Medical Education Centre for Research, Innovation and Training

Khesar Gyalpo University of Medical Sciences of Bhutan

9th ICMH 2025

BOOK OF ABSTRACTS

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MESSAGE FROM THE PRESIDENT

9th ICMH 2025: "A Holistic Approach to Healthy Aging amidst Emerging & Re-emerging Communicable Diseases and Demographic Shifts"

On behalf of the Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), it gives me immense pleasure to extend a warm welcome to all distinguished participants of the **9th International Conference on Medical and Health Sciences (ICMH 2025)**. As President of the University, I am truly honored to host this prestigious gathering of scholars, researchers, practitioners, policymakers, and professionals from across the globe.

Academic conferences play a vital role in advancing knowledge, fostering collaboration, and addressing pressing challenges in society. They provide unique platforms for intellectual exchange, innovation, and discovery. The 9th ICMH 2025 is no exception. I am confident that the deliberations and insights shared during this event will contribute meaningfully to the growth and transformation of the medical and health sciences.

This year's conference is enriched by two dedicated parallel symposiums on Global Health: AMR and Infectious Diseases and Telemedicine/Telehealth, in addition to the Medical & Diagnostics Expo, which will showcase some of the latest advancements in healthcare technologies and solutions. Together, these sessions will broaden perspectives and stimulate deeper conversations on issues of global and national importance.

I wish to commend the organizing committee, partners, sponsors, distinguished guests, speakers, and participants for your commitment to academic excellence and your dedication to improving health outcomes. Your participation is a true testament to the shared vision of building resilient and innovative health systems for the future.

As we embark on this enriching journey together, I encourage all participants to engage actively in the discussions, explore opportunities for collaboration, and share your expertise with openness and enthusiasm. By doing so, you will not only enhance your own learning but also inspire others and contribute to the collective advancement of medical and health sciences.

I extend my best wishes for a successful and rewarding conference experience. May the 9th ICMH 2025 serve as a platform for inspiration, collaboration, and discovery, and may it continue to strengthen our shared commitment to building healthier societies.

TASHI DELEK!

Dr. Pem Namgyal
(PRESIDENT, KGUMSB)

Day 1 - Inaugural Ceremony

9th April, 2024 [08:00 AM – 11:00 AM BST]

INAUGURAL CEREMONY:

1. Registration of participants
2. Arrival of Guests
3. Arrival of Chief Guest - H.E Lyonpo Tandin Wangchuk, Health Minister
4. Recitation of Zhabten for the Long Life of His Majesty, The King
5. Welcome address by Dr. Pem Namgyal, President, KGUMSB
6. Keynote address by Dr. Bhupinder Kaur Aulakh, WR, WHO Country Office, Bhutan
7. Launch of University Business Strategy, Research Policy & Endowment Fund and Lower Altitude Medicinal Book titled: *"Materia Medica on Low Altitude Medicinal Plants of Bhutan."* - by Hon'ble Chief Guest
8. Address by Hon'ble Chief Guest, Lyonpo Tandin Wangchuk
9. Vote of Thanks by Mr. Rixin Jamtsho, Director, MECRIT, KGUMSB
10. Photography Session, followed by High Tea
11. 11:00 AM onwards - Symposiums, Medical & Diagnostics Expo, and others.

Day 1 — Symposium on Embracing Telemedicine/Telehealth & Digital Transformation for Advancing Quality Healthcare and Effective Health Communication [Hall B]

28th August, 2025 [11:00 AM – 05:00 PM BST]

Note: From 1200 noon, a parallel symposium on "Global Health: AMR and Infectious Diseases" will begin at the Main Hall. Telemedicine/Telehealth symposium to be continued at Hall B.

SESSION I: Opening Ceremony [Moderator/MC: Mr. Ugyen Tshering, Dy. Chief Program Officer, Dept. of Public Health, Ministry of Health, Bhutan]

Address by KGUMSB
Dr. Kuenzang Chhezom[1]

Session ID: I.1
Time: 11.00 - 11.05 AM

Affiliation/s:

1. Registrar, Office of the President (OOP), KGUMSB

Address by Chiang Mai University
Prof. Pongruk Sribanditmongkol[1]

Session ID: I.2
Time: 11.05 - 11.10 AM

Affiliation/s:

1. President, CMU, Thailand

Address by Kagawa University [Video]
Prof. Natsuo Ueda[1]

Session ID: I.3
Time: 11.10 - 11.15 AM

Affiliation/s:

1. President, KU, Japan

Address by JICA office
Mr. Yohei Nuruki[1]

Session ID: I.4
Time: 11.15 - 11.20 AM

Affiliation/s:

1. Acting Chief Representative, JICA Bhutan Office, Thimphu

SESSION II: Keynote Address (Chair: Prof. Kenji Wada, Kagawa University)

Introduction of JICA's Digital Health strategy
Mr. Shotaro Togawa[1]

Session ID: II.1
Time: 11.20 - 11.40 AM

Affiliation/s:

1. JICA, Japan

Telemedicine in Japan - [Virtual]
Dr. Ikuo Tofukuji[1]

Session ID: II.2
Time: 11.40 AM - 12.00 PM

Affiliation/s:

1. Takasaki University of Health and Welfare, Japan

Mapping Cancer Genomes: The Power of Liquid Biopsy
Prof. Dumnoensun Pruksakorn[1]

Session ID: II.3
Time: 12.00 - 12.20 PM

Affiliation/s:

1. Chiang Mai University, Thailand

National eHealth Strategy & Action Plan of Bhutan, ePIS, iCTG etc
Mr. Tashi Penjor[1]

Session ID: II.4
Time: 12.20 - 12.40 PM

Affiliation/s:

1. Chief Planning Officer, Policy & Planning Div., Ministry of Health, Bhutan

SESSION A: Diverse applications of telemedicine/telehealth & policy challenges (Chair: Associate Prof. Dr Chaisiri Angkurawaranon, Chiang Mai University

Bridging Distance in Mental Health: Telepsychiatry and Software as a Medical Device (SaMD) - [Virtual]
Prof. Taishiro Kishimoto[1]

Session ID: A.1
Time: 02.00 - 02.15 PM

Affiliation/s:

1. Kagawa University, Japan

Telemedicine Collaboration for Cancer Palliative Care in Kagawa, Japan - [Virtual]
Dr. Akitsu Murakami[1]

Session ID: A.2
Time: 02.15 - 02.30 PM

Affiliation/s:

1. Kagawa University, Japan

Empowering Precision in Venous Thromboembolism Management: Evaluating the Effectiveness of Mobile-Based Clinical Decision Support System]
Associate Prof. Adisak Tantiworawit[1]

Session ID: A.3
Time: 02.30 - 02.45 PM

Affiliation/s:

1. Chiang Mai University, Thailand

Localizing Digital Health in Bhutan: Building Innovation Capacity from within]
Dr. Jigme Yoezer[1]

Session ID: A.4
Time: 02.45 - 03.00 PM

Affiliation/s:

1. Digital Health & Innovation Unit, GMC, CRRH, Gelephu

Reflections from Sri Lanka as a LMIC Country in Developing a Telemedicine Guideline - [Virtual]
Dr. Gumindu Kulatunga[1]

Session ID: A.5
Time: 03.00 - 03.15 PM

Affiliation/s:

1. Ministry of Health, Sri Lanka

Day 1 - Symposium on Global Health: AMR & Infectious Diseases (Main Hall)

28th August, 2025 [12:00 PM – 05:00 PM BST]

Note: Telemedicine/telehealth symposium will run as parallel session at Hall B!

