



**MNUMS**  
Mongolian National University of Medical Sciences  
1942

**“Past, Present and Future”**

**100<sup>th</sup> ANNIVERSARY  
SCIENTIFIC CONFERENCE  
ABSTRACT BOOK**

of The First Central Hospital of Mongolia

Ulaanbaatar 2025





Bodi Insurance JSC was established in 1995 and has now entered its 30th year of operation, providing insurance services to a quarter of a million customers through its 200 employees in all 21 provinces, 330 soums, and 24 branches across the country.

## VISION



BECOME A GENERAL AND LIFE INSURANCE COMPANY TRADED INTERNATIONALLY ON THE ASIAN MARKET.

By 2030, we aim to become a listed company on the junior board of the Hong Kong Stock Exchange and competitor in the greater Asian market as a provider of comprehensive financial insurance.



## MISSION

GUARANTEE YOUR FUTURE TOGETHER WITH US.

We will harness every available resource to support our clients in protecting what's important against an uncertain future; growing to become a far-reaching institution and a societal pillar of financial security



## VALUES

**CLIENTS FIRST**  
**BE PROFESSIONAL**  
**WORK SMART**  
**COOPERATION**  
**RESPONSIBILITY**

Fully utilize all possible resources towards the satisfaction of our clients.

Uphold universally upright professional ethics that are appropriate on an international scale.

Emphasize innovation, productivity and teamwork in everything we do

Work together with our clients and each other to ensure longterm sustainable growth

Be thorough, responsible, and transparent on every level.

## INTERNATIONAL HEALTH INSURANCE

Bodi Insurance JSC's "BODI + Global Healthcare" is a leading healthcare product that we provide. It was launched in cooperation with AXA Life and Health Reinsurance Solutions and its development involved the combined efforts of over 80 years of experience in the health insurance industry. Since its release in 2015, we continue to provide the product while upholding the faith of both our corporate and individual customers. At the same time, we are expanding our cooperation with AXA and opening up new underwriting opportunities to cover the cost of medical treatments for COVID-19 for those who are insured.

In addition to health insurance services, we have partnered with the Institute of Applied Psychology to implement several welfare programs, including information sessions covering the importance of mental health and a healthy balanced diet, as well as provisions of personalized medical advice based on the medical records of the insured fitness club discounts, and more.

## INSURANCE PRODUCTS

WE OFFER PRODUCTS THAT ARE PRICED BASED ON RISK CALCULATION TO PROVIDE OPTIMAL COVERAGE, THAT IS CUSTOMIZED TO A BUSINESS UNIQUE CHARACTERISTIC, WITH CONTINUES APPLICABLE DISCOUNT FOR ITS LONGTERM CUSTOMERS AS WELL AS FOR ITS CONTRACTUAL PROMOTIONS.



### PROPERTY

- Fire insurance
- Comprehensive
- Vehicle insurance
- Building insurance
- Equipment insurance
- Inventory and office property insurance
- Heavy Truck, Special Purpose
- Machinery Insurance
- Contractor's Plant and Machinery Insurance
- Historical & Cultural heritage insurance Petroleum products insurance
- Aircraft hull & liability insurance
- Construction all risk and erection all risks insurance
- Marine cargo insurance



### LIABILITY

- Driver's compulsory liability insurance
- Machinery operator insurance
- General liability insurance
- Corporate liability insurance
- Professional liability insurance
- Cargo transporter's liability insurance
- Passenger transporter's liability insurance
- Notaries and attorneys professional liability insurance
- Directors and officers liability insurance
- Product and service liability



### HEALTH & ACCIDENT

- Accident insurance
- Medical treatment insurance
- International health insurance
- Temporary disability insurance
- Passenger accident insurance
- Employer's liability insurance

### FINANCIAL

- Business interruption insurance
- Cash and securities insurance
- Payment default insurance
- Banker's blanked bond insurance



### SURETY

- Fidelity insurance
- Contractor's liability insurance
- Performance guarantee insurance

### AGRICULTURAL

- Crop insurance
- Livestock insurance

**“PAST, PRESENT AND FUTURE” OF THE FCHM**

*100<sup>th</sup> Anniversary scientific conference*

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## **Welcome message from the General Director of FCHM**

Esteemed scientists, researchers, healthcare professionals, honored guests and attendees. I warmly welcome you all to the scientific conference commemorating our hospital's 100th anniversary. It is an opportunity to acknowledge the invaluable contributions of our predecessors - our doctors, nurses, and medical professionals. I want to take a moment to express sincere gratitude towards all who have taken this incredible journey with us, for their tireless dedication and compassionate care and for their unwavering commitment to the well-being of our nation.

Technological innovations and advancements in science are important drivers in promoting sustainable development of the organization as well as research that identifies effective strategies for implementing evidence-based interventions, addresses urgent issues, and evaluates practical implementation.

In the scope of our hospital's 100th anniversary celebration, we are organizing the International Conference on October 23, 2025. By organizing this event we seek to strengthen our long-term partnerships and reflect on our shared accomplishments, share knowledge and experience, and openly discuss current challenges.

We warmly invite esteemed scientists and researchers from around the world, who share a common goal, to contribute their valuable works that explore global trends in medical science, historical lessons, best practices, and achievements in healthcare. We look forward to you sharing your insights and discoveries with the Mongolian academic community of healthcare professionals.

I am truly excited about the promising future of our hospital and believe we are poised for significant growth, success, technological innovations and productive cooperation in the years to come.

Yours sincerely,



Byambasuren Luvsandagva MD, PhD.

General Director of the First Central Hospital of  
Mongolia

## **Welcome message from Conference President**

Across the world, countless institutions safeguard human health for billions of people. Among them, we Mongolians-though few in number-have long entrusted our health to our Central Hospital, relying upon it as our foremost sanctuary of care. It is no exaggeration to say that the growth of Mongolia’s population from barely half a million to nearly 3.5 million has been made possible in part through the historic contributions of this very institution.

Among the many hospitals that laid the foundation for modern medicine in Mongolia, this one is known as the “First” not by chance but by merit. By the sheer number of lives it has saved, the pioneering technologies it has introduced, the scientific works it has produced, the scholars and physicians it has nurtured, and the nationwide network of healthcare professionals and institutions it has cultivated, the Central Hospital justly bears the title of “First.” Indeed, the Central Hospital was also the institution that first opened the door for Mongolia’s health sector to walk in step with the world. Its history is inseparable from the very history of clinical medicine in our country. The centennial history of our hospital thus stands as a mirror of the past, the present, and the future. For this reason, the International Academic Conference commemorating the 100th anniversary of the Central Hospital has been aptly titled “Past, Present, and Future.”

We are honored that distinguished scholars from the United States, Australia, the Republic of Korea, Taiwan, and Switzerland will join us at this conference, where over 130 researchers will present their findings, share experiences, and engage in broad and meaningful exchange of knowledge and training.

On this historic occasion, we extend our heartfelt congratulations on the 100th anniversary of the Central Hospital to all former and current professors, researchers, teachers, doctors, staff, and, above all, to the many students and trainees who have carried the wisdom of this academic sanctuary to every corner of our homeland. May your scholarly pursuits continue to flourish, and may you achieve ever greater success.

True wealth lies in knowledge.

Knowledge is the greatest wealth.

Yours sincerely,



Sergelen Orgoi MD, PhD, ScD, FACS.Hon

President of 100 th anniversary conference

## Organizing Committee

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|                 |   |
|-----------------|---|
| Sergelen.O      | Professor, consultant Surgeon, Organ Transplantation Center                         |
| Anar.G          | Head of the Gastroenterology Center, FCHM   |
| Ankhtuya.P      | Head of the Division of Research, Training and Cooperation, FCHM                    |
| Byambasuren.L   | General Director, FCHM  |
| Bayarmaa.O      | Deputy Director for Clinical Affairs  |
| Amarjargal.Ts   | Deputy Director for Nursing Affairs   |
| Ariunbold.J     | Head of the Nephrology Center, FCHM   |
| Sarantsetseg.J  | Head of the Central Clinical and Pathology Laboratory, FCHM                         |
| Nergui.S        | Head of the Department of Otorhinolaryngology, FCHM                                 |
| Khishigjargal.B | Senior Physician, Hematology and Blood Marrow, Transplantation Center, FCHM         |
| Baylagmaa.Kh    | Senior Physician, Department of Anesthesiology, FCHM                                |
| Oyunbold.L      | Senior Physician, Diagnostic Imaging Center, FCHM                                   |
| Bolormaa.B      | Senior Physician, Gastroenterology Center, FCHM                                     |
| Saruul.T        | Senior Physician, Hematology and Blood Marrow, Transplantation Center, FCHM         |
| Erdene.S        | Consultant of General surgery Department, FCHM                                      |
| Amarjargal.Ts   | Head of the Director's office, FCHM   |
| Ganchimeg.P     | Head of the Information technology Department, FCHM                                 |
| Gereltuya.A     | Foreign Relations Specialist, Division of Research, Training, and Cooperation, FCHM |
| Dolgor.D        | Head of the Nursing Department , FCHM   |



## Scientific Committee

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**Chair, Scientific Committee:** Sergelen.O, MD, ScD

**Secretary, Scientific Committee:** Saruul.T, MD, PhD

**Members, Scientific Committee:**

1. Khishigjargal.B, MD, PhD
2. Byambasuren.L, MD, PhD
3. Bayan-Undur.D, MD, PhD
4. Bayarmaa.O, MD, PhD
5. Sarantsetseg.J, MD, PhD
6. Oyunbold.L, MD, PhD
7. Ariunbold.J, MD, PhD
8. Anar.G, MD, PhD
9. Otgonbayar.D, MD, PhD
10. Bayarmaa.E, MD, PhD
11. Ganbold.L, MD, PhD
12. Batzorig.B, MD, PhD

## Program at a Glance

| 23 OCTOBER 2025 /THU/ |  |   |   |   |
|-----------------------|--|---|---|---|
| 08:00-08:40           | REGISTRATION /The Concert hall, The Corporate Hotel /              |   |   |   |
| 08:40-08:50           | OPENING CEREMONY /The Concert hall, The Corporate Hotel /          |   |   |   |
| 08:50                 | SECTION I: PLENARY /The Concert hall, The Corporate Hotel /        |   |   |   |
| 09:00                 | Keynote speaker 1  |   |   |   |
| 09:30                 | Keynote speaker 2  |   |   |   |
| 10:00                 | Keynote speaker 3  |   |   |   |
| 10:30                 | Keynote speaker 4  |   |   |   |
| 11:00                 | Keynote speaker 5  |   |   |   |
| 11:30                 | Coffee break and POSTER PRESENTATION EVALUATION /The Concert hall/ |   |   |   |
| 12:25                 | SECTION II   |   |   |   |
|                       | <b>SURGERY SUBSECTION</b><br>/Ulaanbaatar hall/                    | <b>INTERNAL MEDICINE SUBSECTION</b><br>/B event hall/ | <b>ALLIED SCIENCES SUBSECTION</b><br>/A event hall/ | <b>NURSING SUBSECTION</b><br>/The Concert hall/ |
| 12:30                 | Special lecture 1  | Special lecture 1                                     | Special lecture 1                                   | Special lecture 1                               |
| 13:00                 | Special lecture 2  | Special lecture 2                                     | Special lecture 2                                   | Special lecture 2                               |
| 13:30                 | <b>Luncheon Symposium-sponsor presentation</b>                     | <b>Luncheon Symposium-sponsor presentation</b>        | <b>Luncheon Symposium-sponsor presentation</b>      | <b>Luncheon Symposium-sponsor presentation</b>  |
| 14:00                 | SECTION III  |   |   |   |
|                       | <b>SURGERY SUBSECTION</b><br>/Ulaanbaatar hall/                    | <b>INTERNAL MEDICINE SUBSECTION</b><br>/B event hall/ | <b>ALLIED SCIENCES SUBSECTION</b><br>/A event hall/ | <b>NURSING SUBSECTION</b><br>/The Concert hall/ |
|                       | Intermission   |   |   |   |
| 14:10                 | Oral presentation 1  | Oral presentation 1                                   | Oral presentation 1                                 | Oral presentation 1                             |
| 14:20                 | Oral presentation 2  | Oral presentation 2                                   | Oral presentation 2                                 | Oral presentation 2                             |
| 14:30                 | Oral presentation 3  | Oral presentation 3                                   | Oral presentation 3                                 | Oral presentation 3                             |
| 14:40                 | Q&A  | Q&A   | Q&A   | Q&A   |
| 14:50                 | Coffee break   | Coffee break  | Coffee break  | Coffee break                                    |
| 15:10                 | Oral presentation 1  | Oral presentation 1                                   | Oral presentation 1                                 | Oral presentation 1                             |



|       |                                     |                     |                     |                     |
|-------|-------------------------------------|---------------------|---------------------|---------------------|
| 15:20 | Oral presentation 2                 | Oral presentation 2 | Oral presentation 2 | Oral presentation 2 |
| 15:30 | Oral presentation 3                 | Oral presentation 3 | Oral presentation 3 | Oral presentation 3 |
| 15:40 | Q&A                                 | Q&A                 | Q&A                 | Q&A                 |
| 15:50 | AWARD CEREMONY /The Concert hall/   |                     |                     |                     |
| 16:50 | CLOSING REMARKS: /The Concert hall/ |                     |                     |                     |

## General Information

### About the Venue

**CORPORATE HOTEL** Mahatma Gandhi street-39, Khan-Uul district  
15th khoroo 17011 Ulaanbaatar, Mongolia



**Tel:** 976-7000-2030, 9111-5599, **Fax:** 976-7000-2040

**E-mail:** [conference@corporatehotel.mn](mailto:conference@corporatehotel.mn)

**Web:** [www.corporatehotel.mn](http://www.corporatehotel.mn)

### Registration:

- **Registration Desk Location:** Lobby, 3f, Concert hall, The Corporate Hotel
- **Operating hours**

|                       |             |
|-----------------------|-------------|
| 23 OCTOBER 2025 /THU/ | 08:00-17:00 |
|-----------------------|-------------|

- **Onsite Registration Fee**

| № | Last name | Registration number | Affiliated organization | Payment | Signature |
|---|-----------|---------------------|-------------------------|---------|-----------|
| 1 |           |                     |                         |         |           |
| 2 |           |                     |                         |         |           |
| 3 |           |                     |                         |         |           |
| 4 |           |                     |                         |         |           |
| 5 |           |                     |                         |         |           |

| Affiliated organization                | Onsite Registration |
|--|---------------------|
| The First Central Hospital of Mongolia | 1 person/50 000MNT  |
| Other organization's                   | 1 person/100 000MNT |

- **Entitlements for Registrants**

| Admission All Scientific Sessions | Access to Scientific Exhibition | Luncheon Symposium and Coffee Break Refreshments |
|-----------------------------------|---------------------------------|--|
| Program & Abstract Book           | Lucky Draw                      | Lunch coupon                                     |

## Preview Room

- **Place:** Drawing Room, 3f, Ulaanbaatar hall, The Corporate Hotel - /Surgery subsection/

- **Operating Hours:**

|                              |                    |
|------------------------------|--------------------|
| <b>23 OCTOBER 2025 /THU/</b> | <b>08:00-17:00</b> |
|------------------------------|--------------------|

\*All speakers are kindly requested to have their presentations available in electroonic format (USB sticks) and to visit the Preview Room to upload the lecture materials at least 1 hour before their session begins. If there are video or audio files, please review them in the Preview Room.

## Poster Presentation and Poster Exhibition

- **Place:** Lobby, 3f, Concert hall, The Corporate Hotel
- **Session Date & Time**

|                       |             |
|-----------------------|-------------|
| 23 OCTOBER 2025 /THU/ | 11:30-12:30 |
|-----------------------|-------------|

## Awards

The Best Oral Presentation Award, 2<sup>nd</sup> place Oral Presentation Award and Poster Presentation Award prizes will be given at the Award Ceremony.

## Lucky Draw

Please submit your coupon with your mandate number and sponsor stamps to the Lucky Draw Box at the registration desk by 15:00 on Thursday, October 23, 2025. The winner will be announced at the Award Ceremony.

1<sup>st</sup> Prize



Tablet

2<sup>nd</sup> Prize



Hot hair brush

3<sup>rd</sup> Prize



Hair waver

4<sup>rd</sup> Prize



Oa Leg Spa EMS  
Calf Massager

## Wireless Internet

- ❖ A, B event hall
- ❖ Wifi password: 70002030

## Refreshments

Fresh coffee and tea will be prepared at the coffee station in the Meeting Room Foyer throughout the congress.

## Official Programs

### OPENING CEREMONY

**Date & Time:** 2025.10.23 08:40-09:00

**Venue:** The Concert Hall, The Corporate Hotel



**“Past, present and future”** of the FCHM - 100<sup>th</sup> Anniversary scientific conference is an international academic congress that brings together experts from around the world to share and discuss innovative advancements, leading expertise, and methodologies in the field of medical science.

This announcement marks the official commencement of the congress.

