

Medical Education Center for Research, Innovation and Training



8th ICMH 2024



International Conference on Medical & Health Sciences

Transforming Health System: Evidence
based, Equity, Excellence and Resilience

11th - 13th April, 2024

Terma Linca Resort & Spa
Babesa-Thimphu Expressway
Thimphu-11001, Bhutan



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Khesar Gyalpo University of Medical Sciences of Bhutan

8th ICMH 2024

BOOK OF ABSTRACTS

Table of Contents

Foreword	4
Message from the President	4
Day 1 — Inaugural Ceremony	5
SESSION 1: Registration of participants	5
SESSION 2: Arrival of Guests	5
SESSION 3: Arrival of Chief Guest - H.E Health Minister	5
SESSION 4: Marching Ceremony & Chanting of University Song	5
SESSION 5: Welcome address - Dr. Kinzang P. Tshering, President, KGUMSB	5
SESSION 6: Keynote address - Dr. Bhupinder Kaur Aulakh, WR, WHO Country Office, Bhutan	5
SESSION 7: Address - Dr. N. Krishna Reddy, CEO, Access Health International	5
SESSION 8: Address - Dr. Vijeta Tiwari, Access Lead, Asia, Global Health Unit	5
SESSION 9: Release of (8th ICMH 2024) Abstract Booklet by Hon'ble Chief Guest	5
SESSION 10: Address - Lyonpo Tandin Wangchuk, Hon'ble Chief Guest	5
SESSION 11: Vote of Thanks - Mr. Rixin Jamtsho, Director, MECRIT, KGUMSB	5
Day 1 — Symposium on Reimagining NCD care in Bhutan	6
SESSION 1: Understanding the NCD Landscape with special focus on Hypertension & Diabetes: Bhutan's Twin Challenge	6
1.1: Epidemiological trends (<i>an overview of the prevalence and challenges</i>), determinants and challenges in Bhutan	6
SESSION 2: Screening and Early Detection - Path to Prevention	6
2.1: Importance of early detection and the latest advancements in diagnostic techniques for hypertension and diabetes	6
SESSION 3: Clinical and Community Approaches for NCD Management	6
3.1: Integrating global best practices with Bhutan's unique socio-cultural setting for managing hypertension and diabetes	6
3.2: Closing remarks and Roadmap for priority setting in Bhutan and future course of action	6
Day 1 — Symposium on Antimicrobial Resistance (AMR)	8
SESSION 1: Tackling AMR in Human Health	8
SESSION 2: Addressing AMR Challenges in Animal Health	8
SESSION 3: AMR Impact on Food Safety	8
SESSION 4: Tackling the Silent Pandemic through AMS and Infection Control Strategies	8
SESSION 5: National AMR Program and Initiatives	8
SESSION 6: AMR Panel Discussions	8
Day 2 — Scientific sessions	10
SUB-THEME 1: Rethinking better management of the Emerging Infectious Diseases (EIDs) and Antimicrobial Resistance (AMR)	10
1.0: Invited Speaker for Sub-Theme 1	10
1.1: Preparedness towards Zero Rabies Deaths by 2030 in Bhutan: a narrative review	10
1.2: Prevalence of Respiratory Syncytial Virus among hospitalized Severe Acute Respiratory Infection patients in Bhutan - quantitative study	10
1.3: Prevalence and risk factor of Helicobacter pylori Infection in Asymptomatic Children aged five years and below in Bhutan	10
SUB-THEME 2: Non-Communicable Diseases (NCDs)	10
2.0: Invited Speaker for Sub-Theme 2	10
2.1: Comparison of Laboratory and Non-Laboratory-based 2019 World Health Organization CVD Risk Charts in the Bhutanese Population	10
2.2: Obesity Worsens Insulin Resistance and Inflammation in Type 2 Diabetes Mellitus	10
2.3: Bio-social Determinants of Metabolic Syndrome among Adult Women of Diverse Geo-climatic Setup of West Bengal, India	10
2.4: Comparing Ultrasound Guided Bilateral Erector Spinae Plane Block with the Intrathecal Fentanyl for Post Operative Analgesia after Lower Segment Caesarean Section	10
SUB-THEME 3: Wellbeing and Mental Health Resilience	10
3.0: Invited Speaker for Sub-Theme 3	10
3.1: Social Environmental Factors of Psychological Distress among Adolescent Students in Indonesia	10

3.2: Quality of Life and Wellbeing: Correlation with Adverse Childhood Experiences among People Living with HIV in Bhutan	10
3.3: The Prevalence and Factors Associated with Loneliness in Bhutan	10
SUB-THEME 4: Health Financing	10
4.0: Invited Speaker for Sub-Theme 4	10
4.1: SUniversal Health Coverage, Health Financing, Revenue Risking, Risk Pooling, Strategic Purchasing, Efficiency, Quality of Care	10
4.2: Improving Sustainable Financing for Universal Health Coverage in Bhutan: Exploring Policy Options and Financial Strategies	10
4.3: The Prevalence and Factors Associated with Loneliness in Bhutan	10
Day 3 — Scientific Sessions	26
SUB-THEME 5: Medical Education and Technology	26
5.0: Invited Speaker for Sub-Theme 5	26
5.1: Bhutan's Scientific Publications: A Bibliometric Analysis	26
5.2: Effect of Persistent Hyperglycemia and Empagliflozin on Acute Lung Injury	26
5.3: Association of Higher HbA1c Levels with Chronic Periodontitis among Healthy Adults	26
PANEL DISCUSSION: Re-modeling the Referral System	26
6.0: Panel discussion on Re-modeling the Referral System	26
Poster Presentations	30
Posters	30
7.1: Taar (Bloodletting)Therapy in Bhutanese Sowa-rigpa - a view point	30
7.2: Administration of snaa-smen (Errhine Therapy) in Present Era	30
7.3: Quality improvement project on reduction of door-to-antibiotic time (DTAT) among adult patients with suspected sepsis presenting to the Emergency department	30
7.4: Improved the correct use of quiver disinfection system of rigid nasal endoscopes from 0-80%	30
7.5: Quality Improvement initiative on implementation of Extubation Readiness Test to timely wean off ventilator in PICU, JDWNRH	30
7.6: Clinical and Microbiological profile of patients with Urinary Tract Infections visiting General Outpatient Department, National Referral Hospital-Thesis	30
7.7: A case report on Recurrent Ocular Toxoplasmosis	30
7.8: A case report on Pediatric Vogt – Koyanagi Harada Syndrome	30
7.9: A quality improvement project aimed at reducing the incidence of empirical treatment of neonates (≤ 37 weeks) born to mother with history of Prolong Rupture of membrane at JDWNRH	30
7.10: Increase the same day discharges of uncomplicated laparoscopic gynecological surgery in the maternity ward of JDWNRH	30
7.11: Seasonal Hyperacute Panuveitis (SHAPU) in Bhutan	30

MESSAGE FROM THE PRESIDENT

8th ICMH - 2024: Transforming Health System: Evidence Based, Equity, Excellence and Resilience



On behalf of Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), it is my great pleasure to extend a warm welcome to all participants of the 8th International Conference on Medical and Health Sciences (**the 8th ICMH, 2024**), 2024. As the President of University, I am honored to host this esteemed gathering of scholars, researchers, practitioners, and professionals from around the world.