SESSION Global Health (GH): AMR & Infectious Diseases [Chair: Dr. Sithar Dorjee, One Health Expert & Epidemiologist; Co-chair: Dr. Thinley Yangzom, Tropical Medicine Specialist, JDWNRH]

Zoonotic vector-borne diseases in northeast India
Prof. Sandra Albert[1]

Session ID: GH.1
Time: 12.00 - 12.20 PM

Affiliation/s:

1. Indian Institute of Public Health, Shillong, India

Leptospirosis in hill terrains: socio-behavioural practices and infection risk
Dr. Benedicta S Kumar[1]

Session ID: GH.2
Time: 12.20 - 12.40 PM

Affiliation/s:

1. Indian Institute of Public Health Shillong, India

Perceived Barriers and Facilitators to availing Targeted Interventions, Testing and Treatment services by Trans Gender population under National AIDS Control Program India in districts along the Indo Nepal border
Dr. Manish Kumar Singh[1]

Session ID: GH.3
Time: 12.40 - 01.00 PM

Affiliation/s:

1. Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow, India

Rickettsial infections
Prof. Paul Newton[1]

Session ID: GH.4
Time: 02.00 - 02.20 PM

Affiliation/s:

1. Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom

Bhutan's IPC and AMS in Action: A Practical Journey

Dr. Sonam Zangmo[1]

Session ID: GH.5
Time: 02.20 - 02.50 PM

Affiliation/s:

1. Internal Medicine Specialist, JDWNRH, Thimphu, Bhutan

Strengthening Bhutan's Infectious Disease Response: Insights from Japan and Collaborative Pathways

Prof. Hidetoshi Nomoto[1]

Session ID: GH.6
Time: 02.50 - 03.30 PM

Affiliation/s:

1. Japan Institute for Health Security, Japan

Challenges in diagnosing and treating Meloidosis in South Asia

Dr. Chiranjay Mukhopadhyay[1]

Session ID: GH.7
Time: 04.00 - 04.20 PM

Affiliation/s:

1. Kasturba Medical College, India

MISSION Melioidosis in India

Dr. Harpreet Kaur[1]

Session ID: GH.8
Time: 04.20 - 04.40 PM

Affiliation/s:

1. Indian Council of Medical Research, New Delhi, India

Emergence of Melioidosis in Sri Lanka (Video)

Prof. Enoka Corea[1]

Session ID: GH.9
Time: 04.40 - 05.00 PM

Affiliation/s:

1. Faculty of Medicine, University of Colombo, Sri Lanka

Day 2 - (Parallel Session): Symposium on Telemedicine/Telehealth (Hall B)

29th August, 2025 [09:30 AM – 05:00 PM BST]

Note: Main Scientific Session will commence as parallel session at Main Hall!

SESSION B: AI and digital transformation in telemedicine/telehealth [Chair: Dr. Jigme Yoezer, Digital Health and Innovation Unit [DHIU] & CRRH, Gelephu]

Four Banks Project: Achieving National Health and Wellbeing through Data Utilisation
Mr. Masaki Abe[1]

Session ID: B.1
Time: 09.30 - 09.45 AM

Affiliation/s:

1. JICA, Japan

Applications of AI and Digital Health Innovations for Chronic Disease Management in Primary Care
Associate Prof. (Dr) Chaisiri Angkurawaranon[1]

Session ID: B.2
Time: 09.45 - 10.00 AM

Affiliation/s:

1. Chiang Mai University, Thailand

Digitally Empowered Community Health: Advancing Telehealth and e-Dispensing in Kisumu County, Kenya - [Virtual]
Dr. Gregory Ganda[1]

Session ID: B.3
Time: 10.00 - 10.15 AM

Affiliation/s:

1. Department of Health, Kisumu County Government, Kenya

Comparison of an AI-Based App (MEASUREmense™) and Pictorial Blood Assessment Chart for Evaluating Menstrual Bleeding: A Randomized Trial
Associate Prof. (Dr) Adisak Tantiworawit[1]

Session ID: B.4
Time: 10.15 - 10.30 AM

Affiliation/s:

1. Chiang Mai University, Thailand

Feasibility Study for Introduction of National Radiology Platform in Bhutan - [Virtual]
Mr. Eiichiro Ichikawa[1]

Session ID: B.5
Time: 10.30 - 10.45 AM

Affiliation/s:

1. International participant, Japan

SESSION C: Global & inclusive telemedicine/telehealth collaboration [Chair: Associate Prof. (Dr) Adisaki Tantiworawit, Chiang Mai University]

International Collaboration on Telemedicine at Kagawa University
Prof. Kenji Wada[1]

Session ID: C.1
Time: 11.15 - 11.30 AM

Affiliation/s:

1. Kagawa University, Japan

Inclusive Innovation for Maternal Health Equity
Ms. Yuko Ogata[1]

Session ID: C.2
Time: 11.30 - 11.45 AM

Affiliation/s:

1. International participant, Japan

Overcoming Perinatal Challenges: Kagawa University's Global Contribution through Medical Innovation
Prof. Masaaki Tokuda[1]

Session ID: C.3
Time: 11.45 - 12.00 PM

Affiliation/s:

1. Kagawa University, Japan

The experience of international telepathology diagnosis for six years at the Vietnamese health evaluation center - [Virtual]
Prof. Ichiro Mori[1]

Session ID: C.4
Time: 12.00 - 12.15 PM

Affiliation/s:

1. International participant, Japan

Telemedicine and Legal Issues in Japan - [Virtual]
Prof. Tadao Koezuka[1]

Session ID: C.5
Time: 12.15 - 12.30 PM

Affiliation/s:

1. International participant, Japan

SESSION D: Telemedicine/telehealth for maternal & perinatal health care [Chair: Prof. Masaaki Tokuda, Kagawa University]

Development of ultra-compact fetal monitor (iCTG) and its global expansion - [Virtual]
Prof. Kazuhiro Hara[1]

Session ID: D.1
Time: 02.00 - 02.15 PM

Affiliation/s:

1. Kagawa University, Japan

Designing Fetal Monitoring for Real-World Constraints: Toward Scalable, Intelligent Screening
Mr. Keiji Ninomiya[1]

Session ID: D.2
Time: 02.15 - 02.30 PM

Affiliation/s:

1. International participant, Japan

The effect of the telemedicine of the perinatal care on remote islands in Japan - [Virtual]
Dr. Kohei Odagiri[1]

Session ID: D.3
Time: 02.30 - 02.45 PM

Affiliation/s:

1. International participant, Japan

Utilization of iCTG in Ishikawa prefecture which suffered from shortage of obstetricians and a big earthquake as a role modeling for Bhutanese perinatal medicine
Dr. Yasuko Oka[1]

Session ID: D.4
Time: 02.45 - 03.00 PM

Affiliation/s:

1. International participant, Japan

SESSION D: Session D: Telemedicine/telehealth for maternal and perinatal health care ... Cont'd [Chair: Associate Prof. (Dr) Adisaki Tantiworawit, Chiang Mai University]

Implementation of Mobile Cardiotocography for Pregnancy to Improve Pregnancy and Child Health
Session ID: D.5
Time: 03.00 - 03.15 PM

Associate Prof. (Dr) Suchaya Luewan[1]

Affiliation/s:

1. Chiang Mai University, Thailand

Exploring the Bhutanese Context-appropriate Approach to Nationwide Telemedicine Implementation - Lessons Learned from the Early Efforts to Introduction of the iCTG System - [Virtual]
Session ID: D.6
Time: 03.15 - 03.30 PM

Prof. Kozo Watanabe[1]

Affiliation/s:

1. International University, Japan

Knowledge, Attitudes and Perceptions (KAP) about the use of iCTG in Bhutan
Session ID: D.7
Time: 03.30 - 03.45 PM

Mr. Kinley Dorjee[1]

Affiliation/s:

1. Ministry of Health, Bhutan

Current Status of Telemedical Care Using Digital Devices in Prenatal Checkups: A Preliminary Report from a National Survey - [Virtual]
Session ID: D.8
Time: 03.45 - 04.00 PM

Dr. Tokumasa Suemitsu[1]

Affiliation/s:

1. International participant, Japan

SESSION E: Presidential

Presidential Session: Shaping the Future Together: A Trilateral Dialogue between KGUMSB, Chiang Mai University, and Kagawa University

Session ID: E.1
Time: 04.15 - 05.15 PM

SESSION F: Session D: Closing of Telemedicine/Telehealth Symposium

Address by Kagawa University

Dr. Keiji Wada Luewan[1]

Affiliation/s:

1. Kagawa University, Japan

Session ID: F.1
Time: 05.15 - 05.20 PM

Address by Chiang Mai University

Dr. Winita Punyodom[1]

Affiliation/s:

1. Chiang Mai University, Japan

Session ID: F.2
Time: 05.20 - 05.25 PM

Address by MECRIT, KGUMSB

Mr. Rixin Jamtsho[1]

Affiliation/s:

1. MECRIT, KGUMSB, Bhutan

Session ID: F.3
Time: 05.25 - 05.30 PM

Day 2 (B) - Main Scientific Sessions

29th August, 2025 [09:00 AM – 05:00 PM BST]

SESSION B1: Main Scientific Session - Opening

Release of 9th ICMH 2025 Abstract Booklet - by Hon'ble President, KGUMSB

Session ID: B1.1
Time: 09.00 - 09.10 AM

Dr. Pem Namgyal[1]

Affiliation/s:

1. President, KGUMSB, Thimphu, Bhutan

Keynote Address - by IAS Chief Secretary

Session ID: B1.2
Time: 09.10 - 09.20 AM

Ms. Sujata Saunik[1]

Affiliation/s:

1. Former IAS Chief Secretary, Govt. of Maharashtra, India

Address - by Registrar, OOP, KGUMSB

Session ID: B1.2
Time: 09.20 - 09.30 AM

Dr. Kuenzang Chhezom[1]