### CLOSING & AWARD CEREMONY

**Date & Time:** 2025.10.23 15:50-16:50

**Venue:** The Concert Hall, The Corporate Hotel



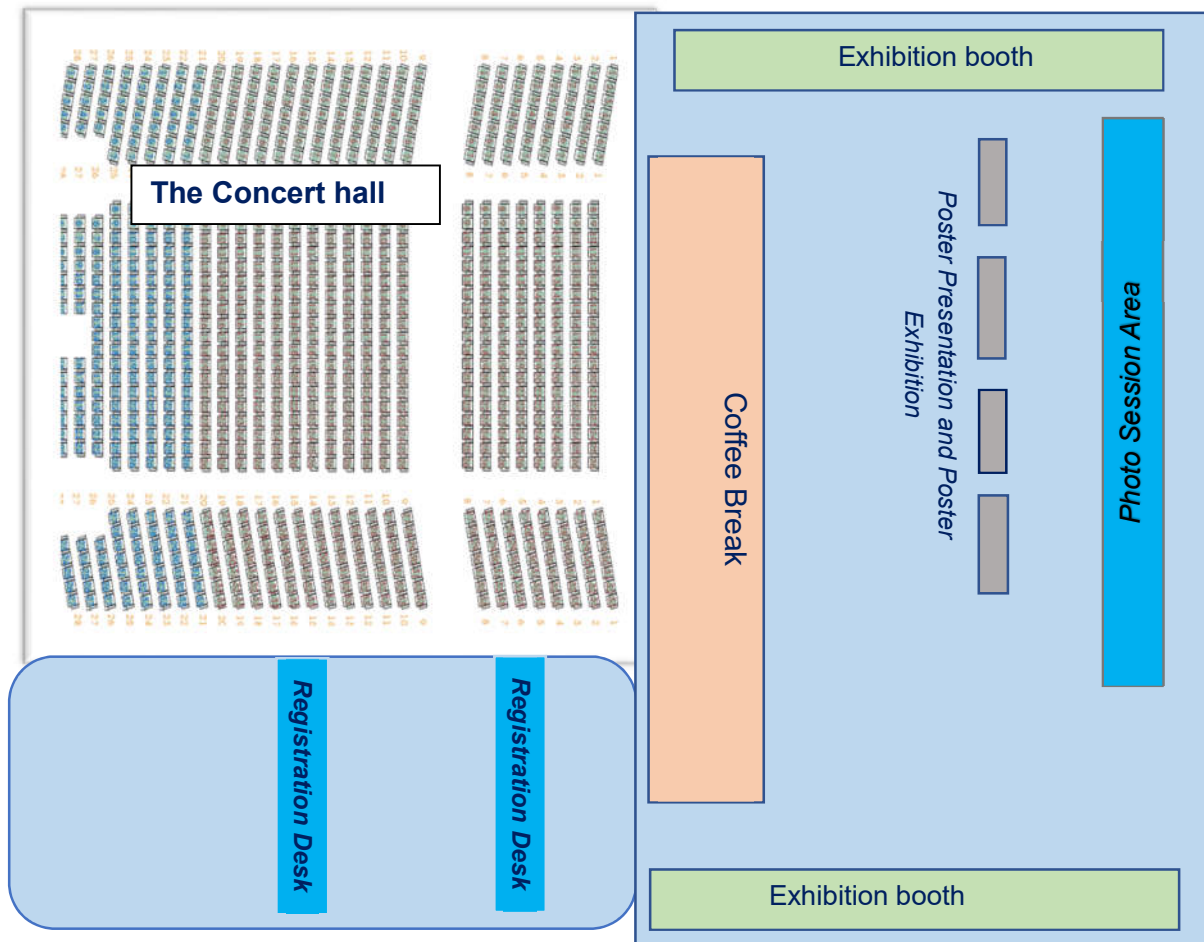
The Closing and Award Ceremony will feature the Best Oral Presentation and 2<sup>nd</sup> place Oral Presentation Awards and the Poster Presentation Awards Ceremony.

Additionally, the winners of the Lucky Draw will be announced and presented with their prizes during the Ceremony! Attendees are asked to get their draw tickets stamped by the sponsors and drop it into the urn at the registration desk.

## Floor Plan

### ❖ THE CONCERT HALL, 3RD FLOOR, THE CORPORATE HOTEL

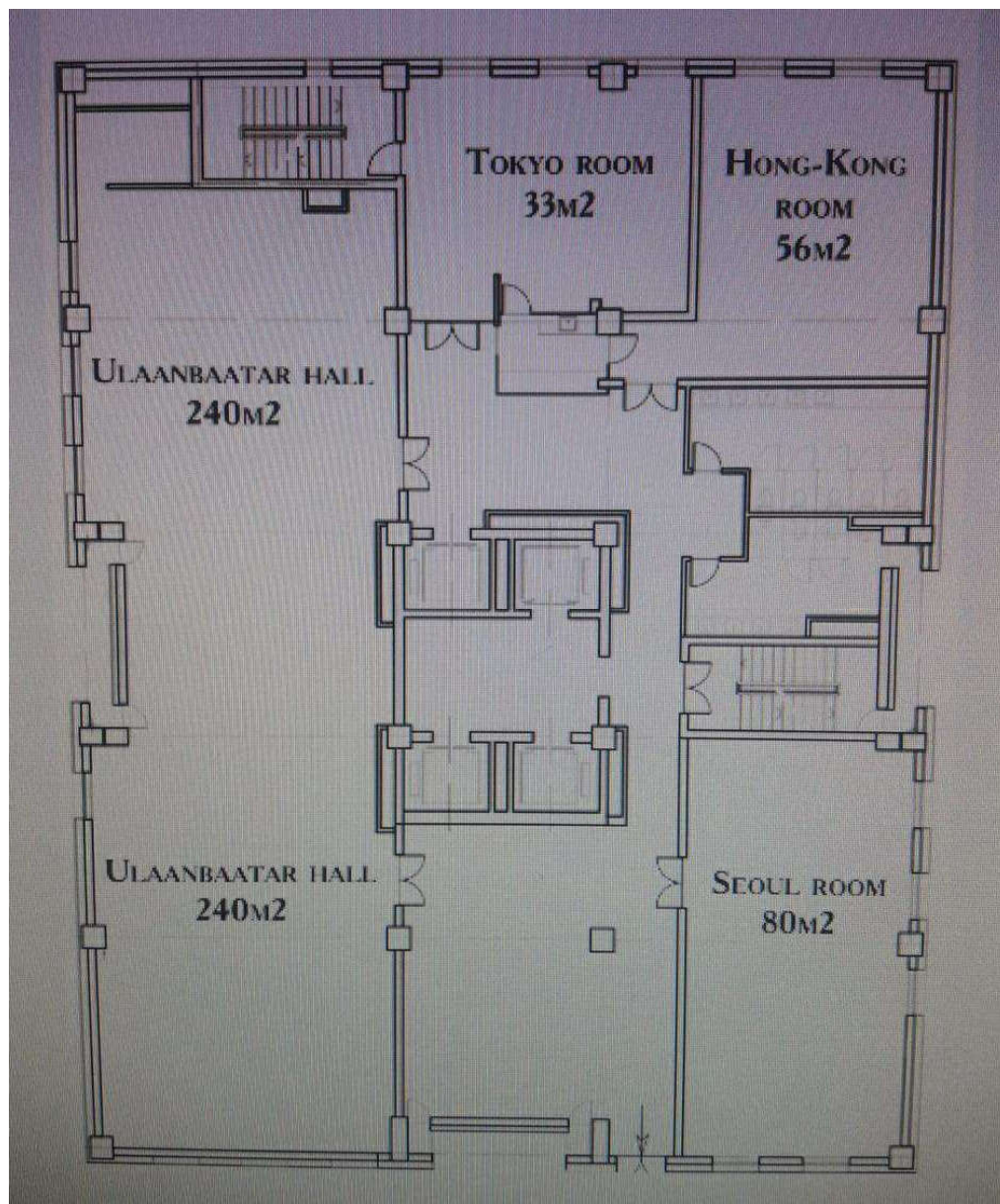
- Opening ceremony
- Keynote lecture
- Coffee Break
- Poster Presentation
- Exhibition booth
- Special lecture /Nursing subsection/
- Oral presentation /Nursing subsection/
- Luncheon Symposium
- Closing & award ceremony





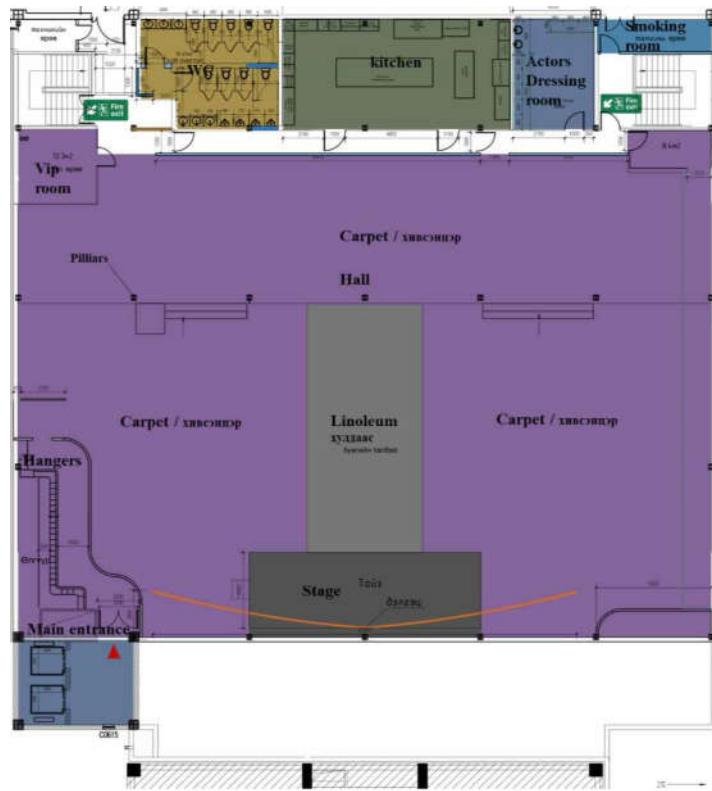
❖ **ULAANBAATAR HALL, 3RD FLOOR, THE CORPORATE HOTEL**

- Special lecture /Surgery subsection/
- Oral presentation /Surgery subsection/
- Luncheon Symposium
- Coffee Break



❖ **“B” EVENT HALL, 7RD FLOOR, THE CORPORATE HOTEL**

- Special lecture /Internal medicine subsection/
- Oral presentation Internal medicine subsection/
- Luncheon Symposium
- Coffee Break



❖ **“A” EVENT HALL, 2RD FLOOR, THE CORPORATE HOTEL**

- Special lecture / Allied sciences subsection /
- Oral presentation / Allied sciences subsection /
- Luncheon Symposium
- Coffee Brea





## Scientific Program

**OCTOBER 23, 2025 (Thu)**

| <b>“Past, present and future” of the FCHM -100<sup>th</sup> Anniversary scientific conference</b> |  |   |  |   |
|---|--|---|--|---|
| 08:00-08:40   | Registration   |   |  |   |
| 08:40-08:45   | Opening address by the General Director of FCHM  |   |  |   |
| 08:45-08:50   | Opening address by the MNUMS Rector Prof. Damdindorj B. MD, PhD  |   |  |   |
| Section I:<br>Plenary   | <b>MODERATORS:</b><br>Byambasuren L. MD, PhD<br>Prof. Damdindorj B. MD, PhD  |   |  |   |
| 09:00-09:30   | Keynote speaker<br>Prof. Sergelen O. MD, Sc.D “The past, present and the future of FCHM”   |   |  |   |
| 09:30-10:00   | Keynote speaker<br>Prof. Ray Price MD, PhD “Laparoscopic surgery in Mongolia and the world”                                      |   |  |   |
| 10:00-10:30   | Keynote speaker<br>Prof. Jeremy Chapman MD, PhD “Deceased donor organ allocation”  |   |  |   |
| 10:30-11:00   | Keynote speaker<br>Prof. Walter Popp MD, PhD “Infection prevention in Mongolia – past, present and future – a look from outside” |   |  |   |
| 11:00-11:30   | Keynote speaker<br>Jurg Baertschi MD, PhD and Bayalagmaa Kh. MD, PhD “Mongolia-Switzerland medical cooperation”                  |   |  |   |
| 11:30-12:30   | Coffee break<br><b>POSTER PRESENTATION EVALUATION</b>  |   |  |   |
| Section II  | Surgery subsection,<br>Ulaanbaatar hall  | Internal medicine subsection,<br>B event hall                                   | Allied sciences subsection,<br>A event hall  | Nursing subsection,<br>Concert hall   |
|   | <b>Moderators:</b><br>Prof. Ganbold L. MD, PhD<br>Prof. Raymond Price. MD, PhD   | <b>Moderators:</b><br>Prof. Tsagaankhuu D . MD, PhD<br>Prof. Ahn Curie MD, PhD  | <b>Moderators:</b><br>Prof. Sonin S. MD, PhD<br>A/Prof. Hyunwook Kwon MD, PhD                | <b>Moderators:</b><br>Prof. Khulan G. PhD<br>Prof. Su-fen Cheng. RN, PhD      |
| 12:30-13:00   | Prof. Sung-gyu Lee. MD, PhD<br><br>“Past, present and future of liver transplantation an online presentation”                    | Prof. Ali Canbay. MD, PhD<br><br>“Liver transplantation”                        | Prof. Hyunwook Kwon. MD, PhD<br><br>“Clinical medicine and artificial intelligence”          | Ms. Enkhjargal G. RN<br><br>“Virtual Nursing - Innovative Nursing Care Model” |
| 13:00-13:30   | Prof. Prepageran Narayan. MD, PhD<br><br>“Redefining Surgical Boundaries in ENT Head & Neck Surgery”                             | Prof. Ahn Curie MD, PhD<br><br>“Kidney transplantation cooperation in Mongolia” | Prof. Michael Metro MD, PhD<br><br>“International volunteers in Urology mission in Mongolia” | Prof. Su-Fen Cheng PhD<br><br>“Digital transformation in nursing education”   |
| 13:30-14:00   | Lunch/sponsor presentation   | Lunch/sponsor presentation  | Lunch/sponsor presentation   | Lunch/sponsor presentation  |
| 14:00-14:10   | <b>Intermission</b>  |   |  |   |

|             | Surgery subsection,<br>Ulaanbaatar hall   | Internal medicine subsection,<br>B event hall  | Allied sciences subsection,<br>A event hall   | Nursing subsection,<br>Concert hall  |
|-------------|---|--|---|--|
| Section III | <b>Moderators:</b><br>Bayan-Undur D. MD, PhD<br>Prof. Jeremy Chapman MD, PhD  | <b>Moderators:</b><br>Bayarmaa O. MD, PhD<br>Prof. Ali Canbay. MD, PhD   | <b>Moderators:</b><br>Prof. Gonchigsuren D. MD, PhD<br>Jurg Baertschi. MD, PhD  | <b>Moderators:</b><br>Ms. Enkhjargal G. Khishigjargal B. MD, PhD   |
| 14:10-14:20 |   | Khosbayar T. MD, PhD<br><br>“Real-Time PCR-Based Identification of Intestinal Infections and Antibiotic Resistance of Shigella”  | Baigalmaa O. MD<br><br>“Development and Psychometric Evaluation of Mongolian Monosyllabic Words for Word Recognition Testing”                       | Baasanjargal I.<br><br>“Work-Related Stress and Contributing Factors Among Nurses at the First Central Hospital of Mongolia” |
| 14:20-14:30 | Otgonbayar M.MD<br>“Malignant bone tumors affecting adolescents”  | Zoljargal B. MD, MSc “Incidence, clinic microbiological characteristics of bacterial infections following liver transplantation in adults: A retrospective cohort study” | Otgonbayar D. MD<br>“Impact of Booster Vaccination Against COVID-19 on Infection and Hospitalization Rates During the Mass Vaccination in Mongolia” | Maamuu D.<br><br>“Assessment of staff skills in SPD unit of some hospitals”  |
| 14:30-14:40 | Anarsaikhan N.MD<br>“Optical Coherent Tomography Based Retinal Structural Evaluation in Pseudoexfoliation Syndrome and Pseudoexfoliation Glaucoma: A Cross-Sectional Study from Mongolia” | Khalium B. MD<br>“A Study of Clinical Presentation and Correlative Histopathological Patterns in Membranous Nephropathy”   | Bayarmaa Kh. MD<br>“Evaluation of Corneal Endothelial Parameters in Type 2 Diabetic Patients Using Specular Microscopy”                             | Munkhtuya G.<br>“A Study on the Risk Factors for Foot Complications in Patients with Type 2 Diabetes and Gender Differences” |
| 14:40-14:50 | Q&A   | Q&A  | Q&A   | Q&A  |
| 14:50-15:10 | Coffee break  |  |   |  |
| 15:10-15:20 | Sarnai E. MD<br><br>“Patterns of inflammatory markers and implications for antibiotic use following laparoscopic cholecystectomy: a   | Oyunpurev E. MD<br><br>“Risk factors of delayed graft function in patients with kidney transplantation”  | Delgertsetseg J. MD<br><br>“The Assessment Of C-shaped Canal Of Permanent Second Molar Among Mongolian Adults”                                      | Enkhjargal B.<br><br>“Assessing quality of life and behavior in menopausal women”  |

|             |  |  |  |  |
|-------------|--|--|--|--|
|             | retrospective cohort study”  |  |  |  |
| 15:20-15:30 | Myagmarsuren P. MD<br><br>“Relationship between Pathomorphological changes and Pituitary-Gonadal Axis in men with azoospermia” |  | Arnabek S. MD<br><br>“Analysis of the impact of sexually transmitted infections on male infertility among Mongolian men using polymerase chain reaction” | Tsegmid B<br><br>“A New Approach to Improving Outpatient Care Quality: Integration of Psychological and Clinical Services”         |
| 15:30-15:40 | Batsaikhan B. MD<br><br>“A study of complications in recipients with early kidney dysfunction after liver transplantation”     | Munkh-Ochir L. MD, PhD<br><br>“Outcomes of ECMO for Critical COVID-19 disease“ | Bolormaa N. MD<br><br>“The Impact of Square-Stepping Exercise on Cognitive Function, Physical Performance, and Gait in Older Adults: A Pilot Study”      | Ganbolor E.<br><br>“A study Assessing the Psychological Status of Patients with Renal Failure Using the Spielberger -Hanin Method” |
| 15:40-15:50 | Q&A  | Q&A  | Q&A  | Q&A  |
| 15:50-16:50 | <b>Award Ceremony</b>  |  |  |  |
| 16:50-17:00 | <b>Closing remarks:</b><br>Bayarmaa O. MD, PhD., Vice Director of FCHM   |  |  |  |

## Invited Guest



**Prof. SUNG-GYU LEE MD, PhD**

Chair professor of surgery at the University of Ulsan College of Medicine and Asan Medical Center, and the president and CEO of Asan Healthcare System.