Conferences provide invaluable opportunities for intellectual exchange, collaboration, and discovery. They serve as platforms for sharing knowledge, fostering innovation, and addressing critical challenges facing our global community. The 8th ICMH-2024 is no exception, and I am confident that the discussions and insights generated during this event will contribute significantly to the advancement of Medical and Health field.

I commend the organizers, sponsors or funders, presenters, and attendees for their dedication and commitment to excellence in scholarship and research. Your participation is a testament to your passion for learning and your desire to make meaningful contributions to your respective fields.

As we embark on this enriching journey together, I encourage you to engage fully with the conference program, seize the opportunity to network with colleagues, and explore new avenues for collaboration. By sharing your expertise and perspectives, you will not only enrich your own understanding but also inspire others to push the boundaries of knowledge and innovation.

Throughout the conference program, you will have the opportunity to engage in thought-provoking discussions, attend informative sessions, and network with colleagues who share your passion for similar field or expertise. Whether you are presenting your research findings, participating in panel discussions, or simply absorbing the wealth of knowledge being shared, I am confident that you will find this conference to be both enriching and inspiring.

I extend my best wishes for a productive and rewarding conference experience. May the **8th ICMH - 2024** be a source of inspiration, collaboration, and discovery for all.

TASHI DELEK!

Dr. Kinzang P. Tshering
(PRESIDENT, KGUMSB)

Day 1 - Inaugural Ceremony

11th April, 2024 [08:00 AM – 11:00 AM BST]

INAUGURAL CEREMONY:

1. Registration of participants
2. Arrival of Guests
3. Arrival of Chief Guest by H.E Health Minister
4. Marching Ceremony & Chanting of University Song
5. Welcome address by Dr. Kinzang P. Tshering, President, KGUMSB
6. Keynote address by Dr. Bhupinder Kaur Aulakh, WR, WHO Country Office, Bhutan
7. Address by Dr. N. Krishna Reddy, CEO, Access Health International
8. Address by Dr. Vijeta Tiwari, Access Lead, Asia, Global Health Unit
9. Release of **(the 8th ICMH 2024)** Abstract Booklet by Hon'ble Chief Guest
10. Address by Lyonpo Tandin Wangchuk, Hon'ble Chief Guest
11. Vote of Thanks by Mr. Rixin Jamtsho, Director, MECRIT, KGUMSB
12. Photography Session, followed by High Tea

Day 1 — Symposium on Reimagining NCD care in Bhutan

11th April, 2024 [11:00 AM – 05:00 PM BST]

Note: In the Afternoon, two parallel Symposiums (NCD will continue with their morning symposium session & New AMR Symposium will be run parallel in the adjacent hall/room!

SESSION 1: Understanding the NCD Landscape with special focus on Hypertension & Diabetes: Bhutan's Twin Challenge

Epidemiological trends (an overview of the prevalence and challenges), determinants and challenges in Bhutan)

Mr. Laigden Dzed¹, Dr. Mahesh Gurung² & Dr. Bhakta Raj Giri³

Affiliation/s:

1. Chief Program Officer, NCD, Dept. of Public Health, MoH, Thimphu, Bhutan
2. Cardiologist, NMS, JDWNRH, Thimphu, Bhutan
3. Sr. Medical Advisor, HMPAMS, Thimphu, Bhutan

Session ID: 1.1
Time: 11.00 AM - 12.00 PM

Moderator: Dr. Vijeta Tiwari, Access Lead, Asia, Global Health Unit, Sanofi

SESSION 2: Screening and Early Detection - Path to Prevention

Importance of early detection and the latest advancements in diagnostic techniques for hypertension and diabetes

Dr. Thinley Dorji¹, Dr. N. Krishna Reddy² & Prof. Nitin Kapoor³

Affiliation/s:

1. Medical Specialist, CRRH, Gelephu, Bhutan
2. DM Card, CEO, ACCESS Health International, India
3. Professor & Unit Head, CMC, Vellore, India

Session ID: 2.1
Time: 12.00 PM - 01.30 PM

Moderator: Dr. Shrikant Kalaskar, ACCESS Health International

SESSION 3: Clinical and Community Approaches for NCD Management**Integrating global best practices with Bhutan's unique socio-cultural setting for managing hypertension and diabetes**

Dr. Pandup Tshering¹, Dr. Farah Naaz Fatima² & Dr. Bhakta Raj Giri³

Session ID: 3.1
Time: 02.30 PM - 04.00 PM

Affiliation/s:

1. Professor, FoUGM, KGUMSB, Thimphu, Bhutan
2. Associate Professor, CHD, St. John's Medical College, Bangalore, India
3. Sr. Medical Advisor, HMPAMS, Thimphu, Bhutan

Moderator: Dr. N. Krishna Reddy, ACCESS Health International

Closing remarks and Roadmap for priority setting in Bhutan and future course of action)

Dr. Pandup Tshering¹, Dr. Farah Naaz Fatima² & Dr. Bhakta Raj Giri³

Session ID: 3.2
Time: 04.15 PM - 05.00 PM

Affiliation/s:

1. Professor, FoUGM, KGUMSB, Thimphu, Bhutan
2. Associate Professor, CHD, St. John's Medical College, Bangalore, India
3. Sr. Medical Advisor, HMPAMS, Thimphu, Bhutan

Moderator: Dr. N. Krishna Reddy, ACCESS Health International

Day 1 - Symposium on Antimicrobial Resistance (AMR)

11th April, 2024 [11:00 AM – 05:00 PM BST]

Note: In the Afternoon, two parallel Symposiums (NCD will continue with their morning session & New AMR Symposium will be run parallel in the adjacent hall/room!

