	Chief, HMIS, DOHS
36	Mr. Kapil Prasad Timalsena	PMIS, MOHP
37	Dr. Mahesh Puri	Associate Director, CREHPA
38	Dr. Suresh Mehata	Government of Nepal
39	Dr. Krishna Kumar Aryal	Public Health Expert
40	Dr. Rajendra Kumar BC	Consultant, NHRC
41	Dr. Mandira Lamichhane	Policy Research Institute
42	Dr. Sameer Mani Dixit	Center For Molecular Dynamics Nepal
43	Mr. Deepak Karki	Health Advisor, UK Embassy, Nepal
44	Dr. Sabitri Sapkota	Director, Implementation Research, Nyaya Health
45	Dr. Sapana Amatya Vaidya	Paropakar Maternity & Women's Hospital
46	Dr. Ram Hari Chapagain	Kanti Children Hospital
47	Dr. Santosh K.C.	DDA
48	Mr. Baburam Humagain	Senior Pharmacist
49	Mr. Pushpa Raj Khanal	Registrar, NHPC
50	Dr. Prabhat Adhikari	Consultant, NHRC
51	Dr. Dipak Kunwar	Psychiatrist, Kathmandu University
52	Dr. Santosh Timilsina	CMC

S.N	Name	Organization
53	Dr. Bibek Rajbhandari	Nepal Police Hospital
54	Mr. Ashok Bhurtyal	Institute of Medicine
55	Dr. Sushil Koirala	INGO Federation
56	Dr. Shankar Khatiwada	RECAST
57	Mr. Kiran Bajracharya	Planning Section, DDA
58	Dr. Basudev Pandey	Expert
59	Dr. Ratna Mani Gajurel	IOM
60	Dr. Bishal Gyanwali	Queen's University
61	Dr. Dinesh Neupane	Harvard/John Hopkins
62	Dr. Ramesh Dhakal	Advisor
63	Dr. Badri Rijal	General Secretary, Nepal Medical Association
64	Dr. Subarna Pokharel	Expert
65	Dr. Yuba Nidhi Basaula	Director, Kanti Children's Hospital
66	Assoc. Prof. Dr. Chandra Mani Adhikari	Director, Shahid Gangalal National Heart Centre
67	Dr. Manisha Rawal	Director, Sukraraj Tropical and Infectious Disease Hospital
68	Dr. Krishna K.C	
69	Dr. Samarika Dahal	
70	Dr. Ashutosh Kumar Singh	Institute of Medicine
71	Dr. Dipak Kumar Yadav	BPKIHS, Dharan
72	Mr Narayan Prasad Dhakal	Chief, Drug Administrator, MoHP
73	Ms. Namita Ghimire	Ethical Review M & E Section, NHRC
74	Dr. Bishnu Marasini	NHRC
75	Mr. Bihungum Bista	NHRC
76	Dr. Meghnath Dhimal	NHRC

Organizing Committee

S.N.	Name	Designation
1	Dr. Pradip Gyanwali	Member-Secretary, (Executive Chief)
2	Mr. Subodh Kumar Karna	Chief, Account Section
3	Mr. Yuba Raj Kharel	Chief Administration Section
4	Dr. Meghnath Dhimal	Chief, Research Section
5	Mr. Chandra Bhusan Yadav	Library and Information Officer
6	Mr. Bijay Kumar Jha	Training Officer
7	Mr. Saraswati Prasad Bhattarai	Store Officer
8	Ms. Namita Ghimire	Research Officer
9	Mr. Sudeep Gyawali	Admin. Officer
10	Ms. Sumita Khanal	Admin. Officer
11	Ms. Sanju Poudel	Account Officer
12	Mr. Bihungum Bista	Senior Research Officer
13	Dr. Bishnu Prasad Marasini	Senior Research Officer
14	Dr. Suman Pant	Research Officer
15	Dr. Shristi Karki	Research Officer
16	Er. Sudarshan Sharma	Electronic/Communication Officer
17	Dr. Nayanum Pokharel	Research Officer
18	Dr. Prerok Regmi	Research Officer
19	Ms. Sashi Silwal	Research Officer
20	Ms. Kopila Khadka	Research Officer
21	Ms. Neelam Dhakal	Research Officer
22	Mr. Anil Poudyal	Research Officer
23	Mr. Bhuwan Thakurathi	Research Officer
24	Ms. Sudha Poudel	Research Officer
25	Ms. Santoshi Adhikari	Research Officer
26	Mr. Shashi Verma	Research Officer

S.N.	Name	Designation
27	Ms. Rojina Basnet	Research Officer
28	Ms. Richa Acharya	Research Officer
29	Ms. Selina Siwakoti	Research Officer
30	Ms. Sailaja Ghimire	Research Officer
31	Mr. Sandeep Rijal	Research Officer
32	Ms. Urmila Shakya	Research Officer
33	Ms. Elina Khatri	Research Officer
34	Ms. Aashray Manandhar	Research Officer
35	Ms. Rajina Shakya	Research Officer
36	Ms. Uma Kafle	Research Officer
37	Ms. Sitasnu Dahal	Research Officer
38	Ms. Sushma Sharma	Research Officer
39	Ms. Kristina Parajuli	Research Officer
40	Mr. Jot Narayan Patel	Research Officer
41	Ms. Samita Maharjan	Research Officer
42	Ms. Pratima Dawadi	Research Officer
43	Dr. Subhanshi Sharma	Research Officer
44	Dr. Ghanshyam Pandey	Research Officer
45	Dr. Isha Amatya	Research Officer
46	Mr. Bijay Kranti Shakya	Research Officer
47	Ms. Upama Ghimire	Research Officer
48	Ms. Urmila Koirala	Research Officer
49	Ms. Kritee Lamichhane	Research Officer
50	Ms. Jyoti Sharma	Research Officer
51	Ms. Purnima Timilsina	Research Officer
52	Mr. Rabindra Bhandari	Research Officer
53	Ms. Sharmila Baral	Research Officer
54	Ms. Sulochana Prajapati	Research Officer
55	Ms. Shreejana Dangol	Research Officer

S.N.	Name	Designation
56	Ms. Sristi Acharya	Research Officer
57	Ms. Januka Khatri	Clinical Pharmacist
58	Mr. Anup Gupta	Clinical Trial Coordinator
59	Mrs. Bina Devi Sitoula	Assistant Admin. Officer
60	Mr. Pradeep Belbase	Training Assistant
61	Mr. Ghanashyam Chaudhary	Library and Information Assistant
62	Mr. Min Bahadur Ghising	Technical Assistant
63	Mr. Sudip Poudel	Publication Assistant
64	Ms. Usha Parajuli	Admin Asst.
65	Ms. Sarita Thapa	Admin Asst.
66	Mr. Ajay Kumar Lal Karna	Office Assistant
67	Mr. Subash Ghising	Office Assistant
68	Mr. Bashu Dev Chapagain	Store Assistant
69	Ms. Kamala Luitel	Store Assistant
70	Ms. Janaki Pandey	Asst. Research Officer
71	Mr. Pukalal Ghising	Assistant Account Officer
72	Ms. Sunita Dhakal	Account Asst.
73	Mr. Kewal Budathoki	Account Asst.
74	Mr. Amit Kumar Jha	Account Asst.
75	Ms. Sona Luitel	Asst. Research Officer
76	Mr. Rakesh Yadav	Asst. Research Officer
77	Ms. Sapana Thapa	Asst. Research Officer
78	Ms. Anjana Aryal	Asst. Research Officer
79	Ms. Sunita Baral	Asst. Research Officer
80	Ms. Srijana Panta	Asst. Research Officer
81	Mr. Ajnish Ghimire	Asst. Research Officer
82	Ms. Aastha Acharya	Asst. Research Officer
83	Ms. Sitasma Sharma	Asst. Research Officer
84	Mr. Pushpa Raj Bhattarai	Asst. Research Officer

S.N.	Name	Designation
85	Ms. Rabina Poudel	Asst. Research Officer
86	Mr. Manish Dhakal	Data Entry Manager
87	Ms. Yunima Sapkota	Clinical Pharmacist
88	Mr. Suman Sharma Paudel	Trial Coordinator
89	Mr. Kiran Neupane	Research Assistant
90	Ms. Sarina Gyawali	Research Assistant
91	Mr. Suraj Kumar Mandal	Research Assistant
92	Dr. Rajendra Kumar B.C.	Consultant
93	Dr. Umesh Raj Aryal	Consultant
94	Dr. Nisha Rana	Consultant
95	Dr. Dinesh Bhandari	Consultant
	Supporting Staff:	
96	Mr. Lal Bahadur Ghising	Driver
97	Mr. Bir Bahadur Ghising	Driver
98	Mr. Mandhwoj Tamang	Driver
99	Mr. Ram Pd. Acharya	Driver
100	Mr. Manoj Luitel	Driver
101	Mr. Lok Bikram Chauhan	Office Helper
102	Mr. Bishanu Prasad Dhungana	Office Helper
103	Mr. Buddhiman Limbu	Guard
104	Mr. Maheshwor Chaudhary	Guard
105	Mrs. Goma Khadka	Gardener
106	Ms. Kamala Pujari	Sweeper
107	Mr. Ambir Ghale Gurung	Technical Assistant
108	Ms. Samali Tamang	Gardener
109	Ms. Renu Sedai	Sweeper

Acknowledgement

We would like to express our gratitude to everyone who contributed to the "Eighth National Summit of Health and Population Scientists in Nepal" with the theme "*Advancing Health Policy and Systems Research: Lessons for a Resilient Health System in Nepal*". We would like to extend our sincere thanks to all the chairs, panelists and moderators of the scientific sessions invited national and international presenters, discussants, all the delegates, guests, volunteers, media personnel, IT personnel and participants of the summit. Similarly, we appreciate the technical and managerial contributions and support provided by members of the Advisory, Steering, Scientific, and Organizing Committees of the Eight National Summit.



Finally, we want to thank everyone who contributed to the success of the Eighth National Summit. We look forward to seeing you all again at the next summit.

Dr. Pradip Gyanwali

Executive Chief (Member-Secretary)

Nepal Health Research Council

Government of Nepal

List of Abbreviations

AMR	Anti-Microbial Resistance
CVD	Cardiovascular Disease
DHIS	District Health Information Software
EDCD	Epidemiology and Disease Control Division
ERB	Ethical Review Board
FCHVs	Female Community Health Volunteers
FERCAP	Forum for Ethical Review Committees in the Asian and Western Pacific Region
FWD	Family Welfare Division
GoN	Government of Nepal
HEDPRP	Health Emergency and Disaster Preparedness and Response Plan
HEOC	Health Emergency Operation Center
HPSR	Health Policy and System Research
IRC	Institutional Review Committee
JNHRC	Journal of Nepal Health Research Council
LMICs	Low Middle Income Countries
MDA	Mass Drug Administration
MEC	Medical Education Commission
MoHP	Ministry of Health & Population
NCD	Non-communicable Diseases
NHRC	Nepal Health Research Council
NPC	National Planning Commission
NTD	Neglected Tropical Diseases
OoP	Out-of-pocket
PCR	Polymerase Chain Reaction
RATA	Rapid Assistive Technology Assessment
SDG	Sustainable Development Goals
UHC	Universal Health Coverage
WHO	World Health Organization

Executive summary

The Eighth National Summit of Health and Population Scientists in Nepal was a continuum of the previous annual summits celebrated every year on the establishment day of NHRC (10-12 April). The summit was a platform for researchers and policy makers to gather together and discuss about the research evidence and their potential implication in regards to the theme of the summit "Advancing Health Policy and Systems Research: Lessons for a Resilient Health System in Nepal". Approximately 2400 people attended the summit in person, and 115,203 people have viewed the program virtually to date. Till date, around 11,113,569 people have been reached through Facebook and around 1634 people have viewed the program on YouTube.

There were 39 oral presentations, 77 poster presentations and 31 national and 22 international invited talks and panel discussions in summit covering diverse issues including Strengthening Health Systems in the context of federalism and COVID-19, Health Policy and System Research for Resilient Health System, Strengthening social health protection in Nepal: the role of evidence towards universal health coverage, Health Policy and System Research, Biomedical, Epidemiological and Clinical Research, Global Health and Implementation Research, Strategies for Improving Quality of Medicines and Research in Pharmaceutical Sector, Maternal, Neonatal and Child Health, and Interdisciplinary Research.

The 11 different awards in the summit were presented in the following categories: Mrigendra Samjhana Medical Trust Oration Award, NHRC Young Health Scientist Research Award (Health Science), Mrigendra Samjhana Medical Trust Young Health Researcher Award (Medical Doctor), Mrigendra Samjhana Medical Young Health Scientist Research Award (NHRC Employee), Health Research Award, Best Research Paper Award, Best Oral Presentation, Best Poster Presentation, Best Employee Award (NHRC Employee), Best Department Award (NHRC Department) and Health Research Life-time Achievement Award were provided to the best awardees who were selected based on the contribution, creativity and innovation in health research. The declaration of the summit was presented at the end of the summit. The summit was concluded with remarks from the executive chairperson of Nepal Health Research Council.

Contents

Advisory Committee.....	iii
Steering Committee	vi
Scientific Committee.....	vii
Organizing Committee.....	x
Acknowledgement	xiv
List of Abbreviations.....	xv
Executive summary.....	xvi
Background	1
Objectives	2
Day I: Pre-Summit Sessions.....	3-18
Session I: Strengthening Health Systems in the context of federalism and COVID-19.....	3
Session II: Promoting Research for Health through Collaboration and Networking	9
Session III: Health Policy and System Research for Resilient Health System.....	15
Day II: Inauguration and Scientific Sessions.....	19-62
Inauguration Session.....	19
Plenary Session I: Strengthening Social Health Protection in Nepal: The Role of Evidence towards Universal Health Coverage.....	29
Parallel Session I: Health Policy and System Research- I.....	35
Parallel Session II: Biomedical, Epidemiological and Clinical Research- I.....	43
Parallel Session III: Health Policy and System Research- II.....	51
Parallel Session IV: Biomedical, Epidemiological and Clinical Research- II.....	59
Day III: Scientific Sessions	63-89
Plenary Session II: Global Health and Implementation Research	63
Parallel Session V: Responsible conduct of Health Research in Nepal.....	69
Parallel Session VI: Strategies for Improving Quality of Medicines and Research in Pharmaceutical Sector	73
Parallel Session VII: Maternal, Neonatal and Child Health	78
Parallel Session VIII: Interdisciplinary Research and Miscellaneous	84
Award Ceremony	90
Closing Remarks.....	91
Declaration of Eighth National Summit	92
Snaps from the Summit.....	93

Background

The Nepal Health Research Council (NHRC) hosted the **Eighth National Summit of Health Population and Scientists in Nepal**, with the theme "**Advancing Health Policy and Systems Research: Lessons for a Resilient Health System in Nepal**".

The NHRC is an apex body of the Government of Nepal (GoN) entrusted with regulating, coordinating, and promoting high quality health and population research in Nepal. Since 2015, the NHRC has hosted annual summits of health and population scientists to generate new knowledge through high-quality research and promote use of evidence in decision making by fostering dialogue between researchers, implementers and policymakers.

The COVID-19 pandemic has exposed health systems resilience in all countries. Nepal's health system has also faced a massive burden due to the pandemic. Despite its limited resources, Nepal responded to the pandemic to its ability while ensuring delivery of essential health services, by developing several policies, guidelines, and strategic initiatives. The NHRC also developed a national guideline for 'Strengthening Evidence Generation on COVID-19' with the goal of regulating, managing, and facilitating COVID-19-related researches in order to generate country-specific evidence for Nepal. Similarly, NHRC continuously supported the Ministry of Health and Population (MoHP) and the GoN in providing contemporary evidence to adapt, improve, and modify policies and practices in response to the COVID-19 challenges.

The COVID-19 pandemic has highlighted the critical importance of generating contextually tailored evidence through high-quality health policy and system research and their use in decision making thereby strengthening health systems resilience to tackle future pandemics, shocks and stressors to the system. The Eighth National Summit with the theme "**Advancing Health Policy and Systems Research: Lessons for Resilient Health System in Nepal**" was a continuum of the previous summits as an annual gathering of researchers, academicians, scientists, practitioners, and policymakers to exchange ideas and health research evidence on national health issues and priorities focusing on lessons from Nepal's response to COVID-19 and to previous natural disasters. This year's national summit sought to facilitate discussion on health systems and policy research (HPSR), as well as its advancement, in order to accomplish communal health goals and construct a resilient health system.

Health systems and policy research (HSPR) is multidisciplinary by nature. It focuses on creating an exhaustive scenario of how collaborative efforts from health institutions, populations and key actors like policy makers and researchers facilitate in building resilient health systems through promotion of evidence-based policy and policy-informed research. The ability to respond effectively to crises, maintain critical health functions during crises, and be aware of potential health hazards is what a resilient health system entails. The ongoing COVID-19 pandemic has pinpointed the significance of a resilient health system in handling public health emergencies and the consequences afterwards. Evidence from health systems and policy research can play a critical role in identifying and selecting policy solutions to meet the needs of the country at the time of crises and thereby aid in building resilience of the country's health system.

This year's national summit of health and population scientists aimed to bring health systems researchers, practitioners, program designers and policymakers together to discuss lessons from past emergencies including the COVID-19 pandemic and utilize these lessons to improve and transform Nepal's health system to better prepare it for public health emergencies and future pandemics.

OBJECTIVES

- To provide a unified platform for health scientists, policymakers, researchers, academicians, and practitioners to share research evidence on national health priorities.
- To foster networking and dialogue exchange between policymakers and health and population experts.
- To discuss upon lessons learnt from Nepal's COVID-19 response and previous emergencies and way forward for developing health systems resilience.
- To encourage young researchers as well as experts to collaborate, innovate and promote research on current health priorities in Nepal.
- To synthesize evidence for contributing to formulate health sector strategic plan and annual work plan and budget.

Day I: Pre-Summit Sessions

Session I: Strengthening Health Systems in the context of federalism and COVID-19

This session was chaired by **Dr. Guna Raj Lohani**, Chief Specialist, Ministry of Health and Population (MoHP) and **Ms. Ellen Pierce**, Principal Associates, International Development.

Topics	Presenters
Municipal preparedness for managing a health emergency for a resilient local health system	Dr. Ajit Karna Mr. Krishna Prasad Neupane
Health system data, data quality and use of health data for program planning and monitoring	Mr. Krishna Gopal Chaudhary Ms. Samikshya Singh
Burden of disease and health system resilience	Dr. Meghnath Dhimal Mr. Achyut Raj Pandey
Strengthening Municipal Health Systems – What we have learned so far? What is the way forward?	Mr. Pravin Paudel Mr. Prabhat Kumar Shrestha

The session started with the presentation of Dr. Ajit Karna on municipal preparedness for managing a health emergency for a resilient local health system.

KEY POINTS OF THE PRESENTATION

- Since all 753 local levels were affected by COVID-19 by early 2022, it badly affected the national health system.
- Local levels either lack a disaster preparedness and response plan or plans are limited to natural disasters like earthquakes, floods and landslides.
- Different municipalities are in different phases of developing Health Emergency and Disaster Preparedness and Response Plan (HEDPRP) based on the implementation of program activities of SSBH.
- Development of the plan resulted in better understanding of municipal staff, people's representatives and political parties on health emergency and disaster preparedness and response planning and health risks of disasters.

FUTURE DIRECTIONS

- The demand for a multi-sectoral response to COVID-19 highlighted the importance of integration in planning for and responding to disasters and health emergencies.
- Policy makers, planners, managers, and practitioners should be encouraged to include municipal stakeholders and sectors in disaster planning to make optimal, targeted use of resources during integrated responses.
- Integrated approach will increase municipal capacity to manage health emergencies to disasters for a resilient local health system.
- Cluster approach can bring all stakeholders and support agencies onto a single platform, thereby avoiding resource gaps and duplication of efforts.

The session continued with a second presentation of Mr. Krishna Gopal Chaudhary, Health Office, Bardiya and Ms. Samikshya Singh, SSBH which focused on the health system data quality being based in project provinces.

KEY POINTS

- Data and its quality related issues along with resources allocated to address those issues have always been prioritized by MoHP as it is expected to improve and sustain health recording and reporting.
- SSBH provides technical assistance at all levels of the health system in the implemented provinces to strengthen health information, including the quality of health data.
- Human Resources for Health, logistics, and technical competency related gaps are still existing issues for health system data quality.
- Training of health workers, onsite coaching, mentoring and periodic review meetings were conducted based on findings of assessment which can ultimately improve governance, DHIS-2 strengthening, advocacy and technical support.
- Remarkable changes in the variables have been observed after the interventions with improvement in internal data consistency.

FUTURE DIRECTIONS

- Functionalization of data quality monitoring committees, reaching municipalities, comprehensive coaching and monthly review can strengthen DHIS2.
- Development of a legal framework and quarterly data quality assessments using cross-verification sheet, daily tally, DHIS2 dashboard, DHIS2 data quality App could be the way forward for enhancing data quality as well as using it for decision making and advocacy.

The third presentation was by Dr. Meghnath Dhimal and Mr. Achyut Raj Pandey who shared the findings of burden of disease and health system resilience respectively.

KEY POINTS

- National Burden of Diseases, 2019 is continuum of 2006 project with more refined methodology, comprehensive and detailed information.
- Despite the fact that smoking, air pollution, raised blood pressure, LDL and blood glucose levels are leading risk factors for NCDs, the primary care prevention program is still in infancy due to continued focus on the curative aspect. Also, global evidence shows the importance of multi-sectoral responses for NCDs.
- Resilience capacities of a health system refer to forecasting capacity, cushioning the impact of shock, adaptive capacity and transformative capacity.
- Among the health financing, 58% of health expenditure is through out of pocket among which 55% is associated with NCDs and 66% with pharmaceutical and medical supplies.
- The NCDI poverty commission proposes 23 interventions to establish UHC by 2030 which if implemented would avert at least 9,680 premature deaths every year by the year 2030.

FUTURE DIRECTIONS

- Multiple risk factors for NCDs go beyond health sectors. So, preventing and managing diseases need inter-sectoral collaboration along with support for local government in evidence informed, locally tailored interventions.

- Sustainable financing mechanisms should be maintained to deal with NCDs burden which might be achieved through expanding the coverage of health insurance schemes. In addition, investment in PHC with the principle of progressive universalism could be the way for a resilient health system
- Nepal needs additional efforts in strengthening public health surveillance, causes of deaths registration and evidence informed decision making.

The final presentation was by Mr. Pravin Paudel from SSBH and Mr. Prabhat Kumar Shrestha, Health coordinator from Triveni Municipality, Salyan district on “Strengthening Municipal Health Systems – What we have learned so far? What is the way forward?”

KEY POINTS

- Strengthening Systems for Better Health (SSBH) works closely with the health structures of municipalities in Karnali and Lumbini province to provide technical support towards strengthening the health systems and performance.
- Ensuring universal health coverage in the federal structure has given new and expanded roles to local governments while optimal performance of municipal health systems has been lacking during the transition from Unitary to federal system.
- Skilled Birth Attendant (SBA) training for nursing staff, DHIS 2 training and onsite coaching sessions was provided based on gaps identified.

FUTURE DIRECTIONS

- Since health service delivery is the primary interface between people and the health system, improving service provider skills and strengthening supportive functions must be prioritized.
- Municipal health systems can be strengthened through effective coordination between the three tiers of government in relation to planning, resource allocation and program implementation.
- Good governance is foundational to a functioning health system so there is a need for clarity on the roles and responsibilities among municipal stakeholders, other tiers of government, and outside entities in strengthening local health systems.
- There is a need for sustainability mechanisms as changes in municipal leadership may undermine sustainability of local initiatives and achievements so far.

PANEL DISCUSSION:

The presentation was followed by panel discussion with panelists such as:

Topics	Panelists
Examples of municipal leadership in combating COVID 19	Mr. Dev Kumar Subedi
Health Service Delivery in Lumbini Province	Dr. Bikash Devkota
Governance and leadership situation, opportunities and challenges in Karnali Province	Mr. Hom Nath Subedi
Lesson learnt on COVID-19 response in Nepal	Dr. Amrit Pokharel

The panelists were representatives from local, provincial and federal level government. The panelists for the session were Mr. Dev Kumar Subedi, Mayor, Birendranagar Municipality, Karnali province, Dr. Bikash Devkota, Secretary, Ministry of Health, Population and Welfare, Lumbini province, Mr. Hom Nath Subedi, SSBH, and Dr. Amrit Pokharel, Epidemiology and Diseases Control Division (EDCD).

EXAMPLES OF MUNICIPAL LEADERSHIP IN COMBATING COVID 19

The panel discussions began with sharing examples of municipal leadership in combating COVID-19 such as **opportunities and challenges for managing COVID 19** in Birendranagar Municipality (most populous municipality of Karnali province).

KEY POINTS OF THE SESSION

- Local level started the management of the pandemic without an appropriate pre-preparedness plan. No funds and resources were available for COVID management. However, the fund net worth Rs. 1 Crore and 70 lakhs was managed from the budget allocated for other purposes.
- Federal government, provincial government, provincial health directorate and different funding agencies including SSBH provided technical support whereas local resources were used for testing and providing preventive measures.
- Established the largest oxygen plant in Karnali province which can produce about 120-150 cylinders of oxygen per day. The testing facilities i.e. Rapid Diagnostic Test (RDT) as well as (Polymerase Chain Reaction) PCR test was provided free of cost even for migrant returnee from the beginning to till date.
- Issues relating to human management especially relating to quarantine, isolation, testing, vaccines, returnee from India, and their accommodation, food, relief materials were the main challenges.

FUTURE DIRECTIONS

- Strong dedication of local level with full utilization of local resources can manage any kind of pandemics in future as well.
- Training the health workers responsible for delivering basic health services at local level with full support from provincial, federal government and funding agencies can facilitate pandemic management in innovative ways.

HEALTH SERVICE DELIVERY IN LUMBINI PROVINCE

- The discussion on health service delivery in Lumbini province focused on strengths and opportunities present in the province in terms of management of COVID -19 pandemic. With a similar provincial structure Lumbini province was able to deliver health service effectively due to a major focus on four unique principles.

KEY POINTS OF SESSION

- **Strengthening & upgrading hospitals:** There were 50 bedded hospitals in six districts. Remaining six districts also upgraded the hospitals in 50 beds, conducted an O & M survey, passed an organogram and allocated a budget from the province. Adequate number of staff has been recruited to meet the requirement. However, the major challenge was to have a specialist for providing healthcare services.
- **Coordination among province and local level:** It was another important aspect which contributed for effective health service delivery within the province. For example; the federal government decided to deliver hemodialysis services from three different hospitals of the province. Additionally from provincial initiation it was decided to deliver this service from other three hospitals as well.
- **Maximum utilization of available resources:** The optimum utilization of resources was done to fulfill the requirement of human resources. For example: Lumbini provincial hospital and Rapti Academy of Health Sciences (RAHS) hold more specialists. So, the cabinet has decided to post them in different other areas by providing additional incentives.
- **Reaching the unreached population:** The promotion of institutional delivery to reduce home delivery and maternal mortality rural ultrasound programs has been launched. Another program entitled “**Doctors to doorsteps**” has been started to reach the underserved.

- **COVID Pandemic management:** During the pandemic situation, four hospitals were designated as COVID special hospitals. Two satellite hospitals with 100 bed capacity were run during Covid management. Province created a trust for COVID management which succeeded to deposit about 500 million with 12-13% contribution from funds provided by individuals, NGOs/INGOs.

FUTURE DIRECTIONS

- Provincial and local governments should focus their attention towards shifting burden and change in health problems based on national data of burden of diseases.
- Strengthening the structure and functions of the health care delivery settings (hospitals) can contribute to the effective delivery of services and management of pandemics in future as well.

GOVERNANCE AND LEADERSHIP SITUATION, OPPORTUNITIES AND CHALLENGES IN KARNALI PROVINCE

In the absence of Dr. Rabin Khadka, Ministry of Social Development of Karnali Province Mr. Hom Nath Subedi who has been working closely with the provincial ministry for more than 4 years elaborated the interesting and valuable experiences of working in Karnali province.

KEY POINTS OF SESSION

- After federalization, Karnali province has changed its organogram of the healthcare system to deliver health care in an integrated approach. Also, the provincial government is trying to provide specialized health service from district hospitals of the province.
- Due to harsh topological structure, transportation cost of the supplies for the rural districts like Mugu, Humla, Jumla and Dolpa. is three to four fold higher than that of other districts. So, it is difficult to be covered by the budgets allocated from the central level in equivalence to other districts with good facilities of road and transportation.
- Despite many opportunities, there is lack of coordination among different levels of government in management of the health care facilities and the budget allocation. Also, the issue of recruiting specialists in hospitals of Karnali provinces is prevalent.