**Prof. WALTER POPP MD**

Vice President of the German Society for Hospital Hygiene (DGKH) and member of the coordinating group of the European Network to Promote Infection Prevention for Patient Safety (EUNETIPS).



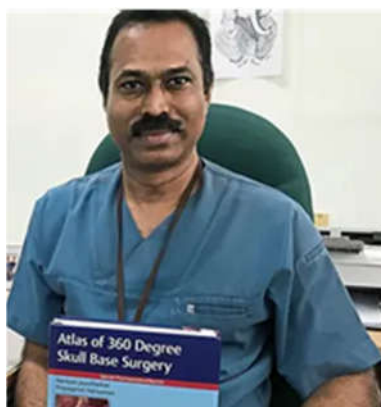
**Prof. JEREMY CHAPMAN MD, PhD**

Inaugural Chair of the Australian Bone Marrow Donor Registry; Chair of the Cecilia Kilkeary Foundation; Board Member of the Westmead Hospital Foundation, Chair of the National Vigilance and Surveillance Expert Committee.



**Prof. RAYMOND PRICE MD, PhD**

Director of the graduate surgical education at Intermountain Medical Center, Intermountain Healthcare, the main private teaching hospital for the University of Utah surgical residency program.



**Prof. PREPAGERAN NARAYANAN MD, PhD**

Senior Professor and Senior Consultant in the Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia, HEARRING Member; President of the ASEAN Rhinology Society and President of the Malaysian Society of Hearing.



**Prof. ALI CANBAY MD, PhD**

Director of the Department of Medicine at Knappschaft Kliniken University Hospital Bochum; President of the German Association for the Study of the Liver (GASL); Chairman of the Board of the Alfred-Nissle-Gesellschaft e.V.; and Treasurer of DePROM.



**JURG BAERTSCHI MD, PhD**

President of the Swiss Albert Schweitzer Foundation; and Project Manager for the Swiss Surgical Team, specializing in medical training in developing countries.



**Prof. AHN CURIE MD, PhD**

Nephrologist of Seoul National University, South Korea, General Secretary of the Asian Society of Transplantation.



**A/Prof. HYUNWOOK KWON MD, PhD**

Academic Committee Member, Korean Society for Transplantation; Member, American Society of Transplantation



**A/Prof. MICHAEL METRO MD**

Director of Reconstructive Urology, Temple University Hospital; Vice Chair of Academic Affairs, Department of Urology; Fellow, American College of Surgeons



**Prof. SU-FEN CHENG RN, PhD**

Professor, Department of Allied Health Education and Digital Learning, National Taipei University of Nursing and Health Sciences



**ENKHJARGAL G. RN, MSN**

Preceptor Nurse, Inova Fairfax Hospital; Clinical Manager & Preceptor Nurse, Human Touch Home Health, Washington, DC



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## **Poster presentations**

### **❖ Surgery subsection posters (Poster display 1 in the foyer)**

1. SANCHIN U. Case Report on Chronic Non-Healing Wound of a Finger Due to Tuberculous Origin;
2. MUNKHDELGER M Comparative Study of Platelet-Rich Plasma and Corticosteroid Injections in Partial Supraspinatus Tears;
3. ZOLJARGAL T. Comparative Study of Surgical Techniques: Traditional Dorsal Rectangular Flap vs. Hourglass-Shaped Dorsal Flap for Syndactyly;
4. ARIUNZAYA A. Postoperative nausea and vomiting (PONV) General anesthesia risk factors;
5. SERGELEN O. A Systematic review and Meta-Analysis of Complications Following Laparoscopic Cholecystectomy

### **❖ Internal medicine subsection posters (Poster display 2 in the foyer)**

1. DAVAAJAV N. MD Endobronchial ultrasound-guided transbronchial needle aspiration;
2. NARANTUGULDUR D. Hypovitaminosis D;
3. ARIUNZAYA Ts. MD Mother-to-child transmission of hepatitis B;
4. TEMUUJIN T. MD Diagnosis EUS and treatment of upper GI submucosal tumor at The FCHM;
5. ZOLBOO B. MD The Relationship between population density factors and age menarche in girls;

### **❖ Allied medicine subsection posters (Poster display 3 in the foyer)**

1. BAT-ERDENE G. Assessment of Pharmacists' Knowledge on Pharmaceutical Waste Management in Public Pharmacies in Ulaanbaatar;
2. ENKHTUUL S. MD Surgical treatment outcome in Malignant glaucoma: Hospital-based single-center retrospective study;
3. ODONCHIMEG G. MD Impact of Booster Vaccination Against COVID-19 on Infection and Hospitalization Rates During the Mass Vaccination in Mongolia;
4. ERDENESUVD B. MD Effectiveness of Interscalene Block in Postoperative Pain Management Following Arthroscopic Rotator Cuff Repair Surgery;
5. JAVKHLANTUGS D. MD The Impact of Sperm Parameters on Intrauterine Insemination Outcomes;
6. ENKHEE O. MD, PhD Histopathological assessment of resected brain tissue from epileptic foci;

### **❖ Nursing subsection posters (Poster display 4 in the foyer)**

1. JIMSEE D. Determining the Need for a Model Nursing History Format at the Joint center;
2. DARIIMAA G. MD, PhD Enhancing Child Health Surveillance: Oral Pigmentation as a Nursing Tool for Detecting Environmental Tobacco Smoke Exposure;
3. TSELMERG J. Assessment of nurses knowledge, competence and resource availability in stoma care;
4. NARANTSETSEG P. Assessment of the Psychological State of Patients During the Waiting Period for Biopsy Results;
5. ALTANSHAGAI N. Evaluation of the Gastrointestinal preparation for the diagnostic GI endoscopy at Gastroenterology center of The FCHM;
6. TSEGMEG B. Workload Assessment through Job Mapping of Nurses at the Colorectal Surgery Department;



## KEYNOTE LECTURES

### Abstract



### FIRST CENTRAL HOSPITAL OF MONGOLIA: LEADERSHIP IN HEALTHCARE – PAST, PRESENT AND FUTURE

**Sergelen Orgoi MD, ScD, FACS Hon.**

The First Central Hospital of Mongolia (FCHM) has served as a pioneering institution in Mongolia's healthcare sector for a century, leading the development of medical education, research, and clinical services. This review provides a historical overview of FCHM's evolution, its current contributions, and future directions in advanced medical care.

**Background:** From 1925 to 1950, Soviet medical teams collaborated with Mongolian physicians to implement preventive and therapeutic strategies targeting social and infectious diseases, significantly reducing maternal and neonatal mortality. Their results, formally documented, laid the groundwork for structured medical training programs. **Past (1925–1960):** The establishment of the Academic Council in 1931, under the Ministry of Health with Dr. Y.L. Groesman as chairman, coordinated early efforts in controlling STDs, plague, tuberculosis, and rabies, while promoting vaccination and tick-borne disease research. Studies on pneumonia, tuberculosis, syphilis, gonorrhea, and other diseases informed the creation of specialized professional training programs. The first Nursing School was established in 1931, and international medical training programs in the USSR produced specialists who contributed directly to national healthcare development. The inauguration of the National University of Mongolia in 1942 further facilitated the training of national medical professionals.

**Present (1961–2025):** FCHM has grown into a modern tertiary referral center, providing specialized services across 15 clinical areas with 828 physicians, 1,961 nurses, 15 administrative units, 12 centers, 16 departments, and 548 beds. The hospital introduced innovative technologies to Mongolian clinical practice, including cytology, laparoscopic surgery, cleft lip and palate repair, kidney and liver transplantation, stem cell therapy, dialysis, intensive care procedures (e.g., ECMO), joint replacement, and advanced diagnostic modalities such as nuclear medicine and ultrasonography.

**Future Directions:** FCHM aims to integrate cutting-edge technologies, including molecular and genomic surgery, robotic surgery, stem cell therapy, pancreas, heart, and lung transplantation, magnetic surgery, nuclear diagnostics and therapy, and artificial intelligence–assisted diagnostics and treatment, positioning the hospital as a leader in modern, evidence-based healthcare.

**Conclusion:** Over its nearly 100-year history, the First Central Hospital of Mongolia has consistently advanced medical education, research, and clinical care, establishing a model of excellence in healthcare delivery. Its continued commitment to innovation and professional development ensures that FCHM remains at the forefront of Mongolia's healthcare system, improving access, quality, and outcomes for patients nationwide.



### **Raymond R. Price, MD, PhD, FACS**

Recognized as an international leader and pioneer in expanding the role of surgery in public health, Dr. Price's work highlights the dramatic impact surgery can have on communities, economies, and individuals. Dr. Price co-founded the Center for Global Surgery at the University of Utah where he now serves as the Dr. Robert Dean Matheson Endowed Professor of Global Surgery in the Department of Surgery. For the last 30 years, He was the vice-director/director of the graduate surgical education at Intermountain Medical Center,

Intermountain Healthcare, the main private teaching hospital for the University of Utah surgical residency program. Dr. Price has mentored hundreds of medical students, surgical residents, and fellows. He helped develop surgical training programs worldwide in laparoscopy (basic and advanced), trauma care, emergency surgery, breast cancer, and quality improvement.

Dr. Price received his BS from the University of Utah, MD from Harvard Medical School, and completed his surgical residency at the Brigham and Women's Hospital.

Dr. Price has authored numerous peer-reviewed articles, book chapters, and books. He serves (or has served) in many leadership positions with the World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care, the Society of American and Gastrointestinal and Endoscopic Surgeons (SAGES), the American College of Surgeons, the International Surgical Society (ISS) and was a Bellagio Commissioner for the Lancet Commission on Global Surgery. Dr. Price led the development of the Association of Academic Global Surgery and helped organize the Global Alliance for Surgery, Obstetric, Trauma, and Anesthesia Care (G4 Alliance).

Over the last 24 years, he has been dedicated to improving education and access to surgical care globally, especially in resource poor areas. He participated in and continues to lead medical and surgical training initiatives/programs in Asia, Latin America, and Africa. This includes innovative teaching methods across cultures and languages that lead to sustainable development of laparoscopic surgery in several countries.

Honors received include: Multiple teaching awards including the Dr. Clark Lowe Rich Distinguished Surgeon and Mentor Award (U of U, "Outstanding teacher, advisor, role model and mentor for medical students, interns, residents, or fellows") (2017), U of U Department of Chemistry College of Science Distinguished Alumni Award (2020), ACS ATLS Styner Meritorious Service Award (2019), the University of Utah Distinguished Alumni Award (2019), ACS ATLS International Meritorious Award, Utah Medical Association Physician of the Year (2017), the Ralph C. Richard Award for Surgical Excellence and Caring Humanitarian (2015), The Mongolian Presidential Friendship Medal (Mongolia's highest medal for foreigners) (2012), American College of Surgeons-Pfizer International Volunteerism Award (2012), Salt Lake County Doctor of the Year (2011), and a Medal of Honor from the Minister of Health of Mongolia (2009). He is a Visiting Professor at the Mongolian National University of Medical Sciences and Honorary member of the Mongolian Surgical Association.

### **Abstract**

#### **LAPAROSCOPIC SURGERY IN MONGOLIA: WORLDWIDE IMPACT!**

**Raymond R. Price MD FACS**

The vision of leaders from the First Central Hospital of Mongolia (FCHM) for video laparoscopy in Mongolia helped change the perception for the need and impact of laparoscopy in low- and middle-income countries worldwide. Collaborative research studying the growth and impact of laparoscopy in Mongolia helped create national and international policies for expanding quality

surgical care globally. Examples from Mongolia, Ethiopia, and Cambodia will highlight the expanded view of the horizon of possibilities from the introduction of laparoscopy in Mongolia.



**Professor Jeremy Chapman AC, MB BChir MD FRACMA  
(hon) FRACP FRCP FAHMS**

Professor Chapman trained in Cambridge, London and Oxford before moving to Westmead Hospital and Sydney University in 1987 as consultant renal physician and then Director of Western Renal Services 1992 - 2019.

Research: Lifetime H index is currently about 100, more than 26,000 citations from more than 460 peer reviewed publications. Global no 1 Transplant Specialist on publications 2014, 2015.

President: The (International) Transplantation Society, responsible for multiple major global congresses, education systems and research developments in Transplantation between 2000 and 2014

President: World Marrow Donor Association (1998- 2010)

Member Expert Advisory Panel of the World Health Organisation 2010 – 2022.

Editor in Chief of the Transplantation Journal (IF 6.2) and Transplantation Direct Journal (IF 2.3) 2014-2024.

Inaugural chair of the Westmead Research Hub Executive in 2003. Current chair of the Westmead Research Hub Council.

Deputy Chair of the Western Sydney Local Health District Board (member 1999-2004, 2010-2020) Chair WSLHD Research Development Committee, member Finance and Performance and Redevelopment committees

Inaugural Chair Australian Bone Marrow Donor Registry (1991- current).

Chair Cecilia Kilkeary Foundation, Board Member Westmead Hospital Foundation

Chair National Taskforce on Australian Organ Donation leading to creation of the National Agency, the Organ and Tissue Authority (Board member 2009-17) which doubled organ donation in Australia between 2008 and 2018. Current Chair National Vigilance and Surveillance Expert Committee

#### **Honours**

- |             |   |
|-------------|---|
| • Australia | 2003 Medal of the Order of Australia, OAM         |
| • Spain     | 2010 Asturias Award for International Cooperation |
| • Mongolia  | 2018 Medal of the Polar Star                      |
| • Australia | 2015 Companion of the Order of Australia, AC      |
| • Australia | 2017 Fellow Academy of Health and Medical Science |

#### **Abstract**

### **DECEASED DONOR ORGAN ALLOCATION**

Jeremy Chapman

Emeritus Consultant, Renal Medicine, Westmead Hospital

The principle of a gift is that it is given freely and without conditions. This is especially true of the gift of an organ or tissue after death. A gift is without coercion or payment. The question that this raises is – who is the gift to? The state, the hospital, the doctors or to a specified patient or patients? In the case of most international organ allocation systems there is not a specified patient for an organ, instead there is a publicly available allocation algorithm. In the case of Australia it is

available on the Internet for the public and for patients on the waiting list to view. It is however most complex and even hard for kidney transplant specialists to understand in detail, though its principles but can be explained in English instead of in mathematical equations.

If an allocation system is so complicated that only a computer can understand it – what use is it? A public allocation system allows ICU and Donation specialists to explain to donor families how an organ or tissue will be allocated, so that they know how the gift will be used. It allows kidney specialists and transplant surgeons to explain to their patients how organs are provided to each person waiting for an organ and to ensure that people understand that it isn't a simple queue – first come first served. The Allocation system is the centre of 'trust' by the community that a donation – a gift – will be fairly distributed among those in need; and that a patient on the waiting list will be treated fairly for the scarce resource.

Without a public allocation system a nation and its healthcare system risks mistrust by the community and with mistrust there is little or no organ or tissue donation.



**Prof. Dr. Walter Popp**

Born 1956 in Northern Bavaria, Germany. Married, 3 children, 3 grandchildren.

Qualified in medicine at the RWTH Aachen in 1981.

Working at the Miners' Association Hospital Bochum-Langendreer (Ruhr University of Bochum, Germany) from 1983-1989.

Specialization in Internal Medicine in 1989.

From 1989 on at the Institute of Hygiene and Occupational Medicine of the University Clinics Essen, Germany.

Specializations in Occupational Medicine (1991), Hygiene (1994) and Quality Management in Medicine (2002).

Member of the MAK commission in Germany for 10 years (corresponding to the TLV Committee).

From 1999 Director of Hospital Infection Control Department at the University Clinics Essen.

Medical director of the School for Disinfectors of the Fire Brigade Essen, Germany.

Since 2015 Medical director of HyKoMed, a consultant in hospital hygiene for different hospitals in the Ruhr area, Germany.

Since 2006 board member of the German Society for Hospital Hygiene (Deutsche Gesellschaft für Krankenhaushygiene, DGKH), since 2010 as Vice President.

From 2006 until 2014 board member of the International Federation of Infection Control (IFIC).

Since 2009 member of coordinating group of "European Network to promote Infection Prevention for Patient Safety (EUNETIPS)".

Since 2010 coordinator of "Mongolian Emergency Service Hospital Hygiene Project (MeshHp)".

**Abstract**

Dr. Popp has led hospital hygiene improving missions to Mongolian hospitals since 2010. His talk will recount the first impressions, actions that were taken and things that have changed since.





**Dr. Jurg Baertschi**

Born: January 1, 1955

Married

Residing in Zug, Switzerland,

**Profile**

Experienced and dedicated specialist in Anaesthesiology and Emergency Medicine with long-standing leadership and project management experience in the healthcare sector. Executive MBA (University of St. Gallen/HSG). Extensive

commitment to international medical training projects.