SESSION 1: Tackling AMR in Human Health

Tackling AMR in Human Health

Mr. Kinley Wangchuk¹

Session ID: 1.0

Time: 02.30 PM -
02.45 PM

Affiliation/s:

1. Microbiologist, Dept. of Pathology & Laboratory Medicine, JD-WNRH, Thimphu, Bhutan

SESSION 2: Addressing AMR Challenges in Animal Health**Addressing AMR Challenges in Animal Health***Dr. Nirmal Kumar Thapa¹***Session ID:** 2.0**Time:** 02.45 PM -
03.00 PM**Affiliation/s:**

1. Animal Specialist, National Center for Animal Health, MoAL, Thimphu, Bhutan

SESSION 3: AMR Impact on Food Safety**AMR Impact on Food Safety***Mr. Anil Rai¹***Session ID:** 3.0**Time:** 03.00 PM -
03.15 PM**Affiliation/s:**

1. Dy. Chief Laboratory Officer, National Food Testing Laboratory, BFDA, MoH, Thimphu, Bhutan

SESSION 4: Tackling the Silent Pandemic through AMS and Infection Control Strategies**Tackling the Silent Pandemic through AMS and Infection Control Strategies***Dr. Sonam Zangmo¹***Session ID:** 4.0**Time:** 03.15 PM -
03.30 PM**Affiliation/s:**

1. Medical Specialist, IPC Unit, NMS, JDWNRH, Thimphu, Bhutan

SESSION 5: National AMR Program and Initiatives**National AMR Program and Initiatives***Mr. Sonam Wangda¹***Affiliation/s:**

1. Chief Program Officer, HFD, Dept. of Health Services, MoH, Thimphu, Bhutan

Session ID: 5.0**Time:** 03.30 PM - 03.45 PM**SESSION 6: AMR Panel Discussions****AMR Panel Discussions ...****Session ID:** 6.0**Time:** 04.15 PM - 05.00 PM**Day 2 - Scientific Sessions****12th April, 2024 [09:00 AM – 05:00 PM BST]****SUB-THEME 1: Rethinking better management of the Emerging Infectious Diseases (EIDs) and Antimicrobial Resistance (AMR)****Invited Speaker for Sub-Theme 1***Dr. Neha Gulati¹***Affiliation/s:**

1. Regional Coordinator, South Asia, Fleming Fund Project, Mott MacDonald

Session ID: 1.0**Time:** 09.10 AM - 09.30 AM**Moderators:** Mr. Sonam Gyeltshen, Dy. Chief Lab Officer, RCDC, DoPH, MoH (Chair) & Mr. Tashi Dawa, CPO, DoPH, MoH (Co-Chair)

Preparedness towards Zero Rabies Deaths by 2030 in Bhutan: a narrative review

Thinley Dorji¹

¹Department of Internal Medicine, Central Regional Referral Hospital, Gelephu, Bhutan

Session ID: 1.1

**Time: 09.30 AM -
09.45 AM**

Background: Rabies is one of the neglected tropical diseases that continues to pose significant public health concern in many developing countries. Bhutan has demonstrated strong commitment towards achieving the global target of Zero Deaths due to Rabies by 2030. However, Bhutan reported its 19th human rabies case in 2023 that called for a review of the national efforts towards prevention of rabies. **Method/s:** This is a narrative review of the last two cases of human deaths due to rabies in Bhutan, the policy framework, national review for the prevention of rabies, management of rabies outbreak and the management of human cases. **Results:** The overall policy framework for rabies prevention and control is guided by the National Health Policy that aims to reduce the incidence of infectious diseases. The One Health strategy establishes the framework for collaborative action involving all relevant sectors in the prevention and control of rabies in animal and human population. Joint rapid response teams are deployed in the field in response to outbreaks and advocacy is done through mainstream and social media for health literacy. However, there were two human deaths due to rabies in the last five years. A 3-year old female child died in Samtse in 2020 and a 35-year old man in Gelephu in 2023. These two cases reflect the need to strengthen preventive measures, enhance health literacy and implementation of guideline-directed management of animal bites. These two cases also highlight the need for cross-border collaboration and joint efforts in prevention and control of infectious diseases. With the completion of the national dog population management programme, there is a need to discuss on the long term strategic interventions required to meet the 2030 targets. **Conclusion/s:** Bhutan has demonstrated strong public health commitment in the prevention and control of rabies. However, experiences from the last two human deaths demonstrates the need to identify key areas of intervention to achieve the global targets.

Prevalence of Respiratory Syncytial Virus among hospitalized Severe Acute Respiratory Infection patients in Bhutan - quantitative study

Kunzang Dorji¹

¹Royal Centre for Disease Control, Department of Public Health, Ministry of Health, Thimphu, Bhutan

Session ID: 1.2
Time: 09.45 AM - 10.00 AM

Introduction: RSV is a common cause of childhood acute lower respiratory infection and a major cause of hospital admissions, resulting in a substantial burden. In Bhutan, acute respiratory infection and common cold are top ten diseases of morbidity as per annual health bulletin, causing high burden to healthcare services. However, there is lack of data regarding prevalence of RSV in severe acute respiratory infection (SARI) requiring hospitalization. **Objective:** To assess the prevalence of RSV and other respiratory viruses among hospitalized SARI patients in Bhutan. **Method/s:** All SARI cases were included for respiratory specimen collection as per the surveillance guideline in year 2016 and 2018. The specimens were first tested for Influenza, and then all Influenza negative were tested for RSV, HMPV, adenovirus and PIV (1-4) by rRT-PCR assay. Descriptive statistics were used to analyze the results to see the proportion of RSV and Influenza-associated SARI. Multivariable logistic regression adjusting for age and sex was used to assess association of RSV with demographic and clinical characteristics. All data were analyzed using STATA 16.1. **Results:** A total of 1339 SARI specimens were tested by rRT-PCR, and virus detection was reported in 34.8% of specimen. The median age of SARI cases was 3 years (IQR: 0.8 – 21) and mean was 21 (Range: 0.08 – 92 years). RSV was detected in 18.5% (248/1339) of SARI cases, followed by influenza in 13.4% (180/1339) and other respiratory viruses in 3% (38/1339). RSV detection in SARI cases was more among children aged 0 – 6 months (Adj OR: 1.87; 95% CI: 1.05–3.34), 7 – 23 months (Adj OR: 3.01; 95% CI: 1.77–5.12) and 24 – 59 months (Adj OR: 3.03; 95% CI: 1.7–5.39) as compared to children aged 5 – 15 years. RSV was associated with breathing difficulty (Adj OR: 1.73; 95% CI: 1.17–2.56) and pre-existing lung disease including asthma. (Adj OR: 2.78; 95% CI: 0.99–7.8). **Conclusion/s:** Respiratory viruses, including RSV, were detected in substantial proportion of SARI hospitalization in Bhutan. RSV was detected in nearly one in 5 of all SARI cases. Surveillance for RSV is necessary for detecting onset of RSV season so that informed decision can be made in clinical management of