FUTURE DIRECTIONS

- Municipalities should coordinate with each other and prioritize their needs in order to utilize the budget provided by higher governments for the development of the regions.

LESSON LEARNT ON COVID-19 RESPONSE IN NEPAL

The discussion was continued by Dr. Amrit Pokharel who explained about the responses carried out during COVID-19. The achievements and challenges in the context of the federal government with the perspective of infrastructure, budget and coordination was shared based on own experiences of pandemic response.

KEY POINTS OF SESSION

- During initial phase of COVID-19, testing for covid-19 was predicted to test for only 2% however later on more than 20% of the population was tested for the same which indicated good response against the pandemic though it is not excellent response since there are many other nations who have better response for the pandemic.
- Lack of risk communication and community engagement during COVID-19 response further hit the people during pandemic.
- Federalism played a vital role in implementing control measures like isolation and quarantine of patients and suspects all over the nation.

- Surveillance of COVID-19 was found incomplete and insufficient. Since the Disease Surveillance system of Nepal is scattered and there is not reliable data of the diseases.

FUTURE DIRECTIONS

- Community should be engaged while managing the disease outbreak. Risk communication should be improved to enhance community involvement and adoption of control measures.
- Implementation of integrated disease surveillance approach for better data quality and effective pandemic management.

DISCUSSION

The four presenters and panelists shared their ideas and experiences on the respective topics. The queries and comments regarding the specific topics received either through virtual medium or from the physically present audience were allowed for discussion at the end of the session. Grabbing the opportunity, the concerns for availability of the data and proper documentation of the data within the region was raised by an audience. In response to which mayor Subedi shared his experience of the covid-19 response when data obtained by the federal and provincial government were updated in the website of the municipality within the same evening and was reported to provincial government through the public health office. He also claimed the good management of data as per the capacity. Furthermore, he indicated inclusion of data management and budget allocation for the same in the next fiscal year as an opportunity which is beneficial in managing future outbreak and health care challenges. Similarly, suggestions to recruit experts rather than medical doctors as health advisors for municipal level based on pandemic management experience.

With respect to discussion on lessons learnt from COVID-19 response in Nepal, Dr. Ram Thapa Kshetri stated his experience of using different social media to awaken the general public regarding health care facilities provided by the nation in order to bridge the gap of information on disasters to the general public. He put his queries regarding the government's plan for opening vacancies and managing a favorable environment for utilizing medical professionals to work during health crisis since lack of medical doctors created huge problems in public awareness and outbreak management in Covid-19 as well as the earthquake crisis. In response to this, Dr. Pokhrel explained about the call center created during Covid-19 pandemic for risk communication and contact tracing, and he mentioned that a significant number of beneficiaries from that Hotmail. Regarding hiring of medical professionals, the queries were handed over to the Chair Dr. Lohani who shared about ongoing bridging between technical and bureaucratic parts to manage the issue.

Similarly, the suggestion regarding the essence of proper coordination and cooperation for transportation of logistics was provided. The issue relating to lack of interest for employees to work in the rural areas which has created a decline in the quality of the health care in Karnali Province was also discussed. Similarly, Dr. Devkota revealed the existence of proper coordination among different levels of government, illustrating the example of Covid-19. He further added the necessity of coordination during the general situation as well. The chairs closed the session with thanking remarks to all presenters, panelists as well as participants.

CONCLUSION

After federalism many improvements have been made in the nation regarding the health care system and providing quality health services. Though many challenges are still prevalent, coordination and cooperation with each level of government and persons working in the health sector will help to mitigate the existing problem and make betterment of health services in Nepal. In addition, learning from the prior experiences of earthquakes and Covid-19 crises can be helpful in making a resilient health care system in future.

Session II: Promoting Research for Health through Collaboration and Networking

DRAFT FRAMEWORK OF RESEARCH FOR HEALTH IN NEPAL

At the beginning, Ms. Shushma Sharma welcomed Dr. Pradip Gyanwali and all panelists and handed the session over to the chair **Dr. Mahesh Kumar Maskey**. After that Dr. Maskey allowed Co-Chair Dr. Khem Bahadur Karki to start the session.

Dr. Karki started the session by welcoming Dr. Gyanwali to proceed with his presentation on Draft Framework of Research for Health in Nepal.

Dr. Gyanwali explained about Historical Perspective, Constitutional mandate, National Health Research Strategy 2076, Framework of Research for Health along with a key message why this framework is mandatory.

Regarding historical perspective he explained that Research in Nepal originated in 1952 when the United States Operations Mission conducted a survey on malaria. Nepal Medical Research Committee and Nepal Health Research Council were established on 15 April 1982 under the Ministry of Health and 12 April 1991 by an Act of Parliament respectively. He highlighted Article 51.9 Focus on health research from Constitution of Nepal along with he discussed briefly Article 6.14 of National Health Research Strategy 2076. He also emphasized outcome 9: Improved availability and use of evidence in decision-making processes at all levels of Nepal Health sector Strategy 2015-2020.

After that, He explained 4 mandates of NHRC. Discussed mandate were:

- 1. Regulation of health research in the country**
- 2. Capacity building in health research**
- 3. Evidence generation for health**
- 4. Promoting the use of evidences**

He further explained about the Health Research regulation in Nepal. He explained NHRC is mandated to provide ethical approval and monitoring research projects to be conducted all over the country. He described that there are 54 IRCs at health care facilities, academic institutions and research institutions throughout the country.

He also explained about the increasing trend of registered proposals in ERB of NHRC from 1991-2021, and about 2000 research proposals were also approved by IRCs in 2019.

He explained the main aim of developing the framework of Research for Health. The aims were:

- 1. Institutional Framework for an effective health research system**
- 2. Federal framework of the research governance and leadership**
- 3. Generating resources**

He explained four concept of Institutional framework;-

- 1. Capacity- Strengthening health research systems**
- 2. Standards- Good research practice**
- 3. Translation- Evidence into practice**
- 4. Priorities- Meeting health needs.**

Along with the concept he explained about the vision and mission of the Institutional Framework.

Vision: Generate quality evidence, knowledge and innovations to accelerate health for all in Nepal

Mission: Catalyze partnerships to harness science, technology and knowledge to translate products, policies and practices and convert them into goods that benefit public health

Along with Institutional Framework, he explained about the federal framework approach and also described how the National Planning Commission and MOHP can Monitor and evaluate provincial research offices along with how they will utilize provincial offices for better outcome in policy and planning.

KEY MESSAGE OF THE PRESENTATION

- Strengthening of the national health research system
 - Promotion of research culture in academic institutes and Motivation to health researchers
 - Promote research for health carried out by non-health sectors to support Health in All Policies
 - Capacity building of health professionals on evidence synthesis and translation
 - Research Innovation, IPR and data governance
 - Linking Research, academic institutes and industries
 - Collaboration in research
 - Generating resources for health research in Nepal

At the end he emphasized that abroad, policies are guided by research but in our research are guided by policy and we need to change this situation. As a last remark, he highlighted Friendship and Collaboration, Knowledge Exchange, Leadership Engagement and Time are the key factors for research innovation and we need to give more emphasis on them for better scientific research outcome.

PANEL DISCUSSION

PANELISTS

Dr. Bishnu Raj Upreti, PRI

Dr. Arati Shah, MEC

Prof. Dr. Umesh Mandal, TU

Dr. Pramod Poudel, UGC

Dr. Rabindra Prasad Dhakal, NAST

Prof. Dr. Rajeev Shrestha, KU

Dr. Chandra Mani Adhikari, SGNHC

Mr. Bhim Prasad Sapkota, MoHP

Dr. Basudev Sharma, NPC

Mr. Manoj Bhatta, SWC

Dr. Sushil Koirala, AIN

Dr. Maskey initiated the panel discussion by allocating the time for the discussion one hour and 10 minutes; and allocated 5 minutes extra for concluding the remarks of the discussion. At the beginning, Ms. Shushma Sharma had handed the session over to the chair Dr. Mahesh Kumar Maskey. After that Dr. Maskey had welcomed all panelists and allowed Dr. Karki to start the session.

Dr. Khem Bahadur Karki started the session by emphasizing the purpose of the panel discussion which was to understand the importance of collaboration and networking for promoting health research. He also raised questions about how collaboration and Networking promotes the research for health.

The moderator asked Dr. Bishnu Raj Upreti (PRI), how can you promote research for health? Are the existing policies effective? What kind of policy is needed in Nepal for research for health? Have the ministries developed a useful policy?

Dr. Bishnu Raj Upreti noted that PRI is an apex body to analyze the existing policy and to provide the suggestion for policy through Prime Minister Offices for policy effectiveness. It has three major mandates. He noted that the research done by different research institutes should not overlap among each other. Now, we have drafted national research policy including many suggestions with coordination of TU and will send it to NPC. There should be a National Research body and the research done by different institutions should not be duplicated. PRI has provided comments on draft national research policy and has forwarded it to the National Planning Commission after many discussions, conducted among stakeholders. The NPC should allocate a budget to the research. PRI has analyzed the effectiveness of the policies and the policies are comparatively not good. There are five reasons that have affected the effectiveness of the policy.

1. Parliament develops a policy and is implemented by the government.
2. The process of policy making is very weak.
3. If people do not follow the rules, he/she gets punished. However, if the policy was not implemented in the country, then nobody would be responsible.
4. The availability of experts. Many policies are made without consultation of experts.
5. There is a gap between policy and research. The objectives of policy did not meet the result of the research.

There are three principle works for collaborating and networking of research.

- a. Networking between University and research institutions.
- b. Sustainable and available resources for research.
- c. To strengthen the subject related research institution and should perform collaborative work.

Furthermore, Dr. Karki had asked another panelist (Dr. Aarti Shah) from MEC to explain the role and responsibility of MEC for networking among different academia and research institutions.

Dr. Shah said that the mandate of MEC is research, medical education policy and coordination/networking. She discussed issues related to the development of a national medical policy. How do we establish health institutions in different parts of the country on the basis of geographical distribution and based on Identity of the community? Do the policies have provided benefits to community people? MEC had mainly focused on Doctors and Nurses. However, we are including Allied sciences and Alternative medicine also. There was a contradictory issue between the National Health Service Act and Medical Education Act; however, we have solved it. While formulating service and for quality Policy, we should discuss with all stakeholder for clear direction and with NHRC we can collaborate. We should work to develop research culture in all levels of the medical profession. NHRC can collaborate in Capacity building for students by providing training. NHRC has to help MEC for estimation of Health Resources.

After the remark of Dr. Aarti, Dr. Karki invited a representative of UGC and asked about the fundamental issues related with Higher education and research. He asked about the use of university grants on research (research for health).

Dr. Pramod Paudel noted that UGC is an apex body for higher education. The basis of funding is based on the 15th Five Year Plan of National Planning Commission, National science, technology and innovation policy, sustainability plan for research funding, and national policy. University small grant is for University faculty development. It has a mandate to develop research and innovation. The Priorities of Collaboration UGC are Intra university collaboration, Inter university collaboration, and international collaboration. We

have a policy to reverse the publication charge to the researcher (around 600 USD), if he/she published his creation in an international journal. But it should be q1 or q2 level. UGC has different programs for research funding: small research development plan for university faculty, cost about 0.2 million NRS, faculty research grant 4 million, collaborative research grant 2 million and technical innovation grant for 12.5 million. UGC has been spending around 49 Crore for research every year to develop research.

The next panelist was from the National Planning Commission, Dr. Basu Dev Sharma. The representative of NPC noted that how can we connect research and policy? We are focusing on infrastructure. There is no demand for research from people. Research budget is dependent upon GDP. It must be 2% of GDP for research. However, no organization has claimed for research at the national Planning commission. National planning commission has to make a plan based on fact and evidence. It depends upon research. However, our plan is based on request. Forty external development partners directly expend money on research. Among them 16 are EDPs but 75 % have returned to their countries. Only 25 % of money is spent in our country without NPC coordination. The major weakness of bureaucrats is to take money from funding EDPs without evaluating its consequences. Each ministry has spent a certain budget for consultancy services every year. The IMF has prepared a 5 years plan for research, with a budget of around 20-30 ARAB Nepali rupees. Every ministry has a budget for research but they perform research according to their feasibility but not per public or nation need. In the future we should lead the movement of research to province level. Sadly we don't have integrated policy, let's advocate for integrated national research policy.

Furthermore, Dr. Karki requested Prof. Dr. Umesh Mandal, representative from TU for his ideas on networking on collaboration of research and also asked a few ways i.e. how do we have promoted research in university?

Mainly, what we are doing on research for health? Also what is the role of University for research for health? After that Prof. Mandal said that he has discussed with different ministries to decentralize the research activities through establishing the unit of TU in different provinces and to strengthen the quality of education. There is apex body of research in TU, i.e. Research Coordination and Development Council (RCDC). In the past, it was not active. Now, we are doing 50 % research and 50% teaching activities for students and around 17 Crore is available for research donated by different Government organizations and the project is running. Before this, there was mini research for our faculty development but we are providing up to 25 lakhs for research. He also added that most of the ministry has no research department. We have called for a National Priority Project; its amount is around 50 lakhs. He noted TU is open for collaboration with National and International stakeholders. Research is increasing in TU these days. Due to lack of budget availability in TU, due to less funding from government all health experts, academicians are going abroad to perform research. He also expressed that the Ministry provides research grants to particular consultancy so that 50% of the budget can return to the same ministry.

As well, Dr. Karki invited the Chief of Research Division of Kathmandu University School of Medical Sciences (Dr. Rajeev Shrestha), and asked about the networking and collaboration of research for health.

Then, Dr. Rajiv has added that we are talking about grants and money but we are not investing in research. We have to invest in researchers. We have to encourage national or international institutions for collaboration. First, we ask for grants from other organizations. It will be provided but before that we have to collaborate and work. It takes time. Networking and collaboration is not only to bring money. It is also for creating knowledge and to generate combined evidence with proper utilization of experts. We find the gaps in collaboration between organizations. Networking and collaboration play a major role in grant and research. Only the Government cannot do everything. It will be a failure. Academia cannot do everything. Collaboration doesn't lose individuality rather it strengthens research.

Dr. Karki called Dr. Rabindra Prasad Dhakal, representative of NAST for his valuable ideas about networking and collaboration for "Research for health".

Dr. Karki asked him how NAST and other organizations work together. Dr. Dhakal noted that there is no environment for networking and collaboration in a country. The coordination between the university and think tank is necessary to perform research activities. We are still talking on priority based subjects.

We are regularly requesting to allocate 1 % of GDP for research grants. We are working for collaborative research and the maximum limit will be up to 50 million. We have kept 9 to 10 themes for this fund. We need to establish a research culture here.

Furthermore, Dr. Karki called the Director of SahidGangalal National Heart Center, Dr. Chandra Mani Adhikari for his remarkable idea on "Research for health".

He said that he wants to talk about cardiovascular research. In our country, research is done for money, post and passion. However, few people are doing research for passion. The students of DM and MCH do a thesis for academic purposes. We have to develop a culture in research. We have to develop a curriculum that influences how we conduct research. We depend upon the AMERICAN guideline. Does the character of our patients meet with American people? He has emphasized on local research and evidence which meet the characteristics of Nepalese population.

After that the next speaker (Mr. Bhim Prasad Sapkota) from MoHP was called by Dr. Karki and requested him to add his valuable remark on networking and collaboration on "Research for health in Nepal".

However, Dr. Karki asked a few queries about research activities done by MoHP. Like, what has been done in research by MoHP? Research is a priority of the ministry or not? Does MoHP work for networking at different Universities? Is there any plan to work for networking with Academic Institution for Research?

Mr. Sapkota has noted that MoHP has a commitment for networking from this stage. It helps to work in the future. We can identify a way for networking for research. We have been working together since NHRC's establishment. We have to complete a long journey for Research with NHRC. I feel that how can we reach at the local level through research? How can we use the data at the local level? There is data of day to day services; the review of that data can also generate some evidence. Then, how can we do that in service transformation? MOHP and NHRC are collaborating to transfer health research to research for health. We should sensitize local level health workers to provide evidence from their day to day service; it will contribute to our country and public. He emphasizes making research localized.

Furthermore, Dr. Karki called Mr. Manoj Bhatta, Member Secretary of Social Welfare Council and the representative noted that there is much research done by SWC. How can we generate synergy in research?

Research is an ongoing process. We are working on how to achieve the main goal of health. He expressed there is a gap between ministry and research institution and also explained National research institute plays a vital role in research collaboration.

At last Dr. Karki called Dr. Sushil Koirala, Representative of Association of all NGO/INGO, a representative who shared his ideas about networking and collaboration of research. And, he has also added that research is not a developmental agenda in Nepal. If we could allocate 1-2% of the development budget in research then we can make it more fruitful. He expressed that his organization would like to work in collaboration with the Ministry and NHRC. He suggested focusing on implementation research.

CONCLUSION OF THE SESSION BY CHAIR

- If all panelists commit to collaboration then it will be more efficient to make research for health.
- How to harmonize research by not promoting consultancy by each ministry section.
- Guidelines for clinical practice must be made on the basis of Nepalese population instead we are using international guidelines.

KEY POINTS FROM DISCUSSION

- Need a national research policy in a country.
- Gap in inter and intra coordination in ministry.
- Research funds should be provided to universities or institutions.
- Establish a network for quality education to provide quality services.
- There is no connection between research culture and policy formulation
- There is a chance of duplication of research.
- We don't have critical research and also not have used the finding of research for policy.
- The universities have not collaborated with the government.
- Networking and collaboration do not lose our identity.
- There is a gap for collaboration and networking within research organizations.
- The review of local health facility data and its utilization can make a change in quality of health services.
- There is a need for an organization for networking and collaboration of research.
- It needs coordination between NGO/INGO, MoHP, and NHRC for networking and collaboration.

FUTURE DIRECTIONS

- Inter-coordination between ministries.
- Coordination between university and Institution, Capacity building for University
- Develop a subject wise institutional strengthening program.
- Coordination will be done between the Policy Research Institution, UGC, NAST and NHRC.
- Need to think about an identification of researchers and will recognize them as "Bidhwan ID". There is a need to call stakeholders to connect between them.
- To establish a single/common research institute, merging all research institutions. Reform for research, i.e. we have to do research for our needs. We need a common advocacy for research.
- We have to make a Government academia partnership policy. We have to develop a collaboration center in different institutions according to their capacity.
- We have to identify the active and useful area of research which can improve the policy of our country.
- We have to promote local level health workers to review their health facility data without writing proposals.
- AIN will develop a policy to allocate some budgets of the total project for health research.

Session III: Health Policy and System Research for Resilient Health System

The session was chaired by the respected secretary **Dr. Roshan Pokhrel**, Ministry of Health and Population and Co-Chair/Moderator Dr. Sushil Chandra Baral. The session was very interactive and fruitful with the views from discussants.

Topics	Panelists
Resilient Health System: Nepal's experience and future directions	Dr. Guna Nidhi Sharma, MoHP
New Population Perspectives of Nepal	Dr. Yagya Bahadur Karki, Former member of NPC
Health Financing and Resilient Health Systems in Fragile Context	Prof. Sophie Witter, Queen Margaret University, UK
Health Policy and System Research –responsive health systems in LMICs	Prof. TolibMirzoev, London School of Hygiene and Tropical Medicine, UK
Urban Health Systems and Community Engagement in LMICs	Dr. Helen Elsey, University of York, UK
Resilient Health System: Nepal's experience and future directions	Dr. Guna Nidhi Sharma, MoHP

Highly professional health and policy expert such as Prof. Dr. Kiran Regmi, Former Secretary, MOHP; Dr. Padam Bahadur Chand, Former Chief Specialist, MoHP; Dr. Kiran Rupakheti, Joint Secretary, National Planning Commission; Ms. Yesoda Aryal, MoHP; Dr. Suresh Tiwari, OPM, and Mr. Deepak Karki, Health Adviser, FCDO, British Embassy, from different arena of national health system were involved. The key points of the session were noted by Dr. Dinesh Bhandari and Mr. Rakesh Yadav, similarly the comments and suggestions were compiled by Ms. Sitasnu Dahal and Master of Ceremony was done by Ms. Uma Kafle. The following presentation was delivered in this session.

The Session started with the presentation of Dr. Guna Nidhi Sharma on "*Resilient Health System: Nepal's experience and future directions*". His presentation was focused on the detail definition of Resilient health system, the Shock Cycle and its stages, and different types of shocks occurred recently in Nepal. He also discussed the preparedness of the disasters by the state, and strength and weakness seen during coping with them. Similarly, Dr. Sharma talked about the impacts and outbreak management and also directed the policy makers for establishing the strong health policy in the country according to the time and situation.

KEY POINTS

- Health System Resilience is the ability to prepare for, manage (absorb, adapt and transform) and learn from shocks.
- Shock is a sudden and extreme change that impacts on a health system and is thus different from the predictable and enduring health system stresses, such as population aging.
- The shock cycle consists of four different stages namely Preparedness, Shock alert and onset, Shock impact and management, and Recovery and learning.
- The two major shocks the country faced were Earthquake (during political transition period) and the COVID-19 pandemic (during implementation period of federalism)
- For the preparedness (pre-earthquake), there were National Disaster Response Framework, National Emergency Operation Center and Health Emergency Operation Center, Cluster Coordination

Mechanisms, Trained HR on Hospitals Preparedness for emergency, Trained Rapid Response Teams and District Disaster Preparedness and response plans **but there were not** dedicated and flexible fund for health sector response emergency, Hospital emergency response plans focused on mass casualty management but not disease outbreak management, framework for Pre-hospital services etc.

- Similarly for the preparedness of the pandemic (Pre-pandemic), there were Infectious Disease Control Act-2020, Public health services act 2075, Incident Command System practiced in 2015 during earthquake, HEOC, PHEOC-3, EDCD **but there were not** Tracing, Testing, Isolation, and quarantine guidelines/procedures, Updated national pandemic preparedness plan, Rapid Action plans, CICTs, Laboratory testing capacity to detect COVID-19, Active surveillance system at borders etc.

FUTURE DIRECTIONS

- Focus on Health System Research
- Design resilient health policies according to the country's need
- Develop and implement the policies.
- Lessons learned should be generated for use in future events.

Second presentation was given by **Dr.Yagya Bahadur Karki** on "**New Population Perspectives of Nepal**". He outlined his presentation on the history of demographic studies as well as the current situation of population and development, challenges, opportunity and future direction for the policy and population development for Government of Nepal.

KEY POINTS

- There was high growth of population (2% per annum or more) until 2001; however, the growth has been declining continuously since 2001.
- Increased numbers of absentee population as well as immigration of female population are the main contributing factors of population low growth.
- Among the 7 provinces, Madhesh province has the highest population size where the growth rate is found to be 1.20%.
- 32 out of 77 districts of Nepal have negative population growth in 2021.
- The 2021 preliminary census shows urban population standing at 66%.
- Since 1976, TFR continuously declined and now it is 2.0
- Life expectancy at birth for 2021 is estimated at 69.6 years (males 67.8 years and females 71.2 years).

FUTURE DIRECTIONS

- Effective implementation of population programs will substantially help achieve most SDGs 2030.
- Formulate a development package for channeling internal migration streams.
- Address the needs of the increasingly large elderly population
- Reduce fertility in Karnali, Madhes and Sudurpaschim provinces to replacement level.
- Make the best use of demographic dividend calls for investment in quality education and health and employment creation.

The session was more fruitful with a presentation of **Prof. Sophie Witter**, Professor of International Health Financing and Health Systems, Institute of Global Health and Development, Queen Margaret University, United Kingdom on "*Health Financing and Resilient Health Systems in Fragile Context*". Prof Witter highlighted desirable attributes in health financing and particular challenges for fragile and conflict prone regions.

KEY POINTS

- Resilience mainly focuses on the ability of a system to sustain functions over time in the face of acute shocks and chronic stressors. Capacities include Absorption, Adaptation and Transformation.
- Critical interface with communities and the importance of establishing and maintaining trust.
- Cultivate effective partnerships and Coordination
- Make cultures of learning and availability of resources and kind of flexibility about resource use
- Desirable attributes in Health financing include Revenue, Pooling, Purchasing and Benefits.
- Overview of Health financing challenges: revenue rising includes- Low overall funding, Public funding is often low, High dependence on external funding.
- Overview of HF Challenges: pooling includes-High levels of out of pocket payments, Low trust undermines pooling and Segmented Population.
- Overview of HF Challenges: Purchasing includes- Multiple Purchasers, Fee for service payment dominates in private and informal sectors and complex remuneration.
- Overview of HF challenges: A benefits package includes- Service provision capacity may be disrupted and parallel provision for refugees.

FUTURE DIRECTIONS

- Prioritizing critical public health functions, including surveillance, immunization, prevention etc.
- Ensuring financial and non-financial barriers
- Supporting PFM systems.

The session was followed by another international health and policy expert, **Professor Tolib Mirzoev**, London School of Hygiene and Tropical Medicine from the UK gave a presentation on "*Understanding responsive health systems in LMICs: insights from Health Policy and System Research*". He started the presentation by talking about violence against health workers and stated that the health system is not responsive to people's expectations which are one of the causes of violence. There is no published work on health system responsiveness from fragile states/countries and there exists limited awareness of feedback channels in countries like Bangladesh. In Nepalese context, responsiveness can be an "add-on" in an overarching health system goal. However, one should be aware of conflating responsiveness with other concepts.

KEY POINTS

- The presentation provided insights into the current understanding of health systems responsiveness, and possible strategies for making the health system more responsive to the needs and expectations of diverse stakeholders.

FUTURE DIRECTIONS

- Engaging the local government in the health system would address the health care needs of people.
- Citizen engagement must be strengthened.

Subsequently, the session was followed by a presentation entitled **Rethinking Urban Health Systems to Respond to Challenges in Cities** by **Dr. Helen Elsey**, University of York, UK. She highlighted the challenges faced due to urbanization in Sub-Saharan Africa and other least developed countries. Due to urbanization, conditions such as non-communicable diseases and infectious diseases have increased. The cities are plagued with weak health systems with limited primary care. There is poor data hindering plan and responsiveness to the changing needs. National level surveys are not able to capture the health needs of urban poor. Traditional survey methods are still being used for modern and changing problems. High uses of the private sector in urban areas are not captured in the HIMS database. Public private partnership model worked in Bangladesh like there was reduced diarrhea, respiratory problems and HIV/AIDS.

KEY POINTS

- Ms. YesodaAryal from MoHP mentioned that urban poor health is not catered to by the current health system in Nepal. Government has established urban health centers but is not uniform across the nation.

FUTURE DIRECTIONS

- Next health sector strategic plans will have a separate section to meet health needs of urban poor. MoHP will keep the door open for public private partnership.

Day II: Inauguration and Scientific Sessions

INAUGURATION SESSION

Inauguration Ceremony of 8th National Summit of Health and Population scientist was held on 11th April 2022, Monday from 9:00 AM to 12:30 noon. In the inaugural session, following distinguished delegates represented in the dais.

- Opening Remarks by Dr. Pradip Gyanwali, Executive Chief, NHRC
- Message from Right Honorable. Prime Minister Sher Bahadur Deuba read by Dr. Pradip Gyanwali, Executive Chief, NHRC
- Opening remarks by Alexandra Plueschke, Deputy Country Director, GIZ
- Opening remarks by Dr. Buddhi Setwang, Chief of Health Section, UNICEF
- Opening remarks by Dr. Md. Khurshid Alam Hyder, Public Health Administrator , WHO, Representative to Nepal
- Opening remarks by Cynthiya Roy, Senior Administrator of British embassy, Kathmandu
- Keynote Speaker – Dr. Tedros Adhanom Ghebreyesus, Director General, WHO
- Opening remarks by Emiratus Chairman of NHRC, Dr. Mrigendra Raj Pandey,
- Opening remarks by Dr. Bikash Devkota, Secretary, Ministry of Health, Population and Family Welfare, Lumbini Province
- Opening remarks by Dr. Shyam Sundar Yadav, Chief specialist, MOHP
- Opening remarks by Dr. Uma Shankar Prasad, Hon. Member, NPC
- Opening remarks by Mr. Yogesh Bhattarai, Hon. Member, Education and Health Committee, House of Representative
- Opening remarks by Honorable Health Minister, Nima Lama, Ministry of Health, Bagmati Province
- Opening remarks by Honorable State minister, Mr. Bhawani Prasad Khapung, MOHP
- Opening remarks by Honorable Chief Minister, Mr. Rajendra Pandey, Bagmati Province
- Vote of thanks by Dr. Mohan Sharma, Executive member, NHRC
- Closing remarks by Prof. Dr. Gehanath Baral, Chairperson, NHRC

Dr. Meghnath Dhimal formally welcomed all the dignitaries presented on the dais and participants who joined the summit physically and virtually via various media like zoom and Facebook live and gave a brief introduction of all the dignitaries. The program was formally started by singing the National Anthem and lighting the light in Panas.