**Education**

1979 – 1985 Medical Studies, University of Bern, Switzerland

1998 – 2000 Executive MBA, University of St. Gallen (HSG), Switzerland

**Professional Experience**

2024 – Present President, Swiss Albert Schweitzer Foundation

2002 – 2025 Project Manager, Swiss Surgical Team (Trainings for doctors and medical staff in Mongolia, Tajikistan, and other countries)

1999 – 2022 Head of the Regional Ambulance Service, Zug, Switzerland

2003 – 2011 Medical Advisor for Management in various hospitals

1998 – 2003 Medical Director, Hirslanden Private Clinic Zug

1994 – 2014 Head of Department of Anaesthesiology, Hirslanden Private Clinic Zug

1993 Swiss Air-Rescue (REGA)

1992 Paediatric Intensive Care, University Hospital Bern

1986 – 1991 Department of Anaesthesiology & Intensive Care, University Hospital Bern

**Commitment & Volunteering**

President, Swiss Albert Schweitzer Foundation

Project Management, Swiss Surgical Team (medical training in developing countries)

**Abstract**

**BUILDING BRIDGES: 20 YEARS OF SWISS-MONGOLIAN MEDICAL PARTNERSHIP AND TRANSFORMATION**

Dr. Juerg Baertschi, MD, Dr. Bayalagmaa Khuvtsgaan, PhD

The Swiss Surgical Team (SST) Mongolia project represents a successful example of long-term international medical cooperation, spanning over two decades from the late 1990s to 2017. What began as simple three-week surgical missions to Ulaanbaatar evolved into a comprehensive capacity-building program that made an important contribution to the transformation of Mongolia's healthcare capabilities.

The project's evolution reflects a crucial learning process. Initially, Swiss surgeons performed operations and departed, often leaving complications unaddressed due to insufficient understanding of local conditions. This unsatisfactory approach led to a strategic shift toward knowledge transfer and training, expanding from the main hospitals of the capital to Mongolia's five largest provincial hospitals. The Swiss Surgical Teams, a non-profit organization of approximately 100 volunteers, developed comprehensive training programs in surgery and anesthesia while providing medical equipment and pharmaceuticals. Since many non-surgical professionals now participate in the projects, the Swiss Surgical Teams were renamed Swiss Medical Teams in 2024.

The collaboration's most remarkable achievement lies in its measurable transformation of healthcare capacity. In 2000, Mongolian hospitals operated with severely limited resources:

antiquated anesthesia machines, minimal monitoring equipment, restricted medication selections, and virtually no postoperative pain management. Through systematic training programs, scholarships enabling over 50 Mongolian doctors to study in Swiss hospitals for 3-6 months, and the establishment of intensive care units with University of Geneva support, Mongolia’s medical capabilities were transformed.

The operating room management project exemplifies this transformation. Between 2012 and 2018, the First Central Hospital increased surgical volume from 7,500 procedures annually across 10 operating rooms to over 13,000 procedures in just 7 rooms, achieving an 80% utilization rate while establishing a dedicated emergency operating room. This improvement occurred without increasing anesthesiology or nursing staff, demonstrating the power of systematic organizational training.

Critical success factors emerged through experience: the paramount importance of considering local conditions, the necessity of highly motivated local partners, essential support from medical faculties and health ministries, clear contractual goals, and mandatory quality control with outcome monitoring. The project’s sustainability depended entirely on extraordinary commitment from Mongolian key personnel, including university representatives, hospital management, and dedicated individuals like Dr. Bayalagmaa Khuvtsagaan, whose personal journey from anesthesiology resident to department head and PhD recipient exemplifies the program’s transformational impact.

The collaboration produced mutual learning, with Swiss participants gaining profound insights into different healthcare systems and cultural approaches. The project’s legacy extends beyond technical capabilities to include chronic pain management training, complex surgical procedures including organ transplants, and training programs for anesthesiology residents. Most significantly, it demonstrated that successful international cooperation requires genuine partnership, long-term commitment, and recognition that sustainable change must be built by local hands with external support rather than external implementation.



**Dr. Lee Sung Gyu**

Dr. Lee is one of the finest Transplant Surgeon in South Korea. He is an experienced Liver Transplant Surgeon in the South Korea. The Medical practitioner has been associated with various reputed hospitals in the South Korea. The physician is currently working as a Liver Transplant Surgeon, Asan Medical Centre, South Korea. The doctor is a well-reputed and sought after medical expert and is

- Doctor of Medicine: Seoul National University
- Master of Medicine: Seoul National University
- Bachelor of Medicine: Seoul National University

qualified. Dr. Lee Sung Gyu has been associated with many hospitals over the course of his illustrious and experienced career.

The hospitals include:

- Endowed chair professor in UUCM AMC
- Chief in Asan Healthcare system
- Chief in Organ Transplantation Center, UUCM AMC
- Chief in Liver Center, UUCM AMC
- Professor in Liver Transplantation and Hepatobiliary Surgery, UUCM AMC
- Associate Professor in Surgery, Korea University
- Residency in Surgery, Seoul National University Hospital

- Internship in Seoul National University Hospital

Dr. Lee Sung Gyu has more than 30 of clinic experience. The Clinician specializes in and performs the following surgeries:



**Prof. Prepageran Narayanan MD, PhD**

MBBS (UM), MS (ORL, Distinction , UM), USMLE (US), FRCS (Edin), FRCS (Glasg), FAAOHNS (US), Fellowship in Neurotology/Otology (Canada), AM (Mal), FAMM, DPT, DPMP  
Dato' Professor Dr Prepageran Narayanan is a Senior Professor and Senior Consultant in the Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, University Malaya, Kuala Lumpur, Malaysia

His appointments include:

- a) Visiting or Adjunct Professor in 11 universities around the world including India, Mongolia, Myanmar, Indonesia, Thailand, Pakistan, Brunei, Hungary, Bhutan, and South Africa
- b) As Invited Expert Surgeon for complex cases more than 500 cases in Malaysia, and Internationally in Thailand, India, Myanmar, Cambodia, Singapore, Indonesia, Bhutan, Hungary, Pakistan, Vietnam, Mauritius, Mongolia, Brunei etc
- c) Head of Department, Dept of ORL and Head & Neck Surgery University Malaya 2011-2016
- d) Chairman National Conjoint Board of Otolaryngology Specialist Training Committee in Otolaryngology and Residency of Malaysia 2013-2014
- e) President Malaysian Society of Otorhinolaryngology and Head & Neck Surgery (President 2013-2014)
- f) President 9th World Congress of Endoscopic Surgery of the Skull base, Brain and Spine (President 2020-2024)
- g) President Asian Research Symposium in Rhinology (President 2015-2017)
- h) President Asia Pasific Symposium in Cochlear Implant related sciences APSCI (Board member since 2017, President 2023-2025)
- i) President Asia Pacific Otology Neurotology Conference 2013
- j) President Asian Research Symposium in Rhinology (Board member since 2010 President 2015)
- k) International Working Group Endoscopic Ear Surgeons (IWGEES)
- l) Asia Pasific Otolaryngology Training (Board Member since 2018)
- m) Collegium Otolaryngology (CORLAS) member since 2018
- n) As Chairman/ Committee member of more than 50 local and international committees/ societies/ panel of expert
- o) HEARRING member since 2024
- p) President ASEAN Rhinology Society (founding President since 2022)
- q) President Malaysian Society of Hearing and Skullbase (MyHears) since 2024

More than 250 Live surgical demonstration dissections in workshops globally in UK, USA, Hungary, Canada, Spain, Romania, Italy, Switzerland, Germany, France, Russia, Brazil, Egypt, Japan, Pakistan, Bhutan, Taiwan, Korea, Hong Kong, India, Australia, Algeria, South Africa, Korea, Russia, Mongolia, Hong Kong, Portugal etc and Asean countries,  
Runs a four day 360 skullbase workshop encompassing Endoscopic Anterior Skullbase, Endoscopic Otology, Exoscope Otology with Implants and Lateral Skullbase in University Malaya since 2005 (25th Workshop this August) and have trained more than 600 surgeons globally. He



now organizes this workshop for Eastern Europe in Szeged Hungary, in Cape Town for Africa, in Taiwan and Pakistan.

### **Abstract**

#### **REDEFINING SURGICAL BOUNDARIES IN ENT HEAD&SURGERY**

N Prepageran MS, FRCSEdin  
University Malaya

ENT and Head & Neck surgery remains as one of the most rapidly evolving subspeciality with the advent of new technology and better endoscopic visualization.

This unique field covers range of different super specialities, including otology, rhinology, and skullbase, laryngology, head & neck and pediatric ENT each with their own sub specialities and refined surgical techniques.

This presentation will cover the advances in Surgical techniques in Rhinology and skullbase, head and neck as well as otology to showcase how rapidly these fields are evolving with the latest cutting edge technology. It will be highlighted with complex surgical cases, and the most effective surgical approaches with minimal morbidity and mortality that highlights the recent advances providing a video journey through the entire ENT itself.



#### **Prof. Ali Canbay MD, PhD**

Head of the Department of Internal Medicine, Ruhr-University Bochum

- Head of the Department of Internal Medicine, Universitätsklinikum Knappschaftskrankenhaus Bochum
  - President of the German Association for the Study of the Liver 2022/2023
  - Member guideline commission „Lebertransplantation“ (DGVS)
  - Panel member of the european guideline commission for “EASL–EASD–EASO Clinical Practice Guidelines for the management of non-alcoholic fatty liver disease”
  - Coordinator for the S2k guideline „Nicht-alkoholische Fettlebererkrankung“ (DGVS)
  - Member of the Einsteinstiftung (Berlin)
  - Associate Editor / Member of Editorial Boards of various Scientific Journals
- President elect of the Visceral Medicine Congress North-Rhine Westphalia 2024
  - President of the *E.coli* Nissle Foundation 2024

### **Abstract**

#### **PAST, PRESENT AND FUTURE OF LIVER TRANSPLANTATION**

Prof. Dr. Ali Canbay<sup>1</sup>

<sup>1</sup> Department of Medicine, University Hospital Knappschaftskrankenhaus Bochum, Ruhr University, Bochum, Germany

End-stage liver disease is one of the leading causes of morbidity and mortality worldwide. Liver transplantation remains the only definitive treatment for this condition. Initially, organ allocation was guided by subjective criteria, but with the development of MELD-based algorithms, patient assessment and allocation have become more objective and equitable. Accumulating evidence has shown that the MELD score alone is not optimal for ensuring fair liver allocation. As a result, it has been modified over time by incorporating additional parameters or adjusting weighting factors. However, one important factor has not been adequately considered until now: the interference

between creatinine and bilirubin, which depends both on bilirubin concentration and the method used to measure creatinine. It is well established that when the Jaffe method is applied, elevated bilirubin levels can lead to falsely increased creatinine values. This introduces unfairness in liver allocation, as outcomes may be influenced solely by the laboratory method employed. In contrast, enzymatic assays are known to be far less affected by bilirubin interference than the Jaffe method. Considering current trends in liver allocation, such as the rising burden of kidney disease in this population, the increasing age of candidates, and the overall sicker clinical profile, accurate measurement of laboratory values is of critical importance. Not only the MELD score itself, but also the specific laboratory methods used should be clearly defined, standardized, and taken into account by policymakers and incorporated into clinical guidelines.



**Prof. Curie Ahn MD, PhD**

Prof. Division of Nephrology, Seoul National University, South Korea

Curie Ahn, MD, Ph.D. is a nephrologist from Seoul, Korea. She is the General Secretary of the Asian Society of Transplantation as well as a Councilor of The Transplantation of Society contributing to those societies for improving transplantation medicine especially in Asia. In addition, as a Director of the Vitallink, she has been actively participating in clinical capacity-

building in nephrology and in deceased organ transplantation for the last 10 years. As a research scientist, she has established the national cohort for CKD(KNOW-CKD), ADPKD, and for organ transplantation(KOTRY, Korean Organ Transplantation Registry), to provide a translational research basis.



**A/Prof. Hyunwook Kwon MD, PhD**

**Education**

Hanyang University, chemical engineering: 1996-1998, only halfway through college

Military service: 1998 - 2000

Hallym University, school of medicine: 2003-2009, Korea M.D. 2/18/2009

University of Ulsan College of Medicine, Seoul, Korea, Master of Medical Science, Feb 2014

University of Ulsan College of Medicine, Seoul, Korea, Doctor

of Medical Science, Feb 2021

**Graduate training**

**Internship**

Asan Medical Center 1/3/2009 – 28/2/2010

**Residency Training**

Asan Medical Center, Department of Surgery, Seoul, Korea: 3/1/2010 – 2/28/2014

**Fellowship Training**

Asan Medical Center, Division of vascular surgery, Department of Surgery  
1/3/2014 – 2/28/2015

Asan Medical Center, Division of kidney & pancreas transplantation, Department of Surgery  
1/3/2015 – 2/29/2016

### **Work experience**

Clinical assistant professor, Division of vascular and transplantation, Department of Surgery  
Hallym University of medicine: 1/3/2016-2/28/2017

Clinical Instructor, Division of kidney and pancreas transplantation, Department of Surgery  
Asan Medical Center, University of Ulsan College of Medicine: 1/3/2017-28/2/2019

Assistant professor, Division of kidney and pancreas transplantation, Department of Surgery  
Asan Medical Center, University of Ulsan College of Medicine: 1/3/2019-229/2/2024

Associate professor, Division of kidney and pancreas transplantation, Department of Surgery  
Asan Medical Center, University of Ulsan College of Medicine: 1/3/2024-present

### **Abstract**

#### **"APPLICATION OF AI IN MEDICAL RESEARCH AND CLINICAL STUDIES"**

Hyunwook Kwon, M.D., Ph.D.

The rapid advancements in machine learning and artificial intelligence have brought forth an array of tools that hold the promise to significantly reshape how researchers plan, conduct, and present their work. Among these tools, OpenAI's Chat GPT stands at the forefront, powered by cutting-edge transformer-based technology that excels at capturing contextual subtleties and producing human-like text.

This lecture explores the multifaceted applications of Chat GPT in research paper writing and highlights the synergistic role of Python in data processing and statistical analysis. A key theme is how GPT can work in tandem with Python libraries (e.g., pandas, NumPy, scikit-learn) to streamline the entire research workflow: from importing, cleaning, and organizing datasets, to performing statistical tests that enhance both accuracy and efficiency. By prompting GPT with specific research questions or tasks, researchers can generate Python scripts tailored to their data and analysis requirements — a process that not only expedites coding but also reduces common errors in data handling.

One striking feature of Chat GPT is its competency in summarizing complex datasets. When provided with tables of results or raw data, Chat GPT can quickly generate coherent and detailed narratives describing key findings, patterns, and potential implications. This ability becomes particularly valuable for those who may face language barriers or strive to refine the eloquence and clarity of academic discourse. At the same time, GPT's suggestions on how to structure tables or Python scripts in Excel-friendly formats make it an invaluable productivity aid.

Yet, leveraging Chat GPT for data analysis and manuscript drafting comes with potential pitfalls. The phenomenon of 'hallucinations' — where the model may generate inaccurate or irrelevant outputs — underscores the need for diligent “prompt engineering” and thorough fact-checking. Researchers must remain vigilant about the risk of false references, which can erode the credibility of scientific findings if left undiscovered. This hazard is compounded by the growing complexity of AI systems, which can fabricate or misattribute citations based on their training data rather than verified sources.

As AI grows more sophisticated, prominent journals worldwide have adopted strict guidelines that prohibit naming Chat GPT as an author or publishing AI-written content without proper oversight. The rationale behind these policies lies in preserving the integrity of the scientific record and maintaining clear authorship accountability. AI detectors such as Harvard and MIT-IBM Watson AI Lab's GLTR, OpenAI's Text Classifier, and AI21 Labs' AI Detector strive to identify AI-generated text. However, these tools are not infallible; paraphrasing and strategic linguistic modifications can circumvent detection, underscoring the importance of thorough, human-led peer review.

In conclusion, while Chat GPT and Python offer remarkable advantages — from faster data handling to streamlined manuscript generation — researchers should employ these tools with a measured approach. By cultivating robust prompt engineering skills, verifying references

diligently, and integrating Python-based analysis workflows responsibly, scholars can harness AI’s transformative potential without compromising academic rigor or trustworthiness.



**Michael J. Metro MD, FACS**

**Education:**

2023-current MBA (Health Care Management Focus) at Fox School of Business at Temple University, Philadelphia. Expected Graduation 2028

1992-96 MD at University of Pittsburgh School of Medicine, Pittsburgh

1989-92 BS (Biology) *Magna Cum Laude* at University of Pittsburgh, Pittsburgh

**Postgraduate Training and Fellowship Appointments:**

2001-02 Fellow in Traumatic and Reconstructive Urology, University of California, San Francisco and San Francisco General Hospital, San Francisco, CA

2000-01 Chief Resident of Urology, University of Pennsylvania, Philadelphia, PA

1997-2000 Resident in Urology, University of Pennsylvania, Philadelphia, PA

1996-97 Intern in General Surgery, University of Pennsylvania, Philadelphia, PA

**Faculty Appointments:**

7/2025- current- Clinical Professor of Urology, Jefferson Health System, Vice Chair Academic Affairs, Jefferson Einstein Department of Urology, Fellowship Director, Traumatic and Reconstructive Urology

**Past Faculty Appointments:**

7/2022-7/2025- Professor of Urology, Physician Scholar Tract, Department of Urology, Temple University Health System

7/2024- 7/2025- Vice Chair of Academic Affairs, Temple University School of Medicine, Philadelphia, PA

2017-2025- Fellowship Director of Traumatic and Reconstructive Urology, Temple University School of Medicine, Philadelphia, PA



**Enkhjargal (Enja) Gendenjamts BSN, MHA, RN4, CMSRN**

Experienced Registered Nurse with a background in Health Care Administration and over 30 years in hospital, home healthcare, ambulatory, and nursing research settings. Skilled in delivering quality patient care, a proven leader adaptable to fast-paced environments, an advocate for patients, and composed in complex, high-pressure situations

**Education:**

Master's Degree of Business Administration/Health Care Administration

- Strayer and Virginia International University

Bachelor's Degree of Nursing

- The University of State of New York

Bachelor's Degree of Law Enforcement

- Mongolian Defense University

Diploma degree of Nursing

- Nursing school of Ulaanbaatar (1991)  
Inova Fairfax Hospital, Medical Surgical. (Sep 2016– Present)  
Capitol View/Human Touch Home Health Wash DC (Oct 2018-Present)  
Human Touch Home Health, Falls Church, VA (July 2012 – Sep2016)

### **Abstract**

#### **VIRTUAL NURSING - INNOVATIVE NURSING CARE MODEL**

Healthcare systems are confronting unprecedented challenges, including persistent nursing shortages, high turnover, rising patient acuity, and widening equity gaps. Traditional care models are no longer sufficient to meet these demands. Virtual nursing has emerged as an innovative solution, leveraging remote technologies to extend the reach of nurses, improve patient engagement, and create sustainable models of care delivery.