Affiliation/s:

1. OOP, KGUMSB, Thimphu, Bhutan

B2 [SUB-THEME 1]: Advancing Nutrition & Combating Non-Communicable Diseases for a Healthier Future

Invited Speaker for Sub-Theme 1

Prof. Shigeru Yamamoto[1]

Affiliation/s:

1. Distinguished Research Professor, Aomori University of Health & Welfare, Japan

Session ID: B2.1
Time: 09.30 - 09.50 AM
Moderators: Mr. Laigden Dzed, Chief Program Officer, NCD, DoPH, MoH (Chair) & Mr. Pema Lethro, National Professional Officer, WHO CO, Thimphu (Co-Chair)

Influence of Sodium Reduction Using KCL and MSG on the Nutritional Profile and Consumer Acceptability of Bhutanese Cheese Curries

Session ID: B2.2
Time: 09.50 - 10.05 AM

Tenzin Wangchuk[1], Nattira On-Nom[2] & Chaowanee Chupeerach[2]
[1]Nutrition & Diet Services, JDWNRH, Bhutan; [2]Mahidol University, Thailand;

Background: The study explores the influence of sodium reduction on the nutritional profile and consumer acceptability of traditional Bhutanese cheese curries—Shakam Datshi (SD) and Kewa Datshi (KD). High sodium content in these popular dishes contributes to the rising burden of non-communicable diseases (NCDs) in Bhutan. **Objective:** This study aimed to reformulate popular high-sodium Bhutanese cheese curries—Dried beef cheese (Shakam Datshi) and Potato cheese (Kewa Datshi)— to reduce sodium content by substituting with potassium chloride (KCl) and monosodium glutamate (MSG), while preserving traditional flavors and improving their nutritional profiles. **Method/s:** Dried beef cheese (Shakam Datshi-SD) and Potato Cheese (Kewa Datshi-KD) were identified as the highest sodium content dishes among commonly consumed Bhutanese meals. Sodium was partially replaced with KCl and MSG. Additional ingredient adjustments to align with WHO dietary guidelines. Sensory using 9-point hedonic and Satiety evaluations using a Visual analog scale (VAS) with 50 Bhutanese panelists compared the modified recipes to the original. Assessed the acceptance and fullness provided by the reformulated dishes in our healthy set menus. **Results:** The reformulation achieved a 20% reduction in sodium for SD and over 40% for KD. Potassium levels significantly increased from 145.32 mg to 377.47 mg in SD and 581.55 mg to 651.51 mg in KD. Total fat was reduced by 15.15% and saturated fats by 16.74% in SD, and 43.50% total fat and 38.53% saturated fat reduction were seen in KD. Sensory evaluations indicated that the modified recipes retained high overall liking scores, similar to the originals (7.96 vs. 8.28 for SD and 7.48 vs. 7.90 for KD). Satiety assessments revealed sustained feelings of fullness over the three-time intervals on VAS. **Conclusion/s:** This study demonstrates that significant sodium reduction in traditional Bhutanese cheese curries can be achieved without compromising taste or cultural authenticity. These findings provide a viable strategy to reduce hypertension in Bhutan through healthier dietary options.

Flourish or perish? Analyzing the drivers of nutritional outcomes within the changing forest-food-health nexus among Solega tribes of BR hills, Karnataka - [Virtual]

Session ID: B2.3
Time: 10.05 - 10.20 AM

Shreelata Rao Seshadri[1], Dhanya Bhaskar[2], Gayatri Menon[1] & Sheetal Patil[3]
[1]Ramalingaswami Centre of Equity & Social Determinants of Health, Public Health Foundation of India, India; [2]IIFM, Bhopal; [3]IIHS, Bangalore

Introduction: For forest dependent indigenous communities, changes in quality and quantity of resources from forests has transformed both their daily diet and lifestyle. This is reflected in the changing pattern of food consumption among tribal communities in India, with significant increases in consumption of fats (including animal fats), sugar and processed food (NSSO, 62nd Round), leading to negative health and nutritional consequences. Solega adults were reported to be suffering from nutritional deficiencies (Krishna Raj et al 2017) and children were found to be anaemic and low in their BMI values (Jai Prabhakar and Gangadhar (2016). **Objective:** Analyse the symbiotic link between forests, food and health in shaping nutritional outcomes and wellbeing among the Solega and examine the generative value of the concept of flourishing (VanderWeele, 2017). **Method/s:** We used qualitative research methods to analyse the drivers of nutritional outcomes in 60 households in eight podus located in five different forest types. **Results:** Our household survey revealed a shift away from forest-based produce and traditional food systems. Consumption of millets by almost 50%, alongside greens, fruit and tubers traditionally gathered from forests. The pattern of dietary change was significantly different based on forest type. **Conclusion/s:** In the Solega context flourishing is inextricably linked to the easy availability of and access to forest-based foods. The provision of a nutritionally rich and diverse food basket via the public distribution system or the market does not sufficiently guarantee a nutritionally adequate diet or well-being. Flourishing has been shown to be closely linked to forests that are the source of mental health, purpose and social connections.

The challenge of preventing metabolic syndrome through the effective use of naturally-occurring functional sweeteners

Session ID: B2.4
Time: 11.00 - 11.15 AM

Masaaki Tokuda[1]
[1]*Kagawa University, Japan*

Abstract: "Rare sugars" refer to monosaccharides and their derivatives that exist in only small quantities in nature, with more than 50 types identified. Kagawa University has advanced research on rare sugars and discovered that allulose exhibits various physiological functions beneficial to human health. Allulose, with an energy value of 0.39 kcal/g (Metabolism. 2010;59(2):206–214), has about 70% of the sweetness of sucrose and a clean, pleasant taste. It possesses two major health benefits, the first being the suppression of postprandial blood glucose elevation. Human trials using 75g OGTT showed that a dose of 5g or more is effective (Biosci. Biotechnol. Biochem. 2010, 74, 510–9). The underlying mechanisms include:

- Inhibition of carbohydrate-digesting enzymes (Tech Bull Fac Agr Kagawa Univ. 2006;58: 27–32).
- Suppression of glucose and fructose absorption in the small intestine (J Agric Food Chem, 2013;61:7381–6).
- Promotion of GLP-1 (Glucagon-like Peptide 1) secretion from L-cells in the small intestine (Nat Commun. 2018;9:113).
- Protection of pancreatic β-cells responsible for insulin secretion (Biochem Biophys Res Commun. 2012;425:717–23).
- Activation of hepatic glucokinase and promotion of glycogen synthesis (Yakuri to Chiryo. 2010; 38: 261–9).

Additionally, allulose enhances fat oxidation, with studies showing a 30% increase in fat burning when combined with exercise following intake of a beverage containing 5g of allulose (Yakuri to Chiryo. 2019;47:517–525). Long-term intake in moderately obese individuals (aged 20–40 years, BMI 23 kg/m^2) led to reductions in visceral and subcutaneous fat (Nutrients. 2018;10:160). These findings indicate that naturally occurring, zero-calorie cellulose positively influences both glucose and lipid metabolism, suggesting its potential in suppressing the progression of metabolic syndrome. As diabetes and obesity continue to rise globally, allulose is expected to serve as a functional sweetener for prevention and improvement of NCDs.

Session ID: B2.5
Time: 11.15 - 11.30 AM

Medication adherence among Type 2 Diabetes Mellitus and its associated risk factors: a prospective cross-sectional study in Bhutan

Kezang Tshering[1], Thinley Thinley[1], Karma Rabgay[1], Kipchu Kipchu[2], Sanga Tenzin[3], Pem Tamang[4] & Kharkha Bdr. Bhattarai [1]
[1]Dept. of Pharmacy, JDWNRH, Bhutan; [2]Department of Pharmacy, Bumthang District Hospital, Bumthang, Bhutan; [3]Department of Pharmacy, Eastern Regional Referral Hospital, Monggar, Bhutan; [4]Department of Pharmacy, Central Regional Referral Hospital, Gelephu, Sarpang, Bhutan

Introduction: Type 2 Diabetes Mellitus (T2DM) is a chronic disease posing significant health burden worldwide. Adequate adherence to antidiabetic agents significantly improves glycemic control, whereby decreasing the risk of complications and overall healthcare cost related to uncontrolled T2DM. **Objective:** To assess medication adherence among T2DM patients and to determine the risk factors associated with poor medication adherence. **Method/s:** A prospective cross-sectional study was conducted at the out-patient unit, department of pharmacy, Jigme Dorji wangchuck National Referral hospital (JDWNRH) from April to June 2025. Adult T2DM patients who were on medication for at least one month were interviewed using a translated and validated 8-item Morisky Medication Adherence Scale (MMAS-8) to assess adherence to antidiabetic medication. Data were analyzed using SPSS version 27. **Results:** A total of 201 T2DM patients aged between 26 to 92 years (mean age: 57.8 $\pm$11.4 years) were included. The majority (120, 59.7%) of the study participants were male and more than half (66.7%, n=134) were without any formal education. Only 22.4% (n=45) of the participants exhibited high medication adherence, with 35.5% and 41.8% showing low and moderate adherence respectively. Participants on combination therapy were more likely to be non-adherent to medications (OR: 2.15, 95% CI 1.1 - 4.2) as compared to their counterparts. Sex and education background were not associated with poor medication adherence in our study. **Conclusion/s:** The overall medication adherence rates among our participant were low as compared to other similar studies and was associated with combination therapy. Targeted intervention is required to improve the overall medication adherence among T2DM.