Prevalence and risk factor of *Helicobacter pylori* Infection in Asymptomatic Children aged five years and below in Bhutan

Passang Lhamo Sherpa¹

¹PhD Scholar, Oita University, Graduate School of Medicine, Japan

Session ID: 1.3

Time: 10.00 AM -
10.15 AM

Introduction: *Helicobacter pylori* (*H. pylori*) is recognized as one of the main causes of gastric related diseases including gastric cancer. Bhutan is known for high prevalence of *H. pylori* but information on children is scant. Therefore, a cross-sectional study on the risk factors and prevalence of *Helicobacter pylori* was conducted among children five years and below in three health centres in Thimphu districts in May June of 2023. **Method/s:** A rapid *H. pylori* antigen test kit was used. A total of 266 children and their parents/caregiver participated in the cross-sectional survey. **Results:** There were 136 (51.1%) females and the mean age was 33.28 (0.30–64.36) ±18.06 months. The prevalence of *H. pylori* was 62/266 (23.3%) with slightly higher among males (26% vs 20.6%). Increasing age of the child, having siblings, eating food by themselves using their fingers or adult feeding children with fingers, children using toilet by themselves, and father's employment were potential risk factor. Eating a balanced diet of with vegetables and fruits everyday was a protective factor against the infection. **Conclusion/s:** The prevalence rate of *H. pylori* among children showed reduction almost by one third. Maintaining adequate hygiene, and continuing to provide balanced diet could protect children from getting infected with *H. pylori*. The present reduction of *H. pylori* infection may be contributed by the national flagship program. Hence, screen and treat strategy simultaneously with public health education on hygiene and dietary practice is still the most appropriate measure to prevent gastric cancer and to eradicate *H. pylori* infection among Bhutanese population.

SUB-THEME 2: Non-Communicable Diseases (NCDs)**Invited Speaker for Sub-Theme 2**

Dr. Tashi Tenzin¹

Affiliation/s:

1. Consultant general surgeon & Neurosurgeon; Professor of surgery, KGUMSB

Session ID: 2.0

Time: 11.00 AM - 11.20 AM

Moderators: Mr. Laigden Dzed, CPO, NCD, DoPH, MoH (Chair) & Mr. Nima Sangay, Dean, FNPH (Co-Chair)

Comparison of Laboratory and Non-Laboratory-based 2019 World Health Organization CVD Risk Charts in the Bhutanese Population

Session ID: 2.1
Time: 11.20 AM -
11.35 AM

Kuenzang Chhenzom¹

¹Faculty of Postgraduate Medicine, Khesar Gyalpo University of Medical Sciences of Bhutan, Thimphu, Bhutan

Introduction: The World Health Organization (WHO) recommends the use of color-coded cardiovascular disease (CVD) risk prediction charts for CVD management. In 2019, the WHO upgraded the charts for 21 global regional areas. However, there have been no studies comparing these charts in South Asia including Bhutan. Therefore, this study aimed to study the agreement between the laboratory and non-laboratory 10-year CVD risks based on the 2019 WHO CVD risk prediction charts in Bhutan. **Method/s:** This was a secondary data analysis of the WHO Non-Communicable Disease (NCD) survey (STEPwise) carried out in Bhutan in 2019. 2019 WHO CVD risk prediction chart on the chart was used to calculate 10-year laboratory and non-laboratory CVD risk among 40-69 years Bhutanese population. The agreement of risk scores for the general population, stratified by gender and age groups (≤ 60 and > 60 years) was determined via kappa statistics. **Results:** In the general population, there was substantial agreement between the two CVD risk score charts for all ages (82.2%; kappa=0.68) and ≤ 60 years at 83.7% (kappa=0.68), but a moderate agreement for participants aged > 60 years at 75.9% (kappa=0.54). In males, moderate agreement for all ages (78.3%, kappa= 0.63, SE= 0.03), ≤ 60 years (78.8%, kappa=0.59, SE=0.03), and > 60 years (69.9%, kappa 0.45, SE=0.06). The substantial agreement for all ages (86.1%, kappa = 0.72, SE = 0.02), ≤ 60 year (87.4, kappa= 0.61, SE= 0.03), and > 60 years (80.6%, kappa=0.57, SE=0.06) in females. The agreement between the two risk charts was higher in females compared to males. Similarly, the risk agreement was higher for ≤ 60 years compared to > 60 years when compared between sexes. **Conclusion/s:** The agreement between the laboratory and non-laboratory-based CVD risk prediction charts ranged from substantial in the general population. Therefore, non-laboratory-based risk charts can be used interchangeably with laboratory-based charts for predicting 10-year CVD risk in resource constraint countries like Bhutan.

Obesity Worsens Insulin Resistance and Inflammation in Type 2 Diabetes Mellitus

Kumar Sarvottam¹

¹Department of Physiology, All India Institute of Medical Sciences, Gorakhpur, Uttar Pradesh, India

Session ID: 1.3

Time: 11.35 AM - 11.50 AM

Introduction: Obesity is an independent predictor of diabetes mellitus and associated complications. Obesity is associated with inflammation and insulin resistance. Obesity might play an additive role in diabetes-related inflammation and adverse outcomes. **Objective:** To compare Insulin resistance and Beta cell function in obese and normal-weight type 2 diabetes mellitus patients. **Method/s:** Study design: analytical cross-sectional; Study setting: OPD based; 120 Normal weight (NW) T2DM (n= 53) and obese T2DM (n = 67) patients of both genders (male=70, female=50) were recruited in this study. The anthropometry and body composition of the patients were measured. Plasma fasting insulin, adiponectin, and IL-6 levels were measured using ELISA kits. **Results:** Homeostatic model assessment (HOMA)-Insulin resistance (IR), HOMA- and plasma IL-6 were significantly higher in obese T2DM patients (p=0.045, 0.004 and 0.013 respectively) while plasma adiponectin was significantly higher in NWT2DM group (p=0.037). **Conclusion/s:** Higher levels of HOMA-IR and HOMA- are suggestive of increased insulin resistance but preserved - cell function in obese T2DM patients. Normal-weight diabetic patients have lesser adiposity and associated inflammation as compared to obese diabetes patients.