Opening Remarks by Dr. Pradip Gyanwali, Executive Chief, NHRC

Dr. Pradip Gyanwali, Member Secretary of NHRC formally welcomed all guests, delegates, participants, invitees, on behalf of himself and from the NHRC family. He provided an overall insight on the functioning areas of NHRC, importance of Health research in generating the evidence for policy formulations and program implementations. He mentioned that NHRC has been conducting the National Summit on Health and Population Scientist every year since 2015 AD and continued every year. For the previous 2 years

NHRC has been organizing the summit virtually due to COVID-19. NHRC is committed to developing research culture and promised to generate more and more evidence in different sectors that will guide national policy and programs.

Dr. Gyanwali announced the success story of NHRC and also highlighted that NHRC has been successful in developing numerous numbers of health research, human resources through training and capacity building also have conducted many health researches including researches on non-communicable disease, mental health, and antimicrobial resistance along with research in the area that has significant impact on health. During the COVID-19 pandemic, the NHRC has been conducting studies with public health importance and clinical trials. Moreover, NHRC is studying about the traditional medicines and herbs so that this can support the Ayurveda health system of the nation.

He mentioned the coordination between the universities and academic sectors to improve the culture of research, and also conduct courses on research. He emphasized the significance of coordination between researchers and research institutions for better outcomes.

Executive chief further highlighted that ERB of NHRC has been accredited in Forum for Ethical Review Committees in the Asian and Western Pacific Region (FERCAP) in 2019 and JNHRC of NHRC has been indexed in different international data centers. Moreover the council will be responsible for capacity building of IRCs simultaneously and already 54 IRCs are established in the country under ERB of NHRC. In his welcome remarks he stated that NHRC has been successful in advancing research activities in line with recent digitized technology and as per mandate of National Health Policy 2019 of Government of Nepal.

Furthermore he was delighted to share about the establishment process of NHRC in all seven provinces. NHRC has been providing a multi-disciplinary and multi-faceted platform to its human resources so that they have accomplished success in health research activities.

On behalf of **Rt.Honorable Prime Minister Mr. Sher Bahadur Deuba**, Dr. Pradip Gyanwaliread the message received from.

The Constitution of Nepal has assured the basic health services as a fundamental right to its citizens and the government has been continuously working to ensure it. The continuous study, research and development are needed to address the health related rights of the citizens of Nepal which has been regarded as the basic need of the people. The Rt. Honorable Prime Minister sent warm wishes for the success of the 8th National summit organized in the organized by Nepal Health Research Council, in its auspicious 31st anniversary, which is playing an important role with the aim of making the national health sector more capable and strengthen. On this auspicious occasion he further congratulated all scientists and researchers involved in the innovation.

The experiences of COVID-19 pandemic, for a few years, have further exposed the importance of scientific studies and research in the health sector. He believed that the summit will play an important role in expanding the strength and development of the health sector. Since its establishment, Nepal Health Research Council has been monitoring health related research, creating an environment for the promotion of quality research and use of the findings for the development of the policies, planning and programs planning and implementation. These roles of NHRC are appreciated.

He further stated that we are in the state of building a disease free nation. For this we should promote the development of alternative medicine such as Ayurveda and Natural medicine along with Modern medicine. He believed that the council will be looking forward to the management of this work with the development of use of international knowledge, skills and technologies for traditional and herbal medicine.

He expected that the conclusions and suggestions drawn from the summit will support the health sector and will play an important role in the direction for the development of the national health policies.

At last, he wished success to the summit in making important decisions to improve the health sector of the country by formulating factual evidence based plans, policies and programmes using the data obtained from studies and research.

Opening Remarks by Ms. Alexandra Plueschke, Deputy Country director, GIZ

Ms. Alexandra addressed all the dignitaries of the summit and expressed this setting as the most appropriate platform for all researchers, academic, policy makers and decision makers to come together. She further focused on day one of the summit and expressed about the health system in Nepal and how the health system was able to cope with COVID in the context of federalism. Additionally researchers exchanged their experiences on COVID and resilient health systems which identified a high investment in the health sector with high out of pocket expenditure. Furthermore she focused on the importance of research and evidence to make better health choices, to formulate policy options and implement policies more effectively.

She also discussed the health financing strategy being drafted by MoHP under wide consultation with stakeholders. As a lot of discussions are around who pays for care, how to pay for services and care, who is allowed to provide for it, and what impact do these answers have on the quality and accessibility of health services.

She expressed her gratitude towards the organization and expressed the summit as an important platform for the researchers and academics in Nepal. Further she motivated researchers to investigate evidence for what works and what not in the context of Nepal, along with identification of the areas where we are lagging behind to meet the policy objectives as formulated by the government and work to further improve them.

Finally she showed her interest towards the evidence that has been found by researchers from Nepal particularly and also in the region to drive information generation and decision making on policy formulation forward.

Dr. Meghnath thanked her for the valuable remarks and as usual continuous support for the health sector development in Nepal.

Opening Remarks by Dr. Buddhi Setwang, Chief of Health Section, UNICEF

With a sincere congratulation on the advancements in health, made possible by the respected frontline health and population scientists of Nepal, Dr Setiawan acknowledged the incredibly fortunate timing of the Summit. He stated that at a time when Nepal health sector is commencing its work on formulating its strategic plan, a right step forward in an ambitious path was taken within a day of the Summit itself. In addition, he recognized the reform work that needs to be done towards achieving the Sustainable Development Goal (SDG) to strengthen the health system to be resilient was accurately addressed in the Summit. Dr Setiawan provided insightful advice about taking a deeper look into the system's key functions and building more evidence around it, including the financing aspect and learning lessons from the impact of the COVID-19 pandemic on local governments and demand generation to strengthen the health system. He concluded his eloquent speech with an optimistic future where efforts are evident in the research agenda for the next government plan, taking into account community mobilization, demand generation, and research focus. A deeper understanding of these systems is essential to address the basics of strengthening the health system to forge a path forward to make a more resilient health system.

Opening Remarks by Dr. Md. Khurshid Alam Hyder, Public Health Administrator at WHO, Representative to Nepal

Dr. Hyder, addressed the dignitaries of the summit and congratulated NHRC for conducting the summit and turning 31. He showed his gratitude towards all the researchers whose work have undeniably contributed significantly to strengthen the Nepal health sector. He focused on this year's theme and expressed the importance of the high quality research and evidence generation to resolve public health challenges and improve the quality of service. Moreover, he described the summit as a platform for the researchers and policy makers to share and exchange the recent and relevant evidence in nation health priorities, partnership in health. Also, he mentioned research as another outcome which is expected during the event and will provide shaping the policies and program design and monitoring in the context of UHC and SDGs.

He highlighted the WHO's core function as to set international norms, standards, guidelines including setting up of researchers. WHO country office for Nepal has partnership with MoHP and NHRC in strengthening the system of health researchers and evidence from policy making. Furthermore, he added the need to strengthen our capacity at all levels to conduct quality research, in line with national and sub national priorities to translate the evidence into policies and practice. He showed WHO commitment to continue supporting Nepal in strengthening the health system, health research and health information system, identifying priorities promoting good practices in research by setting norms and standards, and strengthening link between health research and policy makers.

Finally he requested NHRC to widen collaboration to strengthen the health research in terms of capacity development, generating evidence based and translating evidence into actions. He concluded his remarks with best wishes for the grand success of the summit.

Opening Remarks by the Cynthia Roy, Senior Administrator of British Embassy

Cynthiya Roy addressed the chief guest and all dignitaries and expressed the feeling of pleasure to be the part of this eight Health and Population Scientists' summit in Nepal. Ms. Roy congratulated the Government of Nepal, Ministry of Health and Population for setting the example for responding to the COVID-19 pandemic and covering the 85% of full doses of vaccination in less than a year. She stated that despite having many challenges including difficult geographical constraints, this coverage of vaccines is a stunning success which signifies the strength of the health care delivery system and dedication of health care providers.

Ms. Roy mentioned that the Government of U.K has been supporting the Government of Nepal to implement the health sector strategy of 2015-2022. Dr. Roy further highlighted that the U.K Government is supporting in improving the quality of care, enhancing the use of data and decision making, building resilient health care structure and of course the COVID-19 response in Nepal.

She believed that the outcome of this summit will help to inform and design the Government of Nepal for developing new health sector plans and strategies. She highlighted that health policy and system research is critical in making the health system adaptive, resilient and responsive. Ms. Sindhiya Roy raised two important research agendas which are as

- i. impeding policy and research to address inequalities to access the quality health services and
- ii. support the implementation of federalism to health system research

Ms. Roy mentioned that Nepal had made remarkable progress on improving the overall health outcomes in last couple of decades highlighting the improvement in the indicators like institutional delivery, neonatal death, child mortality rate, maternal death which is the stunning achievement

She further highlighted that the researchers and scientists had the critical role in helping the government in understanding the pattern of health problems and identifying the steps that can address the problem. She also gave the example of the research of the financial barrier that stopped a female candidate from giving delivery in the intuitions in 2005, based on which the government of Nepal introduced the Aama Program with the technical and financial support from U.K. The program contributed to the 40% of women giving safe delivery to the health institutions. Ms. Roy accentuated the importance of research to understand the barriers for accessing the complete health system.

Ms. Roy stated that successful implementation of the new federal system provides the huge opportunity to ensure that services which genuinely match local needs and the basic health governance system and institutions are directly accountable to local citizens. However there may be some challenges with regards to staffing and resources in monitoring and coordination. She further pointed that Health system and policy research can help Nepal to pose the important question whether federalism works successfully or not as mandated by the constitution of Nepal.

She assured that The British Embassy Kathmandu is committed to work closely with the Government of Nepal and Nepal Health Research Council. Ms. Roy emphasized the role of scientists and researchers for generation of evidence and also acknowledged the important role played by the researchers in strengthening the health system.

At last she wished for excellent discussions and hoped that results generated from this platform will create a clear road map in generating the evidence and the lesson learned into action on the ground.

Keynote Speaker – Dr. Tedros Adhanom Ghebreyesus, Director General, WHO

Dr. Tedros felt honored to address this summit. Dr. Tedros exemplified the Covid-19 pandemic as a powerful demonstration of the fragile health system and he also highlighted that resilient health systems don't happen by an accident, they need careful planning based on high quality health policy research.



Dr. Tedros highlighted that the national guidelines prepared by Nepal Health Research Council for strengthening and evidence generation on COVID-19 is a good example. The lesson learned from COVID-19 pandemic and other health emergencies helps us to

strengthen the health system and improve preparedness. He commented that Nepal's effort to maintain essential health services during the time of pandemic is commendable. He further pointed out that the researchers, practitioners, program managers, and policy makers who are gathered in this summit will be engaged in the critical issues and encouraged to work together especially the young researchers to foster resilience. At last Dr. Tedros assured that the WHO remains committed to supporting the Government of Nepal and people of Nepal to build a safer future and wished for a productive conference.

Opening remarks by Honorary Chairman of NHRC, Dr. Mrigendra Raj Pandey

Dr. Mrigendra Raj Pandey in his welcome remarks expressed his gratitude towards NHRC. He focused on the history and establishment of NHRC, a process which was initiated almost 35 years back. During earlier days, the medical research committee under MoHP was responsible for these activities. However, to make autonomy in the health research sector he along with his friends came up with the concept of a research council. Denying the post of health secretary, he along with his friends made an effort to establish NHRC. Moreover he appreciated and thanked each and every individual who were involved and who provided their expertise to NHRC, to bring up the organization to this level.

Mr. Meghnath Dhimal acknowledged Dr. Pandey for his effortless contribution to bring this council to this level and welcomed Dr. Shyam Sundar Yadav , Chief Specialist of MOHP for his remarks.

Opening Remarks by Dr. Bikash Devkota, Secretary, Ministry of Health, Population and Family Welfare, Lumbini Province

Addressing the chief guest and all the dignitaries Dr. Bikash Devkota started his welcome speech focusing on the importance of data in the current context. He emphasized on the importance of research activities and its contribution at the provincial level. Many policies, guidelines are formulated at the national level, but the implementation is poor. In order to strengthen the implementation process, resources are required along with proper evaluation mechanisms. This can only be generated through the facts and data given by research activities.

Moreover, he highlighted the scope and opportunities of NHRC in this federal structure. Even though the plans and policies are formulated at the federal level, the major implementing agencies are provincial and local levels. Provincial level also acts as the major link between the federal and local level. The provincial level has the mandate to form the plan and policies in the context to their respective areas. The data generated through NHRC can be a resource for all 7 provinces, as it will support development and proper implementation of plans and programs in future days.

He added Lumbini province has started working with NHRC at the provincial level by incorporating the research related activities in this year's fiscal planning. Further representing all the provinces, he emphasized on the ongoing next year fiscal budget planning, as this can be an appropriate time to incorporate research activities at province level planning. He welcomed the young scientist to the province level to contribute their expertise for the ongoing activities on provincial level that ranges from the formulation of plan, policies, and programs for the province to the implementation of these activities.

He concluded his speech by congratulating and delivering his best wishes for prosperity and growth of NHRC. Also he suggested NHRC to identify some major areas through the proceedings of the summit and deliver remarkable results in those areas.

Opening Remarks by Dr. Shyam Sundar Yadav, Chief Specialist, Ministry of Health and Population

Dr. Shyam Sundar Yadav addressed all the dignitaries of the summit and all the guests, invitee, researchers and participants. He thanked the organizing committee for providing the opportunity to speak a few words to address the summit. He mentioned that we all believe in science, we have understood the science but it is important to make others understand the importance of science, for which we need to create evidence. From the discussion on the first day of the summit, he mentioned that he heard that only universities can conduct research, which isn't true; research can be conducted in every district by even auxiliary health workers who can collect evidence from the corners of Nepal, which cannot only be collected from a specific site since it won't be representative of the population. Nepal government health system delivery is being strengthened but due to lack of evidence, we have not been able to explain its importance to the general population. Hence, political commitment and resolution is required. For instance, during the COVID 19 pandemic, this was evident as a result of COVID-19 vaccine we have been able to attend this Summit today. Evidence from all corners of Nepal should be included in the planning of the future health system and with that being said, Dr Yadav concluded his remarks.

Opening Remarks by Dr. Uma Shankar Prasad, Member of NPC

After the speech of Dr. Yadav, Dr. Uma Shankar Prasad, honourable member of National Planning Commission was invited to speak. He highlighted the relevance of the theme of the summit in the present context. He requested NHRC to provide the executive summary and conclusion of the summit to NPC, all Ministries and Departments, as it can be an asset for the nation. Nepal is in the state of graduation

from Low Developing Country to Developing country. Nepal adopted federal structure and implemented federalism. It should move along with SDGs.

He talked about the current context, where the war between Russia and Ukraine has affected our daily life and economic condition. Moreover, remittance has decreased due to COVID-19 and hike in prices and decreasing in foreign exchange reserve.

Further he discussed the current context of the health system where we are not being able to provide the free basic health services as mentioned in the constitution. Equity and equality issue still prevails in the health sector along with discrimination in urban-rural settings and quality of services in private and public institutions. We can observe the overcrowding of patients in public institutions. He focused on the need for consultation on how health can be directly linked with economic prosperity along with focus on Medical/Health Tourism.

As the world is in a transition phase, shifting from communicable disease to non-communicable diseases. The treatment pattern also needs to shift from allopathic to Ayurveda. The differences in cluster of castes, rural and urban, provinces, and geographical location related to health services, equipment, human resources, health equipment are still in existence. However we are unable to provide essential medicines and services to rural areas and modality to overcome these issues. There is progress in Social Indicators however still low in GDP, decrease in economy, low Per capita income. Establishment of a large number of pharmaceutical companies however still depends on foreign countries for drugs.

Furthermore, he expressed the idea of linking the findings of the summit with the budget allocation process. The findings can be a major evidence for recommendation for policy shift to the National Planning Commission. He also mentioned that the findings of the summit can contribute to the issues of time management of health workers in health centers. Also help management of COVID-19 in federal context.

Opening Remarks by Honorable Yogesh Bhattarai, Member, Education and Health Committee, House of Representative

Mr. Yogesh Bhattarai addressing the chairperson, chief guest of the health and population scientists expressed his huge respect towards researchers, scientists and academicians for their immense knowledge, skill and capabilities and believed that the conclusion drawn from the summit will definitely help the country to formulate related plans, policies and programs.

He also mentioned that the recent pandemic of this century had banged almost all the nations of the globe. He also recommended research institutions like us to address whether the existing global political system, governmental institutions and their wings are capable enough to address the challenge being faced by health sector, ensure fundamental rights to health and maintaining equalities among the citizens .He further suggested and highlight the need to rethink on ignorant towards health problem because of economic capitalism.

He also highlighted that the GoN had targeted to achieve certain goals (like to decrease child mortality rate from 41 to 21 per thousand live births, maternal mortality rate from 239 to 99 per hundred thousand live births, free basic health services, insurance coverage up to approx. 60% of total population) related to health sector in 15th five year plan which will be continued till 2024. He raised the concern regarding the achievement of above mentioned goals till today. He further mentioned if we look into details there is a vivid gap in the plan and the achievement which reflects that either our plans are not grounded in our context or implementation strategies are not in line with the plans. He also highlighted that it is difficult to achieve socialism until we eradicate differences between castes, race, rich and poor, geographical differences from health aspects too. He believed that this summit will play an important role in strengthening the health sector plans and policies.

He also highlighted that the constitution of Nepal has protected the right of health of every citizen however policies need to be reviewed for betterment. He further stated that we are in the state of building a disease free nation. Discussions are still going on regarding the fundamental requisites to disease free Nepal. The former government had invested a huge budget on the infrastructure and he hoped that the current government would continue it. At last he wished for the success of the summit.

Opening Remarks by Honorable Health Minister, Nima Lama, Bagmati Province

Health Minister Mr. Lama addressed the chief guest and other dignitaries and participants presented in the 8th summit of Health and Population scientists highlighting the continuous effort contributed by the Nepal Health Research Council in the health sector.

Honorable Minister Mr. Lama taking the reference of this platform announced that the Bagmati province had achieved 100% vaccination status of the residents of this province and also thanked all the front liner health workers for this success. He also thanked the Ministry of Health and Population (Federal) for timely distribution of the vaccines. Mr. Lama also congratulated NHRC for organizing such a program and wished for the success of this summit.

Mr. Lama mentioned that the year 2077 and 2078 have become a challenging year to all of us due to the pandemic of the COVID-19 and this pandemic had given the time to understand the current status of health services of Nepal.

Mr. Lama further underlined that this situation had identified the gap in the policies, knowledge or research in the health sector and created the opportunities for financing in research and also highlighted the importance of programs regarding production of the local commodities. He also stated that the Health and Population Ministry, Bagmati Province is in search of such evidence based policy for the implementation of the research activities and will appreciate such activities and also mentioned to involve stakeholders in such activities.

He also assured that the Bagmati Province had forwarded the different programs to provide basic health services to the citizens and for this they are upgrading and will further organize the existing current health service providers like Primary Health Center, district hospitals which have been converted to Provincial level hospitals. Mr. Lama emphasized that Bagmati Province had commenced the screening and early detection campaigns for the prevention of non-communicable diseases like cancer, Hypertension and Heart disorders under the Chief Minister Health Program. Furthermore he also added that the province had already planned to start telemedicine services and also progressed towards the digitalization of health services.

To combat the new pandemics we have to start the capacity building of the health sector, financing for the training for the microbiologists, pathologists, and public health specialists.

In the new budget planning, in coordination with other health partners tried to insulate a certain budget for the research activities.

Finally he highlighted the importance of research in the health sector and also assured the establishment of a Provincial Health Reserch Unit. At last he expected that the findings that have been generated from this summit will be shared with the ministry of Health and Population and contribute for the improvement of the health sector. At last he wished for the success of this summit.

Opening Remarks by Honorable State Minister, Bhawani Prasad Khapung, MoHP

Mr Bhavani Prasad Khapung commenced his remarks by addressing all the dignitaries, organizing committee, press, and audiences. He congratulated NHRC for the successful organization of the Eight National Summit and expressed gratitude for his invitation to the summit.

He mentioned that the general population is made aware of the government's direct presence through the health sector; hence, we have to make an effort to strengthen and promote progress in this sector to make it more effective. The Ministry of Health and Population is committed to provide the population of Nepal with high quality and standards of healthcare service. The Ministry of Health and Population is in line with Nepal's constitution, National Health policy 2076, and Sustainable Development Goal 2030. For a few decades, our combined efforts with the Nepal government, development partners and organizations, and the population has enabled us to achieve success in the health sector and we will aim to continue this progress in the future. With reference to the short term and long term strategies, we are moving ahead. In order to implement these strategies, NHRC plays a pivotal role. With the theme "Advancing Health Policy and Systems Research: Lessons for Resilient Health Systems in Nepal", this Summit has gathered researchers, public health professionals, population health professionals, policy makers, and interdisciplinary experts.

The importance of research is increasing day by day, the number of national and international studies has been increasing, and however quality and morale of the studies need to be maintained. Research studies aid social transformation of the population, with the goal of eliminating poverty, helping marginalized communities and social problems by transforming one's mindset and behavior. In addition to this, technological advancement needs to be made and the positive and negative aspects of society need to be identified to further advance research in our country. The positive impact of our research implications can be shared with the world.

He further mentioned that since its establishment NHRC has promoted the skills and capacity of the researchers to develop policies in the health sector to make it more resilient; however, the training needs to be relevant with the times. He requested the relevant stakeholders to help the growth of research in our country. In the past, our nation, along with many others globally, had to face the COVID-19 pandemic and respond to it with vaccine development. Since the health sector is a fast-paced and multidimensional sector, research needs to be updated to satisfy the new evidence. In order to do so, many researches were undertaken and NHRC contributed greatly to this effort as well, to strengthen our healthcare system. On behalf of the Ministry of Health and Population, MrKhapung expressed deep gratitude to NHRC for not only their role in the pandemic but also for advancing healthcare research in the nation. He concluded his speech on an optimistic note, hoping for the National Summit to contribute by providing expert opinion and recommendations to the government of Nepal.

Opening Remarks by Honorable Chief Minister, Mr. Rajendra Pandey, Bagmati Province

Mr. Pandey addressed the chairperson of Nepal Health Research council and all the academicians, researchers, secretary present in the summit and also felt honored to express his views in this program. He acknowledged the problems faced by the doctors and all other problems that the health sector has been facing.

Mr. Pandey stated that the country is already being operated under federalism so most of the local levels have established health facilities in their own area. During the pandemic time local government had established different isolation centers and the awareness programs, distribution of essential health commodities and played a pivotal role for combating this pandemic.

He further highlighted that before the federal structure the hospitals were centralized but now the situation is different and each level has established their own health facilities and health services are provided accordingly. Mr. Pandey mentioned that in Bagmati Province health services were facilitated by Provincial level allopathic and Ayurvedic hospitals.

He mentioned that during the pandemic times different urgent equipments were installed in the provincial level hospitals and also prepared for the best. This pandemic had clearly visualized the lack of preparedness of the country in the health sector and in the time of second lock down the deficit of oxygen leads to the death of many citizens. This incident had provided the opportunity to prepare further and had installed the oxygen plant in most of the hospitals.

In the sector of science and technology, the provincial government has also planned to establish high quality research and passed the Act recently. Recently the Bagmati Province had enacted the policy for forwarding the research activities and based on the policy the act will be prepared and the Bagmati province will move forward differently in the field of research.

Mr. Pandey invited the Nepal Health Research council to coordinate with the Bagmati Province in the upliftment of research and for this the province will support financially, Judicially, and also eager to establish the Bagmati Health Research Council. He also assured provincial level funding will be soon started by the Bagmati Province.

At last he wished for the success of this summit. He hoped that the findings that have been inferred from this summit will be shared with the federal, provincial and local government and coordinate with all those levels which is the one of the responsibility of NHRC.

Vote of Thanks by Prof. Dr. Mohan Raj Sharma, Member, Executive Committee

Prof. Dr. Mohan Raj Sharma on behalf of NHRC gave a vote of thanks to those who supported the summit. He stated that a lot of resources including financial and human resources are required for the completion of such a huge program. Prof. Dr. Sharma thanked those who contributed for the financial and human resources required for the summit. He thanked the organizing committee, steering committee, scientific committee, researchers those who submitted their scientific papers and researchers those whose paper got selected. He acknowledged the organizations which contributed for the organizations of the resources for the conduction of the summit like UKaid NHSSP, GIZ, and Strengthening System for Better Health, World Health Organization (WHO), UNICEF, PQM, Good Neighbors International, Possible, Care Nepal, CREHPA, One Heart Worldwide, PSI, and Institute for Implementation Science, FairMed and HERD International. At last he acknowledged all the guests, invitee and participants in the dais and the floor, who managed time despite their busy schedule for the completion of the summit.

Closing Remarks - Prof. Dr. Gehanath Baral, Chairperson, NHRC

Chairman of NHRC, Prof. Dr. Gehanath Baral shared the pleasure to welcome and address all the dignified personnel present in this 8th summit of Health and Population scientists in Nepal. Dr. Baral mentioned that this summit had come with unique experience because of the pandemic and this had taught us to focus on the resilient health system. He stated that this pandemic also taught us about the shared responsibility among the different stakeholders like academia, authorities, clinicians including Nepal Health Research Council. He believed that the conference will bring some deliverables which will be beneficial to the people and society of Nepal. He further expects that the researchers and scientists will come up with those deliverables and will be shared with all stakeholders time and again. Dr. Baral accentuated that concept of federalism in health research and will be incorporated at the provincial and local level to share their own experiences during this pandemic. Dr. Baral also highlighted that deliverables that have been shared in this platform will be acknowledged and further steps will be taken.

At last Dr. Baral expected active participation in order to share research experiences among the health researchers and come up with concrete resolutions as deliverables and also focus on utilization of research findings generated from high quality scientific research. He wished for the grand success of the summit.

Plenary Session I: Strengthening Social Health Protection in Nepal: The Role of Evidence towards Universal Health Coverage

The session was jointly chaired by **Prof Dr. Shiva Raj Adhikari and Dr. Damodar Basaula**. The panel discussion was moderated by Dr. Subash Pyakurel, Master of Ceremony for the session was Ms. Sashi Silwal, Note taking by Ms. Kristina Parajuli, and Jyoti Sharma, and Comment compiled by Ms. Uma Kafle. There were four presentations in this session followed by panel discussion. Two panelists (Dr. Amit Paliwal and Dr. Devi Prasain) gave their insight in-person while one international panelist (Prof. Manuela de Allegri) joined the session virtually.

Topics	Presenters
Fiscal Space in Federalism: First Five Years' Experience from the Health Sector	Dr Suresh Tiwari and Hema Bhatt, OPM
Status and progress of social health insurance scheme in Nepal with challenges and opportunities	Shambhu Gyanwali, HIB
Research methods for health insurance with country examples	Dr Swati Srivastava, Heidelberg University, Germany
India's experience on national health insurance research and its policy implications	Dr. Sharmishtha Basu, GIZ India

The first presentation in this session was given by **Dr. Suresh Tiwari** on the topic "**Fiscal Scale in Federalism: First five years' experience from the health sector**"

His presentation mainly focused on how federalism has an impact on the fiscal space for health as there is not only one factor for funding health sectors. With the introduction of federalism at least five types of grant mechanism are made available to local as well as provincial governments and the federalism has also principally created scope of creating fiscal space.

KEY POINTS

GDP in the first five year of federalism has been increasing but slow and gradual increase has been seen. However it is far behind in reaching the threshold of essential health service.

Contributions were coming from internal sources in the first year of federalism, and that internal component is increasing. Over the years, the subnational government has recognized the importance of the health sector and has continued to increase its budget in this sector.

Nepal is still prioritizing in expanding the infrastructure as a result the sizable amount of the budget goes on it.

Regarding the budget allocation, out of the total budget allocation, the provincial government has allocated more budget for the health sector than the budget received from the federal government. Moreover, the provincial government is not waiting for the federal government to allocate the budget or receive the grant.

Furthermore, the Palika level had the limited capacity to understand the scope of grant or matching funds. So they don't have capacity to make a proposal and get matching and special grants from the federal government. Therefore, local governments are utilizing their own resources. Also, they are trying to increase the resources based on their capacity; however, conditional grants are the dominant source for the local government.