Ankle Brachial Index as an Early Biomarker of Cardiometabolic Risk in Indian Adults: Evidence from a Population-Based Study - [Virtual]

Session ID: B2.6
Time: 11.30 - 11.45 AM

Partha Sarathi Datta
[1]*Centre for Public Health and Hygiene Research (CPHHR), India*

Introduction: The ankle brachial index (ABI) is a robust surrogate marker of peripheral arterial disease (PAD) and systemic atherosclerosis, with emerging utility in cardiovascular risk stratification among asymptomatic populations. **Objective:** To investigate the prevalence and determinants of low ABI ($<$0.90) among adults aged 21–50 years and its predictive capacity for clustered cardiometabolic risks. **Method/s:** A community-based cross-sectional study was conducted among 3,467 adults (mean age 36.8$\pm$7.9 years; 41.0% female) in Eastern India. ABI was measured using Doppler-assisted systolic pressure recordings at posterior tibial and brachial arteries. Advanced multivariable logistic regression and ROC-AUC analysis were employed. **Results:** Low ABI prevalence was 9.6% (95% CI: 8.6–10.6), significantly higher in males (11.7%) than females (6.6%, p$<$0.001). Adjusted odds for low ABI were elevated in individuals with hypertension (aOR: 2.08; 95% CI: 1.58–2.75), current smoking (aOR: 2.74; 95% CI: 2.06–3.64), diabetes (aOR: 1.81; 95% CI: 1.29–2.54), and BMI $\geq$25 kg/m^2 (aOR: 1.49; 95% CI: 1.17–1.89). ABI¡0.88 yielded an AUC of 0.884 (95% CI: 0.861–0.903), with 85.3% sensitivity and 82.6% specificity for predicting $\geq$2 cardiometabolic abnormalities. **Conclusion/s:** Low ABI, even in young adults, independently signals elevated cardiometabolic burden. ABI screening offers a scalable tool for early vascular risk detection in primary care and NCD control frameworks, especially in resource-limited settings.

B3 [SUB-THEME 2]: Innovative Approaches to Mental Health, Healthcare Delivery & Aging: Shaping the Future of Global Health

Invited Speaker for Sub-Theme 2

Dasho Dechen Wangmo[1]

Affiliation/s:

1. Head, PEMA Secretariat, Thimphu, Bhutan

Session ID: B3.1
Time: 12.00 - 12.20 PM
Moderators: Dr. Damber K. Nirola, Psychiatrist, Dept. of Psychiatry, JDWNRH (Chair) & Mr. Zimba Letho, Lecturer, FNPH, KGUMSB (Co-Chair)

Why elderly people are moving to old-homes in a society in transition: a snap-shot in Bangladesh - [Virtual]

Session ID: B3.2
Time: 12.20 - 12.35 PM

Sanchoy Kumar Chanda[1]
[1] *Training and Research SARPV, Bangladesh*

Introduction: Ageing (60 yrs+) is one of the most discussed topics in recent time, and ageing population in Bangladesh has tripled in last couple of decades. Elderly people were 7.47% in census 2011, which increased to 9.29% in 2022 in a country of 160 million people. Traditionally, elderly in Bangladesh live in joint family with kins. However, social norms have worn-out due to rapid socio-economic transformation and extended family system is almost abolished. Many elderly people live in old-homes, mainly run by private organization or charity. **Objective:** The objective of this study was to explore the factors forced elderly to live in old-homes and coping with new environment. **Method/s:** Elderly living in three old-homes (n=90) in the capital city were interviewed. Information on reasons for staying in home and satisfaction etc. were collected along-with sociodemographic facts. **Results:** Almost all are from affluent family, 58% male and 32% female. 68% of men and 36% women were retired officials. Reasons were multiple, like problem with family members (57%), children in abroad (21%), no care at home (67%), burden in the family (24%), properties were grabbed (27%). 90% are satisfied with overall management of old-home. **Conclusion/s:** People in this study are mainly from urban middle-class and rich family, may not reflect the real situation of elderly in the society. However, it's a new idea or one answer of the elderly in a society in transition, needs further wide-range research to reflect the indication of the growing rift between generations.

Passed Down to Protect Public Health: The Hidden Power of Indigenous Traditions and Beliefs in Bhutan

Session ID: B3.3
Time: 12.35 - 12.50 PM

Nidup Dorji,[1]
[1]*Faculty of Nursing & Public Health (FNPH), KGUMSB, Bhutan*

Abstract: Development and economic modernization often lead to natural resource exploitation and ecological degradation, which are closely linked to public health challenges and declines in the overall well-being. In contrast, Bhutan has made a remarkable commitment to sustainable development, choosing to prioritize long term environmental and societal well-being over short-term economic gains. This dedication has garnered international acclaim, highlighted by several prestigious awards, including: the Murie Spirit of Conservation Award, the United Nations' first 'Champion of the Earth' title in 2005, and the WWF's J. Paul Getty Award for Conservation Leadership in 2006. Bhutan's approach to ecological conservation and restoration serves as a critical health-enabling strategy, benefiting both the environment and human well-being. While many regions face severe ecological degradation and resource exploitation, Bhutan has successfully conserved and mindfully utilized its natural resources, guided by indigenous beliefs which are of public health blessings. This paper looks at some of the Bhutan's indigenous beliefs and their important role in supporting public health and well-being. It also underscores the necessity of scientific researches to explore and better understand how these traditional beliefs may positively impact health and promote quality of life.

Development of a Prophylactic Vaccine for Kalaazar: experience

Session ID: B3.4
Time: 02.00 - 02.15 PM

Abhay R Satoskar[1]
[1]*Department of Pathology & Microbiology, The Ohio State University, Columbus, USA*

Abstract: Over 12 million people currently suffer from leishmaniasis, and approximately 2 million new cases occur each year, making it a major global health problem and a WHO classified neglected tropical disease (NTD). Cutaneous leishmaniasis (CL) is the most common form of Leishmania infection which manifests as localized skin lesions that can become chronic, leading to significant tissue destruction and disfigurement. Other forms of infections are mucosal leishmaniasis (ML), or life-threatening visceral leishmaniasis (VL) caused by L. donovani and L. infantum. VL is the second most common fatal parasitic infection after malaria and is characterized by dissemination of the parasites to liver, spleen and bone marrow. The zoonotic potential of human leishmaniasis has also been escalating with increased incidence of canine infections, which is the main reservoir host for L. infantum worldwide including the United States. A safe and effective vaccine is critical for control and elimination of leishmaniasis but none is available for humans. This talk will provide overview of the disease including global prevalence, pathogenesis, mechanisms of immunity and immune corelates of protection, animal reservoirs and challenges for elimination. In addition, past efforts in vaccine development, current veterinary vaccines, animal models for vaccine testing, challenges in human vaccine development, target product profile (TPP) for the vaccine, current status of human vaccines at advanced stages of development, and strategies for their clinical testing will be discussed.

Neurosurgical Burden, Challenges & Updates of Neurosurgical Services in the Country (Bhutan) from 2021

Session ID: B3.5
Time: 02.15 - 02.30 PM

Sonam Jamtsho[1]
[1] *Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Thimphu, Bhutan*

Introduction: The establishment of a comprehensive neurosurgical department in Bhutan has been a long-standing goal, driven by the increasing demand for specialized neurological care in the country. This paper chronicles the historical trajectory of neurosurgery in Bhutan, detailing its nascent stages, current operational capacities, and the formidable challenges that persist, while also articulating strategic imperatives for its future advancement. It highlights the significant strides made despite resource limitations and underscores the critical need for continued development to meet the complex demands of neurological care in the region. This analysis aims to provide a comprehensive overview, from the foundational efforts in 2008 to the current status in 2025, delineating the specific milestones achieved and the persistent gaps in optimal neurosurgical service. **Objective:** To document and analyze the phased evolution, current capabilities, and future roadmap of neurosurgical services in Bhutan from 2008 to 2025, highlighting clinical outcomes, operational challenges, and strategic growth in a resource-constrained setting. **Method/s:** Retrospective analysis of clinical activity from August 2021 to August 2025 was conducted, alongside qualitative review of service development milestones, infrastructure expansion, human resource allocation, and system-level challenges. **Results:** Between August 2021 and August 2025, 1,698 neurosurgical operations were performed, with an average of 28–35 cases per month and over 2,600 consultations, primarily from JDWNRH emergency and other 20 district hospitals. **Conclusion/s:** Bhutan's neurosurgical services have grown from basic trauma procedures to an increasingly comprehensive specialty within just four years of establishing. This evolution was driven by dedicated leadership, international collaboration, focused training, and progressive infrastructure investment. While major gaps remain in Bhutan's neurosurgical model demonstrates that systematic, phased development in low-resource settings is both feasible and impactful.