Bio-social Determinants of Metabolic Syndrome among Adult Women of Diverse Geo-climatic Setup of West Bengal, India

Partha Sarathi Datta¹ & Rajesh K. Gautam²

¹Ph.D. Research Scholar; ²Professor, Department of Anthropology, Dr. Harisingh Gour Vishwavidyalaya (Central University), Sagar, Madhya Pradesh, India

Session ID: 2.3

Time: 11.50 AM - 12.05 PM

Background: Metabolic syndrome (MetS) is a multifaceted health condition characterized by a cluster of interrelated metabolic abnormalities, including overweight & obesity, dyslipidemia, hypertension, and insulin resistance. **Objective:** This research aims to investigate the bio-social determinants contributing to the prevalence of MetS among adult women residing in diverse geo-climatic setups in West Bengal. **Method/s:** A cross-sectional study was conducted among 527 adult women aged 21 to 60 years of diverse geo-climatic setups. Anthropometric measurements including skinfold measurement, fasting blood glucose, and lipid profile were recorded from each participants. A semi-structured schedule was used to collect data on the socioeconomic profile, behavioral activity, physical activity, family history of hypertension, diabetes, obesity and weekly consumption of food. Statistical analyses were performed to identify the significant covariates, viz. climatic, socio-economic, and lifestyle variables, using a multivariate approach. **Results:** The overall prevalence of MetS was 16.98% (95% CI: 13.89, 20.45) among adult women. The prevalence of MetS were higher in plain region, 31.25% (95% CI: 18.66, 46.25) and lower in delta region, 13.18% (95% CI: 7.87, 20.26). The family history of diabetes, physical inactivity, overweight & obesity and faulty food habits were found to have significant association with the blood glucose and lipid level among participants. **Conclusion/s:** The study investigated the prevalence of MetS among adult women in West Bengal, India, considering various bio-social determinants and their impact. These findings emphasize the need for comprehensive public health interventions targeting both individual and environmental factors to mitigate the burden of MetS.

Comparing Ultrasound Guided Bilateral Erector Spinae Plane Block with the Intrathecal Fentanyl for Post Operative Analgesia after Lower Segment Caesarean Section

Session ID: 2.4
Time: 12.05 AM -
12.20 PM

Sandeep Sahu¹, Indu Lata², Ashutosh Kumar Singh³ & shutosh Kumar Singh⁴

^{1,3}Department of Anesthesiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences (SJPIIMS) Lucknow, UP, India; ²Department of Maternal and Reproductive Health, SJPIIMS, Lucknow, UP, India; ⁴Department of Biostatistics and Health Informatics, SJPIIMS, Lucknow, UP, India

Introduction: Patients after LSCS often suffer significant postoperative pain. Inadequate analgesia interferes in the care of newborn and maternal well-being and may lead to the development of chronic pain syndrome. Ideal methods / techniques are still not well defined. **Objective:** We compared the postoperative analgesic efficacy of USG guided bilateral Erector spinae plane block (UBESPB) to Intrathecal Fentanyl group (ITFG) after lower segment caesarean section (LSCS). **Method/s:** 60 term Parturients of ASA 1-2 with singleton pregnancy planned for elective LSCS were randomized into Group 1 (UBESPB group) (N=30) were given Spinal Anaesthesia with 1.5ml heavy bupivacaine (0.5%), followed by bilateral UBESPB at T9 level with Levobupivacaine (0.25%) 30ml, at the end of surgery and Group 2 (ITFG) (N=30): were given Spinal Anaesthesia with 1.5ml heavy bupivacaine (0.5%) added with 25 mcg Fentanyl respectively. The Static and dynamic pain by Numerical rating scale (NRS), total Fentanyl consumption, residual motor blockade, duration when ability to ambulate and breastfeed, patient satisfaction rate, and opioid-related complications were evaluated for up to 48 hours postoperatively. **Results:** In the UBESPB group mean static and dynamic NRS pain scores were significantly lower, the mean total fentanyl consumption was also lower (170.73 + 37.71 mcg) as compared to the ITF group (642.03 + 177.49 mcg). No additional increase in the residual motor blockade was seen in both groups. Most of the patients in the UBESPB group were highly satisfied, able to ambulate early and able to breastfeed early as compared to the ITF group. **Conclusion/s:** USG bilateral Erector spinae plane block proved to be significantly more efficacious in terms of quality of pain relief (static/dynamic), patients' satisfaction, early ambulate and breastfeed with better care of new born as compared to intrathecal fentanyl group.

SUB-THEME 3: Wellbeing and Mental Health Resilience**Invited Speaker for Sub-Theme 3**

Dr. Chencho Dorji¹

Affiliation/s:

1. Professor of Psychaitary, KGUMSB; Dept. of Psychaitary, JD-WNRH, Thimphu, Bhutan

Session ID: 3.0

Time: 02.00 PM - 02.25 PM

Moderators: Dr. Kinzang P. Tshering, President, OOP, KGUMSB (Chair) & Dr. Damber K. Nirola, Consultant Psychiatrist, JDWNRH (Co-Chair)

Social Environmental Factors of Psychological Distress among Adolescent Students in Indonesia

I Gusti Ngurah Edi Putra¹ & Tashi Dendup²

¹Institute of Population Health, University of Liverpool, Liverpool, UK; ²Save the Children International, Thimphu, Bhutan