FUTURE DIRECTIONS

The meaning of federalism will phosphoricize the health sector only if conditional grants are gradually eliminated and subnational governments' capacity to secure larger funding through special and matching grants is increased.

- There should be a cost commitment and it should come from the local and provincial government.
- Policy institutions and digital platforms should be made for effective budgeting.
- Integrated budget allocation and expenditure tracking system should be initiated.
- National health assembly needs to be formalized to review the progress.

The second presentation was presented by **Mr. Sambhu Gyanwali**. He presented on the **Status and Progress of Social health insurance scheme in Nepal with challenges and opportunities**.

He mainly focused on ensuring access to quality health services. Social health insurance scheme mainly protects from financial hardship and reduce out of pocket expenses and also build capacity and ownership of health service providers

KEY POINTS

- Thirty percent of the total families and 20 percent of total population are enrolled (2068 population census)
- The program was launched from Kailali district in 2015 and the trend is increasing but in the year 2019 and 2020 there is slight decrease due to COVID-19 pandemic.
- Regarding the enrollment status, the total enrollment is 5.3 million. Out of which 3.9 are now receiving treatment.
- Most of the population covered in this scheme was from province-1 followed by Gandaki Province and was least covered in Madhesh Province.
- Senior citizen was mostly (6 lakhs) enrolled in this scheme followed by ultra-poor and complicated disability

CHALLENGES

- Settlement of timely claim management and reimbursement
- Due to client pressure maintaining quality of health service was an issue.
- There was a strong ownership from the province and local government
- Reimbursement amount exceeds the premium amount collected.
- There were possibilities of fraud and the timeliness of claim was also a challenge.
- Coverage of ultra-poor was only identified in 26 districts
- Insufficient coordination among three tiers of government was also an issue.

OPPORTUNITIES

- The program is addressed in constitution of Nepal 2072
- Health insurance Act 2074 and Health insurance regulation 2075 guided in daily activities of insurance scheme

- There is interest and concern at the provincial and local level in this insurance scheme.
- This insurance scheme reduces out of pocket expenditure and increases the benefit package which covers 1133 drugs and almost all diseases.
- Increasing public interest has created opportunities to expand insurance schemes.

FUTURE DIRECTIONS

- New approach of claim review and settlement process is required.
- Standard medical treatment protocol needs to be implemented.
- Effective coordination with province and local level is effective
- Monitoring and evaluation processes need to be improved.
- Digitalization of the system like online registration, online renewal system has to be extended.

Third presentation was delivered by Dr. Swati Srivastava on the topic entitled "Research Methods for health insurance with country examples".

Her presentation mainly focused on health insurance. She defined it as a complex health financing intervention in a complex health system where the health system consists of sub-systems that consist of the human body or hospitals. She engrossed on demand, supply evaluation and also Pradhan Mantri Jan Arogya Yojana (PM-JAY) which assess defined and opportunity to health need fulfill in an affordable cost. She stated PM JAY was set up to remove financial barriers to access health care and was implemented in almost all states.

KEY POINTS

- Demand evaluation was applied to assess and understand the effects of PM JAY on the target population for the service use and financial protection and the supply side evaluation was done to assess the effects of PM JAY on quality of service delivery and health care protection
- The process document was really difficult: the retrospective scheme design and development from an initially unknown pool of participants.
- To retrospectively document all of the implementation documents given the complexity involved
- There had to consider own reflexivity as many were already involved in insurance scheme
- It was needed to identify beneficiaries for the demand evaluation because the data used to identify these beneficiaries was quite old. Due to these identification issues there were also difficulties to identify the control group for beneficiaries which led to sampling and measurement issues.
- The evaluation followed almost a year after the project started, so it took a bit of time to evaluate the effects.
- The study was conducted in 7 states and it was a huge geographical area hence language training and monitoring was an issue
- In terms of supply side evaluation there were issues with sampling. In some districts there were limited hospitals and had to sample all so there were no hospitals to consider as a comparison group.
- The study had to rely on previous evaluation as a baseline so it was restricted in terms of indicators that could be used to capture quality of care.

The last presentation was on “**India’s experience on national health insurance research and its policy implications**” by Dr. Sharmistha Basu. Her presentation focused on India’s approach for leveraging lessons learned and generating evidence for implementing and advancing social health insurance. In India, the government has launched the PM-JAY health insurance scheme in September 2018. This is the largest government funded health insurance scheme and is a cashless access for health services in both private and public hospitals which covers 90% of expenses. She is a part of the Indo-German programme on Universal Health Coverage (IGUHC).

KEY POINTS

- Data for decision making of health insurance programs.
- Designs innovations based on “lessons learnt” RSBY which was before the PM-JAY.
- Only five members were covered by RSBY but not in PM-JAY.
- Setting up baseline for mid-course correction which was a mixed method evaluation both on the demand and the supply side of the program.
- Mixed method evaluation was done with Heidelberg University.
- Strategies to increase awareness of the scheme and knowledge of the scheme features among beneficiaries.
- Designs of strategies to encourage hospitals to undergo accreditations.
- In-depth exploration of the reasons for continued OOME in patients utilizing services under PM-JAY.
- Close cooperation with National Health Authority (NHA) and State Health Agencies (SHAs).

PANEL DISCUSSION

The 2nd Part of the session was a panel discussion which was moderated by Dr. Subash Pyakurel. Dr. Pyakurel firstly questioned Panelist Dr Amit Paliwal from India for sharing his idea whether India is progressing only with single program or it had to face ups and down and hiccups in the time frame and constant improvement went in the program and it became mature as Nepal is bit apprehensive regarding different vertical of social health protection where Dr. Amit share his idea that every country has its own evolutionary trend. India also started insurance way back in 2006 and started with a small scale level and somehow there was push from the government to start a health insurance scheme and started in 2008 and had some success and in 2018 the government felt they were mature enough to take it to the next level . He added health insurance will flourish only once it becomes a political agenda. People should also demand for health insurance and only it becomes a priority and once it becomes a priority things can change automatically.

Constant improvement is the core factor of social health protection Dr. Pyakurel added and queries were added to presenter Dr. Sharmistha Basu that the same implementing agency does research and evaluation activity or there were some independent unit to do that to know those gaps, overlaps, etc.

Dr. Basu replied to it as "India had national health authority, they had their monitoring and evaluation division and that they were working directly with monitoring and evaluation division and that they had one agency doing everything.

Dr. Pyakurel went further to panelist Dr. Devi Prasain and asked to share his opinion on whether existing social health verticals, predominantly national health insurance schemes will progress in the same route

or are there some intervention on it. Dr. Prasain responded that the health insurance policy had twin objectives while developing it. First was developing insurance as a source of financing and second was a better mechanism for spending their task based resources. But now the insurance took off and there is a risk of it dropping any time as it has a very small pool and the problem was adverse selection. He added that more sick people are enrolled in the scheme and once you enroll more sick people the bill will increase dramatically in the coming years and the source of financing from the premium can be very minimal. So they need the existing health insurance re-engineering its program. Now it is dominated by the provider. He further added that there should be some sort of program that could enroll the whole family just not the senior citizen, or citizen with disability. And hence these sorts of issues need to be reengineered.

It was discussed with Dr. Sambhu Gyanwali that health insurance is a multi-disciplinary, regarding the quality standards regulation, some other agencies has to work on it so, is health insurance board facing situation of facilitation or is there some kind of friction in that provider part where he responded that they had legal document for the regulation of the program however it is new in the context of Nepal and there are many problems arising like fraud claim, untimed claim and over claim

So they moved to overcome such a type of problem by monitoring and they had also planned for a regulation and monitoring mechanism. He added that they have moved towards the IT system. In each step we want digitalization for the strengthening of the program. He said that rules and regulation is not possible to maintain in this program as people respond that the program is not good, however they want to move forward by overcoming its weaknesses.

Next international panelist Prof. Manuela de Allegri who was questioned as "research is the think tank of such a program can you enlighten us how research components can be incorporated in the program like this" She responded to it as "Once policy makers have some idea what they wish to know they can engage in research. Researchers are very much willing to engage in this program generating evidence and providing some answers but when you generate some ideas there has to be some questions. Different areas where research can be used from formative to help find how schemes could meet people's preferences and people need to look in process evaluation and to look at impact elements and to look at facilitators and barriers along the way.

Moderator had some queries to presenter Dr. Suresh Tiwari as "Providers had been stating some kind of frictional statement regarding the program these days because claim should be like circulatory system how health insurance board is trying to address that congestion of claim without addressing that issue there might be some added hiccups in that program for its progress. It was discussed as "Health insurance programs are often complex. The insurance is the intervention to cater the complex system within the health care delivery system. There are some confusion in system design more specifically the current issues coming from the providers are related to the IT platform. Timely recording, reporting and timely approval of all claims are the questions being asked by the providers and also the Health Insurance Board. He added that they had planned to develop a Nepal specific IT platform that will develop the EMR and the insurance system. In the future they are developing a transparent IT platform and the payment can be done efficiently, timely and the quality service can be assured.

QUERIES, COMMENTS AND SUGGESTIONS

To: Dr. Basu and Dr. Amit

Question: You said about the grievance redressal in claim processing and all. So, 1st of all I would like to ask what dimensions you are getting grievances and what are the best practices you are applying for? And the 2nd part of questions is "while changing the model from reimbursement to cashless what are the

technical requirements and challenges that you have faced so that we can address earlier in Nepal, what are the challenges?

Answer: Regarding the grievance redressal what happened was in the evaluation we saw that people were not aware about grievance redressal so awareness generation was important so that people are aware and do the grievance redressal, we never got any response regarding this as the people were not aware.

The biggest transformation you need is digitalization if you are using physical processes to claim processing and underwriting. The biggest change you need is all the physical records need to be electronic, all your payment needs to be electronic, the claim procession mechanism needs to be in an electronic manner, it's like an information pathway. Secondly we need a standard treatment guideline or what document needs to be submitted with what kind of claim.

Parallel Session I: Health Policy and System Research- I

The session was jointly chaired by **Dr. Laxmi Raj Pathak** and **Prof. Dr. Sharad Raj Onta**. The Master of Ceremony of the session was handled by **Astha Acharya**. Note taking was carried out by **Dr. Prerok Regmi**, and **Jyoti Sharma**, and comments were compiled by **Mr. Pushparaj Bhattarai**.

Following are the presented topics with their respective presenters:

Topics	Presenters
Understanding health system resilience to respond to COVID-19: a case study of COVID-19 policies formulation, communication and health workforce management in Nepal	Shophika Regmi
Understanding and strengthening health governance and planning for resilient local health systems: findings from a participatory action research	Achyut Raj Pandey
Rapid Assistive Technology Assessment (rATA) survey 2021 in Nepal	Sitasnu Dahal, NHRC
Assessing feasibility and challenges in adopting 27 health financing reform initiatives pertinent to attaining Universal Health Coverage in Nepal: a qualitative study.	Simon Rushton
Partial integration of the Vitamin A Supplementation and Lymphatic Filariasis Elimination campaigns: Prospects and Challenges in Nepal	Sumitra Dev Shrestha
Non-communicable diseases policy formulation process in Nepal: A qualitative study	Anju Vaidya
Processes of Assistive Technology Service Delivery in Bangladesh, India and Nepal: A Critical Reflection	Jiban Karki
Towards Universal Health Coverage: an analysis of health insurance program of Nepal	Junu Shrestha

The first presenter, Shophika Regmi from HERD International presented on "*Understanding health system resilience to respond to COVID-19: a case study of COVID-19 policies formulation, communication and health workforce management in Nepal*". Her presentation highlighted the challenges to manage the health workforce during COVID-19. She highlights the political transformation in Nepal, formation of three tiers of government; 1 federal, 7 provinces, and 753 local governments. She showed the different stigmas and poor responses by the health workforce. The study presented was Cross Sectional exploratory case study, using mixed method study conducted from January to March 2021.

KEY POINTS

- Chronic shortage of health workforce situation during COVID-19, raised issue of routine services.
- Human workforces were affected working in quarantine and isolation centers.
- Multi Sector collaboration was involved at all levels.
- Technical management was provided by MOHP and CCMC.

CHALLENGES/ WEAKNESS

- Inconsistency in understanding and absence of focused targeted communication were challenges in policy communication.
- There was less orientation/ interaction in policy communication. Sub national governments were less aware about the policy updates and changes affecting delivery of routine services.
- Policy communication was communicated via phone and mostly relied on social media and websites.

- Ultimate allowance and difference in allowance between municipalities are the challenges for Incentives and sanctions to health workers during COVID-19.
- Shortage of Protective Items has challenged problems in physical safety and protection to health workers.

FUTURE DIRECTIONS

- Established mechanisms at different levels to ensure consistency in understanding of policies
- Focused targeted communication according to type of audience
- Strong leadership and commitment for the management, redeployment, training and task reallocation of health workforce
- Strategic approaches - engaging multi sector stakeholders, adopting innovative ways for training
- Inclusion of both vertical (all tiers) and horizontal (all sectors) stakeholders

The second presentation was on “*Understanding and strengthening health governance and planning for resilient local health systems: findings from a participatory action research*” by Achyut Raj Pandey. His presentation focused on a resilient model, objectives mapping resilience: Mapping resilience capacities and Prioritization, co-creation, implementation and evaluation. He describes the COVID-19 pandemic situation and fundamental steps of resilience: Stability, Flexibility and Change. This presentation focussed on prioritization, co-creation, implementation and evaluation of resilience. He describes the study and methodology of the study that was carried out in Kapilvastu Municipality.

KEY POINTS

- 19 policy documents were reviewed for the study. A workshop involving 24 participants and 13 organizations) was conducted and KII was done among 6 people which is still going on.
- Prompt decision making was easy due to easy access to elected local representatives and understanding of the local context among leadership and health workers. Better understanding of health education and promotional messages, spaces and motivations for innovation.
- All the sectors under local governments have better coordination to identify, map capacity and mobilize support from partner organizations. Effective engagement of non-government sector services provides. Feedback mechanisms were made easy as the primary person to rely on information were elected local representatives.
- Lack of charity in leadership roles from one local government to others made difficulties to work in the resilience of COVID-19. Health workers recruitment was a challenging problem and even limited capacity and delineated availability of health workers was a concern.
- Lack of the alternative and flexible services for delivery mechanisms, lack of financing, and advanced information system, research and surveillance challenges the resilient process of COVID-19.

QUERIES, COMMENTS AND SUGGESTIONS

To, Achyut Raj Pandey and Shophika Regmi

Question: They both were talking about the resilience of the health system. Talking about resilience, there was some discussion on resilience yesterday also. How much resilience is actually resilience? How do you test resilience? And in the federal context when the new emerging disease occurs, how can the local level understand and depend on resilience? As we are told, it is a federal response and we are pushing local levels in the resilience health system so when the new emerging diseases occur how much resilience is enough resilience?

RESPONSES TO THE QUERIES AND COMMENTS

Achyut: It is an important question. Though the local level is unable to figure out the resilience clearly, they realize that it is a continuous process of improvement which is a positive point. On the definition of resilience, we are on global discussion till to date as it is a new concept. We are in discussion. Is it an outcome or process? So we do not expect the complete or clear understanding of resilience from the local level. But we are clear that they take it as a continuous process of improvement.

Shophika Regmi: Absolutely as Achyut ji said, it is still a topic of discussion and debate. We are still discussing the definition of resilience. We are not expecting that the local government should know the definition or understand the resilience. We discussed in the presentation about the capacity of the local government. So what we are saying is that there are many policies implemented and there are many things to learn from those implementations which are known as institutionalization. That means documentation and following the things learnt. Until and unless the institutionalization does not occur we are repeating the same mistakes. And the system will not be resilient. So institutionalization, adaptation and learning are the important issues for resilient health systems.

The third presenter Sitasnu Dahal, Research Officer, NHRC presented on “*Rapid Assistive Technology Assessment (rATA) survey 2021 in Nepal*”. Her presentation covered the background of the study presenting 5-15% of people in low and middle income countries (LMICs) who need assistive technology have access to them. A cross-sectional, population-based survey on 2970 households and 11,230 samples using WHO rapid Assistive Technology Assessment (rATA) questionnaire was carried out.

KEY POINTS

Spectacles, Canes/Sticks, Orthosis (spinal), Chairs for showers/bath/toilet, Orthoses respectively were top five uses of AP. The top five unmet needs were found to be Spectacles, Orthosis (spinal), hearing device (Digital) and Batteries, canes/sticks, Orthosis respectively. Most of the participants (57.9%) have no difficulties on the functional aspects of AP. The study shows the need of the AP on the participants (39.6%). Province wise results shows Bagmati Province has maximum 28.9% use and Province has maximum (20%) unmet use. Most of the payers (57.1%) are out of pocket and most of the AP facility is more than 5km. Most of the participants (23.1%) cannot afford the device due to various barriers in AP.

This study shows gaps in access to assistive products in Nepal with high prevalence of use, need and unmet needs and the indicators varied across age groups, sex, residence, province and level of functional difficulties.

FUTURE DIRECTIONS

- Increase in availability and accessibility of AP services at local level in Nepal.
- Subsidy on AP and provision of AP free of cost for economically challenged people.
- Social awareness about the AP for effective implementation of AT policies.
- Need of research/projects on AT in Nepal that carries out actual assessment of the need of AP.

QUERIES, COMMENTS AND SUGGESTIONS

Question: Spectacles are not assistive devices. Low vision devices and other products can be called at. Need to look at the definition.

RESPONSES TO THE QUERIES AND COMMENTS

Thank you so much for the question. I think this misunderstanding is due to the word spectacles which I put on the slide. We take spectacles as an assistive product if they were used to treat any long-sightedness,

short sightedness or filters. We have defined it as above. We kept 50 assistive products here they were operationalized in this, only if they improve the health condition of the patient.

The fourth presenter Bikesh Bajracharya (on behalf of Simon Rushton) presented virtually on “*Assessing feasibility and challenges in adopting 27 health financing reform initiatives pertinent to attaining Universal Health Coverage in Nepal: a qualitative study.*” Health financing is a critical component of health care systems that enable progress towards UHC. The aim of the study was to assess feasibility and challenges in adopting 27 health financing reform initiatives related to revenue raising (7), pooling (6), purchasing (8) and benefit package (6) in Nepal. Qualitative study was conducted In-depth key informant interviews were conducted between 25 January and 4 April 2022 with 25 stakeholders.

CHALLENGES

- Lack of political commitment and instability, low priority to health sector, low absorption capacity of MOHP, demand budget without program and rationale is the major challenge in increasing government allocation to health sector (at least 10%).
- HIB is not institutionalized; Institutional attitude of MOHP and DOHS to hold budget for AAMA, free delivery and medicine, lack of providers and purchase autonomy
- Institutional capacity of HIB, lack of pricing, regulation, costing, defined benefit package, information system and Artificial Intelligence
- Capacity and leadership of HIB, HIB not institutionalized, no clear policy
- Stakeholders pinpointed weak institutional capacity and leadership of Health Insurance Board (HIB) and policy overlaps for **pooling risk** and for being unable to introduce compulsory enrolment of all population and merging fragmented social security schemes
- Lack of fiscal space for health, inefficient fragmented schemes, lack of standard treatment protocol for introducing comprehensive **benefit package** and accreditation system as challenges for adopting these initiatives
- Participants also stressed weak institutional capacity of HIB for poor **purchasing function** and inability to introduce payment mechanisms as Diagnostic Related Groups and performance-based payment as hindering factors

STRATEGY

- Increase advocacy, awareness among politicians and policy makers, demand a budget with purpose and justification.
- Lack of political commitment and leadership; low priority in the health sector are hindrances for raising revenue and introducing earmarked health tax.
- Government should invest and manage the prepayment tax revenue as the premium for health insurance and cover all population, increase public awareness
- Stakeholders pinpointed weak institutional capacity and leadership of Health Insurance Board (HIB) and policy overlaps for **pooling risk** and for being unable to introduce compulsory enrolment of all population and merging fragmented social security schemes
- Strengthen the capacity and autonomy of HIB and providers
- Strengthen capacity of HIB

FURTHER DIRECTION

- Increase fiscal space for health through innovation revenue raising as medical tourism; gradually integrate payment mechanism of all social security schemes into health insurance through inter-ministries coordination
- Strengthen institutional capacity through improved autonomy of HIB
- Gradually expand benefit package and form autonomous accreditation body for strengthening health financing arrangements to progress towards UHC

The fifth presenter **Sumitra Devi Shrestha** from HEAL Group, Nepal presented on “*Partial integration of the Vitamin A Supplementation and Lymphatic Filariasis Elimination campaigns: Prospects and Challenges in Nepal*”. She started her presentation with the background of the Nepal strategy for Vitamin A supplement and lymphatic filariasis elimination campaign. In Nepal, Vitamin A supplementation (VAS) and Lymphatic Filariasis (LF) elimination campaigns have been running for over 27 and 17 years respectively. Campaign integration or collaboration is a new initiative. This pilot study examined the prospects and challenges for the partial integration of these vertically run campaigns in the Rainas Municipality. Quasi-experimental study method was carried out on local Governing bodies (Province & Municipality), 41 health workers and 66 FCHVs. This study shares information on both health interventions with households and verifies if family members received mass drug administration (MDA) during the LF campaign that was conducted a week prior to the vitamin A campaign.

CHALLENGES

- Many are reluctant to take the medicine: persons visibly LF affected aged (over 80), Children as vomited and those away during scheduled campaigns & others.
- Reported awareness raising campaigns needed a lack of budget.
- Capacity building of FCHVs is not convincing.
- No Policy directives & Model on collator health campaign
- Uncertainty or a lack of the strategic direction
- VAS is a popular campaign, so may resistance for change
- Need to administer 5 types of drugs, means many at a time
- Risk of Confusion and Cross reaction
- LF elimination program remains a ‘Sore Eye’ as of side effect
- Need more health workers, while about half posts are vacant.
- Dispersible medicine needed for children.
- Integrated Logistic is not possible.

STRENGTH

- Province, Federal & Municipality perceived & received well on the prospect of the collaborative campaign
- This Study provides evidence on viability of the Partial integration of the Vitamin A/Deworming and Lymphatic Filariasis elimination campaigns to an extent.

FURTHER DIRECTION

- Need of a holistic review of both programs to decide strategic directions.
- There is a need for representative study in terms of sample size, population, study site to high level evidence.

The presenter Anju Vaidya presented on “*Non-communicable diseases policy formulation process in Nepal: A qualitative study*”. Her presentation focused on Nepal about the process of non-communicable diseases policy formulation from a qualitative study. The Objective of this study was to guide utilization of resources, eventually impacting the health outcome of the country. She describes the methodology, outcomes and key points of the study and she addressed the need to formulate the policies regarding non-communicable diseases. According to 2016 data, burden of NCD 66% in Nepal and 73.4% globally.

KEY POINTS

- Adoption of NCD policy and pen intervention at primary health care level.
- Good understanding of the actors with power, the process and factors influencing the process.
- Explore the process of NCDs policy formulation and factors influencing the process in Nepal.

KEY FINDINGS

- NCDs issue recognition and prioritization
- Policy on tobacco control
- Global momentum
- Visibility of the magnitude of the problem
- Selection and adoption of strategy
- Adoption of proven strategy
- Global trend
- Political factors
- Political reform
- International commitments
- External influence

CHALLENGES

- Clarifying decision makers
- Low prioritization/unfinished agenda
- Political instability
- Donor’s interest
- Engagement of stakeholders
- Selecting best buys

FUTURE DIRECTIONS

- For effective policy formulation, it is essential to go beyond the health sector and develop a broader and inclusive government structure.
- Repeated advocacy by policy influencers, visibility of evidence and external influence played a significant role in opening the policy window for NCDs; however, multi-sectoral coordination, financial constraints and lower prioritization for NCDs remain greatest challenges.

The presenter Jiban Karki presented on “**Processes of Assistive Technology Service Delivery in Bangladesh, India and Nepal: A Critical Reflection**”. His presentation covered how assistive technology is delivered in these countries. It does not mean only the assistive devices; it means the policies process and roles. AT services have been recognized as a fundamental human rights. The objective was to critically review and reflect on the various AT service delivery processes for providing AT services to persons with disabilities in Bangladesh, India and Nepal. He conducted 15 KIIs in India, 16 in Bangladesh and 17 in Nepal. He adopted the HEART model to investigate and report broad AT system issues.

KEY POINTS

- AT services in Bangladesh and Nepal are very fragmented compared to Bangalore in India.
- Urban-centric nature of AT service provision is a common challenge for prospective AT users in rural areas of all three countries.
- Difficult to access funding for prospective AT users, despite dedicated annual funding provision.
- Use of local materials to produce AT equipment.
- Follow-up after provision of devices was found to be critically weak in three countries.
- Identified particular problems related to human resources, geographical coverage and funding.
- Easier for PWDs in India and Nepal to access AT than in Bangladesh, but all three countries are failing to uphold the human rights of PWDs.

CONCLUSION AND RECOMMENDATIONS

- The AT service delivery process is not standard and we need a lot of improvements.
- Extending opportunities for training of community-level health and education workers could help alleviate the human resource deficiencies in all three countries.
- Greater use of outreach camps and other models of service provision in rural areas could address the urban-centric nature of the systems we found in all three countries.

The eighth presenter Junu Shrestha presented on “**Towards Universal Health Coverage: an analysis of the health insurance program of Nepal**”. She presented as a part of her thesis on the national health insurance program of Nepal. NIH is a risk sharing mechanism of the government and is considered as the foundation for universal health coverage. This was launched as a Social Health Security Program in 3 districts in 2016. NIH operates with a single fund at national level.

KEY POINTS

- Context, content and process of NIH.
- Free health care policy in 2006 and safe motherhood program in 2007 in Nepal-the determination of this commitment.
- Health has been a kingpin in the Nepalese politics in the past two decades. Major share of OOP expenditure – medicines and supplies followed by curative services.

- Further, reduction in the proportion of external aid in the current health expenditure from 21.5% in 200 to 11.7% in 2016.
- Health insurance act and regulation states mandatory enrolment of every citizen into the health insurance program.
- No specific target for the 2 indicators.
- Groundwork was not sufficient.
- Provider purchaser split-contrasting views among informants.
- Autonomy of HIB is not reached fullest.
- At community level- NIH extends to household level through enrolment assistant(EA) who reach to all families and individuals. I EA per ward.
- Non-operational health insurance fund until the mid of august.
- No national level recent surveys comprehending data from NHIP.

GAP IN THE CONTENT

- Regressive contribution amount
- Subsidy groups are specified in the policy, but their actual identification methods are not available.

FUTURE DIRECTIONS

- Prioritized enrollment of the formal sector by harmonizing the fragmented pools into an unified one.
- Equitable collection of contribution amount.
- Expanding and managing the source of resources.
- Coordination at different level for identification of subsidy groups
- Efficient and transparent electronic system
- Activation of monitoring committee.
- Development of research wings.

CONCLUSIONS

- The pace of implementation of NIHP is slower than expected and the population coverage is less encouraging.
- Adopting a comprehensive national health financing framework which accommodates all the fragmented pools in health can accelerate the coverage.

At the end, the distinguished chairs of the discussion session shared their insights on Health Policy and System Research of invited talk, and all the eight presentations.

Parallel Session II: Biomedical, Epidemiological and Clinical Research- I

The session was jointly chaired by **Prof. Dr. Janak Koirala** and **Prof. Dr. Paras Kumar Pokhrel**. The panel discussion was moderated by **Prof. Dr. Janak Koirala**, Master of Ceremony of the session by **Dr. Suman Pant**, Note taking by **Ms. Urmila Shakya**, and **Dr. Nayanum Pokhrel**, and Comment compiled by **Ms. Purnima Timalsina**. There were three parts in this Biomedical, Epidemiological and Clinical Research – I session. The first part started with one invited talk, the second part was the panel discussion session and there were four national panelists and one international panelist who laid their insight on the action to strengthen and improve the clinical research sector in Nepal and six papers were presented in the third part of the session. The national panelists were given their insight in-person whereas international panelists joined in virtual mode. Following are the presented topics with their respective presenters:

Topics	Presenters
Part – I	
Clinicians as Researchers: Challenges and Opportunities in Nepal (Invited talk)	Prof. Dr. Mohan Raj Sharma
Part – II	
Panel Discussion: Topic - <i>Action to strengthen and improve the clinical research sector in Nepal.</i> National Panelist: Prof. Dr. Saroj Prasad Ojha, Dr. Abhinav Vaidhya, Dr. Amit Joshi, Dr. Prabhat Adhikari. International Panelist: Prof. Dr. Jeremy Day.	Moderator: Prof. Dr. Janak Koirala
Part – III	
Laboratory errors in clinical biochemistry: The quality of laboratory testing in B.P. Koirala Institute of Health Sciences, Nepal	Apeksha Niraula
Evaluation of basic cardiovascular profile and prevalence of cardiovascular risk factors among the national level athletes of Nepal	Reeju Manandhar
A Causal Model of Promoting Resilience in Long-Term Recovery Phase Among Nepalese Elderly Citizens Experiencing Disaster	Rekha Timilsina
REMAP-CAP: A Randomised, Embedded, Multi-factorial, Adaptive Platform Trial for Community-Acquired Pneumonia. (Anticoagulation Domain)	Diptesh Aryal
Carbapenemase-encoding blaKPC and blaOXA-48 genes in carbapenem-resistant Gram-negative bacteria in a tertiary hospital in Nepal	Dhiraj Shrestha
Neglected tropical diseases(NTDs) service availability at local health facilities in eastern Nepal	Bed Prakash Sharma

The first presenter, **Prof. Dr. Mohan Raj Sharma** presented on "**Clinicians as Researchers: Challenges and Opportunities in Nepal**". His presentation highlighted the challenges that practicing clinicians face while doing research. He showed that in Nepal the poor quality data, suboptimal capacity, lack of interest among clinicians, brain drain were some of the major challenges in performing research activities. Furthermore, he added that Nepal has enormous research potential with significant advances in research during the last two decades evidenced by high citation of Nepalese scientific papers.