B4 [Panel Discussions]: Medical Education in the 21st Century

Invited Speaker for Panel discussion

Lyonpo Thakur S. Powdyel[1]

Affiliation/s:

1. Former Education Minister, Thimphu, Bhutan

Session ID: B4.1
Time: 02.40 - 03.00 PM
Moderators: Diki Wangmo, Dean, Apollo Bhutan Institute of Nursing (Chair) & Mr. Nima Sangay, Dean of FNPH, KGUMSB (Co-Chair)

Panelists:

Session ID: B4.2-B4.8
Time: 03.30 - 05.00 PM

1. Dr. Karma Sherub, Dy. Dean, FoPGM, KGUMSB, Thimphu, Bhutan
2. Mr. Tashi Penjor, Chief Planning Officer, PPD, Ministry of Health, Thimphu, Bhutan
3. Ms. Tshering Yangzom, Dy. Dean, FNPH, KGUMSB, Thimphu, Bhutan
4. Dr. Mahesh Gurung, Interventional Cardiologist, JDWNRH, Thimphu, Bhutan
5. Mr. Kinley Dorjee, Research Officer, Health Info. & research Unit, PPD, MoH, Thimphu, Bhutan
6. Ms. Sonam Choki, Associate Professor, Royal Thimphu College, Thimphu, Bhutan
7. Prof. Shigeru Yamamoto, Distinguished Research Professor, Aomori University of Health & Welfare, Japan

Day 3 (C) - Main Scientific Sessions [30th August, 2025]

C1 [SUB-THEME 3]: Embracing Digital Transformation and Telemedicine/Telehealth for Advancing Quality Healthcare & Effective Health Communication

Invited Speaker for Sub-Theme 3

Professor Masaaki Tokuda[1]

Affiliation/s:

1. Kagawa University, Japan

Session ID: C1.1
Time: 09.00 - 09.20 PM
Moderators: Dr. Tashi Tenzin, Consultant Neurosurgeon, JDWNRH (Chair) & Dr. Jigme Yoezer, Lead, Digital Health & Innovation Unit, GMC/CRRH, Gelephu (Co-Chair)

Embracing Telemedicine and Digital Transformation for Advancing Quality Healthcare and Effective Health Communication: Insights from India's Digital Health Mission - [Virtual]

Session ID: C1.2
Time: 09.20 - 09.35 AM

Kamal Gulati[1]
[1]*Centralized Core Research Facility, All India Institute of Medical Sciences, New Delhi, India)*

Abstract: The rise of telemedicine and digital transformation presents a powerful avenue to advance healthcare quality and strengthen patient–provider communication, particularly in underserved regions. India's National Digital Health Mission (NDHM), launched in 2021, offers a lens to examine opportunities and challenges of scaling digital health solutions in resource-constrained settings. By 2025, NDHM issued over 300 million health IDs, expanded teleconsultations, and promoted integration of electronic health records to improve access for 700 million rural residents. Yet, limited connectivity and low digital literacy continue to hinder equitable implementation, despite supportive measures such as Telemedicine Practice Guidelines (2020) and collaborations with private providers.

We propose three strategies to enhance telehealth impact: (1) ensuring reliable platforms to bridge access gaps, (2) training providers and patients to improve digital literacy and trust, and (3) fostering partnerships to enable culturally sensitive, real-time communication. Initiatives like NDHM's "DigiSaksham" illustrate how digital tools can strengthen engagement and reduce inequities. This paper argues that aligning technological innovation with human-centered approaches is vital for scalability and equity, positioning telehealth as a transformative tool for both clinical excellence and robust health communication.

Regulatory Systems of Telemedicine in Japan - [Virtual]

Takashi Hasegawa[1]
[1] *Japan Telemedicine Society, Japan*

Session ID: C1.3
Time: 09.35 - 09.50 AM

Abstract: We provide an overview of Japan's comprehensive regulatory framework for telemedicine. It begins by classifying service models into Doctor-to-Doctor (DtoD) and Doctor-to-Patient (DtoP), explaining how each model reflects legal, clinical, and reimbursement-related value. In Japan, the promotion of advanced technologies such as AI, SaMD (Software as a Medical Device), and digital therapeutics is advancing under a regulatory environment that prioritizes physician responsibility and patient safety.

The legal foundations-including the Medical Practitioners Act and the Medical Care Act-define the legitimate forms of telemedicine, and in most DtoP cases, an appropriate combination with in-person consultations is essential. Legal guidelines are also provided by the Ministry of Health, Labour and Welfare. While the public health insurance system offers limited reimbursement for telemedicine, coverage is gradually expanding. The approval of medical devices and services is governed by the Pharmaceuticals and Medical Devices Act (PMD Act), under which Japan requires its own independent certification regardless of foreign approvals.

Telemedicine quality is assessed based on treatment effectiveness and safety, and further institutional research is encouraged. In addition, issues related to system design, personal data protection, and quality control should be prioritized as key challenges in social implementation. Although Japan's model may seem excessively detailed, it is systematic and addresses a wide range of issues-serving as a valuable reference for other countries developing their own telemedicine systems.

Introduction of tele-homecare using assistive technologies in Japan - [Virtual]

Session ID: C1.4
Time: 09.50 - 10.05 AM

Ryoji Suzuki[1]
[1] *Takasaki University of Health and Welfare, Japan*

Abstract: In Japan, 36.23 million people are aged 65 years or more, representing an aging rate of 29.1%. Among them, 63.9% either live alone or are married couples. To continue living independently at home, several elderly people use caregiver services and welfare equipment along with long-term care insurance. In 2025, the widespread adoption of IoT-based monitoring devices in households is expected, supported by municipal subsidies.

This presentation introduces some of the assistive technologies currently used in Japan. As a personal example, I will describe situations in which my parents used a one-dose package medication support system (ODP-MSS) and other devices.

We developed and evaluated the ODP-MSS-a pill dispenser that seals multiple medications intended to be taken together into single-dose film bags that are rolled on a rotating drum. If the patient misses a dose because of forgetfulness, a voice message is sent via telephone to their medication supporters, such as their child, to inform them of the missed dose. As a result of our research, the ODP-MSS was launched as Fookkun® (Ishigami Manufacturing Co., Ltd., Iwate, Japan) in 2015.

Additionally, my mother has been using Fookkun for approximately 10 years, and I have been using tele-home monitoring to support her care. Furthermore, I use Alexa from Amazon to communicate with my parents and exchange information with their care managers. By using these tele-homecare tools and assistive technologies, our families can live their lives with greater peace of mind.

ICT-Enabled Regional Collaboration for Sustainable Perinatal Care System in Kagawa Japan: A Tertiary Center's Approach

Session ID: C1.5
Time: 10.05 - 10.20 AM

Uiko Hanaoka[1], Noriko Kunitomo[1], Chiaki Tenkumo[1], Megumi Itou[1], Emiko Nitta[1], Nobuhiro Mori[1], Hirokazu Tanaka[2], Masaaki Tokuda[3] & Kenji Kanenishi[1]

[1]Department of Perinatology & Gynecology, Kagawa University, Japan; [2]Shodoshima Central Hospital/Department of Perinatology and Gynecology, Kagawa University; [3]Collaborating Researcher in the Faculty of Medicine, Kagawa University

Abstract: Japan's perinatal care system faces increasing challenges due to a declining birth rate and an aging maternal population. Obstetricians are burdened with heavy workloads, legal risks are rising, and regional disparities persist. In response, national policy promotes the improvement of working conditions and the centralization of services into perinatal centers equipped with MFICUs and NICUs. However, approximately 45% of deliveries still take place in small clinics ($\leq$19 beds), two-thirds of which have fewer than three full-time physicians. This situation demands the reorganization of perinatal care systems by leveraging local medical resources. Our tertiary perinatal center in Kagawa Prefecture-facing the Seto Inland Sea and serving island communities-has strengthened regional collaboration through ICT. The mobile fetal heart rate monitor "iCTG" enables real-time data sharing via cloud platforms. Coordination with referring clinics and emergency services allows continuous monitoring of fetal and maternal status before and during transport, facilitating timely preparation for emergency admissions. During the COVID-19 pandemic, iCTG was also used for non-contact monitoring in isolation settings, reducing exposure risks for healthcare providers.