Session ID: 3.1

Time: 02.25 PM - 02.35 PM

Introduction: This study aimed to investigate social environmental factors associated with psychological distress among Indonesian school-going adolescents and examine the extent to which these factors might differ by gender. **Method/s:** This cross-sectional study used the data of 11,006 adolescents (11-18 years), retrieved from the 2015 Indonesia Global School-based Student Health Survey. Three measures of psychological distress, such as loneliness, anxiety, and both measures combined as psychological distress, were examined. Social environmental factors encompassed peer support, having close friends, bullying victimisation, physical fight, physical attack, and parental supervision, connectedness, and bonding. Binary logistic regression was used to assess the associations between social environmental factors and each measure of psychological distress, adjusting for sociodemographic covariates (e.g., age), and health behaviours (e.g., smoking). Gender-disaggregated analyses were carried out to examine gender differences in the social environmental factors. **Results:** The prevalence of loneliness, anxiety, and combined psychological distress was 6.12%, 4.52%, and 8.04%, respectively. Adolescents who were bullied, physically attacked, had no close friends, and no parental connectedness and bonding were more likely to experience one or more measures of psychological distress. Bullying victimisation and having no close friends were consistently associated with some psychological distress measures in both boys and girls. Experiencing physical attacks, having no peer support, and no parental connectedness were found to be important social environmental factors associated with psychological distress in girls. **Conclusion/s:** Social environmental factors were associated with psychological distress among adolescent students in Indonesia and these factors appeared to differ by gender. Interventions that encourage positive social relationships with peers and parents might help to reduce psychological distress among Indonesian adolescents.

Quality of Life and Wellbeing: Correlation with Adverse Childhood Experiences among People Living with HIV in Bhutan

Session ID: 3.2
Time: 02.35 PM -
02.45 PM

Nidup Dorji¹, Wangchuk¹, Dan Bromberg², Shufang Sun³ & Kaveh Khoshnood²,

¹Khesar Gyalpo University of Medical Sciences of Bhutan; ²Yale School of Public Health, USA; ³Brown University, USA

Introduction: A growing body of research supports that exposure to multiple adverse childhood experiences (ACEs) has a lasting generational effect on multiple dimensions of life including health, wellbeing, and quality of life (QoL). There is lack of information on ACEs and its relationship with wellbeing and QoL among people living with HIV (PLHIV) in Bhutan. **Objectives:** Assess ACEs and its correlations with QoL and wellbeing among PLHIV in Bhutan. **Method/s:** Cross-sectional survey was designed. Data was collected from 455 PLHIV living in different parts of Bhutan. **Results:** On average, participants ACEs was 4.74 (SD: ± 2.28 ; range: 0-11) in this study. Emotional neglect (93.4%), witnessing community violence (71.0%), and lived with household members treated violently (62%) were the highest reported ACEs. Sexual abuse was reported the least (15.3%). ACEs ≥ 5 was reported greater (54.1%) among the female participants ($p < 0.05$). Wellbeing and QoL were correlated with sexual and emotional abuses ($p < 0.05$), living with household members treated violently ($p < 0.01$), parental separation or divorce ($p < 0.05$), and bullying ($p < 0.05$). Compared to ACEs ≤ 4 , QoL was significantly reported for those with ACEs ≥ 5 ($p < 0.05$). **Conclusion/s:** Increase in ACEs decreases QoL and wellbeing. ACEs recognition, its prevention, and trauma-informed interventions are critical to promote better QoL, wellbeing, and reduce the negative health sequelae of ACEs.

The Prevalence and Factors Associated with Loneliness in Bhutan

Tashi Dendup¹, I Gusti Ngurah Edi Putra² & Tshering JAMTSHO³

¹Save the Children International, Bhutan Office, Thimphu, Bhutan;

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³MECRIT, Khesar Gyalpo University of Medical Sciences of Bhutan, Thimphu, Bhutan

Session ID: 3.3

Time: 02.45 PM - 02.55 PM

Background: Loneliness is increasingly being recognized as a serious emerging public health problem and is shown to be associated with many adverse health conditions including mortality. There is a paucity of data on the burden and associated factors of loneliness in Bhutan. This study examined the prevalence and factors associated with loneliness among Bhutanese adults. **Method/s:** Data collected from 30,879 adults in the National Health Survey was used for this study. Logistic regression analysis accounting for the complex survey design effect was performed to identify the factors associated with loneliness. The backward elimination method was applied in the multivariable analysis. **Results:** The weighted prevalence of loneliness was 22.8% (95%CI = 21.77 – 23.81) with greater prevalence in females than males (27.4% vs 17.3%). The multivariable analysis showed older adults, being female, being unmarried, having higher education levels, being a student, and living in rural areas and the western region were associated with increased odds of loneliness. Those who smoked, abused alcohol and drugs, and had chronic diseases were also more likely to be lonely than their counterparts. **Conclusion/s:** A little over a fifth of Bhutanese adults were lonely. The findings suggest that interventions targeting females, older adults, rural residents, students, and those with chronic conditions may yield larger gains in alleviating loneliness and its associated impacts. Strategies aimed to promote social connection and interaction and those addressing risky health behaviors may help reduce loneliness. More studies are needed to better understand the situation of loneliness and its influencing factors.

SUB-THEME 4: Health Financing**Invited Speaker for Sub-Theme 4**

Mr. Jayendra Sharma¹

Affiliation/s:

1. Consultant (Health Financing), Thimphu, Bhutan

Session ID: 4.0

Time: 03.30 PM -
03.50 PM

Moderators: Mr.
Tashi Penjor, CPO,
PPD, MoH (Chair)
and Ms. Sonam
Yangchen, Health
Financing &
Governance Focal,
WHO CO,
Thimphu
(Co-Chair)

Universal Health Coverage, Health Financing, Revenue Risking, Risk Pooling, Strategic Purchasing, Efficiency, Quality of Care

Session ID: 4.1
Time: 03.50 PM -
04.05 PM

Dorji Tshering¹

¹Phuentsholing Hospital, Dept. of Clinical Services, NMS, Ministry of Health, Bhutan

Introduction: Despite encouraging progress towards universal health coverage (UHC), Bhutan's health financing (HF) system is facing sustainability and efficiency concerns. The rising healthcare cost presents sustainability concerns and further strains the government fiscal space. On the other hand, there are questions regarding efficiency in spending limited resources, quality of care (QoC) provided, and equitable distribution of the benefits. This study aims to review the HF function of the health systems, assess its influence on Bhutan's advancement towards UHC, and propose recommendations for HF reforms to realize UHC 2030 goals. **Method/s:** The study was based on a literature review using Kutzin's framework regarding HF influence on UHC intermediate objectives and UHC goals. **Results:** The government accords high priority to health, ensuring stable and adequate funding and lesser reliance on out-of-pocket (OOP) and donor assistance. Yet, for long-term sustainability, further diversification of revenue sources is needed. Although all Bhutanese citizens are entitled to the comprehensive benefit, the utilization was inequitable. Bypassing primary healthcare (PHC) and oversupply of services, including a high rate antibiotic prescriptions, are some of the leading health system inefficiencies. The passive provider payment mechanism (PPM) via line-item budget is facing considerable challenges in incentivizing providers to deliver quality health services. **Conclusion/s:** Evidence from the study suggests that Bhutan's HF system built on the foundations of pooled public funds is well positioned to attain UHC, but moving forward, it calls reforms in purchasing strategy for more efficiency gains and improved quality.