KEY POINTS

STRENGTHS

- Enormous research potential.
- Significant advances during the last two decades evidenced by high citation of Nepalese scientific papers.
- Cost-effective research can be performed on the basis of the local needs of the country and working sites.

CHALLENGES/ WEAKNESS

- Poor quality data
- Suboptimal capacity for research
- Lack of interest or pessimism among clinicians
- Lack of expertise
- Brain – drain of clinicians
- Mushrooming of many healthcare journals with suboptimal standards in Nepal.
- Risk of falling prey to many predatory/ cloned journals.

FUTURE DIRECTIONS

- Development of Research culture among clinicians of Nepal as per the need of the country.
- To bridge linguistic barriers to conduct quality research.

QUERIES, COMMENTS AND SUGGESTIONS

- Where should research be initiated?
- Why is sufficient research not happening in Nepal?

RESPONSES TO THE QUERIES AND COMMENTS

Lack of passion, not able to perform large scale trials, not able to generate large scale data despite the presence of sufficient funding were the reasons given by the speaker. He also mentioned that four Randomized control trials were undergoing in Nepal.

The second part of the session was a half an hour panel discussion among national and International panelists who discussed “**Action to strengthen and improve the clinical research sector in Nepal**” and was moderated by Prof. **Dr. Janak Koirala**. The discussion began by **Prof. Dr. Saroj Prasad Ojha** who remarked that “We need to generate facts in our settings for quality research practice” by young researchers. This discussion was then preceded by **Dr. Abhinav Vaidhya** who added that interdisciplinary collaboration was a must with training packages for clinicians on research conduction. Moreover, he said that clinicians must perform research that suits their practice. **Dr. Jeremy Day** laid his opinion that we are always surrounded by research questions while practicing but the problem lies in the delay in regulatory process and treating patients without evidence based medicine is risky. **Dr. Amit Joshi** focused on not separating research with clinical practice. He notified that research itself requires commitment and it is difficult for busy clinicians to focus on both clinical practice and research. Hence, research among clinicians requires confinement to only their need with proper training and workshops on research. The last panelist **Dr. Prabhat Adhikari** pointed out that the main problem in research related activities was the hesitation to ask questions out of fear of embarrassment among peers, lack of interdepartmental collaboration, data security, data centralization, unavailability of surveillance data and research funding with unclear workflow for clinical trials in Nepal along with insurance for such trials.

KEY POINTS

- ⇒ Generation of facts for quality research in our own settings.
- ⇒ Compartmentalization is a problem so it requires interdisciplinary collaboration and training packages to understand the basics of research.
- ⇒ Clinicians must perform research that suits their practice.
- ⇒ One of the research related problems lies in the delay in the regulatory process.
- ⇒ Involving both public and patients in clinical trials to generate data.
- ⇒ Research requires commitment and it is difficult for busy clinicians to focus on both clinical practice and research simultaneously.
- ⇒ Clinicians doing research is different from non-clinicians doing research.
- ⇒ Identifying a good research topic that matches with clinical situations is key.
- ⇒ Lack of data security, data centralization, unavailability of surveillance data and research funding with unclear workflow for clinical trials in Nepal along with insurance for such trials were some of the major setbacks.

FUTURE DIRECTIONS

- ⇒ Need of clear guidelines for clinical research.
- ⇒ Multidisciplinary collaboration
- ⇒ Data centralization and data security
- ⇒ Proper workflow for conducting clinical trials in Nepal.
- ⇒ Tailoring teaching practice that suit clinicians

The panel session was concluded with the comments of the chairs where they accepted that there was unavailability of issues addressing agencies.

RESPONSES TO THE QUERIES AND COMMENTS

Dr. Amit Joshi responded to the question by placing his thoughts around the fact that we must first understand our limitations while doing research. Secondly, government involvement is required in conducting such research and to conduct that; we must impose research into culture so as to bring good output with a remark made by Prof. Dr. Paras Kumar Pokhrel that “No research is better than bad research”. Prof. Dr. Janak Koirala further added that we must separate out people who are keenly interested in research as a separate path and they must be provided grants since they have taken a career position as a researcher. The institutional regulatory board must take the responsibility of ethics whereas the rest must be dealt with by a separate group of individuals for example, Research department, Research committee etc.

The Next oral presentation in the session was given by **Dr. Apeksha Niraula** who presented orally on the topic “**Laboratory errors in clinical biochemistry: The Quality of laboratory testing in B.P. Koirala Institute of Health Sciences, Nepal**”. Her presentation focused on evaluating the common pre-analytical errors occurring in routine biochemistry laboratory and subsequently implying strategies applicable in BPKIHS biochemistry laboratory setting to minimize their occurrence. Out of 34,540 samples screened during a one year period from December 2018 to November 2019, 1015 (2.94%) were subjected to rejection. Among the rejected samples, maximum samples (1.5%) were rejected due to hemolysis, 0.6% had a wrong identification, 0.4% of samples were misplaced, 0.2% had an improper sample collection technique, 0.12% found to be collected at an inappropriate time, 0.1% of the samples were missing and 0.02% were found to be lipemic samples.

KEY POINTS

- Significant number of pre-analytical errors existed in BPKIHS laboratory which had a direct impact on quality laboratory results and patient service which needs to be improved.
- Specimen rejection rate of 38.32% was from wards and 36.74% from the ICU in terms of inpatient services and 24.9% from OPD services.
- Centralization of laboratory services is one of the reasons for errors occurring in the laboratory.
- Paucity of manpower (Disproportionate ratio of patients to phlebotomists) making sample collection difficult.
- Fixed timing for collection of blood samples.
- Difficulty in sample collection and con-compliance of sample collection.
- Lack of basic level of workmanship among laboratory personnel.
- Quality laboratory reports contribute to 70% of medical diagnosis and treatment.
- Substantial development of automation in the field of clinical chemistry has aided in the significant improvement in medicine and laboratory science but the errors related to it especially in the pre-analytical phase contribute to a maximum error in the entire cycle of laboratory diagnosis.

FUTURE DIRECTIONS

- Holistic approach should be adapted towards laboratory diagnosis and function in concert with the clinicians to provide effective services to the patients.
- Promotion of ideal phlebotomy practices and sample transport procedures for the efficacy of laboratory functioning.
- Practice of keeping records of the errors at all stages of analysis and then devising corrective strategies for their prevention can gradually free a laboratory from such errors.

QUERIES, COMMENTS AND SUGGESTIONS

No comment

The presenter, **Dr. Reeru Manandhar** presented on "**Evaluation of basic cardiovascular profile and prevalence of cardiovascular risk factors among the national level athletes of Nepal**". His presentation covered the basic cardiovascular evaluation with their baseline characteristics, prevalence of cardiovascular risk factors among national level football players. His results showed that out of 102 national football players recruited in the study, 79(77.4%) were male, with an overall mean age of 23.8 ± 1.5 years. Average resting heart rate was 56.8 ± 3.2 . Sinus bradycardia (63.7%) was most common findings in ECG, followed by early repolarization (40.2%), left ventricular hypertrophy pattern (20.6%), sinus arrhythmia (15.6%) and first degree AV block (9.8%). The mean left ventricular internal diameter in diastole was 51 mm and 41mm in male and female players respectively, with overall mean LV ejection fraction of $62.8 \pm 4.5\%$, with concentric remodeling(2.9%), structural heart disease(1.9%) were also detected by echocardiography. Mean BMI and BSA among all players were $23.6 \pm 2.3 \text{ kg/m}^2$ and $1.69 \pm 0.08 \text{ m}^2$ respectively with 4.9% of players had body mass index more than 25 kg/m^2 , mean total cholesterol level and LDL was 3.8 and 1.9mmol/L respectively.

KEY POINTS

- Heart shows adaptive changes due to regular intense exercise.
- Underlying heart disease must be screened among Nepalese athletes, which may pose a risk of sudden cardiac death.

FUTURE DIRECTIONS

- Screening of cardiac conditions among National level Nepalese athletes and promotion of Sports Cardiology to **prevent** mishaps in the field of sports.

The next presenter **Ms. Rekha Timilsina** presented on "**A Causal Model of Promoting Resilience in Long-Term Recovery Phase among Nepalese Elderly Citizens Experiencing Disaster**". Her presentation focused on Nepal as being at high risk of natural disasters that might push Nepalese elderly citizens into psychosocial vulnerability and cause psychosocial health problems. Key notes of her presentation were that there is scarcity of robust nurse-led resilience interventions and hypothesized causal models for promoting resilience did not fit with data. Whereas, the final modified model adding a path from perceived stress to self-efficacy fitted with the empirical data.

KEY POINTS

- A cross-sectional path analytical study among 324 randomly selected Nepalese elderly (65 – 99 years old) citizens experiencing an earthquake disaster in 2015 at one municipality and three rural municipalities of Sindhupalchowk district.
- Data were collected using ten sets of valid and reliable standard instruments for measuring exogenous (self-esteem, optimism, mental health, life satisfaction, perceived stress, loneliness, spirituality, and social support) and endogenous variables (self-efficacy and resilience).
- The modified model shows a better fit with the empirical data that explained 74.7% of variance by self-efficacy, perceived stress, spirituality, self-esteem, and social support on resilience ($R^2 = .747$).
- The significant direct and positive effect of spirituality and self-efficacy.
- The significant direct and negative effect of perceived stress on resilience.
- The significant indirect and positive effects of self-esteem and social support.
- The significant indirect and negative effects of perceived stress on resilience through self-efficacy.

FUTURE DIRECTIONS

- Self-efficacy is the strong and significant factor explaining resilience of elderly citizens.
- It is necessary to design resilience-focused interventions to enhance self-efficacy, self-esteem, and spirituality.
- Lower the perceived stress, and promote social support for fostering resilience and positive and successful psychosocial and spiritual adaptation among elderly citizens in the long-term post-disaster phase.

QUERIES, COMMENTS AND SUGGESTIONS

Could you please elaborate the context of spirituality?

RESPONSES TO QUERIES AND COMMENTS

Underwood 2002, 16-item daily spirituality experiences scale was used to identify the participant's daily activities to sustain their daily life especially addressed to god or supernatural power. Spirituality dimension was measured on the basis of the responses on the 6-point Likert scale. Spirituality dimension was the direct and most resilient variable as the finding of study. The spirituality focused intervention for elders can develop resilience not only during disaster but also during other crisis situations in countries like Nepal where people had faith towards spirituality.

The next presenter **Dr. Diptesh Aryal** presented on "**REMAP-CAP: A Randomized, Embedded, Multi-factorial, and Adaptive Platform Trial for Community-Acquired Pneumonia (Anticoagulation Domain)**". His presentation covered thrombosis and inflammation that may contribute to morbidity and mortality among patients with coronavirus disease 2019 (Covid-19). His study hypothesized that therapeutic-dose of anticoagulation would improve outcomes in critically ill patients with Covid-19.

KEY POINTS

- 1098 critically ill adult patients with severe Covid-19 were randomly assigned to a pragmatically defined regimen of either therapeutic-dose anticoagulation with heparin or pharmacologic thromboprophylaxis (534 assigned to therapeutic-dose anticoagulation and 564 assigned to usual-care thromboprophylaxis) in accordance with local usual care.
- The patients were stratified into severe (ICU-level of care; critically ill) and moderate (hospitalized; non-critically ill).
- The strata were based on D-dimer: high D-dimer group, low D-dimer group or unknown D-dimer group.
- Intervention: Therapeutic low molecular weight heparin (LMWH) or unfractionated heparin (UFH). Therapeutic –dose as per hospital policy for treatment of venous thrombotic events (VTE).
- The primary outcome was organ support–free days, evaluated on an ordinal scale that combined in-hospital death (assigned a value of -1) and the number of days free of cardiovascular or respiratory organ support up to day 21 among patients who survived to hospital discharge.
- The trial was stopped when the pre-specified criterion for futility was met for therapeutic-dose anticoagulation.
- The median value for organ support–free days was 1 (interquartile range, -1 to 16) among the patients assigned to therapeutic dose anticoagulation and was 4 (interquartile range, -1 to 16) among the patients assigned to usual-care thromboprophylaxis (adjusted proportional odds ratio, 0.83; 95% credible interval, 0.67 to 1.03; posterior probability of futility [defined as an odds ratio <1.2], 99.9%).
- The percentage of patients who survived to hospital discharge was similar in the two groups (62.7% and 64.5%, respectively; adjusted odds ratio, 0.84; 95% credible interval, 0.64 to 1.11).
- Major bleeding occurred in 3.8% of the patients assigned to therapeutic-dose anticoagulation and in 2.3% of those assigned to usual-care pharmacologic thromboprophylaxis.

FUTURE DIRECTIONS

- In critically ill patients with Covid-19, an initial strategy of therapeutic-dose anticoagulation with heparin did not result in a greater probability of survival to hospital discharge or a greater number of days free of cardiovascular or respiratory organ support than did usual-care pharmacologic thromboprophylaxis.

QUERIES, COMMENTS AND SUGGESTIONS

- There must be some confounding variables, why critically ill patients actually died or had more adverse events or require more organ support when they were on therapeutic anticoagulants?
- In your study, moderately ill patients didn't have adverse effects from the therapeutic anticoagulation, are you using those in the moderately ill patients or just the prophylactic anticoagulation?

RESPONSES TO QUERIES AND COMMENTS

Possible reasons were speculated but definitive reason still on secondary analysis. Two presumptive reasons were distinct, one of them was that in the stages of COVID, there is irreversibility when the severity of the illness is heightened including thrombotic changes and this behaves like DIC. On the other hand in the moderately ill cases, heparin has three effects i.e. anti-inflammatory, anticoagulation and antiviral. As moderate illness is the early stage of the COVID, the assumption is that there might be the combination effect of all. But there needs to be another methodology to prove this hypothesis. In a clinical practice, we are using therapeutic anticoagulation among moderately ill patients but for critically ill patients, in case of clinical trial we are using intermediately or otherwise it depends on the decision of the physician.

The next presenter **Dr. Dhiraj Shrestha** presented on "Carbapenemase-encoding blaKPC and blaOXA-48 genes in carbapenem-resistant Gram-negative bacteria in a tertiary hospital in Nepal". His presentation mainly focused on the burden of carbapenem resistance as well as carbapenemase-encoding genes among GNB in a healthcare setting in Nepal. Objective of his study is to find out the frequency of CR in GNB, and to identify occurrence of carbapenemase-encoding bla_{KPC} and bla_{OXA-48} genes in GNB. Key findings of his study were 186 CR GNBs were identified. Out of 186 CR isolates, 42 (22.6%) isolates were MHT positive. The bla_{KPC} and/or bla_{OXA-48} genes were confirmed in 29 (69.0%) isolates. The MHT was significant in *E. coli* (p=.026, FET, OR= 0.27), and bla_{KPC} gene was significant in *A. baumannii* (p= .035, FET, OR= 0.17). Among the tested antibiotics, most isolates showed susceptibility to colistin and tetracycline. All 186 CR isolates were MDR, 9 (4.8%) isolates were extensive drug-resistant and 6 (3.2%) isolates were possible pan drug-resistant.

KEY POINTS

- 1.27 million AMR attributes deaths (2019)
- AMR leading to post antibiotic era where we will die with common infections due to lack of antibiotics
- The carbapenemase-encoding blaKPC and blaXOA-48 genes were common among CR GNB indicating their rapid spread in Nepal.
- This warrants the need for immediate interventions to contain this raging public health threat.
- CR rates high among GNB in South Asia
- Colistin and Tetracycline drug of choice for CR

FUTURE DIRECTIONS

- People don't talk about AMR most people talk about politics few talk about climate change but no one talks about AMR and only a few topics raised about these topics
- AMR is only the second topic discussed in the WHO general assembly so WHO has formulated the global action plan, Nepal formulated a National action plan but it's time to talk about the antibiotics issues in the future.
- We should talk about Antimicrobial resistance in the future.
- Request to all talk about AMR and fight against AMR

QUERIES, COMMENTS AND SUGGESTIONS

- Which tetracycline did you use or test for? please clarify it (Prof. Dr. Janak Koirala)

RESPONSES TO QUERIES AND COMMENTS

The Presenter answered as they used commercially used tetracycline discs.

Prof Dr Janak Koirala again suggested the presenter as it was probably the Tigecycline. Tigecycline has more activity. It may be Tigecycline instead of Tetracycline.

The next presenter **Mr. Bed Prakash Sharma** presented on “**Neglected Tropical Diseases (NTDs) Service Availability at Local Health Facilities in Eastern Nepal**”. His presentation emphasized the availability of NTD services in three NTD prevalent districts in eastern Nepal. The objective of his study was to assess the status of service availability and readiness among local health facilities for major NTD, and to identify capacity building needs in terms of NTD service delivery at local health facilities. Key findings of his study were Most of the facilities (89%) did not have diagnosis and treatment services for LF, Two-thirds (66.7%) had national guidelines for leprosy, Most of the health facilities did not have health workers trained on NTDs, except for leprosy.

KEY POINTS

- Majority (81.6%) of facilities were offering services for leprosy, 11.1% for LF, and 8.3% for VL. One-third of facilities (33.3%) were providing both treatment and diagnostic services, while 39% were only providing a treatment service, and 19.4% had no service for leprosy.
- Most of the facilities (89%) did not have diagnosis and treatment services for LF. In the case of VL, only 3 facilities reported providing both diagnostic and treatment services, with 3 other facilities having only diagnostic services.
- An anti-rabies vaccine was available in 2 facilities (5.6%) only.
- Two-thirds (66.7%) had national guidelines for leprosy, with fewer proportions having national guidelines available for VL (13.9%), LF (5.6%), and rabies (8.3%).
- Most of the health facilities did not have health workers trained on NTDs, except for leprosy (72% had at least one health worker with leprosy training).
- Neglected Tropical Diseases (NTDs) are a public health concern with leprosy, lymphatic filariasis (LF), visceral leishmaniasis (VL), soil-transmitted helminths, and trachoma most common in Nepal
- The burden is high in Terai plains in southern Nepal
- In Nepal almost the entire population is at risk of at least one NTD.
- Service availability at the local level health institution is inadequate.

FUTURE DIRECTIONS

- Need to strengthen the health system by ensuring trained personnel, availability of diagnostics and medicines
- Use of national guidelines for providing NTD services at local health facilities.
- Manpower should be trained for NTD services
- To provide quality services national guidelines should be implemented and promoted.

At the end, the distinguished chairs of the parallel session shared their insights on biomedical, epidemiological and clinical research of invited talk, panel discussion and all the six presentations and thanked to all presenters and participants of the session.

Parallel Session III: Health Policy and System Research- II

The session was jointly chaired by **Mr. Deepak Karki** and **Dr. Biraj Man Karmacharya**. Master of Ceremony of the session was done by Ms. Janaki Pandey, Note taking by Ms. Samita Maharjan and Mr. Bhuwan Thakurathi, and comment compiled by Mr. Jot Narayan Patel. There were altogether ten presentations under this session.

Topic	Presenters
Strengthening sexual and reproductive health and rights (SRHR) in Pre-service Education of Doctors, Nurses and Midwives.	Dr. Binjwala Shrestha (Invited Talk)
The Gendered Experience of Female Community Health Volunteers (FCHVs) in Nepal: Implications for Policy and Practice during and Post COVID-19	Ayushka Parajuli
A Policy Research on Eye Health Services of Nepal	Dipak Kumar Sah
Generation and use of gender and social stratifiers in the Information Management System of Nepal.	Sampurna Kachapati
Routine Data Quality Assessment; System and Data Verification gaps and recommendation in Selected Hospitals of Lumbini Province	Yanzi Sherpa
A Systematic Review and Meta-Analysis of Prevalence and Associated Factors of Exclusive Breastfeeding (EBF) Practices in Nepal.	Sharada Prasad Wasti
Enhancing the use of routinely collected data in health system performance and accountability in Nepal.	Pushkar Silwal
Factors Associated with Implementation of the Protocol -1 (CVD prevention) of the Package of Essential Non-communicable Disease (PEN) in Primary Health Care Facilities of Nepal.	Dinesh Timalsena
Factors affecting compliance of childhood immunization in Ilam district of Nepal; A case control study.	Bina Sigdel
Factors affecting implementation, enrollment and sustainability of the National Health Insurance in Nepal: A systematic review.	Bikesh Bajracharya

There were ten papers presented on this session. The first paper presented was by Dr. Binjwala Shrestha (invited talk) on **Strengthening sexual and reproductive health and rights (SRHR) in Pre-service Education of Doctors, Nurses and Midwives**. She initiated her presentation with emphasis on right to sexual health. According to her, sexual health is a fundamental right of people. Furthermore, she added the Sexual Reproductive health as the key health programs of basic health care package indicated in Public Health act of Nepal and doctors, nurses, and midwives are crucial human resources for SRH.

KEY POINTS

- Coherence in principles and minimum criteria of curriculum development (SRHR components) of council and competency required to deliver SRHR services as per basic health care package.
- Most of the guidelines did not have specific components of SRH that were necessary to demonstrate competency as per the government's policies, programs and job descriptions of respective cadres.
- No consistent format and specification of structure, time allocation or duration of the course for theory, practical and clinical posting for hands-on training.

- Medical Education Commission (MEC) is responsible to develop standard guidelines for the development of curricula for competent Human resources for health production in Nepal.
- Presently, MEC is in the process of developing curriculum guidelines for all programs under all medical institutions in consultation with concerned professional councils and experts from universities.
- Identification of clear gaps between government stakeholders, professional councils, academia and NHTC/FWD.

FUTURE DIRECTIONS

- Need to draft the minimum standards of curriculum for Nursing and Medical doctors to meet the required competency for SRHR service delivery to meet the national and international benchmark.

The second presentation was on **The Gendered Experience of Female Community Health Volunteers (FCHVs) in Nepal: Implications for Policy and Practice during and Post COVID-19** by Ms. Ayushka Parajuli. The presentations explored the roles of FCHVs and their gendered experiences during and post COVID-19 in Nepal. In this there were total 22 interviews, 13 in-depth interviews with FCHVs and 9 key informant interview with Supervisor of FCHV, Public health inspector, Health coordinator, COVID focal person, Mayor, ward chairperson etc from Chandragiri municipality, Kathmandu and Gulariya municipality, Bardiya.

KEY POINTS

- FCHVs are highly motivated to serve the community and also attention must be paid to the FCHV's multiple responsibilities needed to carry out as a woman and close to community service providers.
- Ensure effective roles of FCHVs and result in improved health outcomes of the community.

FUTURE DIRECTIONS

- Need to address gendered challenges faced by FCHVs in the community.

Mr. Dipak Kumar Sah presented a third paper entitled "**A Policy Research on Eye Health Services of Nepal**". He highlighted that almost all the eye health services in Nepal are delivered through NGOs and private organizations and Eye health service providers have been providing services on their own which are crowded in some places and inadequate in others.

KEY POINTS OF THE PRESENTATION

- Eye healthcare system is not adequately addressed by policies, strategies and programs and there is a significant gap in monitoring and implementation.
- Eye information was not recorded in HMIS and since 2011 it started recording in electronic medical records and still many eye hospitals have not applied.
- There were 35 hospitals, 20 departments and 162 eye care centers in Nepal and the tertiary eye health facilities are especially focused to cataract and refractive error
- Only few hospitals are focused towards preventive aspects, whereas rehabilitation is most neglected. Also, among 70 free essential medicines of Government of Nepal, only four are ocular drugs: *Lignocaine, Neomycin, Acyclovir, Fluconazole* and among 359 medicines in Essential drugs list of DDA only 15 are ocular drugs.

FUTURE DIRECTIONS

- Proper implementation of existing policies and plans in eye health care services is required.
- Expansion of health insurance can be an effective way of financing eye health.

The **fourth** presentation was a case study of HMIS and IMS of private hospitals presented by Dr. Sampurna Kachapati on **Generation and use of gender and social stratifiers in the Information Management System of Nepal**. The presenter initiated with the key information of HMIS being the main platform to record routine health service utilization data. This study focused on understanding what gender and intersectional stratifiers are incorporated in HMIS and IMS in private sector, exploring the use of IMS to inform gender and equity dimensions in health planning and identify gaps in use of evidence and develop framework that inform gender and intersectional dimensions in IMS for evidence-based decision making.

KEY POINTS OF THE PRESENTATION

- Public health facilities are using HMIS paper-based forms for recording, and DHIS2 and HMIS 9.3 (paper-based) for reporting private health facilities are using their own IMS for recording, and reporting through DHIS2 and HMIS 9.3 to the government.

FUTURE DIRECTIONS

- Existing HMIS recording and reporting forms require major reforms.
- Conducive environment to generate quality data through designated and trained human resources should be assured through strong and dedicated leadership at all levels of governments.

Ms. Yanzi Sherpa presented a fifth presentation on **Routine Data Quality Assessment; System and Data Verification gaps and recommendation in Selected Hospitals of Lumbini Province** under Health Policy and System Research. This mixed method study comprising observation and discussion assessed the system factor and the data verification of routine data using the RDQA tool in Bheri hospital, Rapti Provincial and Lumbini Provincial hospital.

KEY POINTS

- Quality of the data reported from health service is important to ensure improvement in their service quality.
- Standardized Web based RDQA tool was adapted in randomly selected referral hospitals from 5th August to 5th September 2021 with its result analyzed in scores in range of 0-3 in system assessment and using descriptive analysis in data verification assessment in percentages.
- Lumbini provincial hospital has achieved a score of 1.94, Rapti provincial hospital as 2.15 and Bheri hospital as 1.63 as an average score for all five domains in system assessment.

FUTURE DIRECTIONSS

- Initiation of practice of cross verification, use of tally sheets, monitoring and supervision, timely feedback mechanism and use of data for decision making was recommended for improved data quality in hospitals.

The **sixth** presenter was Dr. Sharada Prasad Wasti. His title of the study was "**A Systematic Review and Meta-Analysis of Prevalence and Associated Factors of Exclusive Breastfeeding (EBF) Practices in Nepal.**" The method applied in this study was systematic review and meta-analysis and data were extracted from PubMed/MEDLINE, Embase, Scopus, Web of Science, Cochrane Library, Directory of Open Access Journals (DOAJ), Nepal Journals Online (NepJoL). Meta-analysis was performed by R

statistical software (version 4.0.2) using meta-package. Likewise, twenty three cross-sectional studies which were conducted in Kathmandu from 2000-2019 in 14 Health Facilities and 13 communities of 10,031 mothers with a child above six months were taken.

KEY POINTS

- Pooled prevalence of exclusive breast feeding (EBF) practice was found 43% (30-59%).
- Lumbini province was found to have the highest prevalence of EBF followed by Gandaki province.
- Parents' level of education, knowledge of the duration of EBF, lack of milk secretion, mother's age, occupation and busy work schedule were identified as barriers for EBF practices.

FUTURE DIRECTIONS

- The inclusion of the EBF component in existing health care counseling packages would be helpful for exclusive breastfeeding practices in Nepal.