This presentation examines the evolution of virtual nursing in the United States, grounding the discussion in the American Nurses Association (ANA) Principles for Virtual Nursing Practice. These principles highlight the importance of accountability, ethics, patient rights, and professional competence in virtual care. A central case example is the Inova Health System Virtual Nursing Model, where remote nurses support admissions, discharges, patient and family education, documentation, and clinical mentoring. Early outcomes demonstrate enhanced nurse satisfaction, improved patient experiences, and measurable operational efficiencies, though challenges remain in technology integration, role clarity, cost, and equity.

The session also explores how artificial intelligence (AI) can augment, rather than replace, nursing practice by streamlining documentation, enhancing predictive analytics, and supporting workflow management. Ultimately, virtual nursing—when grounded in policy, ethics, and evidence—offers a scalable and sustainable path to healthcare transformation.



#### **Su-Fen Cheng PhD, MSN, RN**

National Taipei University of Nursing and Health Sciences  
Department of Allied Health Education and Digital Learning  
**Education**

|           |                 |  |                  |
|-----------|-----------------|--|------------------|
| 1998-2002 | PhD,<br>Nursing | University of Colorado Health<br>Sciences Center | Denver, CO       |
| 1993-1994 | MSN             | University of Maryland at<br>Baltimore           | Baltimore,<br>MD |
| 1990-1992 | BSN             | University of Dubuque, Iowa                      | Dubuque, IA      |

#### **Professional experience**

|              |                        |   |                        |
|--------------|------------------------|---|------------------------|
| 2016-Present | Professor              | National Taipei University of Nursing and Health<br>Sciences<br>Department of Allied Health Education and Digital<br>Learning | Taipei city,<br>Taiwan |
| 2008-2016    | Associate<br>Professor | Department of Allied Health Education and Digital<br>Learning<br>School of Nursing  | Taipei city,<br>Taiwan |



*“Past, present and the future” of the FCHM -100<sup>th</sup> Anniversary scientific conference*

|           |                     |  |                           |
|-----------|---------------------|--|---------------------------|
| 2004-2008 | Associate Professor | Fooyin University, Taiwan<br>School of Nursing | Kaohsiung city,<br>Taiwan |
| 2002-2004 | Assistant Professor | Fooyin University, Taiwan<br>School of Nursing | Kaohsiung city,<br>Taiwan |
| 1998-2002 | Research assistant  | University of Colorado Health Sciences Center  | Denver, CO                |
| 1995-1998 | Lecturer            | Fooyin University, Taiwan                      | Kaohsiung city,<br>Taiwan |
| 1993-1994 | Research assistant  | University of Maryland at Baltimore            | Baltimore, MD             |
| 1988-1990 | RN                  | Cathay Hospital, Taiwan                        | Taipei city,<br>Taiwan    |

**Abstract**

**DIGITAL TRANSFORMATION IN NURSING EDUCATION**

This presentation addresses the digital transformation of nursing education. It will first clarify the concept of digital transformation and provide an overview of developments in Taiwan’s nursing education over the past 15 years. Selected cases, published in internationally recognized journals, will be presented to illustrate key innovations and outcomes. Finally, the presentation will discuss future directions and potential challenges associated with sustaining and advancing digital transformation in nursing education.



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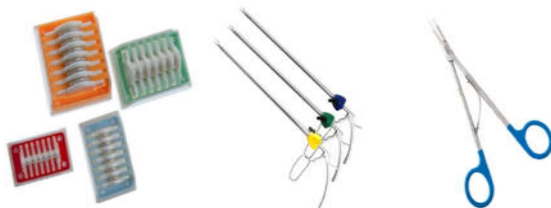
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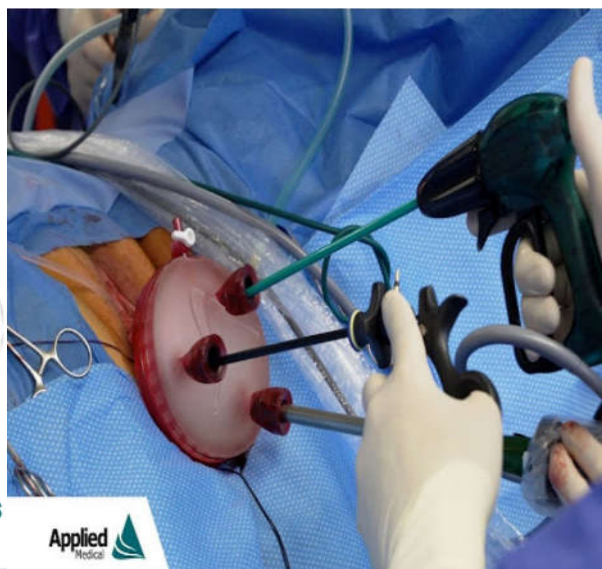
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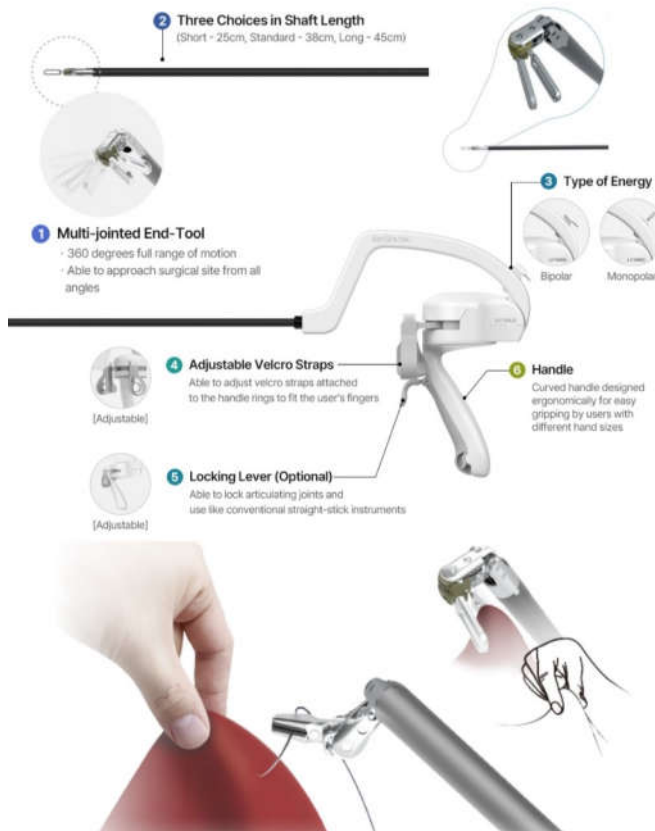
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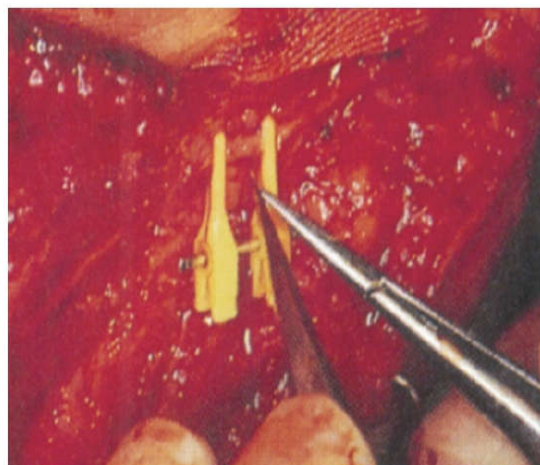
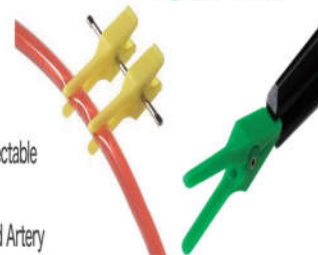


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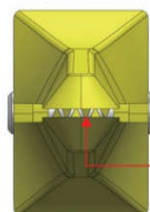
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- Four sizes available for each Vein and Artery
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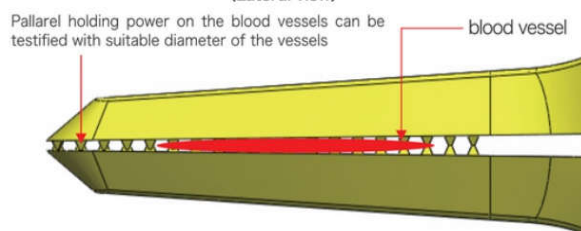
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### Holding Mechanism (Frontal cut section)



Arrangement of fine teeth on the upper and lower jaw surfaces can be bitten alternately

### Holding Mechanism (Lateral view)



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## ABSTRACTS

### SURGERY SUBSECTION

#### TRANSORAL LASER CORDECTOMY IN THE TREATMENT OF GLOTTIC SQUAMOUS CELL CARCINOMA

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**Keywords:** Laryngeal cancer

**Introduction:** Laryngeal cancer and benign laryngeal lesions often necessitate highly precise surgical intervention to achieve both oncologic control and functional preservation. Among the available treatment modalities, CO<sub>2</sub> laser cordectomy has emerged as a gold standard for managing lesions confined to the larynx, offering a minimally invasive approach with excellent functional outcomes. This technique enables precise excision of pathological tissue while minimizing thermal damage to surrounding structures, thereby preserving vocal function. Comprehensive preoperative evaluation—including flexible endoscopy, stroboscopy, and high-resolution imaging—is essential for accurately assessing lesion extent and determining the optimal surgical plan. This study evaluates the clinical efficacy of CO<sub>2</sub> laser cordectomy in the management of early-stage malignant laryngeal lesions, underscores the importance of thorough diagnostic assessment, and examines the role of adjuvant therapy in reducing recurrence and improving long-term outcomes

#### MALIGNANT BONE TUMORS AFFECTING ADOLESCENTS

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**Keywords:** Mega-prosthesis, Osteosarcoma, Chondrosarcoma, Ewing’s Sarcoma, Neoadjuvant, Adjuvant Chemotherapy

**Introduction:** The most common malignant bone tumors affecting adolescents and young adults in their second and third decades of life are osteosarcoma, chondrosarcoma, and Ewing’s sarcoma. Before the 1980s, limb amputation was the primary treatment for bone malignancies. After 1990 limb-salvage surgery became the preferred treatment method for giant bone loss and bone sarcoma. 35% of all limb-salvage surgeries at NTORC involved malignant or benign tumors affecting joints. Most malignant cases were diagnosed at a late stage (extracompartmental), but without distant metastases. 66.6% of malignant surgeries were for primary bone cancer (osteosarcoma), with very promising short-term results using the chemo-surgery-chemo treatment protocol.

#### OPTICAL COHERENT TOMOGRAPHY BASED RETINAL STRUCTURAL EVALUATION IN PSEUDOEXFOLIATION SYNDROME AND PSEUDOEXFOLIATION GLAUCOMA: A CROSS-SECTIONAL STUDY FROM MONGOLIA

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**Keywords:** Optical coherence tomography, pseudoexfoliation, glaucoma, ganglion cell complex, retinal nerve fiber layer thickness, choroidal thickness.

Pseudoexfoliation syndrome (PXFS) is an age-related disorder marked by the accumulation of fibrillar material in ocular tissues and, notably, in systemic organs such as the heart, lungs, and blood

vessels. This broader involvement has been linked to increased cardiovascular and cerebrovascular risks. Ocularly, PXFS significantly raises the likelihood of developing pseudoexfoliation glaucoma (PXFG), a form of secondary glaucoma that often progresses rapidly and is resistant to treatment. Optical Coherence Tomography (OCT) allows for early detection of structural retinal changes, which is essential for timely intervention. Pseudoexfoliation syndrome (PXFS) is an age-related condition involving fibrillar deposits in ocular and systemic tissues, including the heart and blood vessels, and is associated with increased vascular risk. OCT enables early detection of retinal structural changes critical for timely management. Objective: To evaluate and compare retinal nerve fiber layer (RNFL), ganglion cell complex (GCC), and choroidal thickness in eyes with PXFS and PXFG, relative to healthy controls, using OCT. Materials and methods: This hospital-based, cross-sectional study was conducted between August 2024 and January 2025 at the First Central Hospital of Mongolia. Ninety participants (159 eyes) were categorized into three groups: PXFS (n=30), PXFG (n=30), and age-matched controls (n=30). All participants, including patients and controls, underwent detailed medical and ocular history-taking followed by comprehensive eye examinations. OCT imaging of the macula and optic nerve head was performed to assess retinal nerve fiber layer (RNFL), ganglion cell complex (GCC), and subfoveal and peripapillary choroidal thicknesses. Results: 159 eyes of 90 patients were included. RNFL thickness was significantly reduced in PXFG eyes ( $78 \pm 14 \mu\text{m}$ ) compared to PXFS ( $88.1 \pm 8.3 \mu\text{m}$ ) and control groups ( $101 \pm 11 \mu\text{m}$ ,  $p < 0.001$ ). Significant differences in RNFL thickness were observed across all quadrants (superior, inferior, nasal, and temporal). GCC values followed a similar trend of reduction in both PXFS and PXFG groups versus controls. Choroidal thickness was lowest in the PXFS group ( $241.8 \pm 1 \mu\text{m}$ ), followed by PXFG ( $251.5 \pm 14 \mu\text{m}$ ), and highest in controls ( $273.6 \pm 0.15 \mu\text{m}$ ), demonstrating a statistically significant intergroup difference. No other significant variations were found among demographic or ocular parameters. Among 159 eyes, RNFL was significantly thinner in PXFG ( $78 \pm 14 \mu\text{m}$ ) vs. PXFS ( $88.1 \pm 8.3 \mu\text{m}$ ) and controls ( $101 \pm 11 \mu\text{m}$ ,  $p < 0.001$ ). All RNFL quadrants showed differences. GCC was reduced in PXFS and PXFG vs. controls. Choroidal thickness was lowest in PXFS, followed by PXFG and controls, with significant intergroup differences. Conclusion: Quantitative OCT assessment revealed progressive thinning of RNFL and GCC in PXFS and PXFG, underscoring the potential of OCT as a diagnostic adjunct for early glaucomatous damage. The associated choroidal thinning may reflect vascular compromise in pseudoexfoliative pathology. These results support incorporating OCT-based monitoring into clinical protocols for patients with PXFS and PXFG. **Discussion:** The structural retinal alterations detected through OCT in this study underscore the clinical importance of early imaging in pseudoexfoliation-related ocular disorders. As expected, RNFL and GCC values were markedly lower in PXFG eyes compared to PXFS and controls, aligning with the known neurodegenerative trajectory of glaucomatous optic neuropathy. Interestingly, the PXFS group also demonstrated subclinical changes, suggesting that neuroretinal degeneration might precede overt glaucoma. Choroidal thinning across both pseudoexfoliation groups, although not as pronounced as RNFL loss, introduces a possible vascular component in disease progression. While it is yet unclear whether these changes are causative or consequential, the trend mirrors findings in studies linking impaired choroidal perfusion to glaucomatous damage. Importantly, our study adds to the limited data from Central Asia, particularly Mongolia, offering region-specific insight into PXFS/PXFG pathology. Further prospective studies incorporating visual field testing and OCT angiography would help validate these findings and explore their prognostic implications. OCT showed RNFL and GCC thinning in PXFG and subclinical changes in PXFS, suggesting early neurodegeneration. Choroidal thinning in both may indicate vascular involvement. Similar to other studies, our findings confirm OCT's utility in early detection and add region-specific data on PXFS/PXFG from Mongolia.

**PATTERNS OF INFLAMMATORY MARKERS AND IMPLICATIONS FOR  
ANTIBIOTIC  
USE FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY: A RETROSPECTIVE  
COHORT STUDY**

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**Background:** Laparoscopic cholecystectomy is the standard treatment for benign gallbladder disease, offering reduced morbidity and shorter hospital stays compared to opensurgery. However, postoperative infectious complications remain a major concern, with reported incidence ranging from 0.5% to 15%. Antibiotic prophylaxis is widely recommended, yet practices vary significantly, especially in resource-limited settings where antibiotic stewardship may be less established. Reliable biomarkers, including white blood cell count (WBC) and C-reactive protein (CRP), are essential for early detection of infection, but comprehensive data on their utility in severe outcomes after laparoscopic cholecystectomy remain limited.