Improving Sustainable Financing for Universal Health Coverage in Bhutan: Exploring Policy Options and Financial Strategies

Session ID: 4.2
Time: 04.05 PM -
04.20 PM

Ugyen Tshering¹, Jayendra Sharma², Dorji Tshering³ & Tandin Dendup⁴,

¹Department of Public Health, Ministry of Health, Thimphu, Bhutan; ²Center for Health Policy, Thimphu, Bhutan; ³Phuentsholing General Hospital, Chukha, Bhutan; ⁴Policy and Planning Division, Ministry of Health, Thimphu, Bhutan

Abstract: Deeply rooted in its developmental philosophy of gross national happiness (GNH), Bhutan's healthcare system strives towards achieving a shared goal of universal health coverage (UHC). Despite being primarily financed by the government, the health system faces a plethora of challenges. To overcome these hurdles and achieve UHC goals, expanding the fiscal space for health and improving operational efficiency is crucial.

This policy brief aims to address Bhutan's evolving healthcare landscape and advance the achievement of UHC through two policy options. The first policy option focuses on dual objective of improving health outcomes and promoting financial sustainability by leveraging health taxes, while the second option emphasises reinforcing a systematic Health Technology Assessment (HTA) in the Bhutanese health system.

First, to promote financial sustainability, the proposal suggests introducing earmarked taxes on alcohol and tobacco products for the health sector. Global evidence suggests that earmarked taxes are a reliable source of revenue for health, and Bhutan's high prevalence of tobacco and alcohol consumers assures a reliable revenue base. The Goods and Services Tax (GST) will be implemented in 2024, and it will be a good opportunity for the Ministry of Health (MoH) to advocate and negotiate with Ministry of Finance (MoF) for the earmarked taxes to the health sector.

Second, integration of HTA into policymaking and decision-making processes is essential for effective resource allocation in UHC. Nurturing and strengthening the existing Health Intervention & Technology Assessment Division (HITAD) under MoH and establishing a dedicated multidisciplinary HTA Committee will ensure informed

Day 3 - Scientific Sessions

13th April, 2024 [09:00 AM – 05:00 PM BST]

SUB-THEME 5: Medical Education and Technology

Invited Speaker for Sub-Theme 5

Mr. Thakur S. Powdyel¹

¹Former Education Minister, Thimphu, Bhutan

Session ID: 5.0

Time: 09.10 AM -
09.30 AM

Moderators: Dr.
Tashi Tenzin,
Former Dean,
FoPGM (Chair) &
Ms. Diki Wangmo,
Former Registrar
(Co-Chair)

Bhutan's Scientific Publications: a bibliometric analysis

Don Eliseo Lucero-Prisno III¹, Jerico B. Ogaya², M.B.N Kouwenhoven³, Lin Xu⁴ & Thinley Dorji⁵

¹Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London, United Kingdom;

¹Department of Internal Medicine, Central Regional Referral Hospital, Gelephu, Bhutan; ²Department of Medical Technology, Institute of Health Sciences and Nursing, Far Eastern University, Manila, Philippines; ³Department of Physics, Xi'an Jiaotong-Liverpool University (XJTLU), Suzhou, China; ⁴Department of Thoracic Surgery, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, 31003, China; ⁵DDepartment of Internal Medicine, Central Regional Referral Hospital, Gelephu, Bhutan

Session ID: 5.1**Time: 09.30 AM - 09.45 AM**

Background: While Bhutan is renowned for its exemplary cultural heritage preservation, its growing interest in academic research and development to advance science is becoming more evident. Despite its relatively small size of land and population, Bhutan has made significant progress in various fields, contributing to global knowledge production. This study aims to provide a systematic overview of Bhutan's scientific publications in Scopus, the most widely used database for scholarly literature and academic institution rankings, by examining various indicators such as publication trends, collaboration patterns, affiliated authors, citation overview, and thematic content analysis. **Method/s:** This study conducts a comprehensive bibliometric analysis of publications of authors originating from Bhutan in various Scopus-indexed journals. A thorough search strategy was employed by opting to search within "Affiliation country" to filter out all publications affiliated with "Bhutan" in the Scopus database ranging from the year 1975 to 2024. Microsoft 365 Excel was utilized for descriptive analysis supported by data analytics of the Scopus database with graphs, charts, and figures. **Results:** The Scopus search engine generated a total of 2,214 documents to be included in the analysis. The trend reveals that Bhutan began its scanty publications from 1975 to 2009 and started to exponentially increase from the year 2010 up to the present, demonstrating its peak during the COVID-19 pandemic. Collaboration patterns among Bhutanese scholars and international collaborators highlight the growing knowledge exchange and global partnerships. The country's scholarly outputs are diverse but highly focused on the top three subject areas: Medicine, Agricultural and Biological Sciences,