The **seventh** presenter was Mr. Pushkar Silwal. His title of the study was "**Enhancing the use of routinely collected data in health system performance and accountability in Nepal**". The routinely collected health data are data collected for purposes other than research or without specific a priori research questions developed before collection, e.g. HMIS, LMIS, Electronic Health Record (EHR), Mortality Register etc. Health system performance improvement includes selecting, gathering, interpreting, and acting upon information about key indicators in order to enhance the steering capacity of a health system. Health system is composed of multiple stakeholders, and they are inter-connected to each other by the various types of accountability relationship like performance accountability (accountability for results), and Financial accountability. The objective of the study was to review and reflect on the gaps and opportunities for improving the use of routinely collected data in health system performance and accountability in Nepal.

KEY POINTS

- Strengthening of the routinely collected health data can be helpful in driving the health system performance improvement at micro, meso and macro level health system units in the federal health system structure in Nepal.
- The existing policy mechanisms support the 'measurement' function, but the 'incorporation' and 'use of performance information' are not clearly defined.
- Incorporation and use of information are not integrated into the governance and accountability mechanisms.

FUTURE DIRECTIONS

- Enhancing the use of routinely collected data in performance improvement requires a well-defined framework that identifies the measurement, incorporation and use of information (e.g., performance audit, benchmarking, and performance comparison) functions that support the financial and programmatic decision-making.

The **eighth** presenter was Mr. Dinesh Timalsena. His topic of presentation was "**Factors Associated with Implementation of the Protocol -1 (CVD prevention) of the Package of Essential Non-communicable Disease (PEN) in Primary Health Care Facilities of Nepal**". The study focuses on factors associated with protocol 1 implementation. Nepal adopted PEN protocol in 2016 and piloted it in Ilam and Kailali districts. The main objective of the study was to assess the factors associated with the Package of Essential Non-communicable Diseases (PEN) protocol 1 implementation in government health facilities. The study design was cross-sectional quantitative and conducted in 31 PEN implementation districts. The

study population was Health workers working in the PEN implemented districts (Medical officer, Health Assistant, Staff nurse, Auxiliary health worker and Auxiliary nurse midwife) with a total number of samples of 192. Multi- multi-stage sampling method was used for the sampling procedure.

KEY POINTS

- All healthcare workers measured blood pressure, 56% tested glucose, 28% used CVD risk chart and 27% assessed BMI.
- CVD risk chart use was associated with urban setting and metformin access.
- BMI assessment was associated with access to weighing-scale, Stadiometer, glucometer, knowledge and motivation.
- Glucose measurement was associated with being at PHC, laboratory and glucometer; motivation , self-efficacy and positive expectancy from protocol-use .
- First study from Nepal to study WHO PEN protocol 1 implementation.
- Standardized tools and measured Cronbach's alpha for the reliability of a new tool .
- Generalized estimation equation multivariate analysis control for confounding and clustering.
- Could not enroll the targeted sample due to COVID- 19 pandemic, which reduced the power of the study.
- Self-reported data, which could have led to overestimation of protocol use due to social desirability bias.
- Cross-sectional design and causality could not be established.
- Study focused on the supply side of the health system and did not consider the demand side gaps, which could be important in designing intervention to address the gaps identified.
- Cannot generalize our findings to the entire PEN trained health workers of primary health care settings of Nepal because there have been many environmental and political changes after PEN implementation.

FUTURE DIRECTIONS

- Incorporate the NCD recording and reporting mechanism in HMIS.
- Provide a handbook and flow chart of disease management for health workers.
- Provide routine supportive monitoring and supervision for health workers.
- Refresher training should be planned for health workers
- The regular supply of the medicines and equipment.
- Posting of the adequately trained human resource in health facilities.

The **ninth** presenter of the session was Mrs. Bina Sigdel. The topic of the presentation was "**Factors affecting compliance of childhood immunization in Ilam district of Nepal; A case control study.**" The objective of the study was to identify the factors affecting compliance to childhood immunization in children aged 16-36 months. The study was Community-based unmatched case-control study design and conducted from July to August 2018. The study sites were Mai municipality and Chulachuli rural municipality of Ilam district, Nepal. The study participants were mothers who had children aged 16-36 months with a total sample size of 250 (cases 83 and controls 167). Multistage cluster sampling technique was used to recruit study participants. Structural questionnaires, divided into three parts: Demographic

characteristics, Questionnaire related to knowledge, attitude and behavior of immunization and Questionnaire related to immunization service delivery for data collection. A binary logistic regression analysis was used to identify the independent predictors of noncompliance of immunization.

KEY POINTS

- More than two thirds (66.8%) of the sampled children were fully immunized and 19.3% children were defaulted of the Measles Rubella vaccine.
- Only 19.2% of the respondents had good knowledge about the type of vaccine and more than half (59.2%) of the respondents had a positive attitude towards immunization.
- Multivariate logistic regression analysis showed that no information about vaccines, father education, not getting immunization on the day of appointment, not knowing about immunization schedule and negative attitude towards immunization independently impeded on compliance on the childhood immunization.

FUTURE DIRECTIONS

- Majority of the children were defaulted on the Measles and Rubella vaccines where the targeted intervention health promotion activities at the household level should be promoted, regular outreach activities should be encouraged. This could be achieved through integrating the immunization service to other elements of primary health care.

The last presenter of the session was Mr. Bikesh Bajracharya. The topic of the study was "**Factors affecting implementation, enrollment and sustainability of the National Health Insurance in Nepal: A systematic review.**" The objective of the study was to assess the factors (barriers and facilitators) affecting implementation, enrollment and sustainability of the National Health Insurance in Nepal and utilizing an ecological Framework that considers the individual, interpersonal, community, and systems level perspectives. Four electronic databases were searched including quantitative and qualitative studies written in English languages, published from 2013 to 2021. Findings were synthesized based on thematic analysis, categorized according to the ecological model into individual, interpersonal, community and systems levels.

Key Points

- At an individual level, families with larger size are more likely to enroll than to a smaller number of family members.
- Joint families enroll and renew more in comparison to nuclear families
- 53% participants who were the household heads were enrolled in health insurance compared to 45% of those who were not household heads.
- Enrolment in health insurance among individuals residing in rural areas is comparatively less than urban dwellers.
- Participants who interacted with peers or neighbors were twice more likely to enroll in health insurance compared to those who did not interact.
- At community level, none of the community factors reported in any studies regarding their influence in national health insurance which might be due to its implementation at the national level.
- At national level, lack of proper coordination among stakeholders, delay in developing organizational structure and human resource of the Health Insurance Board had a negative impact on the implementation of health insurance.

- Benefit packages and membership criteria were reported to facilitate uptake while Cost-containment measurement, amount, and timing of premium were reported to negatively influence implementation, uptake, and sustainability of health insurance.
- People are unwilling to enroll and keen to dropout due to the poor health facility environment.
- Lack of supplies, long waiting time, rude service provider behaviors, availability, and accessibility of services.

FUTURE DIRECTIONS

- There are a multitude of interrelated factors at the individual, interpersonal, and systems levels that drive the implementation, enrollment, and sustainability of NHI in Nepal and to guarantee that scheme objectives are met, these should be effectively addressed in scheme design and execution and harmonized across levels.

After the presentation, the chairs of the session Dr. Biraj Karmacharya expressed his views as the session was wonderful and the whole field of health research has advanced in the last few years. He also provided information about the areas of presentation of the session (*three were related to data, two related to gender, two related to MCH, one of each related to NCDs, Insurance and eye services and health system*). Dr. Karmacharya also talked about the variation of study methods used in the presentations (*qualitative, quantitative, mixed methods, reviews, meta-analysis*) and this also shows hope that the current generation are on the way to create a resilient health system in Nepal.

QUESTIONS FROM PARTICIPANTS

To Dr. Brinjwala Shrestha

1. How can we ensure clinical skills learned during a pre-service course could be retained for the in-service period?
2. Do you think we have a conducive environment to address human resources issues including demand and supply of trained human resources promptly?
3. What are the research findings and recommendations on retaining the competency of the trained human resource for health?

QUESTION ANSWERED BY DR. BINJWALA

She said that there is a gap in competency of ANM, midwife knowledge, and skills. Her team had reviewed the curriculum of the nursing and medical .Kathmandu University college curriculum is comparatively better than other eight universities (such as BPKIHS, TU, PAHS) which they studied. She also expressed that she was only willing to conduct the study if the gap would be addressed. There is also the conduction of training related to skills in support of the WHO. The curriculum would also include competency and skills based and universities would make such a curriculum. The medical education commission would have to ensure whether they (university) have prepared that curriculum. She also mentioned about the faculty development training which would be useful for pre-service training conduction.

To Mr. Dipak Kumar Sah

1. Did your study explore anything on the possibility to provide basic eye services through the current primary health care system?

Question answered by Mr. Dipak Kumar Sah

- Till now eye health services are not provided through the primary health care system and more than 600 municipalities are still waiting for eye health care services.

Questions to Dr. Sampurna Kakchapati and Pushkar Silwal related to information system

1. What are the suggestions, problems and readiness regarding Electronic Health Records (HER) in health facilities?

- Recommendation to Dr. Sampurna Kakchapati

The main problem in recording and reporting is data related to private hospitals, polyclinics and clinics. It would have been great if you have included how we can bring private hospitals and clinics into the government system of recording and reporting in the HMIS tool.

- Recommendation to Ms. Yangzi Sherpa

Why is there no monthly meeting and data assessment in the health facility? This should be included along with recommendations. Electronic Health Records system should be maintained mainly in Emergency, OPD and Indoor. It depends on the manager and focal person whether to use tally sheets or not.

Question answered by Dr. Sampurna Kakchapati

There is gap in HMIS system for instance in periphery level and variables such as age,sex are collected however the data are lost when they are reported to central level. In annual report, HIV related data are categorizes in age,sex,key population, TB related data are categorizes in age and gender and family planning related data are categorizes in education status. However, these variables should be used and categorized for all health related indicators.

Comment on recommendation to Dr. Sampurna Kakchapati

There is poor recording and reporting of data in private health institutions. Government should scale up DHIS and HMIS use both in private and public organizations. Dr. SampurnaKakchapati.

Mr. Deepak Karki thanked all the presenters and highlighted the importance of the health information system.

At last the session was ended by presenting Token of Love to all presenters and session chairs.

Parallel Session IV: Biomedical, Epidemiological and Clinical Research- II

The session was jointly chaired by **Dr. Shyam Sundar Yadav** and **Prof. Dr. Prakash Ghimire**. Master of Ceremony was done by Ms. Yunima Sapkota, Note was taken by Dr. Suman Sharma Paudel and Ms. Januka Khatri, and comments were compiled by Mr. Ajnish Ghimire.

Topics	Presenters
Nepal's Population Based Cancer Registry: Key Findings (Invited Talk)	Uma Kafle (from NHRC Study Team)
Scrub Typhus and Molecular Characterization of <i>Orientia tsutsugamushi</i> from Central Nepal	Rajendra Gautam
Seroprevalence of dengue fever in Central region of Nepal	Mandira Adhikari
Assessment of Antigenemia of Lymphatic Filariasis among Children Born after Mass Drug Administration (MDA) in Salyantar Dhading	Pramod K. Mehata
Patterns of Use of Antibiotics in Hospitalized COVID-19 Patients in a Tertiary Care Center in Lalitpur District, Nepal.	Bibechan Thapa
The Impact of Basic Police Training and Scale Diet on Body Composition and Aerobic Performance of Nepal Police Officers Trainees	Bibek Rajbhandari
Multimorbidity, Stress, Anxiety, Depression, and Quality of Life of Older Nepali Adults	Tarka Thapa
Varicella zoster outbreak in a military training center in Nepal: A clinico epidemiological study	Lee Budhathoki

As a first presentation of the session Ms. Uma Kafle briefed on the '**Population Based Cancer Registry (PBCR), Key findings of 2019**', A study led by Nepal Health Research Council (NHRC). PBCR is the program of systematic and continuous collection of information launched with the objective of providing burden of cancer in the community and understanding its pattern which will ultimately help governments to adopt appropriate prevention and control activities. Originally started in Germany in 1972, PBCR program was established in Nepal on 1st January 2018 in Kathmandu, Bhaktapur, Lalitpur, Siraha, saptari, Dhanusha, Mahottari and Rukum District. Program was conducted in collaboration with the Ministry of Health and Population (MOHP), WHO, IARC, regional hub, Mumbai India. Data was collected for the patient with reportable malignancy diagnosed in the defined year by applying a Health facility based approach and community based approach including Hospitals, laboratories, community health facilities by mobilizing field enumerators. As an outcome of the study, the rate of cancer incidence (AAR) was found to be decreased in 2019 (M-86.7, F-90.8) than in 2018 (M-95.3, F-98.1), In Kathmandu Valley. In contrast, cancer mortality was found to be higher in 2019 (M-42.1, F-34.3) than in 2018 (M-36.3, F-27).

Mr. Rajendra Gautam shared his presentation on '**Scrub Typhus and Molecular Characterization of *Orientia tsutsugamushi* from central Nepal**'. Study was conducted to evaluate PCR, detection of

possible phylogenetic linkages between the different types/sources of infection. This descriptive, cross-sectional study found 29.59 % of positive rates on Real time PCR (qPCR) based on 16S rDNA. This study identified a novel strain named Karp-like serotype strain which might be very useful for the development of diagnostic tools, vaccine and vaccination programs in Nepal. After this first molecular evidence for scrub typhus in Nepal, Mr. Rajendra has suggested more prospective studies on neglected illness and to bring awareness among the local communities and physicians about this re-emerging endemic disease.

Ms. Mandira Adhikari presented on the topic '*Seroprevalence of Dengue Fever In Central Region Of Nepal*'. This descriptive cross sectional study was conducted in Sarlahi, Mahottari and Dhading district of Nepal in 2019 by taking 216 blood samples. Study found that there was high seroprevalence of dengue and larger serological surveillance should be conducted and frequent effective mosquito vector control measures should be employed.

Mr. Pramod Kumar Mehta shared his work on the topic '*Assessment of Antigenemia of Lymphatic Filariasis among Children Born after Mass Drug Administration (MDA) in Salyantar Dhading*'. Study aimed to measure the effectiveness of MDA in Dhading district launched in 2003. An immunochromatographic test (ICT) was performed as an antigen test on all of 202 study samples, out of which 20 people (9%) tested positive. Study concluded that there is increasing in the prevalence of new infection of LF in the study areas, when compared with baseline values before start of the elimination activities similarly Pre-TAS, TAS I , TAS II report after MDA. From his study, Mr. Pramod has recommended conducting a large-scale Transmission Assessment Survey (TAS) in the study area to make an informed decision on whether MDA can be continued for further rounds in Salyantar Dhading.

Mr. Bibechan Thapa presented on "*Patterns of Use of Antibiotics in Hospitalized COVID-19 Patients in a Tertiary Care Center in Lalitpur District, Nepal*" As per his study findings , rate of use of antibiotics in COVID-19 was very high (98% of patients) whereas almost 70% of patients received two or more antibiotics. The number of antibiotics used, and the estimated cost of antibiotics was significantly associated with the patient being admitted to the intensive care unit and patients on ventilator support. He emphasized on the need of robust antibiotic stewardship program and surveillance system to prevent AMR during COVID-19 pandemic

Mr. Bibek Rajbhandari presented on the "*Impact of Basic Police Training and the Scale Diet on Body Composition and Aerobic Performance of Nepal Police Officers.*" The measuring tools used in his study are fat % and VO₂ max. His study findings imply that scale diet and physical training has a significant effect on improving aerobic performance and reducing body mass index and body fat. Furthermore the impacts were significantly higher among female officers compared to males. He recommended that general populations should also participate in structured exercise programs to improve and maintain their health, occupational performance and to decrease the incidence of the non-communicable disease.

Mr. Tarka Bahadur Thapa presented on the topic "*Multimorbidity, Stress, Anxiety, Depression, and Quality of Life of Older Nepali Adults*" "with the objective to assess the HRQOL of older Nepali adults and its relationship with multi-morbidity and depression. He quantified HRQOL using the 13-item Older People's Quality of Life (OPQOL) scale, which captures participants' views in terms of a 5-Likert scale ranging from 1= Strongly agree to 5= Strongly disagree. His study findings showed that participants with single and multiple-morbidity had lower QOL score as compared to those without any chronic conditions. He concluded his presentation with a recommendation to devise policies and promote the physical as well as mental health of older Nepali people through multiple centered comprehensive prevention and management programs.

Ms. Lee Budathoki presented the study on “*Varicella zoster outbreak in a military training center in Nepal: A clinico epidemiological study.*” This outbreak investigation has studied the natural history of Varicella and observed the clinic-epidemiological features in an ongoing outbreak. The study found that various preventive strategies applied along with the strict implementation of them in a military training set up appears to have prevented the subsequent waves of infection.

Ms. Sheela Thapa presented on “*Occupational Health and Safety among Airline Crew Members (Pilots and Cabin Crew) in Nepal*”. The findings of her study showed that prevalence of occupational safety and health vulnerability was 100% among crew members. About 36.1% crew members had inadequate empowerment to participate in injury and illness prevention and Most of the pilots and cabin crew had reported health problems in the past 6 months. She highlighted the need to empower airline crew members by increasing their access to policies and procedures through orientation and training by concerned authorities

QUESTION AND ANSWER SESSION

- **First question was raised to Mr. Rajendra Gautam** why were the cases of scrub typhus said to be higher after the Nepal earthquake 2015? Mr. Gautam responded “Despite the saying with higher prevalence of scrub typhus after people getting homeless and living in shelter-based residence, it is evident that the cases of scrub typhus were higher even before earthquakes that were not diagnosed. It also could be because of the fact that the diagnosis of such diseases was not prevalent in Nepal during that period. The Chair raised a query to Ms. Uma regarding any expansion plan of PBCR in the other districts of the country; Ms. Uma responded that there are plans to expand and currently the registry is made from nine districts of Nepal only. The existing registry has provided the burden of cancer in Nepal. There are plans for expansion by identifying the targeted areas but it is still in planning phase. Question to Mr. Pramod K. Mehta: Mass drug administration (MDA) is the bullet in prevention of diseases. What is the major issue in Salyantar in relation to lymphatic filariasis? Why is MDA ineffective in this area? Mr. Mehta responded that Migration is the major issue in Salyantar. Public has not complied with the medicine administration. This study particularly focused on children born after MDA. It is also evident that even though government reports show drugs delivered to the people, ground reality differs as the public are hesitant to take medications.
- **Question to Dr. Bibechan Thapa:** What is your opinion on the misuse of antibiotics in study sites as 1/3 of misuse of antibiotics is prevalent in Asian countries. Did you observe it during your study? Answer: Definitely there is misuse of antibiotics. But in this particular study, we did not measure it in our study. There should have been tallying of pre-inflammatory markers against antibiotic use and culture but was not done. However, further studies can take this perspective into consideration. Is there any change in therapeutic antimicrobials when supposedly most of the antibiotics are used on an empirical basis? Are there any cases of definitive therapy after drug sensitivity, susceptibility or culture sensitivity report? How many therapeutic interchanges due to suboptimal efficacy in the study? Answer: Most of the antibiotics were used on the first day of admission which was empirically used. As therapeutic markers were not considered for the study, therapeutic interchange was not part of the study.
- **Question to Dr. Bibek Rajbhandari** How many study sites as data collection centers were used in the study? Answer: There were a total of 20 centers used for data collection as sampling units. Physical fitness is a matter of interest for all of us. Does your sample represent the common Nepali population? Is it generalizable considering the heterogeneous mass in the general population?

Answer : It cannot be generalized in general. As the study conducted was an analytical cross sectional study, the study cannot conclude with the findings for the general population, community-based intervention with representation from most groups are crucial to generalize further. Does ethnicity matter on body composition in aerobic performance? Answer: As ethnicity matters it cannot be disclosed due to ethical concerns and is out of scope as per objective.

- **Question to Dr. Bibek Rajbhandari and Lee Budhathoki:** How did you assure autonomy is not compromised during the study? Dr. Bibek Raj Bhandari: Orientation class was carried out as a means of motivation and not obligation. Risks were taken into consideration. Lee response: We did not enforce them but observed closely. The response from the study team was too prompt.
- **Question to Tarka Thapa** How do stress, depression and anxiety change quality of life? What is the change in the brain Answer: Stress, depression and anxiety do not change quality of life but impact the quality of life.

Day III: Scientific Sessions

Plenary Session II: Global Health and Implementation Research

The plenary session was jointly chaired by **Dr. Khursid Alam Hyder** and **Dr. Phanindra Baral**.

Topics	Presenters
Nepal's move to federalism and its impact on the health system	Prof. Dr. Sujan Babu Marahatta
Strengthening mental health systems through collaboration care model: evidence and learnings from rural Nepal	Ms. Pragya Rimal
Global, regional and national initiative on addressing health impacts of climate change	Er. Raja Ram Pote Shrestha
Efforts for developing climate resilient health system in Nepal	Dr. Meghnath Dhimal
National and Provincial Situation of non-communicable disease and mental health in Nepal	Mr. Bihungum Bista
Implementation Science Research to Address Non-Communicable Diseases in Low Resource Setting	Dr. Archana Shrestha
The Planet's Health is our Health	Prof. Dr. Vandana Shiva

In a comprehensive presentation on Nepal's move to federalism and its impact on the health system, on behalf of Prof. Marahatta, Dr. Pratik Adhikari and Dr. Sujata Sapkota shared about the research process. The study was a longitudinal qualitative study on stakeholders' perceptions of the federalized health system.

KEY POINTS

- The findings of the study were divided into five categories namely: Improved health institutional capacity, increased resources, Policy priority, Trust towards current system and Implementation concerns.
- Participants appreciated hiring temporary staff to overcome the local human resource crisis.
- Local policies and programs developed and endorsed by national policy on the basis of local needs.
- All three level participants expressed that it is too early to talk about impacts of federalism in the health system.
- There were mixed views regarding federalism.

FUTURE DIRECTIONS

- Careful implementation of the policies is needed, and mitigation of the concerns.
- Research with beneficiaries is needed to understand the impacts of federalism on the health system in Nepal.

DISCUSSION

Both the presenters were asked about the selection process of districts for which they answered that districts were selected through ecological basis and rural/ urban settings. They were also asked about service provider explanations.

Ms. Pragya Rimal, Senior Mental Health Research Manager at Possible, shared about Collaborative care model in strengthening mental health systems. She briefed about the evidence and learnings about mental health from rural Nepal.

KEY POINTS

- There is unequal distribution of resources, high burden and treatment gap to mental health problems.
- Collaborative care model was initiated to integrate mental health systems in primary health care centers.
- Stigma related to mental health is always a huge component in the health delivery system.
- CoCM is team based, evidence based care, and population focused care for the mental health system.
- CoCM helps to improve access to care, to access gaps and for holistic care in mental health.
- CoCM intervention is designed to improve target behavior of screening, diagnosing and treating mental illnesses.
- The study showed that 85% of patients with depression prescribed antidepressant, and provider behavior on capability, opportunity and motivation were also improved.

FUTURE DIRECTIONS

- Adaptation and expansion of CoCM should be done in other areas of Nepal to improve access to high quality mental healthcare.

DISCUSSION

Ms. Rimal was asked about the sustainability of trained human resources in the mental health system. She responded with the focus on retraining and supervision for trained personnel. She also focused on local adaptation and maintaining a fine balance between researchers and government policies for the mental health system.

In the third presentation, Er. Raja Ram Pote Shrestha, National Professional Officer at WHO presented on Global, regional and national initiatives on addressing health impacts of Climate Change. He focused on climate change with resilient health systems.

KEY POINTS

- Climate change is the biggest global health threat of the 21st century.
- Annual min. temp of Nepal has increased by 0.002 and max. temp by 0.056 which is larger than global temp increment.
- Climate change has increased many climate sensitive diseases in human health, like vector borne diseases have increased by 74% globally followed by water borne diseases.

- WHO has estimated that from 2030 to 2050, an additional deaths per year will be about 250000 due to climate change.
- Vulnerability and Adaptation Assessment (VAA) in Nepal was done and its preliminary report says that climate sensitive diseases had reached Himalayan region too which is alarming to human health.
- The Paris Agreement (COP 21) made an announcement that the global temperature should not increase more than 2 degrees for better global health.
- WHO has focused on key areas to study climate resilient health systems.
- Nepal's commitments on COP-26 are 'net zero carbon' from 2022-2045, halt deforestation and increase forest cover to 40% by 2030 and ensure all vulnerable people are protected from climate change by 2030.

FUTURE DIRECTIONS

- Integration of the emerging issue in overall health program at national and sub national levels.
- Strengthening of technical capacity of local governments.
- Multi-sectoral collaboration with other sectors and environmental health programmes.

DISCUSSION

Mr. Shrestha was asked about air pollution in Kathmandu valley, its effect on health and its mitigation policy initiated by the government. He responded by saying that sources of the pollution should be minimized and the government has initiated urban health initiatives that contain environmental approaches to minimize air pollution but he stressed on the fact that it is only in paper agreement. He was also asked about green climate funds for which he responded that those funds have been processed for NAP, household energy development and for agriculture. In all his responses, he stressed on the fact that all the programmes and funds are generated only in the environment and climate but the health sector has been completely neglected.

The fourth presenter, Dr. Meghnath Dhimal, Chief, research section at NHRC presented on efforts for developing climate resilient health systems in Nepal. He focused on the shocks and stresses to health systems and six building blocks of health systems.

KEY POINTS

- For developing a climate resilient health system, H-NAP tool was developed which is an evidence based tool to guide health system adaptation.
- The tool provides a flexible and context-specific approach to health adaptation to climate change and ensures that the health adaptation plan coordinates with overall national adaptation programmes.
- Male Declaration was made for building climate resilient health systems.
- For the whole health system to become climate resilient, its independent building blocks (i.e. leadership and governance, health workforce, health information system, essential medical products and technologies, service delivery and financing) should have to be climate resilient.
- Major progress made by Nepal in each building blocks of health system and its further 10 components of climate resilient health system

FUTURE DIRECTIONS

- National capacity building is a key for adapting and developing climate resilience.
- For developing a resilient health system, efforts should be enhancing capacity on ten components of operational framework for developing climate resilient health system (developed by WHO)
- Human capacity for disaster preparedness and response should also be increased.

DISCUSSION

Dr. Dhimal was asked about further research in Chikungunya and Zika virus and for this he responded saying that the government has announced free tests for Zika virus and he also added that there should be multi-sectoral collaboration between various stakeholders to initiate green climate funds provided by WHO.

Vandana Shiva, an Indian scholar, environmental activist, food sovereignty advocate, eco-feminist and anti-globalization author, has worked in a wide range of different fields inspiring change globally was guest speaker to talk on "The Planet's Health is our Health ". Her deliverables include the biodiversity of plants and soil, conservation of Carbon-dioxide, carbon content in the environment, climate resilient and destruction of forests.

KEY POINTS OF PRESENTATION

- She highlighted biodiversity as the basis of the health of the plant and the health of people from microbial level to planetary level which means biodiversity plays a significant role in reducing earth temperature from 290 degree centigrade to 30 degree centigrade and reducing 4,000 ppm carbon to 270 carbon that made life possible on earth.
- But invasion of forest is the main cause for emergence of 300 new infectious diseases over the last 30 years. Unfortunately leading to climate changes and relates to massive fossil fuel usage on synthetic fertilizers, horrible hunger, and massive use of machines in packaging, transportation and processing of food.
- She briefly elaborated how biodiversity is protecting our planet and regularity of the ecosystem and its imbalance has impacted human health in terms of disease conditions and nutrients deficiency.
- To combat these problems, she stressed on conserving local seeds, organic systems, carbon audit firms linking to financial systems and carbon colonization.

FUTURE DIRECTIONS

- She concluded that looking at the future threats and current threats, we need to find the best solutions and multiple paths to address those problems.

The sixth presentation was given by Mr. BihungamBista, a Senior Research Officer at Nepal Health Research Council on title "National and Provincial Situation of non-communicable disease and mental health in Nepal ". The major objectives of his presentation were based on the WHO recommended policy options on strengthening vital registration systems and cancer registries, undertaking periodic risk factors surveillance and strengthening technical and institutional surveillance capacities.

KEY POINTS OF PRESENTATION

- The major cause of death in Nepal was non-communicable diseases which accounted for 71% death affecting equally both male and female groups, 21 % death is due to Communicable, maternal, neonatal and injuries and 8% death resulting from disability.
- The leading risk factor was smoking which is a modifiable factor, while, ambient air pollution and household air pollution on combining exceeds more death than smoking.
- Based on the national survey data findings, tobacco consumption is high in Lumbini province which is 28.9% and more precisely it is found high in Terai region. Similarly consumption was found to be 20.8% while Bagmati province has a high alcohol consumption rate.
- Low serving of fruits and vegetables which is 96.6% and physical inactivity is high in Bagmati and Gandaki province.
- The prevalence of NCDs like blood glucose level high, COPD, CKD are 11%, 11%, 6% respectively.
- The cancer registry data shows that cancer is high among male which is lung cancer while breast cancer is high in females.
- The prevalence of mental health disorder among adults is 4 % and same as in all provinces.