**Methods:** This retrospective cohort study analyzed patients undergoing laparoscopic cholecystectomy at a tertiary center between January 2019 and December 2024, focusing on those who experienced mortality or required re-operation. Thirty-four patients met inclusion criteria: 32 in the mortality cohort and 2 requiring re-operation. Inflammatory markers were evaluated using electronic medical records, with WBC measured via automated hematology analyzers and CRP via immunoturbidimetric assays. **RESULTS:** Results showed markedly elevated inflammatory markers in adverse outcome cases. The mortality cohort demonstrated a mean WBC of  $13.3 \times 10^9/L$  (maximum  $35.9 \times 10^9/L$ ) and a mean CRP of 182 mg/L (maximum 509.7 mg/L), representing a 21% elevation above normal WBC limits and a  $>60$ -fold increase above normal CRP. In the re-operation cohort, mean CRP was 234 mg/L, a 78-fold elevation above normal. These values significantly exceed the expected postoperative response, where CRP typically peaks below 150 mg/L, strongly suggesting severe infectious or inflammatory complications such as systemic inflammatory response syndrome or sepsis. The findings underscore critical implications for surgical practice. Elevated WBC and CRP highlight the need for more rigorous postoperative monitoring, with CRP  $>150$  mg/L by postoperative day 3 serving as an early warning threshold. The results also raise questions about the adequacy of current antibiotic prophylaxis regimens, particularly regarding antibiotic selection, timing, and coverage of resistant organisms. Delays in infection recognition and treatment may contribute to mortality, emphasizing the importance of rapid response protocols and integration of inflammatory markers into infection risk assessments.

**Conclusion:** Patients with mortality or re-operation following laparoscopic cholecystectomy exhibited profound elevations in CRP and WBC, indicative of severe infectious complications. These findings support the adoption of systematic biomarker monitoring and early intervention strategies to improve outcomes. Future prospective studies are needed to refine predictive models, optimize prophylactic regimens, and develop cost-effective monitoring protocols for broader implementation.



## **RELATIONSHIP BETWEEN PATHOMORPHOLOGICAL CHANGES AND PITUTARY-GONODAL AXIS IN MEN WITH AZOOSPERMIA**

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**Keywords:** Azoospermia, Sperm retrieval

**Introduction:** Azoospermia become a major reproductive health which afflicting 10 to 20% among infertile male worldwide. In clinical practice, azoospermia can be divided in to obstructive azoospermia (OA) and non-obstructive azoospermia (NOA). Intra-cytoplasmic sperm injection (ICSI) which sperm retrieved from testis by sperm retrieval surgical technique has become the standard management of azoospermia. Method of sperm retrieval techniques, testicular volume and serum hormone maybe used as valuable parameters in sperm retrieval rate. Other study suggested that testicular histology assessment was the best predictor of sperm retrieval surgery's outcome.

**Objective:** To assess correlation between testicular histopathology and clinical assessment in men with azoospermia.

**Materials and Methods:** The study involved 71 azoospermia infertile men who performed sperm retrieval surgery in RMC (IVF) center in 2019-2021. Semen analyses were conducted at least twice for assuring the azoospermia in all of the patients. Andrology assessment was performed to evaluate the etiology of azoospermia, including clinical history, physical examination such as testicular volume, varicocele, and FSH concentration measurement (1.5-12.4 IU/l as a normal value). The testicular biopsy was taken during the performing mTESE and histopathology assessment was conducted by storing the specimen in fixative solution, formaldehyd or bouain, and further being processed and stained with Hematoxylin and Eosin. The data were analyzed using Statistical Package for Social Science (SPSS) version 16 for Windows. P-values less than 0.05 were regarded as significant.

**Results:** In total, 71 patients with mean age of  $34.69 \pm 5.02$  years were included in the study. The mean of testicular volume of overall patients was right testis  $17.29 \pm 4.8$ cc, left testis  $15.59 \pm 4.8$ cc ml. The mean (St.er) of FSH was 11.75(1.15) LH was 5.73(0.40) and testosterone was 415.0(18.6). PESA was successfull in 36 of the 71 patients (45.6%) and mTESE was successfull in 16 patients (42.1%) unsuccessful in 20 (52.6%). In PESA successfull group Johnson score mean(sd) was  $7.1 \pm 0.5$ , mTESE successfull group Johnson score was  $5.9 \pm 2.6$  and unsuccessful group was  $2.05 \pm 2.7$ . There was significant positive correlation between Johnson score and testicular volume (TVR- $r=0.72$  p<0.01, TVL- $r=0.67$  p<0.01). There was negative correlation between Johnson score and pituitary gonadal axis FSH ( $r=-0.62$  p<0.01) болон LH ( $r=-0.52$  p<0.01).

**Conclusion:** Testicular volume less and high serum FSH, LH concentration in men with azoospermia may indicated minimum spermatogenesis activity.

## **A STUDY OF COMPLICATIONS IN RECIPIENTS WITH EARLY KIDNEY DYSFUNCTION AFTER LIVER TRANSPLANTATION**

Batsaikhan Batsuuri 1

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**Keywords:** Dysfunction, Transplant, Survival

**Introduction:** Liver transplantation (LT) recipients frequently develop kidney dysfunction (KD), but the predisposing factors and long-term consequences of KD are not well understood. Post-LT complications that lead to graft failure and patient morbidity/mortality can be generally categorized



as vascular, biliary, parenchymal and malignant. Main reasons for our study are to identify complications' rate for early post-transplant KD and to evaluate the post-LT patients and graft survival rate.

**Study aim:** Our goal was to evaluate complications in recipients with early post-transplant KD and to investigate the survival rate after LT.

**Methodology:** To determine the impact of post-LT early and late complications, as well as to identify risk factors for KD, we analyzed the retro- and prospectively maintained the First Central Hospital of Mongolia's LT database, which includes 286 patients who received their liver transplant between September 21, 2011, and December 31, 2024. Early KD was identified by measuring glomerular filtration rate by Cockcroft-Gault creatinine clearance formulation at pretransplantation, intraoperatively, 24h, 72h, 7d, 14d 28days of post LT.

**Results:** In our study KD rate was 29.7%. Several factors increased the risk of KD among recipients. Post-LT complications' related risk factors for KD was high MELD score (OR, 1.11; 95%CI, 1.06-1.16), Child-Turcotte-Pugh scores of B and C (OR, 5.57; 95%CI, 1.27- 24.52 and OR, 8.21; 95%CI, 1.87–36.54), comorbidities (OR, 1.92; 95%CI, 1.14-3.23), post-LT acute bleeding (OR, 3.22; 95%CI, 1.22-8.46), early relaparotomy for revision (OR, 3.12; 95%CI, 1.34-7.28), pre- and post-LT blood transfusion respectively. Additionally, the survival rates for recipients with post-LT KD were 90.7% at 1 year and 81.3% at 3 years.

**Conclusions:** Early and late post-LT complications occurred in 33.6% and 54.0%. The correlation between improving renal function post-LT may represent true, females with old ages or high CTP and MELD score recipients have a high tendency for KD. Alternatively, as of peri- and post-LT blood product transfusions are marks of blood loss, should avoid massive bleeding during LT to prevent KD. Recipients with KD has a poor survival rate compared with non-KD group.

## CUTANEOUS TUBERCULOSIS

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Mongolian Japanese Hospital of MNUMS<sup>1</sup>  
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**Keywords:** Cutaneous tuberculosis, direct inoculation, caseating granuloma

Tuberculosis (TB) is a chronic granulomatous infection, predominantly affecting the lungs. However, extra-pulmonary tuberculosis (EPTB) is increasingly observed in immunocompromised individuals, such as those with diabetes mellitus, malignancies, chronic alcoholism, or those undergoing immunosuppressive therapy. Cutaneous tuberculosis (CTB), a rare manifestation of EPTB, accounts for only 0.5–2% of all TB cases. CTB can result from direct exogenous inoculation or endogenous spread via hematogenous or lymphatic routes from a primary focus. CTB presents with diverse clinical manifestations and is frequently misdiagnosed in early stages due to its nonspecific clinical appearance. Diagnostic delay may result in chronic infection, tissue necrosis, and even amputation—particularly in high TB burden settings. Histopathological evidence of granulomatous inflammation, supported by microbiological or molecular confirmation, is essential for diagnosis. We present a case of a chronic non-healing digital wound due to tuberculous origin, initially misdiagnosed as a simple soft tissue infection. Epidemiology Approximately 20% of tuberculosis cases are extra-pulmonary in origin, with lymphatic involvement being the most prevalent (30%). Cutaneous tuberculosis remains rare but is more commonly encountered in TB-endemic countries such as India, China, Indonesia, and Mongolia. Despite its rarity, CTB poses diagnostic challenges, as it may mimic chronic bacterial infections, non-healing ulcers, or even neoplastic conditions.

**Discussion:** CTB is diagnostically challenging, particularly when presenting as a chronic soft-tissue infection. In this case, direct inoculation of Mycobacterium tuberculosis through trauma is a likely route of entry. Despite antibiotic treatment targeting E. coli, the persistence of symptoms

warranted further investigation, ultimately revealing a tuberculous etiology. Histological features, including caseating granulomas, epithelioid cells, and Langhans-type multinucleated giant cells, confirmed the diagnosis. CTB should be suspected in chronic wounds unresponsive to conventional therapy, particularly in TB-endemic areas. Advanced diagnostics, such as PCR assays, can expedite diagnosis when available.

### **SURGICAL TREATMENT OUTCOME IN MALIGNANT GLAUCOMA: HOSPITAL-BASED SINGLE-CENTER RETROSPECTIVE STUDY**

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Burenjargal Peljee<sup>1</sup> MD, MSc, Clinical Professor, Cataract Surgeon  
Enkhzul Damdin<sup>1</sup> Ophthalmologist, Altanzul Tumurpurev<sup>2</sup> ophthalmologist,  
Enkhtuya Erdene<sup>2</sup> ophthalmologist, Batzaya Dugersuren<sup>2</sup> ophthalmologist,  
Narantsetseg Oyungerel<sup>1</sup> ophthalmologist,  
<sup>1</sup>FCHM Ophthalmology department  
<sup>2</sup>Gerelt Melmii eye clinic

**Keywords:** malignant glaucoma, pars plana vitrectomy, capsulotomy, iridodissection surgery, transpupillary anterior vitrectomy, iridodissection, intraocular pressure, antiglaucoma drops.

**Purpose:** To determine the results of surgical treatment for malignant glaucoma among inpatients at the Department of Ophthalmology of the First Central Hospital and to evaluate the post-operative visual acuity, intraocular pressure, and the usage of intraocular antiglaucoma drops.

**Methods:** A hospital-based single-center retrospective study of 19 patients, treated for malignant glaucoma during the period from January 2019 to April 2023 in FCHM were recorded. Demographic and clinical data of cases were collected from medical records.

**Results:** The average age was  $74.5 \pm 9.8$  years, female gender predominated - 14 (82.3%) and 16 (88.8%) eyes were pseudophakic. Of these, PPV was performed in 9 cases, transpupillary AV case was 8, and lensectomy was performed in 2 cases. Capsulotomy and iridodissection was done in all cases. The mean follow-up period was  $11.44 \pm 13.4$  months. Visual acuity was improved in the PPV group ( $p=0.048$ ) and transpupillary AV group ( $p=0.012$ ). In both groups, intraocular pressure was significantly decreased respectively ( $p=0.002$ ) ( $p=0.001$ ), and the number of antiglaucoma drops decreased with statistical significance ( $p=0.003$ ) ( $p=0.013$ ). In the anterior vitrectomy group, IOL removal surgery was done for 2 cases as a recurrence was detected. In both treatment groups, intraocular pressure was effectively reduced after surgery, and intraocular pressure reduction was similar in both groups ( $p=0.384$ ).

**Conclusion:** Pars plana vitrectomy-capsulotomy-iridodissection surgery has been shown to improve visual acuity and effectively reduce intraocular pressure in patients with malignant hypertension that is ineffective in laser and medical therapy. Also, transpupillary anterior vitrectomy - capsulotomy - iridodissection is a cost-effective and effective way to lower intraocular pressure and reduce the usage of antiglaucoma drops.

### **EFFECTIVENESS OF INTERSCALENE BLOCK IN POSTOPERATIVE PAIN MANAGEMENT FOLLOWING ARTHROSCOPIC ROTATOR CUFF REPAIR SURGERY**

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Odonchimeg Gombosuren<sup>1</sup>, Enkhtaivan Narangerel<sup>1</sup>,  
<sup>1</sup>The First Central Hospital of Mongolia

**Keywords:** Interscalene block, RC repair

**Introduction:** Shoulder joint surgery, particularly arthroscopic rotator cuff (RC) repair, is often associated with moderate to severe postoperative pain, necessitating effective analgesic strategies.

Interscalene brachial plexus block (ISB) is a commonly employed regional anesthesia technique to provide perioperative analgesia for shoulder surgeries. This study aimed to evaluate the impact of ISB on opioid consumption and postoperative pain control in patients undergoing arthroscopic RC repair.

**Methods:**

A retrospective observational study was conducted on 121 patients who underwent arthroscopic RC repair between 2024 and 2025. All patients received general anesthesia; among them, 57 patients also received an interscalene block (Group B), while 64 did not (Group N). Primary outcomes included postoperative pain scores and total opioid consumption (converted to oral morphine equivalents). Secondary outcomes included incidence of postoperative nausea and vomiting (PONV) and length of hospital stay. Statistical analysis was performed using the independent t-test and chi-square test, with a significance level set at  $P < 0.05$ .

**Results:** Group B demonstrated significantly lower opioid consumption (Mean: 52.15 mg) compared to Group N (Mean: 63.68, mg;  $P < 0.001$ ). Postoperative pain scores at 6, 12, and 24 hours were also significantly reduced in the ISB group ( $P < 0.001$  at each time point). Additionally, the incidence of PONV was lower in Group B, although length of hospital stay did not differ significantly between groups.

**Discussion:** The use of interscalene block in arthroscopic RC repair significantly reduced postoperative pain scores and opioid requirements. Moreover, ISB contributed to a lower incidence of postoperative nausea and vomiting, likely due to reduced opioid use. These findings support the incorporation of ISB as a component of multimodal analgesia for shoulder arthroscopy.

## **SURGICAL MANAGEMENT AND ALGORITHMIC APPROACH TO THE SPLENIC LESION FOR SPLENIC ECHINOCOCCAL DISEASE: RARE CASE REPORT**

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<sup>1</sup>Intermed International Hospital

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**Keywords:** Hydatid disease, Spleen

**Background:** Splenic lesions are often discovered incidentally during imaging, with few or no clinical symptoms to guide diagnosis. Consequently, imaging characteristics play a central role in differential diagnosis and subsequent management. Although various pathologic conditions of the spleen have been described, little guidance exists on the approach to incidentally found splenic cystic lesions. Among these, hydatid cysts are rare, accounting for 0.5–5.8% of echinococcal disease cases, following liver and lung involvement.

**Methods:** We report the case of a 45-year-old male who presented with intermittent upper abdominal discomfort, with no associated symptoms. Abdominal computed tomography revealed a simple splenic cyst measuring  $6.2 \times 6.3$  cm. Serologic tests for echinococcus were negative. The patient underwent laparoscopic exploration, during which 4 liters of brown fluid were aspirated. The cyst wall was excised, and the residual cavity was packed with omentum.

**Results:** Postoperative recovery was uneventful. The patient was discharged on the fourth postoperative day, tolerating a regular diet. At 18-month follow-up, he remained asymptomatic, with no evidence of recurrence.

**Conclusion:** Minimally invasive partial splenectomy is a viable surgical option for managing splenic hydatid disease. This approach offers key advantages, including splenic preservation, reduced impact on long-term quality of life, and facilitation of early adjunctive antiparasitic therapy. Standardized classifications such as the Gharbi classification (1981) provide a valuable framework for assessing the natural progression of echinococcal cysts. Ultrasound, with a sensitivity of 90–95%, remains the preferred first-line diagnostic tool, while abdominal CT, with near-perfect sensitivity (95–100%), has revolutionized the evaluation and management of splenic hydatidosis.

## **POSTOPERATIVE NAUSEA AND VOMITING (PONV) GENERAL ANESTHESIA RISK FACTORS**

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**Keywords:** Post operative vomiting

Postoperative nausea and vomiting is a common symptom reported on patient satisfaction surveys and affects nearly one-third of all surgical patients. The first episode of (postoperative nausea and vomiting) PONV may occur early in the post-anaesthesia care unit or later at the ward or after discharge at home in an ambulatory setting. This study aimed to investigate and describe the risk of early postoperative nausea and vomiting in the post-anesthesia care unit and after discharge at the department. We hypothesized that patients and perioperative factors were associated with early postoperative nausea and vomiting. This study identified several significant factors associated with early postoperative nausea and vomiting (PONV). Consistent with previous literature, female sex, obesity (BMI >35 kg/m<sup>2</sup>), longer anesthesia duration, and the use of opioids were associated with an increased risk of PONV. Suboptimal prophylaxis, especially in patients who received none or only one antiemetic agent, was strongly linked to a higher incidence of early PONV. These findings highlight the importance of accurate risk assessment and the need for individualized, evidence-based prophylactic strategies. Although antiemetics such as ondansetron and droperidol were associated with lower PONV rates, a considerable number of patients still experienced symptoms, suggesting that single-agent prophylaxis may be insufficient in high-risk individuals. Multimodal approaches to PONV prevention, including the combination of pharmacologic and non-pharmacologic methods, may offer better protection. Further prospective studies are needed to confirm these associations and optimize prevention strategies in clinical practice.

## **NEUROSURGERY IN THE FIRST CENTRAL HOSPITAL OF MONGOLIA**

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**Background:** Starting in March 2020, neurosurgery became part of the Center of Clinical Neurology at the First Central Hospital. Since then, our department has grown with the assistance and support of the hospital administration. For instance, we established the first Wound Dressing room on October 1st, 2020, expanded our team with a second neurosurgeon in November 2020, added a new outpatient room in April 2021, an intensive care unit in June 2021, and increased our human resources by two more surgeons starting in September 2021. Furthermore, this growth enabled us to equip a full surgical room with brain and spinal surgical devices, spinal endoscopes, and neurosurgical microscopes. Now we have 4 attending and a consultant neurosurgeon. Total bed 12. We aim to thoroughly analyze the spectrum of neurosurgeries performed and to predict future development.