Effect of Persistent Hyperglycemia and Empagliflozin on Acute Lung Injury

Rinkoo Yadav¹

¹All India Institute of Medical Sciences Raebareli, U.P. India

Session ID: 5.2

Time: 09.45 AM -
10.00 AM

Introduction: RDS is associated with significantly increased morbidity, mortality and usage of critical care resources. There are so many modifiers of ARDS, and diabetes is one of them. Earlier research showed that diabetes may delay or increase ARDS chances. So knowing the exact association between Diabetes and ARDS is very important for treating ARDS. To confirm the findings effect of the antihyperglycemic agent Empagliflozin (SGLT2 inhibitors) on pulmonary parameters and survival times was used. **Objective:** Study the effect of SGLT 2 inhibitors treated chronic Hyperglycemia rats on acute lung injury. **Method/s:** The experiments were performed on healthy adult male albino rats weighing 150-180 gm. The anaesthetized rats' trachea, jugular vein, and carotid artery were cannulated to keep the respiratory tract patent, deliver saline/ drugs, and record BP. Animals were randomly divided into three groups. In group I, Oleic acid (OA 75 μ l) was administered to induce ALI in rats. In group II, for a hyperglycemic model, rats were fed a high-fat diet for 2 weeks; after that, streptozotocin was injected (35mg/kg i.p). In hyperglycemic model rats, and was injected with oleic acid to induce acute lung injury (ALI). Group III, hyperglycemic rats were fed with 30mg/kg of empagliflozin orally by gastric lavage, and acute lung injury was induced by injecting oleic acid. Cardio-respiratory parameters were recorded, and pulmonary water content and histological lung examination in all the animals were determined. **Results:** Injection of OA produces ALI, indicated by a moderate to severe increase in respiratory frequency followed by a progressive decrease and, ultimately, death of the animal. OA-induced ALI in the hyperglycemic animal model shows early deterioration of all cardiorespiratory parameters. Histological examination of the lungs showed moderate focal interstitial fibrosis, alveolar septal infiltration, alveolar oedema, alveolar exudate and peribronchial inflammatory cell infiltration. The survival time of animals in this group is less compared to the OA group. However, rats treated with empagliflozin showed improved pulmonary parameters and survival time, and histology showed less damage to the lung. **Conclusion/s:** OA-induced ALI in the hyperglycemic animal model shows early deterioration of all cardiorespiratory parameters, which is improved by the antihyperglycemic drug

Association of Higher HbA1c Levels with Chronic Periodontitis among Healthy Adults

Srinivasa T. S¹

¹Department of Dentistry, All India Institute of Medical Sciences, Gorakhpur, Uttar Pradesh, India

Session ID: 5.3

Time: 10.00 AM -
10.15 AM

Introduction: Glycosylated hemoglobin (HbA1c) level is a measure of average glycemic control of the blood for 3-4 months. People suffering from altered glycemic status are susceptible to periodontitis. **Objective:** In this study, we have compared the level of HbA1c in healthy adults and patients attending OPD for periodontitis with no reported history of diabetes mellitus. **Method/s:** Study design: Analytical cross-sectional study; Study setting: out-patient based; Number of participants: 40 comprised of adults with healthy periodontium (n=20) and patients suffering from chronic periodontitis (n=20) of age range 21-57 years and 24-57 years respectively. Kit-based HbA1c measurement was performed using finger stick blood (A1CNOW+® Bayer Health Care, Tarrytown New York, USA). **Results:** The HbA1c levels of both the groups were clinically within the range with patients of periodontitis having significantly higher levels of HbA1C ($5.66 \pm 0.35\%$ vs $5.17 \pm 0.3\%$ P = 0.003). **Conclusion/s:** The higher levels of HbA1c may be an important predictor of periodontitis even in healthy adults with no history or symptoms of diabetes mellitus.

Poster Presentations

11-13th April, 2024 [09:00 AM – 05:00 PM BST]

Poster presentations session

- | | |
|--|---|
| <p>Taar (Bloodletting) Therapy in Bhutanese Sowa-rigpa - a view point
 <i>Deki Choden¹</i>
 ¹MD Sorig Tsubched 2nd Year 2024, FoTM, KGUMSB</p> | <p>Session ID: 7.1
 Time: 09.30 AM - 05.00 PM</p> |
| <p>Administration of snaa-smen (Errhine Therapy) in Present Era
 <i>Jigme Nidup</i>
 ¹Second Year MD Scholar, FoTM, KGUMSB</p> | <p>Session ID: 7.2
 Time: 09.30 AM - 05.00 PM</p> |
| <p>Quality improvement project on reduction of door-to-antibiotic time (DTAT) among adult patients with suspected sepsis presenting to the Emergency department
 <i>Ugyen Rinzin¹</i>
 ¹Emergency Medicine Resident (Year 4), FoPGM, KGUMSB</p> | <p>Session ID: 7.3
 Time: 09.30 AM - 05.00 PM</p> |
| <p>Improved the correct use of quiver disinfection system of rigid nasal endoscopes from 0-80%
 <i>Ngajay Jamtsho¹</i>
 ¹MD, ENT Department, FoPGM, KGUMSB</p> | <p>Session ID: 7.4
 Time: 09.30 AM - 05.00 PM</p> |
| <p>Quality Improvement initiative on implementation of Extubation Readiness Test to timely wean off ventilator in PICU, JDWNRH
 <i>Tshering Lhamo¹</i>
 ¹Final Year Pediatric Resident, FoPGM, KGUMSB</p> | <p>Session ID: 7.5
 Time: 09.30 AM - 05.00 PM</p> |

- Clinical and Microbiological profile of patients with Urinary Tract Infections visiting General Outpatient Department, National Referral Hospital - Thesis**
Ugyen Thinley¹
¹*Resident, General Practice, FoPGM, KGUMSB*
- Session ID: 7.6**
Time: 09.30 AM - 05.00 PM
- A case report on Recurrent Ocular Toxoplasmosis**
Ugyen Zangmo¹
¹*Ophthalmology Final Year Resident, FoPGM, KGUMSB*
- Session ID: 7.7**
Time: 09.30 AM - 05.00 PM
- A case report on Pediatric Vogt – Koyanagi Harada Syndrome**
Adwitya Powdyel¹
¹*Ophthalmology Resident, 4th year Resident, FoPGM, KGUMSB*
- Session ID: 7.8**
Time: 09.30 AM - 05.00 PM
- A quality improvement project aimed at reducing the incidence of empirical treatment of neonates (≥ 37 weeks) born to mother with history of Prolong Rupture of membrane at JDWNRH**
Chimi Lhaky Zam¹
¹*Pediatric Resident (year 4), FoPGM, KGUMSB*
- Session ID: 7.9**
Time: 09.30 AM - 05.00 PM
- Increase the same day discharges of uncomplicated laparoscopic gynecological surgery in the maternity ward of JDWNRH**
Dorji Wangchuk¹
¹*Gynae Resident (year 4), FoPGM, KGUMSB*
- Session ID: 7.10**
Time: 09.30 AM - 05.00 PM
- Seasonal Hyperacute Panuveitis (SHAPU) in Bhutan**
Dr. Sandip Tamang¹
¹*4th year Resident, Department of Ophthalmology, FoPGM, KGUMSB*
- Session ID: 7.11**
Time: 09.30 AM - 05.00 PM