FUTURE DIRECTIONS

- There is variation in estimates of non-communicable diseases and mental health disorders across the different provinces and should be planned for province specific programs.

Associate Professor of Public Health, Dr. Archana Shrestha at Kathmandu University was the final presenter on the title 'Implementation Science Research to Address Non-Communicable Diseases in Low Resource Setting'. The presentation was entirely on her past decade experience to establish implementation research, training platform and to let know that it is also conducted in Nepal.

KEY POINTS OF THE PRESENTATION

- With the growing age we would be expecting a lot more NCDs in Nepal. In the last two decades, communicable, maternal, neonatal and nutritious diseases have decreased while NCDs are increasing.
- Most NCDs have solid evidence based interventions for treatment, management and prevention but are unable to address those problems, a major gap though we have guidelines and interventions.
- Implementation research is the study of methods and strategies that take intervention or fasten the objects of scientific evidence.
- Some of the Implementation Science Research in Nepal were on Cardio-metabolic Disorders in Worksite Setting, Evaluate PEN Interventions in Nepal and Cervical Cancer Prevention in Nepal.
- Some of the challenges like research is not viewed as a sustainable project by stakeholders and health system related challenges like IRB is not trained on IS research so ethical approval is required at times.

FUTURE DIRECTIONS

- Nevertheless, there are huge potentials to make an impact on public health through existing resources and carries a lot more value, many online free resources are currently available to support implementation research.

DISCUSSION

Dr. Shrestha was asked about the addressing diet quality in their study interventions and for that she replied they have been focusing on few diet quality attributes like use of whole grain replacing all-purpose flour, second restrictions on highly sweetened beverages and food, use of healthy oil and unsaturated fats, elimination of trans-fat and lower the intake of sodium. These are the five dietary interventions that they were working on.

The session ended with thanking all the presenters and the participants for active participation and fruitful discussion. All presenters were acclaimed with Token of Appreciation by both the chairs.

Parallel Session V: Responsible conduct of Health Research in Nepal

The session was chaired by **Prof. Dr. Ramesh Kant Adhikari**, Chairperson, Ethical Review Board, NHRC. Total two papers on research ethics were presented in the session. The presentations were followed by a discussion among the panelists. Following is the list of papers presented along with the respective presenters and panelists of the session:

Title	Presenters
Responsible Conduct of Health Research in Nepal	Ms. Namita Ghimire
Enhancing Quality of Ethical Review: International Standards	Mr. Arthur Navarro
Panelists	Moderator
Prof. Dr. Basudha Khanal Dr. Nandini K Kumar Dr. Mahesh Puri Dr. Tarun Saluja Dr. Mongal Singh Gurung Dr. Tshering Pema Lama	Dr. Sushil Chandra Baral

First of all, Prof. Dr. Adhikari shared the purpose of the session, which is to discuss what it means to be a responsible researcher. According to Prof. Dr. Adhikari, all of us need to be aware of the dimensions of research, all the procedures developed by the system and their application to conduct research with responsibility. He then requested the presenters to deliver their presentation.

The first presentation of the session was delivered by **Ms. Namita Ghimire**, Ethical Review M & E Section, NHRC on **Responsible for Health Research in Nepal**. She presented on the Responsible Conduct of Research (RCR), its principle, the need for RCR, and different areas addressed by RCR. She further highlighted how responsible conduct of research is promoted in Nepal by the Ethical Review Board (ERB) and Institutional Review Committees (IRCs). She also mentioned different types of reviews done by the Ethics Committee based on the risk categorization of the proposed study. She focused on the ethical and practical challenges faced by the Ethics Committee as well as researchers. She concluded her presentation by pointing out some way forward on how those challenges can be tackled.

KEY POINTS

- Aspects that influence research include 1) social values, 2) policies and priorities, 3) proper planning and conduction, 4) professional, legal, and moral responsibilities of researchers, sponsors, and institutions, 5) research mentoring monitoring, reviewing, and reporting 6) authorships, 7) research misconduct, 8) clinical trials registration, 9) collaboration and networking, 10) institutional research arrangements.
- Individuals/organizations interested in conducting health research must obtain approval from NHRC since the inception of the Nepal Medical Research Council (NMRC) in 1982
- The study is subject to being halted in case of misconduct if it does not adhere to the National Ethical Guidelines for Health Research in Nepal.

- Ethical Review Board of NHRC consists of 11 to 15 members based on the National Ethical Guideline and Standard Operating Procedure, who thoroughly review and discuss scientific (objectives, design, outcomes, etc.) and ethical aspects (vulnerability, risks, benefits, ICF, etc.) of research proposals for appropriate decision.
- Proposals that have less than minimal risk can be exempted from review; those with minimal or low risk can be expedited, and high risk undergoes full board review.
- Ethical challenges include skilled human resources, community engagement, adequate infrastructure especially in terms of laboratory, risk and benefit-sharing, data access and sharing, capacity building, post-trial access and benefit-sharing, and provision of research participants' compensation
- Challenges for researchers arise from 1) administrative issues like approval from multiple institutions; their departments, hospitals, local authorities, DDA, SWC; creating loss of time of researchers in administrative issues, donor pressure for timely implementation of research projects, submission of processing fee for multiple organizations like NHRC, DDA, IRCs, inadequate knowledge about the review process and online system, 2) delay in submitting the administrative requirements like acceptance letter, material transfer agreement, MoU, ethical review processing fee, 3) delay in addressing reviewer's comment and addressing other ethical requirements in the proposal.
- Challenges for the Ethics Committee include post-approval challenges like monitoring of ongoing approved studies and IRCs, delay in submission of the amendment, continuing review and delayed or no submission of progress/final report by the researchers.

FUTURE DIRECTIONS

- Target based planning for adhering responsible conduct of health research in Nepal
- Promote harmonized research regulation and procedure through a collaborative process between all concerned stakeholders.
- Establish policies and plans for the protection of research participants
- Build capacity of EC members and its secretariats, reviewers, and researchers regularly
- Establish and implement an accreditation mechanism to IRC based on standard criteria
- Set and implement criteria for researcher and reviewer
- Develop a research institution with required infrastructures along with laboratory facilities per the international guideline
- Promote researchers to conduct research based on the priority areas.
- Upgrade the ERB online system and harmonize it to other ECs

This presentation was followed by the presentation of **Mr. Arthur Navarro**, Program Manager, Forum for Ethical Review Committees in the Asia and Western Pacific Region (FERCAP), on **Enhancing Quality of Ethical Review: International Standards**. He started the presentation with a brief overview of the Strategic Initiative for Developing Countries in Ethical Review (SIDCER) recognition program, its aim and its framework. He then moved on to the different standards for quality ethical review. He highlighted five different standards for quality ethical review process along with methods of review in each standard. He emphasized that all the standards are equally essential to maintain the quality of the ethical review process.

KEY POINTS

- The social mandate of the ethics committee (EC) ensures scientific and ethical soundness, good data for evidence and knowledge-based medicine and health care delivery, and improved social value of research protecting human participants.
- 258 recognized ECs/IRBs in 14 areas/countries have been engaged in the SIDCER-FERCAP recognition program
- The Strategic Initiative for Developing Countries in Ethical Review-Forum for Ethical Review Committees in Asia and the Pacific (SIDCER-FERCAP) has developed a framework for international standard of quality ethical review in externally evaluating ethics committees (ECs) with five recognition criteria
- The criteria include 1) structure and composition 2) adherence to specific policies 3) completeness of the initial review process 4) completeness of the post-approval review process and 5) documentation and archiving
- All the standards are in line with the WHO Standards and Operational Guidance for Ethics Review 2011.

The presentations were then followed by a panel discussion. Ms. Rojina Basnet, MC of the session, introduced all the panelists and the moderator of the session to the audience. The session was thereafter handed over to the moderator, Dr Sushil Chandra Baral. Dr. Baral thanked the Chair of the session and welcomed all the panelists. He then started the session by putting forward his question to **Dr. Nandini K Kumar, Vice President of Forum for Ethics Review Committee in India** to share her experience of institutionalizing the Responsible Conduct of Health Research in Low- and Middle-Income Countries. He further asked Dr. Kumar how the implementation of RCR is being done in Low- and Middle-Income Countries. Dr. Kumar stated that the practice of RCR is different in LMICs than in developed countries, like the absence of disciplinary actions upon misconduct and the presence of a hierarchical (mentor-mentee) structure among researchers in LMICs compared to developed countries. She further stated that in countries like Nepal and India, there are various guidelines in place for promoting RCR; however, there are challenges in implementing these guidelines. Then, Dr. Baral asked about the practical challenges in implementing those guidelines. To this, Dr. Kumar said that most of the researchers are not aware about the context of the different guidelines. So, researchers must be sensitized about the importance of following guidelines to maintain RCR.

The moderator then raised concern to **Dr. Tarun Saluja**, Research Scientist at International Vaccine Institute, regarding the key practical challenges for advancing RCR in various research projects conducted by him. Dr. Saluja said that while conducting clinical trials in Nepal there were three main challenges: capacity of research sites in terms of infrastructure, human resources, awareness regarding various guidelines and regulations in place and management of logistics. He further highlighted another prominent challenge was community engagement and gaining trust of community people.

The moderator welcomed **Dr. Basudha Khanal, Head of Department of Microbiology, B.P. Koirala Institute of Health Sciences**, and requested her to share her experience in undertaking research in a laboratory setting that requires safeguarding of human samples. Dr. Khanal highlighted issues with quality to be the primary concern, especially, the reliability and accuracy of laboratory data in addition to inadequate human resources training in terms of the ethical aspect of research and difficulty in making people understand and convince them for their participation.

Dr. Mahesh Puri, Co-Director of Center of Research on Environment Health and Population Activities (CREHPA), another panelist was questioned regarding the challenges faced while conducting social science research in terms of protection of research participants. To this, Dr. Puri replied that as a researcher, there are challenges of taking ethical approval from multiple institutions, i.e., ERB, IRCs, local authorities, and there is no uniformity in it since each of them has their own forms and formats. He further added that researchers have to pay ethical review processing fees and other regulatory costs at different levels, which is another big challenge. He also stated that there is no provision to capacitate the researchers.

Dr Baral then requested **Dr. Tshering Pema Lama**, Associate faculty at Johns Hopkins University to share her experience on working with young researchers and engaging them in safeguarding human participants. Dr. Lama said research is usually designed by an international principal investigator who is generally unaware of the real scenario of the study site, which poses a challenge. Apart from that, she mentioned that the language barrier is also one of the significant challenges in the research project she is involved in, especially when it involves taking consent. However, they have made several changes following field testing and provided extensive training to the field researcher.

The moderator then moved to **Dr. Mongal Singh Gurung**, Secretary at Research Ethics Board of Health, Ministry of Health, Bhutan and asked him about the challenges he faced while conducting collaborative study with various institutions and researchers as a member of the Ethics Committee. To this, Dr. Gurung replied that lack of awareness and accountability among researchers due to lack of a system or mandate for continued education is one of the major challenges being faced. He further added data ownership, sharing and management are also important challenges in collaborative research, particularly in externally funded research.

DISCUSSION:

After the presentation and panel discussion, the session was followed by a question-and-answer session and suggestions from the participants. Few questions raised by the participants were regarding the compensation to research participants and its regulation, follow up of study participants, data sharing and storage in collaborative research, capacity building of researchers, CoI of NHRC while conducting research as it has a dual role of regulating research ethics and implementing research. Then the closing remark for the session was kept forward by Prof. Dr. Ramesh Kant Adhikari. He thanked presenters and panelists for their active participation. He mentioned that the issue raised in the session will be food for thought for the Ethics Committee and he ensured that the same rigorous process of review and approval is followed for the studies conducted by NHRC like any other researcher. Prof. Dr. Adhikari further emphasized that responsible conduct of research is an integral part of ensuring scientific integrity.

KEY POINTS OF THE SESSION

- Despite formulating different guidelines for promoting responsible conduct of health research, the level of awareness among researchers is low.
- Community engagement is an integral part of any research.

FUTURE DIRECTIONS

- Enhance capacity of the researchers in the area of research ethics by promoting responsible conduct of health research and continued education in the field
- Hold all stakeholders accountable for promoting responsible conduct of research.

Parallel Session VI: Strategies for Improving Quality of Medicines and Research in Pharmaceutical Sector

The session was chaired by **Prof. Dr. Panna Thapa** and **Mr. Bharat Bhattarai**. There were three invited talks in this session, followed by a panel discussion.

Topic	Presenters
Pharmaceutical sector reform for quality assured medicines (Invited Talk)	Sudip Pokharel
Overcoming SF medicines challenges and strengthening BA/BE in the local context (Invited Talk)	Pravin Prasad Achyut B. Thapa
International trend in pharmaceutical research and development (Invited talk)	Manish Mahajan
Panel Discussion: Mr. Bal Krishna Khakurel Dr. Rajani Shakya Dr. Rajendra Gyawali Mr. Prajwal Jung Pandey Mr. Pan Bahadur Chhetri Prof. Dr. Shyam Mani Adhikari Mr. Santosh K.C.	Moderator: Mehmood Anwar

The first presentation of the session was delivered by Mr. Sudip Pokharel on the necessity of pharmaceutical sector reform to improve the quality of medicines.

KEY POINTS

- The market value of pharmaceutical companies in Nepal is around 60 billion and is growing day by day.
- 45% of domestic medicines need are met by domestic pharmaceutical companies
- Budget allocated is only 0.5% of the total ministry of health budget, which is very low
- The issues that need immediate reforms are self-reliance, quality assurance and regulations, research and innovation and strategic position of the pharma sector.
- Heavy reliance in foreign imports; 70% of raw materials imported from India and 30% from China
- Regulatory authorities are limited in capacity and resources, market vigilance is weak so
- prevalence of substandard medicines is high
- Lack of research and innovation in domestic manufacturer which leads to poor product diversification
- The future of the sector is very promising but needs support from the government.

FUTURE DIRECTIONS

- Institutional restructuring of DDA and NML
- Local Manufacturer should invest in research and development to make pharma sector self-reliant
- Position/Prioritize pharma industry as one of the key industries for economic growth of the country
- Huge potential to produce raw materials in Nepal

- Government should create enabling environment to foster Research and Development
- Promote use of Pharmaceutical services like provide drug information, rational use of Medicines, safeguarding consumer rights
- Functional analysis of pharma sector is required

The second presentation of the session was delivered by Mr. Achyut B. Thapa and Dr. Pravin Prasad jointly. Mr. Achyut B Thapa presented on 'strategies to overcome SF medicines, and its challenges' while, Dr. Pravin Prasad conveyed on 'strengthening BA/BE in the local context'.

KEY POINTS

- Prevalence of Substandard and Falsified medicines may be the result of poor governance, weak regulatory mechanism, surveillance and monitoring system
- These medicines could contribute to so many problems like AMR, Treatment failure, non-compliance and lack of belief in healthcare system
- There are so many cases of falsified medicines reported to WHO per year worldwide
- In Nepal, few studies were conducted by NHRC on Substandard and Falsified medicines. Prevalence of SF medicine in Nepal is high (15 to 18%)
- BABE study is one of the solutions to assure the quality of medicines available in the Market. BE is a legal requirement under medicines registration guidelines 2073.
- There are many institutions conducting BABE but only for academic purpose
- Maharajgunj Medical Campus has been working since the last 4 years to establish a pharmacology lab as CRO for BABE. The major challenges are limited finance and Human resources

FUTURE DIRECTIONS

- Need to focus on the quality of product that we are purchasing.
- To conduct BABE study in Nepal, collaborations with different stakeholders like government institution, contract research organization, legal framework and Pharmaceutical industries is required.
- An Autonomous Bioequivalence center is needed in Nepal to assure quality of medicines.

The last presentation was delivered by an international speaker-Dr Manish Mahajan on the topic 'International trend in Pharmaceutical research and development'.

KEY POINTS

- Percentage spending of net revenue in Pharma R and D is more (about 90%) as compared to other sector in international trend
- Factors that influence R and D spending is global anticipated revenue of product, demand and supply, cost of drug development process and policies
- Cost to produce a new drug is about 0.8 billion to 2.3 billion USD. More than 50% of that cost goes to Clinical trials
- However, spending in R and D is increasing gradually in international market
- R and D organizations are looking for benefits in Tax, regulatory policies, vaccination policies and enabling environment
- Pharma industries need to earn profits to reinvest back in R and D of new drugs

FUTURE DIRECTIONS

- Policymakers should foster policies that foster culture of innovation

PANEL DISCUSSION

PANELISTS:

Mr. Bal Krishna Khakurel

Prof. Dr. Shyam Mani Adhikari

Mr. Pan Bahadur Chhetri

Mr. Prajwal Jung Pandey

Dr. Rajani Shakya

Dr. Rajendra Gyanwali

Mr. Santosh K.C.

Moderator: Mr. Mehmood Anwar

The moderator of the panel discussion, **Mr. Mehmood Anwar** initiated the discussion by allocating three minutes time for each panel members. He highlighted the areas on panel discussion such as the substandard and falsified medicine, strategies to improve quality of medicines, strengthening BA/BE, present status of research and development in pharmaceutical industries, and lastly exploring barriers and need for reform of pharmaceutical industries.

Mr. Bal Krishna Khakurel, the first speaker, spoke on the challenges with SF drugs. He stated that such issues can be resolved by bolstering indigenous medicine production industries, particularly life-saving drugs. He also discussed the government's involvement in providing subsidies to domestic enterprises to promote and manufacture essential medicines in the country. The moderator then requested Mr. Pan Bahadur Chhetri to provide his thoughts on the subject of SF medicine. Mr. Pan Bahadur Chhetri claimed that 10% of medicines are identified to be substandard, yet falsified medicines are extremely rare in Nepal.

Similarly, Mr. Prajwal Jung Pandey, who represented the Association of Pharmaceutical Producers of Nepal, spoke about the importance of bolstering Nepal's pharmaceutical industry. He also highlighted concerns about the implementation of the National Drug Policy 2051, which states that domestic companies will be promoted and that domestic industries will manufacture 80 percent of vital pharmaceuticals. He stressed the importance of bolstering the regulatory structure in collaboration with the pharmaceutical industry and academics, as well as fostering research and development. He discussed the fierce competition between brands in Nepal's pharmaceutical industries, which number about 20,000. He also compared Nepal's situation to that of other nations, such as Bangladesh, where the patent molecule advantage is being used in accordance with World Trade Organization (WTO) principles, and from which Nepal may learn.

To discuss the regulatory part, the moderator asked Mr. Santosh KC.

Mr. Santosh KC spoke on the DDA's structure, which isn't up to par, as well as the Drug Act's activities. He discussed the current state of the Drug Act and Drug Policy. He also stressed the necessity of effective collaboration between industries and authorities. He emphasized the importance of technology transformation and increased investment.

After that, Dr. Rajani Shakya recalled a study conducted by NHRC which showed that substandard and falsified medicines were around 30% in Nepal. She focused on the importance of identification

of SF medicines through quantitative detection such as the BA/BE study. She noted that BA/BE was launched in 2006 by the Department of Pharmacy at Kathmandu University with assistance from Nepal Pharmaceutical Limited, but it was unable to continue owing to a variety of factors. She stated that BABE is highly important, especially for those with non-linear kinetics, narrow therapeutic windows, and poor dissolution, and that at the very least, the pharmacokinetic data of such medications should be made public before the product is marketed. She also highlighted the need of a regulatory compulsion to guide BA/BE activities and national guiding documents for the same.

Finally, to talk about Ayurveda and herbal medicines, the moderator asked Mr. Shyam Mani Adhikari and Dr. Rajendra Gyawali. Dr. Shyam Mani Adhikari focused on promotion of Ayurveda medicines along with the allopathic medicines. He notified that the health care system is moving towards only allopathic medicine, and mentioned that Ayurvedic medicines should also be taken together. Similarly, Dr. Rajendra Gyawali talked on the quality assurance of both ayurvedic and allopathic medicines. He discussed the importance of standardization in accordance with WHO-GMP guidelines. He also highlighted the demand for regulatory agencies to control medicinal plants.

DISCUSSION

After all of the panelists had given their opinions, the moderator asked them some questions received from the audience.

Firstly, a question was asked to Mr. Prajwal Jung Pandey about Research and Development activities, resource allocation for research, drug development in Nepal by Nepali pharmaceutical industries. Mr. Pandey responded that Nepali pharmaceutical industries have been able to focus only on formulation research and branding of generic products. R and D account for less than 10% of the total budget. Governments in several nations have taken initiatives to promote the development of new medications and Ayurveda. In order to promote the pharmaceutical industry, the government must take the lead.

Similarly, Mr. Pan Bahadur Chhetri was questioned on the government's lack of investment in DDA, as well as how to acquire the same fees from pharmaceutical companies as the US-FDA does, as well as cold chain management and monitoring in Nepal. To address the queries, Mr. Chhetri highlighted that the DDA and NML structures are at a very basic level in Nepal, with no sufficient research institutions or hospital sites. The main issue is a lack of resources. Policy updates appear to be essential, as does dialogue with higher-level professionals. He claimed that the cold chain in Nepal is well-maintained and monitored on a regular basis by the DDA.

Key Points of the session

- With the existing structure, infrastructures and resources, it is difficult to tackle the current issues in the pharmaceutical sector. So, there is a need to revise the Drug act, regulatory framework and policies to function smoothly.
- To ensure better delivery in the pharmaceutical system, strengthening the national industries for the production of essential and lifesaving medicines and enforcing good practices in pharmacies is very necessary.
- The raw materials for allopathic medicines are certified, however certified Ayurveda raw materials are not available, resulting in a lack of confidence in the quality of Ayurveda raw materials.
- There is no strict regulatory enforcement to mandate pharmaceutical companies to conduct bioequivalence studies in Nepal. This is still an option for companies.
- There is a negligible amount of budget being allocated for research and development in pharmaceutical sectors.

- There is a need for collaboration between regulators, pharmaceutical industries and research institutions. Holistic approach is needed in order to expand the activities in the pharmaceutical field.

FUTURE DIRECTIONS

- There should be investment on technology and infrastructure in Nepal along with collaboration with academia, research institutions and pharmaceutical industries.
- Raw material standardization of Ayurveda and herbal products should be done. The quality analysis of the materials should include microbiological, chemical, physical and phytochemicals tests as well.
- Formation of National medicinal plant board is necessary in Nepal to regulate and assure the quality of herbal medicines
- Existing pharmaceutical policies, regulatory framework and infrastructures are outdated and must be reformulated to address the current scenarios.

CONCLUSION

The moderator, Mr. Mehmood Anwar summarized the discussion and handed the session back to the chair. The chair requested the Executive Chief of NHRC, Dr. Pradip Gyanwalli for his few words. Dr. Gyanwali thanked the chair, panelists, moderator and speakers of the session for their contribution in successful completion of the session. He outlined the potentiality and scope of drug development, clinical trials, vaccine development and preclinical studies in Nepal and informed about the guidelines that are being drafted for this. He also underlined the need for additional discussion with different pharmaceuticals' in future consultative meetings.

Prof. Dr. Panna Thapa, the session's chair, highlighted the main points raised during the discussion. He concluded the session by stating that we are back in tertiary care practice and that there is a need for a multidisciplinary conversation on the subject.

Parallel Session VII: Maternal, Neonatal and Child Health

The session was jointly chaired by **Dr. Mahesh Puri**, Co-Director of Center of Research on Environment Health and Population Activities (CREHPA) and **Prof. Dr. Rita Thapa**, Founding Chairperson, Bhaskar Tejshree Memorial Foundation. A total of 7 papers related to Maternal, Neonatal and Child Health were presented in the session. The presentations were followed by a discussion. Following are the presented topics along with the respective presenters:

Topic	Presenters
Investing in Quality Newborn Health for Nepal-A closer look at low cost high impact interventions (Invited Talk)	Dr. Asherber Gym/ Matthew Reeves
Preterm Care Practice in Neonatal Care Units of Selected Hospitals of Nepal (Invited Talk)	Tumla Shrestha
Skin carotenoid assessment to detect vitamin A deficiency in children and pregnant women in Nepal	Raba Thapa
Maternal and Newborn Health Emergency Helpline Support: Assisting MNH service providers from remote areas to make clinical decision during COVID-19	Sajana Maharjan
Prevalence and correlates of excessive screen time among Young Children of 5 to 9 years in an urban area of Nepal: Evidence from a cross-sectional analytical study	Bimala Sharma
Impact of federalization in maintaining quality of maternal and neonatal care in Nepalese health system	Pasang D Tamang
Association between Media Exposure and Maternal Health Outcomes in Nepal: Further Analysis of Multiple Indicator Cluster Survey 2019	Shreeman Sharma

The first two presentations were presented as invited talks. The session started with the presentation of Dr. Asherber Gym and Matthew Reeves on **“Investing in Quality Newborn Health for Nepal-A closer look at low cost high impact interventions”**. First of all, Dr. Gym thanked NHRC for selecting health system research as the topic for discussion. Then he highlighted the status of child as well as newborn mortality in Nepal and the progress made by Nepal in the reduction of child mortality. According to Dr. Gym, if Nepal continues to progress as it is then Nepal will achieve the targets set out by Sustainable Development Goals (SDGs) by 2030. Dr. Gym shared the background, rationale and objective of the study. According to him, the present study was commissioned by the UNICEF Regional Office for South Asia on Investment cases for child health focusing on the key contributors or the key interventions to support child mortality in collaboration with regional and country offices. The aim of this study was to identify what would be the cost of investing in interventions to achieve the SDGs targets. Then Dr. Matthew Reeves, one of the researchers of the study, presented the overall study.

KEY POINTS

- As per the UN estimates, about 5 million children had died under 5 years globally in 2020 of which half died during the newborn period. Neonatal mortality is the major contributor of child mortality. In Nepal, 60% of child mortality is newborn mortality; the majority dying during 7 days of life.
- There is a significant reduction in child mortality in Nepal from the past few years and Nepal is on target to achieve the targets set out by the Sustainable Development Goals. To achieve the targets, Nepal is focused on investing on key interventions to reduce child mortality

- The Live Save Tool for modeling costs was used as an economic modeling approach for the study. Overall improvement in service coverage was modeled rather than any particular strategy for delivering those services.
- There are very high economic investments from Nepal. In each country in south Asia including Nepal there is a very high economic return on investment for investing in newborn health. In Nepal, for every dollar invested in neonatal health there is a 6 \$ economic return which is a very good investment. The costs are slightly higher because of the remote population, terrain difficulties and Nepal's GDP per capita is relatively low. Similarly, it would cost about 260 million US\$ to meet the neonatal mortality targets of SDG over 10 years for Nepal. This indicates a very small investment for very big gains. This is because the government or a community is willing to invest to save the life of newborns.
- The largest gains and the most strategic areas to invest in neonatal health are in quality labour and delivery management, neonatal resuscitation, full supportive care for premature babies, full supportive care for neonatal sepsis/pneumonia, chlorhexidine and multiple micronutrient supplementation

FUTURE DIRECTIONS

- For the short term, countries need to focus on ensuring service continuously.
- For the longer term, countries have to focus on strategic scale-up of high-impact interventions, with a focus on quality of services.

The second presentation for the session was delivered by **Ms. Tumla Shrestha** on the topic “**Preterm Care Practice in Neonatal Care Units of Selected Hospitals of Nepal**” with an aim to explore the PTI care practice of nurses in NCUs as limited information is available about the care practices in Nepalese context. This study used a mixed-method study design of which a qualitative study was a part. Ms. Tumla presented the findings of qualitative study. This study was conducted in the NCUs of three public hospitals in Kathmandu among purposively selected 40 NCU nurses. Data were analyzed using thematic analysis.

KEY POINTS

- Neonatal mortality is still a problem in Nepal and preterm and low birth weight is the leading causes of neonatal mortality.
- The prevalence of preterm birth is 9.3% slightly lower than global; however, it is an increasing trend.
- Survival and positive developmental outcome is the most important agenda to achieve the SDG to reduce child and neonatal mortality that requires meticulous care and treatment involving their parents.
- Preterm infant care in NCU is a collaborative and team effort, and nurses are the main cadre for quality of care. However, their care is influenced by various factors.
- Exploration of infant care practice of nurses has derived five themes; 1) Standard Survival Care (thermal care, safe oxygen administration, nutritional care including breast milk feeding and infection prevention); 2) Sub-standard developmental supportive care practice (proper positioning, sleep promotion, supportive sensory environment, and pain management), 3) Insufficient parental support (infant-parent attachment, communication, emotional support and

care guidance), 4) Insufficient human and materialistic resources and 5) Inadequate professional development opportunities.