Additionally, we employ the real-time telemedicine platform "Teladoc HEALTH" to support fetal ultrasound screening in remote clinics. Our ultrasound supervising physician provide real-time procedural guidance and diagnostic assistance, contributing to quality assurance, maternal reassurance, and upskilling of local clinicians. Although current ICT utilization remains case-specific, establishing routine, bidirectional information-sharing systems among primary, secondary, and tertiary institutions is vital. Such collaboration enhances responsiveness to maternal health changes and supports the development of a sustainable, regionally integrated perinatal care system.

C2 [SUB-THEME 4]: Navigating the Challenges of Fertility Decline and Demographic Shift: Socioeconomic Impacts & Public Health Strategies

Invited Speaker for Sub-Theme 4

Mr. Tashi Dorjee[1]

Affiliation/s:

1. Chief Statistical Officer, Social Statistics Division, NSB, Thimphu, Bhutan

Session ID: C2.1
Time: 11.00 - 11.20 AM
Moderators: Dr. Sonam Gyamtsho, HoD (Specialist), Dept. of Obstetrics & Gynecology, JDWNRH (Chair) & Dr. Mongal S. Gurung, Dy. Chief Research Officer, PPD, MoH (Co-Chair)

Incidence and risk factors of cervical laceration following vaginal deliveries in Punakha, Bhutan

Session ID: C2.2
Time: 11.20 - 11.35 AM

Nima Dorji[1], Manish Raj Gurung[1], Pema Wangchuk[2], Daniel Chateau[3] & Kinga Wangmo[4]
[1]Punakha District Hospital, Punakha, Bhutan; [2]Eastern Regional Referral Hospital, Monggar, Bhutan; [3]Australian National University (ANU), ACT, Canberra, Australia & [4]JDWNRH, Thimphu, Bhutan

Introduction: Cervical laceration is a critical health issue with significant maternal morbidity and mortality worldwide. This study aimed to evaluate the incidence and risk factors of cervical laceration among mothers following spontaneous vaginal delivery in Punakha, Bhutan. **Method/s:** This retrospective study using a population-based sampling technique included 180 mothers who had spontaneous vaginal delivery. The researchers developed the instruments for data collection and employed logistic regression to identify the predictors of cervical laceration. **Results:** The incidence of cervical laceration was 23.10% (95% confidence interval [CI] 18.2 to 27.9). Logistic regression revealed that mothers $\leq$19 years of age had 3.5 times higher odds of experiencing cervical lacerations compared with those $\geq$30 years of age (adjusted odds ratio 3.5 [95% CI 1.27 to 9.74]). **Conclusion/s:** The incidence of cervical laceration was high in this study, with teenagers being at greater risk of experiencing this complication. The Health Ministry of Bhutan needs to strategize and revamp the existing policies and create better awareness campaigns to reduce teenage pregnancies and the grave consequences associated with it.

Fetomaternal Outcome in Twin Pregnancies at the National Referral Hospital of Bhutan

Session ID: C2.3
Time: 11.35 - 11.50 AM

Rojna Rai[1] & Dinesh Pradhan[1]
[1]Department of Obstetrics & Gynecology, JDWNRH, Thimphu, Bhutan

Objective: To determine maternal-fetal characteristics and perinatal outcomes of twin pregnancies registered in JDWNRH. **Method/s:** Retrospective observational study of all twin pregnancies delivered at JDWNRH. Data extracted from the hospital's birth registers, operating room records, and patient records. The inclusion criteria were pregnancy more than 26 weeks, and exclusion criteria were pregnancy less than 26 weeks and multiples of higher order than twins. Maternal history and complications, twin complications, and perinatal outcome were studied. **Results:** There were 190 twin pregnancies – 115 monochorionic and 75 dichorionic. Incidence of twin pregnancies was 22/1000 live births (monochorionic 13.6/1000 live births, dichorionic 8.8/1000 live births). Most mothers were 20-29 years, multigravida, had conceived spontaneously, and had registered pregnancies. Cesarean section was predominant mode of delivery. Majority babies were born at term, cephalic-breech presentation being most common. Majority babies were low-birth weight and very low-birth weight. There were 6 cases of TTTS and 1 case of TAPS. There were 6 single twin demise and 4 both twin demise. Majority pregnancies resulted in live birth outcome. NICU admission was noted in 16.3%. There was higher incidence of monochorionic pregnancies with higher incidence of late preterm deliveries and low birth weight, higher incidence of birth weight discordancy, and worse perinatal outcome including higher rate of NICU admission. **Conclusion/s:** Significantly higher incidence of monochorionic pregnancies needs further research, and efforts have to be focused on these pregnancies since it results in higher incidence of late preterm births, low-birth weight, birth weight discordancy and NICU admission.

Determinants of Contraception and Fertility Decline in Bhutan

Session ID: C2.4
Time: 11.15 - 12.05 AM

Tshering Jamtsho[1], Mongal S. Gurung[2] & Kinley Dorjee[2]
[1]Research & Innovation Division, MECRIT, KGUMSB, Thimphu; &
[2]Policy & Planning Division, Ministry of Health, Thimphu, Bhutan

Introduction: Bhutan has witnessed a marked fertility decline over the past two decades, with the Total Fertility Rate (TFR) decreasing from 5.6 in 1994 to below replacement level in recent years. Understanding the determinants of current contraceptive use is essential to explain this demographic shift and inform reproductive health policy. **Objective:** This study aims to identify the key socio-demographic and economic determinants of current contraceptive use among women of reproductive age (15–49 years) in Bhutan, and to explore their contribution to the country's fertility decline. **Method/s:** A secondary data analysis was conducted using the Bhutan National Health Survey (NHS) 2023. The study included a weighted sample of women aged 15–49 years. Descriptive statistics were used to assess contraceptive prevalence, and multivariate logistic regression was applied to examine associations between contraceptive use and variables such as age, education, residence, number of living children, and media exposure. **Results:** The overall contraceptive prevalence rate was found to be 65.4%, with modern method use at 61.2%. Higher educational attainment, urban residence, and prior exposure to family planning information were significantly associated with increased likelihood of contraceptive use ($p < 0.05$). Women with secondary or higher education had 2.5 times greater odds of using modern contraception. The fertility decline was more pronounced in regions with higher access to health services and education. **Conclusion/s:** Current contraceptive use in Bhutan is strongly influenced by education, urbanization, and access to reproductive health information. These factors have contributed substantially to the national fertility decline, highlighting the need for targeted interventions to reduce regional and socio-economic disparities.

Implementing a Hub-and-Spoke Model for hrHPV DNA Cervical Cancer Screening in Rural India: The Amethi Model

Session ID: C2.5
Time: 12.05 - 12.20 PM

Nuzhat Husain[1], Parag Bhamare[2], Somesh Kumar[2], Subuhi Qureishi[2] & Devbrat Singh[1]
[1]Dr Ram Manohar Lohia Institute of medical sciences, Lucknow, India; [2]JHPIEGO India

Abstract: Cervical cancer remains highly prevalent in South Asia, yet conventional screening methods such as cytology and VIA have limited reach and impact. We piloted a high-risk HPV (hrHPV) DNA-based screening program using a hub-and-spoke model in rural Amethi, Uttar Pradesh, in partnership with JHPIEGO and local health authorities.

A total of 5,012 eligible women (aged 30–65, mean age 40) were enrolled between 2022–2024. With guidance from ASHAs, over 75% of participants self-collected cervical samples using FLOQSwabs® and Roche universal media. Samples were processed at a state referral center equipped with the Cobas 4800 system. The hrHPV positivity rate was 4.44%, with HPV16 comprising 31% of positives and other high-risk types 53%. Results were returned in an average of 8 days. Of the 274 women who tested positive, 146 underwent VIA triage and were treated by trained physicians.

This model demonstrates the feasibility and effectiveness of hrHPV self-sampling in low-resource settings. The "Amethi model" offers a scalable framework aligned with the WHO 90–70–90 targets for cervical cancer elimination.