**Methods:** We gathered data from all neurosurgical cases performed between March 2nd, 2020, and July 30th, 2025.

**Results:** A total of 2077 patients aged 5–85 (mean age  $50.1 \pm 13.1$  years) underwent surgery. Of these, 20.9% were emergency surgeries. The majority were rural residents (66.3%) and women (51.7%). Among the total patients, 13.7% (n=17) presented in serious or very serious condition. Additionally, 33.1% experienced limb paralysis, muscle atrophy, or neuropathic pain prior to surgery. Among all surgical cases, the distribution of diseases was as follows: spinal and spinal cord diseases (47%), cerebrovascular disease (25%), peripheral nerve disease (20%), brain tumors (5%), and other lesions (3%)

**Conclusion:** The neurosurgery department has been successfully established at the First Central Hospital. To meet the needs of citizens requiring neurosurgical services, further expansion of the department is essential.

## TRACHEAL INTUBATION IN PEDIATRIC PATIENTS

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**Keywords:** Anaesthesia; Pediatric; lidocain; intubation

Tracheal intubation in pediatric patients undergoing cochlear implant surgery presents unique challenges due to anatomical and physiological differences. Neuromuscular blocking agents (NMBAs), such as atracurium, are widely used to facilitate intubation; however, they are associated with side effects including delayed recovery, postoperative airway complications, and hemodynamic instability. As an alternative, topical lidocaine spray can blunt airway reflexes during laryngoscopy without the need for muscle relaxants, and may be particularly beneficial when rapid recovery or intraoperative neuromonitoring is desired. Nevertheless, data comparing these two approaches in pediatric otologic surgeries are limited.

**Objective:** To evaluate the efficacy and safety of topical lidocaine spray versus tracrurium-assisted intubation in pediatric patients undergoing cochlear implant surgery under general anesthesia.

**Conclusions:** Topical lidocaine spray represents a safe and effective alternative to neuromuscular blockade for tracheal intubation in pediatric patients undergoing cochlear implant surgery. It provides comparable rates of successful intubation while significantly reducing airway-related complications and facilitating more stable and rapid postoperative recovery. This approach is particularly advantageous in younger children or in clinical scenarios where prompt emergence from anesthesia and intraoperative neuromonitoring are prioritized. Further large-scale prospective studies are recommended to validate these findings and to inform clinical guidelines for pediatric airway management in otologic surgery.

## COMPARISON OF ROTATIONAL THROMBOELASTOMETRY AND CONVENTIONAL COAGULATION TESTS IN LIVER TRANSPLANT RECIPIENTS: A RETROSPECTIVE ANALYSIS

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**Keywords:** rotational thromboelastometry, Liver

**Introduction:** Rotational thromboelastometry (ROTEM) provides dynamic, functional insights into clot initiation, formation, and stability within the first 10 minutes. Understanding the correlation between CCTs and ROTEM parameters is essential for improving perioperative coagulation



management in liver transplantation surgery. Objectives: Compare ROTEM parameters and conventional coagulation tests in liver transplantation recipients across the four major surgical phases and to evaluate the degree of correlation between these testing modalities in each phase.

**Methods:** We conducted a retrospective study on 143 patients who underwent orthotopic liver transplantation at the First Central Hospital of Mongolia between September 2022 and May 2025. Blood samples were collected at four defined surgical time points: pre-operation, anhepatic phase, 30 minutes post-reperfusion, and postoperative period after immediately wound closure. Standard CCTs were included PT, APTT, INR, HGB, fibrinogen, and platelet counts. ROTEM parameters from EXTEM, INTEM, and FIBTEM assays were analyzed in relation to CCTs.

**Results:** ROTEM parameters by phase: In the preoperative period, patients exhibited a generally hypocoagulable profile. EXTEM and INTEM CT, CFT was markedly prolonged, while A10 and MCF were reduced. FIBTEM MCF was decreased, suggesting impaired fibrinogen contribution. During the anhepatic phase, coagulation status further deteriorated ( $p < 0.05$ ). FIBTEM MCF also dropped significantly ( $p < 0.05$ ), indicating worsening fibrinogen deficiency. Following graft reperfusion, ROTEM parameters remained impaired. EXTEM and INTEM CT increased further, while A10 and MCF demonstrated modest recovery (MCF:  $37.8 \pm 9.2$  mm). FIBTEM maximum lysis (ML) peaked at 21.5%, suggesting active fibrinolysis and persistent coagulopathy during the early phase of graft function. In the postoperative period, coagulation parameters showed signs of recovery. EXTEM and INTEM CT and CFT decreased, and MCF increasing to  $41.4 \pm 7.5$  mm, approaching the normal range. FIBTEM MCF also improved to  $9.8 \pm 6.2$  mm, although it remained suboptimal, suggesting gradual restoration of hemostatic balance in most patients. ML values declined across all assays, indicating reduced fibrinolytic activity stabilization of coagulation. Correlation between ROTEM and conventional coagulation tests: Moderate positive correlations were found between platelet count and EXTEM, INTEM A10, A20 and MCF ( $r = 0.372$ ,  $r = 0.377$ ,  $r = 0.328$ ,  $p < 0.001$ ). Moderate negative correlations were found between PLT and CFT ( $r = -0.354$ ,  $p < 0.001$ ), especially in post reperfusion period, indicating higher platelet count are associated with faster clot formation.

**Conclusion:** Our findings confirm that CCTs are suitable for baseline and quantitative evaluations, ROTEM assay offers dynamic, real-time functional assessment during liver transplantation. Their combined use improves the accuracy of perioperative coagulation management, facilitating targeted transfusion strategies.

## **RESULTS OF LOCAL APPLICATION PLATELET-RICH PLASMA IN OPEN RHINOPLASTY OPERATION**

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In 1972, for the first time, Matras used platelets as sealants to improve tissue healing following surgical procedures. Platelet-rich plasma (PRP) is an autologous platelet concentrate rich in biologically active substances, inducing immune cell reactions, which suppresses inflammation and accelerates tissue reparation and wound healing. Wound healing is a physiological phenomenon in response to tissue injury which involves a diversity of cells, growth factors, cytokines and mediators. It consists of four phases including hemostasis, inflammation, proliferation, and remodeling, which eventually may lead to scar formation. Prevention of excessive scar formation appears to be more efficacious than scar treatment. In our country's ENT surgical practice, there is a lack of studies on the use of platelet-rich plasma in the treatment of local areas during openrhinoplasty operation, which is the basis and novelty of our study.

**Purpose:** To study the effect of local application of platelet-rich plasma in open rhinoplasty

**Methods:** Our study was conducted in randomized controlled trial study on a total of 50 patients who underwent Open Rhinoplasty at the Songinokhairkhan district general hospital dept at General orthopaedic and ENT between 8th January 2025 and July 20, 2025. Participants randomly assigned to group 25 patients in the PRP local treatment and 25 participants in the control group. Data were analyzed by independent t-test and chi square test with a significance level of p value.

**Results:** In our study, the age and gender of the patients in the platelet-rich plasma treatment group were 18-40 years old, with a mean age of 32.2 years. The treatment group was divided into 5 (20%) males and 20 (80%) females. The control group was divided into 18-53 years old, with a mean age of 34.2 years, with a mean age of 5 (20%) males and 20 (80%) females. Wound healing was assessed by the time it took for the surgical wound to be completely closed and sutured. In the treatment group, sutures were removed 5-8 days after surgery. In the control group, sutures were removed 7-14 days after surgery. Statistical analysis (t-test) showed a statistically significant difference in the recovery time between the two groups ( $p<0.05$ ). The recovery time in the treatment group was shorter. The relationship between the longer recovery time with increasing age was statistically significant in both groups ( $p<0.05$ ).

**Conclusion:** The use local application platelet rich plasma in open rhinoplasty operation shown that accelerates wound healing process; prevent bacterial infection and hypertrophic scar.

## TRANSORAL ROBOTIC SURGERY OF PARAPHARYNGEAL TUMORS

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Parapharyngeal space (PPS) tumors comprise approximately 0.5% of all head and neck neoplasms. Their deep anatomical location and adjacency to vital structures—including the internal carotid artery, internal jugular vein, and cranial nerves IX to XII—make surgical excision challenging. Conventional approaches (transcervical, trans-parotid, or mandibulotomy) are often associated with significant operative morbidity, prolonged recovery, and esthetic or functional consequences. Transoral robotic surgery (TORS) offers a minimally invasive approach, utilizing three-dimensional magnification, tremor filtration, and articulating robotic arms to safely target these lesions with reduced morbidity and improved cosmetic outcomes. This review evaluates the current evidence and indications supporting the use of TORS for parapharyngeal tumors. Transoral robotic surgery presents a promising minimally invasive option for selected parapharyngeal tumors, offering excellent visualization, precision, and reduced morbidity. Ongoing technological innovations and clinical research are expected to expand its role in head and neck oncologic surgery.

## ON THE DECISION-MAKING PROCESS FOR SURGICAL INDICATIONS OF TEMPORAL LOBE EPILEPSY IN RESOURCE-LIMITED COUNTRY

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**Background:** There are over 50 million people worldwide with confirmed epilepsy. The prevalence of epilepsy among the population over 5 years of age in Ulaanbaatar city was found to be 2.5 per 1000 population. Temporal lobe epilepsy (TLE), the most frequently encountered form of focal

epilepsy in the adult population. It divides in 2 types: neocortical and mesial temporal. A significant proportion of individuals with TLE are drug-resistant. In the United States, the prevalence of drug-resistant mesial temporal lobe epilepsy (MTLE) due to hippocampal sclerosis is estimated at 0.51-0.66 cases per 1,000 people, with an annual incidence of 3.1-3.4 cases per 100,000 people. Surgery is a highly effective treatment for drug-resistant temporal lobe epilepsy. The first step of surgery is the decision-making process for surgical indication. Recently, we have established international collaborative framework for epilepsy surgery with Japan. In environments where VNS or DBS cannot be used for drug-resistant epilepsy, appropriately maximizing surgical indications for temporal lobe epilepsy contributes to the benefit of epilepsy patients. **Methods:** We conducted a prospective, single center study on 96 cases of temporal lobe epilepsy diagnosed with MRI and VEEG under two constraints: (1) unavailability of nuclear medicine examinations and (2) unavailability of chronic intracranial electrodes. The analysis includes the number of cases deemed eligible for surgery, cases where surgical eligibility could not be determined due to resource limitations, and cases deemed ineligible for surgery regardless of resource limitations (including patient refusal). Surgical eligibility was determined through conferences with two epilepsy surgery experts from Japan.

**Results:** This study included 96 patients (46 males and 50 females) with mean age  $33.6 \pm 8.7$  years. Epileptic changes were observed on the left side in 43 patients (44.8%), on the right side in 41 patients (42.7%), and on both sides in 8 patients (8.3%). In 4 cases (4.2%), the EEG was clear. Brain MRI showed notable changes in 69 (71.9%) patients. There were 41 (42.7%) patients eligible for surgery, not indicated (including refused patients) were 31 (32.3%) and surgical eligibility could not determine were 24 (25.0%).

**Conclusion:** Indications for surgery are determined by carefully evaluating VEEG and MRI findings. When surgical eligibility is unclear, additional examinations, such as intracranial EEG, should be considered.

### **COMPARATIVE STUDY OF SURGICAL TECHNIQUES: TRADITIONAL DORSAL RECTANGULAR FLAP VS. HOURGLASS-SHAPED DORSAL FLAP FOR SYNDACTYLY**

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**Keywords:** webbed finger, congenital

**Introduction:** Syndactyly is a congenital anomaly characterized by webbed fingers or toes, with an incidence of 1 per 2000 live births. It accounts for 20% of all hand anomalies. This study aims to compare two surgical techniques used to treat simple syndactyly: the traditional dorsal rectangular flap and the hourglass-shaped dorsal flap without skin grafting.

**Methods:** A retrospective cohort study was conducted on 20 children (aged 2–15 years) diagnosed with congenital simple syndactyly (ICD Q70.0) and operated between January 2020 and January 2025. Surgical data were obtained from medical records. Evaluation criteria included operation time, postoperative complications (infection, necrosis, adhesion, scarring), pain (Wong-Baker scale), scar assessment (Vancouver Scar Scale), and finger webbing (Web Creep Score).

**Results:** Thirteen patients (65%) were male. The average duration of surgery was 130 minutes for the traditional method and 70 minutes for the hourglass flap. Hospital stay averaged 6 days (traditional) vs. 4.5 days (hourglass). Complications such as infection, necrosis, and scarring occurred more frequently with the traditional flap. Vancouver Scar Scale ratings showed better outcomes in the hourglass group: 30% excellent, 60% good/normal, and 10% moderate, compared to the traditional group: 40% good/normal, 30% moderate, and 20% hypertrophic scarring.

**Conclusion:** The hourglass-shaped dorsal flap technique yielded better outcomes, including shorter operation time, reduced need for skin grafting, fewer complications, and improved hand function. This method appears superior to the traditional technique for managing simple syndactyly. Further long-term studies are recommended.

## **THE USE OF MICRODEBRIDERS IN THE MICROSURGICAL TREATMENT OF LARYNGEAL PAPILLOMATOSIS**

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**Keywords:** papillomatosis, microdebrider, voice

**Objectives:** To assess the clinical outcomes of microdebrider-assisted microsurgery in the treatment of laryngeal papillomatosis.

**Methods:** This hospital-based case-control study examined 25 cases of laryngeal papillomatosis diagnosed and treated at the Department of Otolaryngology, First Central Hospital of Mongolia, between June 2023 and January 2025. All enrolled patients underwent microsurgical excision using a microdebrider. Data collected included patient demographics, surgical history, operative time, postoperative hospital stay, and voice assessment scores. Voice quality was evaluated using GRBAS and Voice Handicap Index (VHI) scores. Statistical analysis was conducted to determine associations between clinical factors and surgical outcomes.

**Results:** A total of 25 patients were included, with an age range of 21 to 81 years (mean:  $44.63 \pm 15.85$  years). The cohort consisted of 15 males (62.5%) and 9 females (37.5%). A majority of cases (79.1%) had a history of recurrent papillomatosis, with an average of  $22.96 \pm 36.75$  previous surgeries. The mean operative time was  $26.04 \pm 16.81$  minutes, and the mean postoperative hospital stay was  $3.02 \pm 0.83$  days. Postoperative voice scores showed significant improvement, with a mean GRBAS/VHI score of  $4.71 \pm 1.97$ . Gender and smoking status had no statistically significant effect on surgical outcomes ( $p > 0.05$ ). Patients presenting with severe preoperative voice impairment and dyspnea were more likely to have undergone multiple surgeries (correlation coefficient  $r = 0.71$ ,  $p < 0.05$ ). While multivariate regression analysis indicated that symptoms such as cough and dysphagia negatively influenced postoperative voice quality, the association did not reach statistical significance ( $p = 0.067$ ).

## **A SYSTEMATIC REVIEW AND META-ANALYSIS OF COMPLICATIONS FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY**

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**Keywords:** Minimally invasive surgery, meta-analysis, systematic review

**Background:** Laparoscopic cholecystectomy (LC) is the standard surgical treatment for symptomatic gallbladder disease due to its minimally invasive nature and favorable outcomes. Nonetheless, postoperative complications—ranging from minor to severe—continue to pose clinical challenges, affecting patient recovery and healthcare resources. This systematic review and meta-analysis aimed to assess the incidence, types, and predictors of complications following LC.

**Methods:** A systematic search of PubMed, EMBASE, Cochrane Library, and Web of Science was conducted for studies published between January 2015 and December 2023, following PRISMA guidelines. The search strategy incorporated both MeSH terms and free-text keywords related to

“laparoscopic cholecystectomy” and “complications,” including bile duct injury, bleeding, infection, and conversion to open surgery. Inclusion criteria were studies reporting complication rates after LC with sample sizes of at least 100 patients. Data on patient demographics, operative characteristics, and complication outcomes were extracted. Meta-analyses were performed using RevMan 5.4 with random-effects models. Heterogeneity was evaluated using the  $I^2$  statistic, and publication bias was assessed using funnel plots and Egger’s test.

**Results:** Forty-seven studies comprising a total of 156,432 patients met the inclusion criteria. The pooled overall complication rate was 8.7% (95% CI: 7.2–10.4%). Major complications were observed in 2.1% (95% CI: 1.6–2.7%) and minor complications in 6.6% (95% CI: 5.4–8.1%) of cases. Common complications included bile duct injury (0.4%), conversion to open surgery (3.2%), significant bleeding (1.1%), and port-site infections (2.3%). Heterogeneity across studies was substantial ( $I^2 = 78.3\%$ ). Subgroup analyses revealed significantly higher complication rates among emergency procedures (12.4% vs. 7.1%,  $p < 0.001$ ) and patients aged  $\geq 65$  years (11.2% vs. 7.8%,  $p = 0.003$ ). Increased risk of complications was associated with acute cholecystitis, prior abdominal surgeries, male sex, and surgeons performing fewer than 50 LC procedures per year.

**Conclusions:** Laparoscopic cholecystectomy remains a safe and effective procedure with a low incidence of major complications. However, elevated risks are observed in specific clinical contexts and patient subgroups. These findings underscore the importance of appropriate case selection, timely surgical intervention, and surgeon experience to optimize patient outcomes. The study supports current guidelines advocating LC as the first-line approach for gallbladder disease, while highlighting the need for heightened caution in high-risk populations.