- Although there was good practice of thermal care and intermittent Kangaroo Mother Care (KMC), there was limited practice regarding continued KMC especially there was lack of dedicated space and KMC bed. Nutritional and breastfeeding practice was according to WHO and national guidelines. However, there was a challenge in exclusive breastfeeding due to lack of milk banks. Variation and inadequate practice of developmental supportive care were found related to inadequate awareness as well as lack of resources. There was compromised practice in some developmental supportive care components and parental supports.
- The practice was influenced by the available infrastructure, essential resources including human resources and availability of related training.

FUTURE DIRECTIONS

- The findings might be useful to strengthen the existing preterm infant care practice in neonatal care units.

The third presentation was on the topic "**Skin carotenoid assessment to detect vitamin A deficiency in children and pregnant women in Nepal**" presented by **Dr. Raba Thapa**. The objective of the study was to assess the skin carotenoid score as a non-invasive biomarker for VAD in children and pregnant women in Nepal. A comparative cross-sectional study was conducted in public hospitals of three ecological regions of Nepal.

KEY POINTS

- Vitamin A deficiency is a continuing public health problem among children and pregnant women in Nepal. Vitamin A deficiency is associated with various morbidities and mortality
- Routine screening for Vitamin A deficiency is not available in our country and laboratory tests are also very high. Moreover, samples need to be sent to the foreign countries which delay the treatment.
- Veggie meter was used to assess skin carotenoid levels. Detailed eye evaluations were conducted in subjects with low skin carotenoid scores and those with night blindness
- The findings of the study showed a very good correlation of skin carotenoid with the serum carotenoid and also the skin carotenoid with serum retinol both in children and pregnant women.
- In pregnancy, the veggie meter was found to be sensitive in detecting severe vitamin A deficiency.

FUTURE DIRECTIONS

- Skin carotenoid assessment using portable non-invasive technique could be a biomarker for screening of very high risk people, especially pregnant women and children.
- Awareness program, continuity of Vitamin A program in high risk children could be helpful in addressing the issue of Vitamin A deficiency among pregnant women and children in countries like Nepal.

Fourth presentation of the session was delivered by **Ms. Sajana Maharjan** on the title "**Maternal and Newborn Health (MNH) Emergency Helpline Support**". The objectives of the study were to assess the effectiveness and feasibility of this MNH helpline program using REAIM framework. A mixed method was conducted in 14 district and 551 birthing centers of Nepal.

KEY POINTS

- The COVID 19 lockdown interrupted many of the regular health services.
- The Family Welfare Division (FWD) developed “Interim Guidance for Reproductive Maternal, Newborn and Child Health (RMNCH) services in COVID 19 pandemic”, highlighting the use of telephone consultation as one of the strategies for providing services.
- Aligning with the government strategy, OHW developed a MNH emergency helpline to support MNH service providers working in remote districts of Nepal.
- The MNH service providers can seek clinical advice from experts (MDGP/gynecologists) in case of emergency while providing ANC, delivery or PNC services so that they can better manage the case or refer patients in a timely manner.
- Guidelines for using the helpline developed and oriented to all MNH service providers and experts.
- Strengthen the referral system by providing the flex in all birthing centers containing contact details of vehicle/ambulance, referral center and concerned stakeholders to service seekers.
- The project was carried out in 14 districts in 551 birthing centers.
- REAIM framework was used for the study. The findings were as pregnancies reached 29%, case managed within HF 21%, decrease in referrals 24%, HF using MNH helpline 29%, challenges of under reporting 42% (calls not responded by experts, only ask to refer, network problem, lack of essential drugs and lack of competency of HWs) and OHW direct program cost per case consulted as NRs. 2048 (\$20).
- The majority of consulted cases using the helpline were for delivery (56.4%) and ANC (28%).
- The most used transport for the referral was ambulance, hired vehicle, public vehicle and helicopter.
- Implementation challenges faced from a program perspective were coordination with referral centers, under reporting by OHW districts staff due to busy schedules, very few reporting by experts and changes in district hospital experts.

FUTURE DIRECTIONS

- The clinical decisions made through experts’ consultations and timely referral through the MNH helpline can help improve maternal and neonatal health outcomes in rural Nepal.
- The program should be scaled up at national level with engagement of provincial level stakeholders, by strengthening the pool of experts, improving readiness of HFs and maintaining strong linkages between health facilities and referral centers.
- MNH helpline program orientation should be done every year since staff get transferred or some staff might have missed previous orientation

Dr. Bimala Sharma presented on topic “**Prevalence and correlated of excessive screen time among young children of 5 to 9 years in an urban area of Nepal: evidence from a cross-sectional analytical study**” which aimed to find out the prevalence and correlation of excessive screen time among young children aged 5 to 9 years in Pokhara Metropolitan city of Kaski district, Nepal conducted a quantitative cross-sectional study that included a face-to-face interview with one of each child's parents.

KEY POINTS

- Exposure to different types of screen is common among children
- There were 352 participants among which 190 were boys and 162 were girls participants in the study.
- Almost half of children had screening time of more than 2 hours, spending watching TV, playing video games, watching video or other applications on a mobile device on a usual school day and weekend day.
- Boys, older children, and children from joint families were more likely to report excessive screening time.
- Being TV at home, excessive ST of parents, parental offering of screening device to make children eat and to have free time for themselves had increased likelihood of reporting excessive ST among children

FUTURE DIRECTIONS

- There is a need for an intervention program that aims to reduce children's screen time and should involve parents to create a supportive environment with reduced accessibility to screen devices and parental screen time as well.

Dr. Pasang D Tamang, a post-graduate researcher at University of Huddersfield, presented the “**Impact of federalization in maintaining quality of maternal and neonatal care in Nepalese health system**”. This study aimed to explore the impact of federalization in maintaining quality of maternal and neonatal care in Nepalese Health System through a descriptive cross-sectional study.

KEY POINTS

- Even though Nepal has prioritized women's health and child health, they are still dying in staggering numbers before, during and after childbirth due to preventable causes, putting us quite far behind the sustainable development goal target.
- Nepal has moved from a unitary country to a federal structure. Despite that there has been lots of improvement in maternal and newborn health, the development of the change in health system has impacted the delivery of healthcare at all levels of health facilities.
- Federalization has brought many challenges as well as opportunities in maintaining the quality of maternal and neonatal health in Nepal.
- The impact of federalization includes improved health worker's availability, less waiting time, fixed opening time, and better communication and information availability.
- Some challenges include health system readiness, lack of training, demotivated health workers, difficulty in budget allocation, confusion in level of coordination, need for policy revision based on the local context and lack of political commitment.
- Some opportunities include quick decision making, local level focused planning, health worker availability, coordination and political commitment.

Future direction

- There is a need for policy revision based on local context and health facility readiness in the new health system structure.
- Further research is needed to explore the strategies that can tackle the implementation challenges.

Mr. Shreeman Sharma presented on the topic **Association between Media Exposure and Maternal Health Outcome in Nepal: Further Analysis in Multiple Indicator Cluster Survey 2019**. This study aimed to compare the social-determinants, risk behaviors and service utilization among women using media and women not using media in Nepal based on secondary data of MICS survey of 2019.

KEY POINTS

- There have been many literatures worldwide that give information about the influences of the media and its access and use by women. However, limited literature is available to establish association between use of media and women's health outcomes including maternal health.
- Media use was higher among younger women, women from urban, educated groups and women with rich quintiles compared to their reference group.
- Media use is associated with risky behavior like smoking and alcohol consumption.
- Use of media by women was positively associated with utilization of maternal healthcare services such as place of delivery of the last child, menstrual hygiene management, use of family planning methods and knowledge on HIV and its testing.
- Media exposure can aid women in accessing healthcare services in bringing positive health outcomes in low resource settings such as Nepal.
- Media use is not absolute. The use of media is influenced by many factors. Factors affecting media use are such as ownership, access and control over media content and media devices.

FUTURE DIRECTIONS

- Health communication is vital for educating women for changing their behavior and increasing service utilization. So, this study recommends conducting further studies that may further contribute to better understanding.

DISCUSSION

After the presentation, Dr. Mahesh Puri, Chair of the session thanked all the presenters for informative presentations. Dr. Rita Thapa congratulated all the presenters for bringing the most relevant research-based issues which are critical to the theme of the summit. Then there was a question-and-answer session and suggestions from the participants. Few questions raised by the participants were regarding the rationale and implication of study on skin carotenoid assessment as Vitamin A supplementation has been a core program of Nepal for many years. Similarly, participants suggested the presenter come up with a patient/user perspective on the effectiveness of interventions as the focus of current health services is patient-centered. They also suggested presenters for scaling up the cost effectiveness of any intervention in order to improve maternal and newborn health.

Parallel Session VIII: Interdisciplinary Research and Miscellaneous

The session was jointly chaired by **Prof. Dr. Shiba Kumar Rai and Dr. Lochan Karki**. There were 3 invited talks and four papers were presented in the session related to **Interdisciplinary Research**. Following are the presented topics with their respective presenters:

Topics	Presenter
Social Media and Surgeon (Invited Talks)	Professor Dr. Ramesh Singh Bhandari
Satisfaction among women of reproductive age (18-49 years) receiving family planning services from private health facilities in Nepal (Invited Talk)	Mr. Pratik Khanal
Awareness on rights related to Menstrual Hygiene Management (MHM) and its relation with their perception on risk, self-efficacy, and behavior pertinent to MHM among female adolescent students in selected public schools of Bajura District, Nepal (Invited Talks)	Mr. Ram Naresh Yadav
Trend and Determinants of Birth Registration in Nepal: Evidence from Multiple Indicator Cluster Survey	Sharad Kumar Sharma
Economic impact of COVID-19 pandemic on the lives of persons with disabilities in Gorkha district of Nepal	Alisha Karki
Blood, Bleeding and Beliefs: An ethnographic echo of purity versus pollution during the menstrual practices in cross cultural communities of Nepal	Sachin Ghimire
Quality of family planning services and protection from Sexually Transmitted Infections and HIV/AIDS in Nepal	Milima Dangol

The session began with the presentation of an invited guest, Professor Dr. Ramesh Singh Bhandari, on “Social Media and Surgeon”. His presentation was focused on Social Media which played a unique and powerful role in information propagation, mentorship, networking, and research dissemination. He had also put views regarding what the surgeons can do on Social Media.

KEY POINTS OF THE PRESENTATION

- Educational opportunities of social media are endless.
- Surgeons should also learn how to use novel communication technology to advance the field and further professional and public interactions.
- Social media for young surgeons which make it easier for junior surgeons or underrepresented groups to create a voice for themselves and make their expertise and contributions known.

FUTURE DIRECTIONS

- Surgeons should not keep themselves away from social media, understand its massive potential, embrace the advances and try to take the most advantage of it. However, at the same time they should also understand the limits and drawbacks of using social media.
- The rational use of these social media will definitely help in personal and professional development of any surgeon.
- At Surgical institution and societies level, Telemedicine and Tele-mentoring should be used in this era of internet.

Second presentation of the session was delivered by Mr. Pratik Khanal, on the topic “Satisfaction among women of reproductive age (18-49 years) receiving family planning services from private health facilities in Nepal”. The main objectives of his study was to measure clients’ satisfaction with service (appointment convenience, privacy, and confidentiality, attitude of staff, attention given to treatment) provided at health facilities and assess overall client satisfaction (clients’ future intention to visit the health facility, recommend the facility to others, and experiences meeting expectations) and also to identify the barriers faced by women of reproductive age in accessing family planning services during the COVID-19 pandemic.

KEY POINTS OF THE PRESENTATION

- Almost 90% of participants consulted on using the Family Planning (FP) methods, advantages and disadvantages of methods.
- Providers promoted the use of condom in addition to method of choice are less than 50%.
- Almost all the health facility staff treated the service users with respect.
- Among FP service users, less than half had knowledge about legality of abortion in Nepal.
- Overall satisfaction of clients regarding FP services was satisfied (58%).

FUTURE DIRECTIONS

- A more focus on improving the FP service delivery such as client-provider communication, audio-visual privacy during counseling, and mutual respect, and promotion of condom in addition to method of choice should be recommended.
- Programmatic interventions such as improving client experience of care and addressing waiting time concerns in the facility and improving access to FP during COVID-19 restrictions should be warranted.
- Awareness of the legality of safe abortion among women of reproductive age should also be emphasized.

Third invited talk for the session was given by Mr. Ram Naresh Yadav. Title of presentation was, “Awareness on rights related to Menstrual Hygiene Management (MHM) and its relation with their perception on risk, self-efficacy, and behavior pertinent to MHM among female adolescent students in selected public schools of Bajura District, Nepal” He highlighted his findings on major health issue affecting women and girls of reproductive age.

KEY POINTS OF THE PRESENTATION

- The majority of the girls no longer believe that negative consequences would follow when one deviates from the menstrual restriction.
- Socio-cultural norms defining school as a sacred place and thus restricting menstruating females (e.g. student, teacher) from attending the school have become primarily invalidated.
- The findings from qualitative study depicts that the practice related to menstruation is changing in recent days. However, the malpractices and misconceptions related to menstruation were still widely prevalent.
- Among multiple determinants of adolescent performing menstrual practices, fear of adverse outcomes when they deviate from the cultural practice and internalized menstrual stigma seem critical.
- Despite all promising findings, it shall be kept in mind that only one girl who participated in the study said she is free from menstrual restrictions.

- Many other girls are still forced to follow different types of menstrual restrictions, including the restrictions of going to school and staying in Chhaugoth during the period.

FUTURE DIRECTIONS

- BCC (Behavior Change Communication) and belief model related interventions are required to make adolescent girls enable to practice hygienic behaviors related to menstruation.
- The intervention should properly advocate and collaborate at the governmental level to take appropriate measures for the proper implementation of the laws and policies.
- Actions and activities to create a favorable environment to manage menstruation need to be increased.

Fourth presentation of the session was delivered by Dr. Sharad Kumar Sharma on the title “Trend and Determinant of Birth Registration in Nepal: Evidence from Nepal Multiple Indicator Cluster Survey”. His presentation covered the comparison of birth registration rate of 2014 and 2019 with age, household wealth index, ethnicity, and by province. He stressed to expand birth registration services to birthing centers and to integrate with maternal and newborn health care.

KEY POINTS OF THE PRESENTATION

- Birth registration coverage increased from 58% in 2014 to 77% in 2019. Odds of birth registration were 1.3 times higher in 2019.
- Birth registration coverage increased with age of child i.e., school going children were more likely to be registered. Odds of birth registration among the children aged 48-59 months were 7.3 times higher than children below one year.
- Poorest households were less likely to register the birth of a child but there is not much variation of birth registration according to the household wealth index.
- There was an increase in birth registration according to ethnicity from 2014 and 2019. However, Dalit are more likely to be registered.
- Level of birth registration and change in birth registration coverage varied according to province. Karnali has the highest level of birth registration whereas, Sudurpaschim has the lowest.
- Mother/caretaker with higher level of education were 1.4 times more likely to register the birth of their child compared with no education.

FUTURE DIRECTIONS

- Expand birth registration services to birthing centers and integrate it with maternal and newborn health care.
- Compulsory free education up to secondary for women's empowerment and autonomy.
- Need to conduct a public awareness campaign through radio about provision, process and importance of birth registration in the local language.
- Need of implementation of targeted intervention on birth registration particularly among Janajati, Muslim and other disadvantage groups.
- Establishment of birth registration monitoring system by integrating it in health information management system needs to be upgraded in future.
- There is an urge to amend existing law to remove current barriers associated with birth registration: fee, permanent residence, need of parent citizenship, fingerprint and signature.

The fifth presentation of the session was delivered by Ms. Alisha Karki on the topic “Economic impact of the COVID-19 pandemic on the lives of persons with Disabilities in Gorkha districts, Nepal”. The aim of her presentation was to examine the economic impact of the COVID-19 pandemic on the lives of Persons with Disabilities (PWDs) in Gorkha district of Nepal and also to explore the economic hardships faced by PWDs and seek to produce evidence on how their economic condition has been impacted by the pandemic.

KEY POINTS OF THE PRESENTATION

- The pandemic negatively affected the economic activities of persons with Disabilities.
- Majority of people with disabilities had problems accessing the food from relief packages.
- Financial hardship among the people with disability increased from 64% in 2019 to 72 % in 2021. Similarly, few of the participants who depend on the disability allowances provided by the government were irregular.
- There was reduction or loss of source of income due to COVID-19.
- There was financial hardship because of the increase in price of essential amenities.

FUTURE DIRECTIONS

- There is a need for specific assistance in the areas of income loss and employment opportunities of PWDs.
- Develop the strategies and introduce training and employment opportunities to improve the quality of life of PWDs.
- Address economic insecurities faced by PWDs and plan disability- inclusive measures for pandemics and future emergency preparedness.

The fifth presenter Dr. Sachin Ghimire presented his study titled “Blood, Bleeding and Beliefs: An ethnographic echo of purity versus pollution during the menstrual practices in Nepal”. The study adopted a peer ethnography method capturing existing experiences of MHM (menstrual hygiene myths) in 12 districts of Nepal. It was seen that his study was influenced by a material-discursive intrapsychic approach.

KEY POINTS OF THE PRESENTATION

- Although government has launched various programs and health policies to promote sexual and reproductive health of adolescents at the national level, they have given less attention to menstrual hygiene myths (MHM).
- The empirical reality on the topic such as celebration and seclusion, purity and pollution, restrictions and mobility, cultural fear and body comfort, public gaze and revolt were discussed.
- The level of knowledge, sociocultural practices, perceived stigma and discrimination; perceptions and role of the key influencers in the society in relation to existing practices of menstrual health and hygiene management in Nepal were main discussion of this presentation.

FUTURE DIRECTIONS

- The critical menstrual study should be practiced which includes incorporation of multidimensional trans-disciplinary approach.
- This will ultimately help to bring changes in health policies and its transformation in future.

QUESTION/ ANSWER TO THE PRESENTER

First question was raised by Dr. L.B Basnet to Dr. Sachin Ghimire on how relevant was it to say that the problem of menstrual hygiene myth is only of remote areas and not of urban setting. Dr. Ghimire responded that there is an issue of availability and affordability of menstrual hygiene in the remote areas and not in urban areas. The more we go up to higher status families there will be more rigidity in their attitude making the methodology of the study difficult, hence, it was relevant to confirm that the problem of MHM was in remote areas and not in urban settings.

Second question was raised by Dr. Sushil Chandra Baral to Dr. Sushil Gimire on what were the practical difficulties faced by the team while conducting peer ethnography. Dr. Ghimire stated that as the age group for the study was 14-18 yrs.; it was difficult to make them understand the objective of the study and also there was lack of support from certain peer ethnographers.

The last presenter Mrs. Milima Dangol presented her study titled “Quality of family planning services and protection from Sexually Transmitted infections (STI) and HIV/AIDS in Nepal”. Objective of her study was to assess the quality of family planning services through client’s overall satisfaction with family planning services and client’s knowledge of whether their chosen method protected them from STI, including HIV/AIDS.

KEY POINTS OF THE PRESENTATION

- More than half of the respondents (52.8%) were very satisfied with the family planning services they received, but only 32.3% had correct knowledge of whether their method protects from STIs.
- Participants of older age 40-59 years, with high education levels, clients who do not need to pay fees, and clients who left the facility with a family planning method were very satisfied compared to their respective reference categories.
- Clients who received family planning services from Medical officers and Specialists were more satisfied than those who received services from nurses and paramedics.

FUTURE DIRECTIONS

- Women lack knowledge about protection from STIs through their choice of family planning methods so, more awareness programs regarding this should be addressed.
- Improvement is needed in raising awareness about quality of care in family planning services to satisfy half of the clients using the services and to attract the non-users.

QUESTION/ ANSWER TO THE PRESENTER

Dr. Sushil ChandaraBaralrose a question to Mrs. MilimaDangol on how reliable were the measures of satisfaction level of the client in this study. To this she responded that most of the clients tend to be satisfied by the services they received.

CLOSING SESSION

The closing session was facilitated by Dr Meghnath Dhimal, Chief Resarch Officer of NHRC. Before the formal closing session, MrigendraSamjhana Medical Trust oration was given by Prof. Dr Rita Thapa on the topic “**The Health Paradigm Shift**”. She highlighted key Paradoxes

Despite significant improvement in our health care system, & 58% attended births, women continue to give birth at roadsides, and hospitals are vandalized

Health staff, despite facing burnout and stress, are still blamed and shamed by the public.

A typical citizen's socio-economic and political freedom of expression has changed for the better, yet our health system has not changed in tandem. There is a discrepancy between the upward trajectory of society and its health care system. These paradoxes resonate not only with the theme of this Summit, but also heralds that HEALTH should become a shared responsibility of every development sector, including that of citizens themselves.

Despite an increase in public and private expenditures providing advanced medical care including subsidy to NCD patients, the NCDs are still rising as the largest premature killers contributing to 71% of all deaths in Nepal

Healthy behaviors are the best medicine. Admittedly, habits are difficult to change, yet this original groundbreaking published research shows reduction in the five mortality-associated NCDs risk behaviors among school adolescents.

The three core pillars of this paradigm shift are:

- a) use of proven integrative interventions such as the BISHES Action Tool;
- b) applying the art and science of transmitting knowledge experientially to empower adolescents to avoid the 5 deadly risks; and
- c) enthusiastic community participation and support from local leaderships-mayors, school and health authorities, teachers, and students and inter linkages among themselves & BTMF.

In the formal closing session of the summit, following distinguished delegates represented the Dias.

1. Prof. Dr. Gehanath Baral, Chairperson, NHRC
2. Dr. Shyam Sundar Yadav, Chief Specialist, Ministry of Health and Population, Nepal
3. Prof. Dr. Mrigendra Raj Pandey, Honorary Chairperson, NHRC
4. Prof. Dr. Bhagwan Koirala, Member, Executive Committee, NHRC and Chairperson, Nepal Medical Council
5. Prof. Dr. Bandana Khanal, Member, Executive Committee, NHRC
6. Dr. Pradip Gyanwali, Member secretary and Executive Chief, NHRC

On behalf of NHRC, Member secretary Executive chief, **Dr. Pradip Gyanwali** thanked all the participants and collaborative partners for the success of the summit. He accepted that there were certain shortcomings during the commencement of the summit. He also cleared about false news that has been circulated and emphasized that NHRC has been collaborating with MOHP for improving health, policy and research. He focused on the importance of health and research journalism and also announced that awards will be provided for health research journalists for their effort to raise awareness on research and its importance. He also promised to make policy briefs on topics that were raised after the national summit.

Prof. Dr. Bhagwan Koirala during the closing session explained about the selection criteria for different awards of the summit. He said that research culture has been taken as a compulsion for academic accomplishment so he stressed that research culture should be developed from national level as well. He explained that scoring for the awards were done on the basis of type of publications, type of authors and reviews. He thanked the NHRC team for giving him the opportunity for the award selection.

Award Ceremony

The awards in the summit were presented in the following categories

Award	Awardees Name
Mrigendra Samjhana Medical Trust Oration Award	Dr. Rita Thapa
Best Employee of NHRC	Mr. Ajay Kumar Lal Karna
Best Section Award of NHRC	Ethical Review Monitoring and Evaluation Section
Best Research Paper Award	Dr. Guna Raj Dhungana
Young Health Research Award (Non-clinical)	Mr. Achyut Raj Pandey
Mrigendra Samjhana Medical Trust Young Health Research Award (Medical Doctor)	Dr. Apeksha Niraula
Mrigendra Samjhana Medical Trust Young Health Research Award (NHRC Staff)	Mr. Anil Poudyal
Health Researcher Award	Dr. Saruna Ghimire
Best Research Paper, Poster Presentation	Ms. Soniya Shrestha
Best Research Paper, Oral Presentation	Dr. Raba Thapa
Health Research Life-Time Achievement Award	Prof. Dr. Madan Prasad Upadhyaya

Prof Dr. Mrigendra Raj Pandey highly appreciated the summit and expressed his congratulations to NHRC for its grand success. He thanked all the respective personalities and said that the program was so wonderful. It was much nicer than the past 3 years but there were some mistakes also so identify those mistakes and try to improve those mistakes in upcoming days. He emphasized that we must work together in the field of research to improve the health of the people. He mentioned that we all had done fantastic jobs and that we needed to do even more in the future so don't be satisfied with this and go-ahead for the upcoming days

Prof. Dr. Bandana Khanal expressed her appreciation for the summit and expressed her vote of thanks on behalf of all NHRC board members and family. She acknowledged the valuable presence of honorable chief guests and all other special guests from various sectors, organizing team, and participants for the summit's huge success. She also stated that she anticipates receiving the same level of support from all collaborators in the future.

Dr. Shyam Sundar Yadav, Nepal's Chief Specialist for the Ministry of Health and Population, praised the summit's great success and congratulated the NHRC and all participants and researchers. Every MOHP plan and activity, in his opinion, should be evidence-based. He highlighted the importance of research in the generation of evidence. He also emphasized that research or evidence must be of high quality which reflects the truth, and be developed with all corners of the country in mind. According to him, to improve Nepal's health and health-care system, one must have a long-term vision. While the number of NCDS continues to rise, he believes, it is critical to adjust your behavior for the sake of your own health and that of your family, because prevention is better than treatment, and it is everyone's responsibility to preserve their health.

Closing Remarks

Prof. Dr. Gehnath Baral expressed his thanks to all the participants in this 3-days summit. He explained the importance of research and also highlighted that language should not be an obstacle for conducting research. He mentioned that the objectives of NHRC were to encourage the new researchers, regulate and evaluate research works, conduct research, and submit to MOHP and different stakeholders, but our main objectives were to develop the new researchers and develop the culture for research. He also clarified that there may be some mistakes from our side also because we all are learners and students of research, research is done to generate new knowledge and we shouldn't think as a teacher we should always think as a student to conduct research. He also focused that research is the shared responsibility of all the stakeholders not only for the NHRC and research is not for the research itself it should be for the people, society, and community. He mentioned that we should conduct research in our settings and generate new evidence to improve people's health. Research is a gradual process and it should never stop. In the end, he thanked all the guests, dignitaries, delegates, national and international participants, participants who were from the zoom platform and who were present physically. He also thanked all the participants and also invited them to all in next year's summit.

The session was facilitated by Dr. Meghnath Dhimal. He summarized the whole session and read out the Declaration of Summit with detailed explanation. He also announced that at least five policy briefs will be prepared based on the major findings of the summit. He thanked and congratulated all the guests, participants and members for the success of the summit.

Declaration of Eighth National Summit

The Eighth National Summit of Health and Population Scientists addresses the discipline of advancing health policy and system research to improve the health outcomes for a resilient health system in Nepal. With the unprecedented global health crisis following the COVID-19 pandemic, the importance of scientific research and evidence generation have augmented, and this adds to the need for a resilient health care system. Strengthening preparedness and developing resilience is prerequisite to safeguard the health care needs of people.

In this context, we all delegates, representing the Ministry of Health and Population (MoHP), Nepal Health Research Council (NHRC), professional councils and associations, academic institutions, bilateral and multilateral agencies, private sectors, and individual scholars, as the shared responsibility collectively commit to the following declarations:

1. Facilitation in policy-making through scientific health research and evidence that strengthens adaptive, absorptive and transformative capacities in federal context.
2. Foster synergies in the domain of health to link research, academia and industries that boosts research uptake.
3. Promote biomedical, epidemiological, and clinical research by coordination with various stakeholders for effective adoption of clinical based evidence in health policies and programs.
4. Collaborate, consolidate, and catalyze a multidimensional approach to implementation research for better public health outcomes.
5. Acknowledge and plan for potential threat of climate change, natural disaster and emerging infectious diseases by gathering information that supports analysis through new technologies.
6. Address the changing pattern of non-communicable diseases and its burden by promoting early prevention, risk reduction, diagnosis, and management.
7. Leverage research strategies and promote mutual reinforcement between pharmaceutical sectors to improve the quality of medicines.
8. Reinforce maternal, neonatal, and child health programs by underlying the importance of multilateral efforts to reduce mortality.
9. Protect health rights of vulnerable population through gender equity and justice utilizing research data and policy.

Snaps from the Summit

















Organized by:
Government of Nepal
Nepal Health Research Council (NHRC)



In Collaboration with:



Nepal Health Research Council (NHRC)

P.O. Box: 7626, Ramshah Path, Kathmandu, Nepal

Tel : +977 | 4254220

Fax : +977 | 4262469

E-mail : nhrc@nhrc.gov.np

Website : www.nhrc.gov.np