SESSION C3: Closing & Valedictory

I. Keynote Address, Summary & Feedback Reports

Keynote: Health Systems & Service Delivery Foundations: Prerequisites for reaping the benefits of health technology and innovation
Dr. Sangay Thinley[1]

Session ID: C3I.1
Time: 02.00 - 02.20 PM

Affiliation/s:

1. Former Health Secretary (RGoB)/Director (SEARO, WHO), Thimphu, Bhutan

Summary of last 3 Day Conference sessions
Mr. Sonam Phuntsho[1]

Session ID: C3I.2
Time: 02.20 - 02.40 PM

Affiliation/Role:

1. Chief Rapporteur, 9th ICMH 2025, Sr. Planning Officer, OOP, KGUMSB

Participants' Feedback Survey Report
Mr. Tshering JAMTSHO[1]

Session ID: C3I.3
Time: 02.40 - 03.00 PM

Affiliation/Role:

1. Member Secretary, 9th ICMH 2025, Sr. Research Officer, RID-MECRIT, KGUMSB

II. Valedictory Sessions & Closing Remark

Best Presenters (Oral & Poster presentations), including Judges, Rapporteurs, MC & others certifications
Presented by: Hon'ble President, KGUMSB

Session ID: C3II.1
Time: 03.00 - 03.30 PM

Vote of Thanks & Closing Remarks
Mr. Sonam Dorji[1]

Session ID: C3II.2
Time: 03.30 - 03.40 PM

Affiliation/Role:

1. Director (Logistics Chairperson, 9th ICMH 2025), Dept. of Planning & Strategic Development, OOP, KGUMSB

SESSION D: Poster Presentations

29th August, 2025 [03:30 – 05:00 PM BST]

Poster Presentations Session

The Salivary Microbiome: A Non-Invasive Biomarker for Oral Cancer Detection

Session ID: D.1
Time: 03.30 - 05.00 PM

Shipra Gupta[1]
[1]*Post Graduate Institute of Medical Education and Research, Chandigarh, India*

Introduction: Oral cancer is the third most prevalent cancer in India. Research suggests a causal link between bacterial infections and the development of certain malignancies, with bacterial infections accounting for 16% of all cancer cases. Notably, oral microbial dysbiosis has been associated with the progression of oral carcinogenesis. Since the salivary microbiome closely mimics the oral microbiome, alterations in salivary microbial composition may play a role in oral cancer development. **Objective/s:** To investigate the potential overlap between the salivary microbiome and the microbiome of oral cancer lesions. **Method/s:** Following both aerobic and anaerobic culture of tumour tissue and saliva of 85 oral cancer patients, microbial colonies were identified using MALDI-TOF MS. Conventional PCR was used to investigate prevalence of Porphyromonas gingivalis. Selected samples were subjected to metagenomic analysis using next-generation sequencing approach. **Results:** Fusobacterium nucleatum was found in more abundance as compared to Porphyromonas gingivalis. A significant decrease in the alpha diversity was observed. Veillonella, Haemophilus, Actinomyces and Streptococcus species were highest among all the samples. Some taxa including Eikenella and Selenomonas were identified differentially in the tumour tissue than the other samples. Some core taxa including Prevotella, Pasteurella, Eikenella and Selenomonas were identified differentially in the tumour tissues of the subject. **Conclusions:** The present findings have potential implications for the early detection of oral cancer. A notable overlap was observed between the salivary microbiome and oral cancer lesions. Therefore, analysing the salivary microbiome could serve as a liquid biopsy for oral cancer detection.

Postoperative severe protein energy malnutrition in a case of Minigastric bypass procedure leading to death in an elderly female patient-lesson learned from case capsule

Session ID: D.2
Time: 03.30 - 05.00 PM

Mahendra Lodha[1]
[1]*All India Institute of Medical Sciences (AIIMS), Jodhpur, India*

Abstract: We present a case of an elderly female morbid patient who underwent a minigastric bypass procedure for a morbid obesity and comorbidity, for initial few month she was in a telephonic follow-up and losing weight, because she was a vegetarian, she was regularly insisted to increase protein diet, any how she was not able to increase her oral protein diet.

After few month she presented to the opd with psychosis and generalised weakness and oedema whole over the body special around the joint, she was having some symptoms of sepsis also, her albumin level were low, she was not able to move her joints and continuously bedridden and started skin lesion around groin.

We started her on TPN and enteral feed, we also worked up for the OA and started her on treatment for sepsis. Despite of TPN and continuous care for sepsis, we lost her and she died.

The lesson learned-elderly bariatric patient require strong post-operative protocol for the protein energy malnutrition

Digital Continuing Professional Development for Midwives in LMICs: A Scoping Review of Educational Design, Outcomes, and Implementation Contexts

Session ID: D.3
Time: 03.30 - 05.00 PM

Miyuki Toda[1]
[1]*Hiroshima University, Japan*

Introduction: Although digital learning for midwives in low- and middle-income countries (LMICs) has increased, few reviews have thoroughly examined these interventions. Midwives play a crucial role in improving maternal and newborn health in LMICs, yet many lack access to high-quality continuing professional development (CPD). Digital education offers flexible solutions, but evidence regarding its design and implementation remains fragmented. **Objective/s:** This scoping review aimed to outline the characteristics of digital CPD interventions for qualified midwives in LMICs, including educational content, delivery methods, learning outcomes, theoretical frameworks, and implementation factors. **Method/s:** We followed Arksey and O'Malley's scoping review framework and PRISMA-ScR guidelines. We searched six databases for studies published from 2010 to April 2025. Eligible studies included digital CPD interventions for in-service midwives in LMICs. Data were charted and synthesized narratively. **Results:** Of the 1,321 records screened, 28 studies were included. Interventions primarily focused on emergency obstetric care and neonatal resuscitation, utilizing mobile, online, and blended formats. Most studies reported improved knowledge or confidence (Moore Levels 3–4), although few assessed changes in behavior or patient outcomes. A limited number of studies reported on the use of educational theory or on sustainability. Barriers included restricted internet access, time constraints, and short-term interventions, while facilitators included offline access and peer support. **Conclusions:** To support sustainable improvements in maternal care, digital CPD interventions for midwives in LMICs should be explored with a focus on integrating educational theory, addressing implementation challenges and enablers, and assessing long-term and higher-level outcomes.

Session ID: D.4
Time: 03.30 - 05.00 PM

Effect of Total Intravenous Anaesthesia with Propofol and Dexmedetomidine Versus Inhalational Anaesthesia on Perioperative Inflammation in Oral Cancer Surgery: A Randomised Controlled Trial

Priyanka Sethi[1], Pradeep Kumar Bhatia[1], Manbir Kaur[1], Kamla Kant Shukla[1] & Jeevan Ram Vishnoi[1]
[1]All India Institute of Medical Sciences (AIIMS), Jodhpur, India

Introduction: Anaesthesia play an important role in modulating perioperative inflammation which may influence cancer progression and metastasis. **Objective/s:** To compare changes in postoperative levels of TNF-α, IL-6, IL l0 and IL13 after two different anaesthesia techniques, in oral cancer surgery patients at day 1 and day 3. **Method/s:** After ethics approval, 66 patients aged 25 to 65 years, with oral cancer were randomized into two groups. Preoperative inflammatory markers (IL-6, IL-10, IL-13, and TNF-α) were measured. Patients in group A received Total intravenous anaesthesia (TIVA) with propofol and dexmedetomidine infusion(0.5mcg/kg/hr infusion) and group B received inhalational agent for maintenance. Biomarkers were again measured on postoperative day 1 and day 3. Day of discharge and day of return of intended oncological therapy (RIOT) were also noted. Quantitative variables are presented as median (IQR) or mean (SD). Chi square test was applied for qualitative data. Unpaired student's t test was applied for comparing quantitative data. The results were significant if P value was < 0.05. **Results:** Postoperative levels of IL-6, IL-10, TNF-α, and IL-13 were comparable between groups on both days. Most patients (57%) were discharged by day 3 in both groups. No significant differences were found in day of discharge ($p = 0.783$) or RIOT ($p = 0.235$). **Conclusions:** TIVA and inhalational anaesthesia resulted in similar effects on perioperative immune response, hospital discharge timing, and RIOT in oral cancer patients. Either technique may be selected based on individual patient profiles, comorbidities, and surgical considerations without impacting short-term perioperative outcomes.

Effect of High Protein Normo-Caloric Nutrition on Skeletal Muscle Wasting in Critically ill Mechanical Ventilated Patients: A Randomized Double-Blind Study

Session ID: D.5
Time: 03.30 - 05.00 PM

Bikash Ranjan Ray[1]
[1]*All India Institute of Medical Sciences (AIIMS), New Delhi, India*

Introduction: Muscle wasting is a common finding among patients in intensive care units (ICU) and is associated with poor outcomes. During ICU stay, delivering appropriate nutritional support minimize the muscle loss which can be reliably track using ultrasound. **Objective/s:** We sought to measure the impact of high-dose protein based nutrition on muscle mass, muscle echogenicity and fascial characterstics in critically ill patients. **Method/s:** We conducted a randomized prospective, double-blind trial in 30 critically ill patients, anticipated to be mechanically ventilated for >48 hours. Patients received 1.5gm/kg/day of protein in the high protein group (HPF) compared to 1gm/kg/day of protein in standard feed group (SF). Muscle thickness, cross-sectional area, echogenicity and pennation angle was measured on days 1, 3, 5, and 7 after admission to critical care. Right lower limb Vastus lateralis, medial head of gastrocnemius were investigated. **Results:** We found progressive loss of muscle mass from day1 to 7 in both the groups. However in the gastrocnemius and vastus lateralis muscles, muscle thickness, and cross-sectional area were significantly high in the HPF over 7 days. Change in echogenicity, pennation angle were not significant between the groups. **Conclusions:** In critically ill, mechanically ventilated patients, high protein normo-caloric nutrition decreases the muscle wasting in lower limb weight-bearing muscles, during first seven days of ICU stay. However, the changes in qualitative muscle parameters (echogenicity and pennation angle) were not significant.

Intravascular Ultrasound (IVUS) guided PCI in Bhutan

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Session ID: D.6
Time: 03.30 - 05.00 PM

Abstract: Unprotected left main coronary artery disease (ULM CAD) poses a high risk for extensive myocardial ischemia and mortality. We report the first intravascular ultrasound (IVUS)-guided percutaneous coronary intervention (PCI) in Bhutan performed on a 56-year-old male with ULM CAD and triple vessel disease (TVD).

Initially advised coronary artery bypass grafting (CABG), the patient opted for PCI. IVUS, brought temporarily for demonstration, guided stent optimization during a staged PCI. IVUS enabled precise assessment of lesion morphology and real-time guidance of stent deployment, significantly improving procedural safety and efficacy.

The success of this landmark case demonstrates the clinical value and necessity of IVUS in Bhutan's growing interventional cardiology services. This case highlights the importance of intravascular imaging in high-risk PCI and the urgent need for permanent IVUS acquisition in Bhutan.

First Clinical Experience with Intra-Aortic Balloon Pump Therapy in Bhutan

Session ID: D.7
Time: 03.30 - 05.00 PM

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Abstract: The intra-aortic balloon pump (IABP) is a mechanical circulatory support device used in the management of cardiogenic shock and acute coronary syndromes. Although its global use has declined due to the advent of advanced technologies, IABP remains a crucial and accessible intervention in resource-limited settings. This case series presents the first successful clinical application of IABP therapy at the Heart Centre, Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Bhutan.

The intra-aortic balloon pump (IABP) enhances myocardial oxygen delivery and systemic perfusion in patients experiencing cardiogenic shock, severe myocardial ischemia, or those undergoing high-risk percutaneous coronary intervention (PCI). The device inflates during diastole and deflates just before systole, reducing afterload and improving coronary perfusion, thereby stabilizing hemodynamics in critically ill cardiac patients [1].

While advanced mechanical circulatory support devices such as extracorporeal membrane oxygenation (ECMO), Impella, and ventricular assist devices (VADs) have emerged, they are expensive and require significant infrastructure and expertise, making them less suitable in low-resource environments. IABP continues to be a valuable option due to its affordability, ease of use, and established clinical benefit when used appropriately [2,3]. This case series describes the initial experience with IABP therapy at JDWNRH in two patients with cardiogenic shock due to acute myocardial infarction.

Session ID: D.8
Time: 03.30 - 05.00 PM

Rare Fetal Giant Sacrococcygeal Teratoma – Prenatal Detection, Monitoring, and Postnatal Management: A Case Report and Literature Review

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Introduction: Sacrococcygeal teratoma (SCT) is a rare congenital tumor originating from pluripotent cells at the base of the coccyx. It is the most common germ cell tumor found in neonates, with an incidence of approximately 1 in 40, 000 live births. SCTs are more frequently observed in female fetuses and can range in size and complexity. Although most are histologically benign, large tumors may lead to serious perinatal complications such as high-output cardiac failure, hydrops fetalis, or intrauterine demise if left undetected or unmanaged. Advances in prenatal imaging, particularly ultrasonography and fetal MRI, have facilitated early diagnosis and improved neonatal outcomes. **Case Presentation:** We report a rare case of a massive sacrococcygeal teratoma identified antenatally at 26 weeks 2 days of gestation during a routine obstetric ultrasound. The fetus was closely monitored with serial scans to assess tumor growth, vascularity and detection of any fetal complications like hydrops. However, at 33 weeks, the mother went into spontaneous labour and an emergency lower segment cesarean section was performed. A viable female neonate was delivered with a large external mass arising from the sacrococcygeal region. Postnatal evaluation confirmed the diagnosis of Altman Type I SCT. Surgical resection was performed on day 4 of life, and histopathological analysis confirmed a mature cystic teratoma. Post-operative period, neonate developed surgical site infection which was conservatively managed with antibiotics and subsequently showed good recovery period. **Conclusions:** Early antenatal detection through routine imaging, close multidisciplinary monitoring, and timely surgical intervention are critical for managing giant SCTs. A planned delivery at a tertiary care center with pediatric surgical capabilities significantly enhances neonatal outcomes. This case highlights the importance of vigilance in prenatal screening and coordinated perinatal care for rare fetal anomalies.

Session ID: D.9
Time: 03.30 - 05.00 PM

Speckle Tracking Echocardiography in Diagnosing Cardiac Amyloidosis: Report of Two Cases from Bhutan Highlighting the Role of Global Longitudinal Strain in a Resource-Limited Setting

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Abstract: Amyloidosis is a disorder characterized by extracellular deposition of insoluble amyloid fibrils formed due to the misfolding of specific precursor proteins. Cardiac involvement significantly worsens prognosis by causing arrhythmias and progressive heart failure. Consequently, early diagnosis is crucial to initiate disease-modifying therapies and improve patient outcomes.

Amyloid infiltration of the myocardium leads to increased wall thickness, myocardial stiffening, and impaired ventricular compliance, resulting in diastolic dysfunction and bi-atrial enlargement. A hallmark echocardiographic finding in CA is a marked reduction in global longitudinal strain (GLS), with a distinctive "apical sparing" pattern, often described as a "cherry-on-top" appearance on strain imaging. Speckle tracking echocardiography (STE)–based myocardial strain imaging plays a pivotal role in the early, non-invasive detection of CA and helps guide further evaluation and management. This is especially important in resource-limited settings like Bhutan, where access to advanced diagnostics such as endomyocardial biopsy and specialized imaging modalities is limited.

Cardiac amyloidosis is a frequently underdiagnosed cause of heart failure and left ventricular hypertrophy. In Bhutan, where access to advanced imaging modalities may be limited, speckle tracking echocardiography offers a reliable and sensitive alternative for the early detection of cardiac involvement in amyloidosis. The characteristic apical sparing strain pattern provides an early and specific clue to the diagnosis, enabling timely referral and initiation of appropriate treatment. The two cases presented here underscore the value of incorporating strain imaging into routine echocardiographic assessment. Wider adoption of this technique in resource-limited settings could substantially improve the early detection and management of cardiac amyloidosis.

A Report on a Self-Assessment Survey of Midwifery Competence Among Hospital Nurse-Midwives: Evaluating the Usefulness of a Web-Based Questionnaire

Session ID: D.10
Time: 03.30 - 05.00 PM

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Introduction: Self-assessment of clinical competence among nursing professionals is a valuable tool for identifying strengths and areas for improvement. It contributes to professional development, enhances job confidence, and improves quality of care. However, traditional methods often rely on paper-based surveys, which can present challenges such as increased respondent burden and inefficient data management. Web-based survey methods can help overcome these issues. **Objective/s:** This study aimed to evaluate the feasibility and effectiveness of a web-based questionnaire for assessing midwifery competence among hospital nurse-midwives nurses and midwives in Bhutan. **Method/s:** Nurse-midwives working at 51 hospitals across Bhutan were invited to participate. The web-based questionnaire was created using Google Forms and included the Regional Competency Assessment Tool for Midwifery Educators and Midwives, developed by the World Health Organization (WHO), along with demographic questions. Survey access was provided via a QR code and URL, distributed through social networking groups by head nurses at each facility. The collected responses were analyzed for response rate, data completeness, and participant characteristics. Ethical approval was obtained from the Research Ethics Committee of Kagawa University, Faculty of Medicine. **Results:** A total of 310 responses were collected. The minimal missing data suggest that the web-based approach was accessible and user-friendly. The respondents represented a wide range of ages and institutional settings. **Conclusions:** The web-based questionnaire proved to be a practical and efficient method for conducting self-assessment surveys among nurse-midwives. Its effectiveness in this regional context indicates strong potential to support and advance future scientific research in the area.

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Table 1: Scientific Committee for ICMH 2025