## THE FIRST TRANSORAL ENDOSCOPIC THYROIDECTOMY VESTIBULAR APPROACH (TOETVA) IN MONGOLIA

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**Keywords:** laparoscopic thyroidectomy, TOETVA

**Introduction:** Transoral Endoscopic Thyroidectomy Vestibular Approach (TOETVA) represents a revolutionary minimally invasive surgical technique that eliminates visible neck scarring while maintaining surgical safety and efficacy. This innovative approach has gained recognition worldwide for its superior cosmetic outcomes, particularly benefiting young patients concerned about aesthetic results. We present the first successful TOETVA procedure performed in Mongolia at the First Central Hospital, demonstrating the feasibility and excellent outcomes of this advanced surgical technique in the Mongolian healthcare setting.

**Case Description:** A 36-year-old female presented with a palpable, benign thyroid nodule measuring 3.5 cm in the right thyroid lobe. Laboratory investigations revealed mild anemia with red blood cell count of  $3.79 \times 10^{12}/L$  and hematocrit of 36.2 g/L. Non-contrast computed tomography demonstrated a heterogeneous thyroid nodule measuring 1.7×2.6×3.2 cm, radiologically suspicious for neoplasm. Preoperative evaluation, including ultrasound and fine needle aspiration (Bethesda II), confirmed a benign follicular lesion. The patient met all inclusion criteria for TOETVA, including no history of neck surgery or radiation, adequate oral access, and patient preference for a scarless approach. The procedure was performed under general anesthesia using a three-port transoral vestibular approach. Dissection proceeded through the subplatysmal and strap muscle planes, with identification and preservation of the recurrent laryngeal nerve. A right hemithyroidectomy was completed using harmonic instrumentation, with an operative time of 145 minutes and minimal blood loss (25 mL). No intraoperative or postoperative complications occurred. Postoperatively, the patient experienced rapid recovery, resuming oral intake within hours and being discharged on postoperative day one.



Follow-up at one week and three months showed excellent cosmetic outcomes with no visible scarring, intact vocal cord function, and complete healing of oral incisions. Histopathology confirmed a benign follicular adenoma with negative margins. Discussion: This case marks a significant milestone in Mongolian surgical practice, introducing advanced endoscopic techniques to the national healthcare system. TOETVA offers distinct advantages over conventional thyroidectomy, particularly the elimination of visible cervical scarring that can significantly impact quality of life, especially in young female patients. The successful implementation demonstrates that complex minimally invasive procedures can be safely adopted in developing healthcare systems with appropriate training and equipment. The absence of complications validates the safety profile of TOETVA when performed by experienced surgeons, while the excellent cosmetic outcome highlights the patient-centered benefits of this innovative approach.

**Conclusion:** The first successful TOETVA procedure in Mongolia establishes a new standard for thyroid surgery in the country, combining oncological safety with superior aesthetic outcomes.

### **TO STUDY THE OPTIMAL CONDITIONS FOR PRESERVING RAT DONOR ARTERIES AND TO ASSESS THE POTENTIAL COMPLICATIONS ASSOCIATED WITH GRAFTING DURING AND AFTER SURGERY**

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**Introduction:** Vascularized composite allotransplantation (VCA) has recently become a promising treatment for amputees. As with organ transplantation (SOT), minimizing ischemic time is a key therapeutic challenge, which directly affects graft viability and functional outcome. The current gold standard for organ preservation is static cold storage (SCS), which involves maintaining the graft at a low temperature of approximately 4°C using a preservative. However, irreversible muscle damage in VCA can occur within 4–6 hours after SCS, limiting the potential for functional recovery and increasing the risk of rejection. Storage limitations also have direct implications for autologous transplantation and indirect implications for allotransplantation. Objectives: To investigate the appropriate compensation for preserving donor arteries for microvascular grafting in a rat limb ischemia model and to investigate the complications associated with grafting after surgery. Methods: A total of 70 male Wistar rats were randomly assigned to two groups. The control group (n=10) underwent direct end-to-end artery transplantation on the right femoral artery (vessel diameter: 0.3–0.5mm). The experimental group (n=60) was subdivided into two models of blood supply insufficiency by ligating the femoral artery for either 3 or 7 days. After establishing ischemia, donor arteries-preserved for 3 or 7 days-were used to perform both end-to-end (n=15 per time point) and end-to-side transplantation (n=15 per time point). The transplantation outcomes of these two techniques were compared. All procedures were performed under the experimental protocol was approved by the Animal Ethics Review Committee of the University of Mongolian National University of Medical Sciences (MNS 6871:2020). Results: In the ischemia-induced groups, grafts using 3-day preserved donor arteries showed significantly better outcomes, with improved tissue regeneration, endothelial cell proliferation, and graft patency. In contrast, the 7-day ischemia group exhibited poorer outcomes, including impaired graft patency, tissue necrosis, and heightened inflammatory responses due to ischemia-reperfusion injury. The end-to-end anastomosis technique

using 3-day preserved vessels resulted in the best results, while the end-to-side technique showed alternative viability but with less favorable outcomes.

**Conclusion:** This study demonstrates that shorter ischemic durations (3 days) lead to improved graft success and tissue regeneration, while prolonged ischemia (7 days) exacerbates tissue damage and increases the risk of graft failure. Timely intervention and optimal ischemic durations are crucial for improving microvascular graft outcomes and reducing limb loss in PAD patient Keywords: Donor artery, Vascular preservation, Vascular grafting, Microsurgery, Postoperative complications.

## **THE EFFECT OF BILATERAL STELLATE GANGLION BLOCK ON POSTOPERATIVE COGNITIVE DYSFUNCTION IN ELDERLY PATIENTS**

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**Keywords:** SGB, POCD

**Objective:** To investigate the interventional effect of preoperative bilateral stellate ganglion block (SGB) on postoperative cognitive dysfunction (POCD) in elderly patients undergoing spinal surgery, and explore its clinical and laboratory-related predictive factors. Methods A single-center randomized controlled trial was conducted with blinding of patients, pain physicians performing the block, and cognitive function assessors. Sample size estimation was based on pre-trial data: with  $\alpha=0.05$  and power  $(1-\beta)=0.80$ , the incidence of POCD in the experimental group was expected to decrease by 35% compared with the control group. A total of 125 cases in the experimental group and 122 cases in the control group were enrolled, including elderly patients who underwent spinal surgery under general anesthesia with the same anesthetic strategy from October 2023 to March 2025. The experimental group received bilateral SGB (5 mg compound betamethasone + 0.2% lidocaine, 5 ml per side) before anesthesia. Neuropsychological tests such as MMSE and MoCA were used to evaluate cognitive function, and plasma levels of  $\alpha$ -synuclein (aSYN), neurofilament light chain (NFL), and phosphorylated tau-217 (pTAU-217) were measured to predict the risk of cognitive dysfunction. Statistical analyses were performed using  $\chi^2$  test, Mann-Whitney U test, and other methods.

**Results** At 1 and 3 days postoperatively, neuropsychological test scores showed a significant negative correlation with aSYN, NFL, and pTAU-217 levels ( $P<0.01$ ), while scores among different tests were positively correlated ( $P<0.01$ ), and biomarker levels were also positively correlated with each other ( $P<0.01$ ). Using MMSE  $<27$  and MoCA  $<26$  as diagnostic criteria, the incidence of POCD in the experimental group (15.2%) was significantly lower than that in the control group (53.3%,  $P<0.05$ ). The degree of dysfunction in the experimental group was mainly mild, while that in the control group was mainly moderate ( $P<0.05$ ).

**Conclusion** Preoperative bilateral SGB effectively reduces the incidence and severity of POCD in elderly patients undergoing spinal surgery, possibly by regulating the levels of biomarkers such as aSYN, NFL, and pTAU-217.

## **TOTAL LAPAROSCOPIC PANCREATICODUODENECTOMY: THE FIRST CASE IN MONGOLIA**

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**Keywords:** TLPD, laparoscopic Whipple, minimally invasive surgery

**Introduction:** The Whipple procedure, or pancreaticoduodenectomy, is among the most technically demanding abdominal surgeries, primarily indicated for neoplasms of the pancreatic head and periampullary region. In recent decades, advances in minimally invasive techniques have facilitated the development of total laparoscopic pancreaticoduodenectomy (TLPD), though its safety, feasibility, and clinical outcomes compared to open surgery remain under evaluation.

**Case presentation:** We report the first successful TLPD performed in Mongolia at the Department of General Surgery, First Central Hospital of Mongolia. The patient was a 58-year-old male presenting with jaundice, pruritus, nausea, anorexia, fatigue, and significant weight loss. Diagnostic evaluation revealed elevated serum bilirubin, bile duct dilatation, and an infiltrative lesion at the Ampulla of Vater. Biopsy via endoscopic retrograde cholangiopancreatography confirmed poorly to moderately differentiated adenocarcinoma. Preoperative staging classified the lesion as resectable, and the patient underwent TLPD. The surgical approach included standard trocar placement, dissection of Calot’s triangle, mobilization of the duodenum, resection of the pancreatic head and distal bile duct, and reconstruction via duct-to-mucosa pancreatojejunostomy, choledochojejunostomy, and gastrojejunostomy. Intraoperative frozen section analysis confirmed negative margins. The final pathology reported poorly differentiated adenocarcinoma, staged as pT1b, Nx, Mx (Stage IB). No intraoperative complications were encountered, and appropriate drainage was placed. TLPD has been associated with advantages typical of minimally invasive surgery, including reduced intraoperative blood loss, shorter hospital stays, and decreased analgesic requirements. Literature suggests that while operative time is longer compared to open procedures, perioperative outcomes such as mortality, pancreatic fistula, and overall complication rates are comparable. Technical challenges and the steep learning curve have limited widespread adoption, even in high-volume centers. Nonetheless, the present case demonstrates that with adequate training, multidisciplinary support, and infrastructure, TLPD can be safely performed in resource-limited healthcare settings. This case adds to the growing body of evidence supporting the feasibility of TLPD and underscores its potential role in global surgical oncology. Further multicenter studies and long-term follow-up are necessary to refine patient selection, optimize perioperative care, and establish standardized protocols. The experience in Mongolia illustrates the progressive integration of advanced minimally invasive pancreatic surgery into diverse healthcare environments, with implications for expanding access to complex oncological surgery worldwide.

**Conclusion:** Total laparoscopic pancreaticoduodenectomy is technically feasible and can be safely implemented outside of high-income academic centers. With structured training, appropriate resources, and perioperative management strategies, TLPD may offer significant benefits in both developed and developing countries, potentially improving outcomes for patients with pancreatic and periampullary malignancies.

## **THE RELATIONSHIP BETWEEN HAND GRIP STRENGTH AND KNEE OSTEOARTHRITIS FEMALE PATIENTS: A 10-YEAR FOLLOW-UP STUDY**

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**Keywords:** knee replacement, fracture, muscle weakness

**Introduction:** Background: Handgrip strength has been reported to be an important predictor of functional limitations and disabilities associated with low muscle strength in older people. In Mongolia, there has been no research related to hand grip strength in total knee replacement patients. Aim: The aim of the study was to determine whether hand grip strength (HGS) predict functional independence in older patients who have undergone total knee replacement due to osteoarthritis.

**Materials and Methods:** The study was conducted from June 2014 to June 2025 using a retrospective cohort design. Women aged 55 and above who have undergone total knee replacement surgery at the National First Central Hospital of Mongolia were included in the study. Handgrip strength (HGS) was measured using a dynamometer (TKK-5101; Takei Scientific Instruments, Tokyo, Japan). HGS was considered weak if it was below 18 kg for women.

**Results:** A total of 99 participants were included in the study. Mean age was 71.63±8.46 SD. Age, Body mass index (BMI), and years of total knee replacement were significantly associated with HGS decline in females. However, hormone treatment and fracture were not significantly associated with HGS. In women, logistic regression analysis was performed to identify risk factors, and found that the number of births (OR, 1.888, 95% CI (confidence interval) 1.302-2.739, p=0.0001), menopause (OR, 1.227, 95% CI 0.110-1.204 p=0.0001), had significant effect on low HGS in participants.

**Conclusions:** Low HGS was significantly associated with higher risk of osteoarthritis of in total knee replacement women.

## **ANATOMICAL AND VISUAL OUTCOMES OF PNEUMATIC RETINOPEXY AS A PRIMARY TREATMENT FOR RHEGMATOGENOUS RETINAL DETACHMENT IN MONGOLIA**

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**Keywords:** Perfluoropropane, Pneumatic retinopexy, Retinal detachment, Single-operation success, Visual outcome

**Introduction:** Mongolia, similar to many developing nations, encounters substantial challenges in managing retinal diseases, largely due to the financial burden associated with advanced surgical interventions. Pneumatic retinopexy (PnR), owing to its cost-effectiveness and minimal surgical requirements, offers a promising alternative for the treatment of rhegmatogenous retinal detachments (RRD). Despite the potential benefits of PnR, data on its utilization and outcomes in

Mongolia remains limited. Purpose: To evaluate the anatomical and visual outcomes of patients undergoing PnR for RRD at the First Central Hospital of Mongolia. Methods: This single-center prospective cohort study included 15 eyes of 15 patients who underwent pneumatic retinopexy (PnR) between September 2019 and September 2022. The study included phakic or pseudophakic patients with one or two retinal breaks confined to a single clock hour in cases of retinal detachment extending between the eight and four o'clock meridians. The primary outcome was retinal reattachment rate after primary PnR, and the secondary outcome was the final best-corrected visual acuity (BCVA). Patients were followed at one week, and at 1, 3, 6, 12, and 24 months postoperatively. This study was reviewed and approved by the Branch Committee of Ethics Oversight of the Mongolian National University of Medical Sciences (MNUMS) during meeting No. 2020(3-08), held on February 23, 2021. Results: The primary anatomical success rate for retinal reattachment was 80% (12/15). Subsequent vitrectomy resulted in a 100% reattachment rate for initially failed cases. Patients with macula-off detachments improved from baseline BCVA of  $2.03 \pm 0.38$  to  $0.33 \pm 0.36$  logMAR ( $p=0.028$ ). Conversely, macula-on patients improved from  $0.68 \pm 0.38$  to  $0.34 \pm 0.40$  logMAR ( $p=0.325$ ), though this improvement was not statistically significant. Overall, the entire cohort experienced a significant enhancement in visual acuity ( $p=0.004$ ). No statistically significant correlation between preoperative features and final BCVA was identified.

**Conclusions:** PnR can be a highly effective option for carefully selected cases, particularly in low/middle-income settings like Mongolia. However, further studies with larger sample sizes are needed to confirm these findings.

## **CURRENT STATUS AND FUTURE PERSPECTIVES OF ORGAN AND TISSUE TRANSPLANTATION FROM DECEASED DONORS IN MONGOLIA**

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**Keywords:** organ transplantation, deceased donor, brain death, Mongolia, future perspectives

**Background:** Organ and tissue transplantation in Mongolia began in 1996 with the first living donor kidney transplantation. Over the past two decades, this field has expanded significantly, becoming a life-saving therapy that aligns increasingly with international standards. As of mid-2025, the First Central Hospital of Mongolia (FCHM) has successfully performed 418 kidney, 325 liver, and 36 bone marrow transplantations; the National Center for Maternal and Child Health (NCMCH) has carried out six pediatric liver transplants; and the National Cancer Center (NCC) has performed 207 liver transplants; the Central Military Hospital (CMH) has performed 1 liver transplants; the Second State Central Hospital (SSCH) has performed 3 liver transplants. Since the establishment of the Regulatory Department of Organ Transplantation in 2018, 278 potential brain-dead donors have been identified, with consent obtained from 37 families, resulting in 31 actual donors. This has saved 72 lives, improved the quality of life for 173 patients, and prevented an estimated outflow of 45 billion MNT for treatments abroad.

**Objective:** This study aims to examine the current situation, challenges, and future perspectives of organ and tissue transplantation from deceased donors in Mongolia. Methods: The nationwide demand for transplantation remains high. Thousands of patients are newly diagnosed each year with end-stage liver disease, liver cancer, or chronic kidney failure, while hundreds die due to the unavailability of suitable grafts. By the first half of 2025, over 1,000 patients were listed on the national waiting list for kidney and liver transplantation. Brain death determination teams have been established in 21 hospitals, yet the number of effective deceased donors remains insufficient. Contributing factors include public mistrust, cultural and religious beliefs, and limited awareness.



Although the enactment of the Law on Donor (2022) and the introduction of an electronic donor card have laid the groundwork for expanding deceased donation, further regulatory refinements and continuous public education are necessary.

**Results:** To address donor shortages and ensure sustainability, advanced biomedical innovations such as stem cell therapy, 3D bioprinting, artificial organs, and xenotransplantation represent potential future directions. Strengthening the legal and ethical framework, investing in specialized human resources and medical infrastructure, and intensifying nationwide awareness campaigns are critical steps to elevate transplantation services in Mongolia to an international level.

**Conclusion:** Deceased donor transplantation in Mongolia has shown measurable progress but remains in its early stages. Enhancing donor identification, fostering public trust, and embracing innovative medical technologies will be key to meeting the country's growing transplantation needs in the coming decades.

## INTERNAL MEDICINE SUBSECTION

### REAL-TIME PCR-BASED IDENTIFICATION OF INTESTINAL INFECTIONS AND ANTIBIOTIC RESISTANCE OF SHIGELLA

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**Keywords:** Bacteria, virus, pathogen

In Mongolia, over the past decade (2013–2022), the average annual number of reported intestinal infectious diseases was approximately 6,463 cases, with an incidence rate of 21 per 10,000 population. During the COVID-19 pandemic, due to nationwide lockdowns and restricted movement, the number of reported gastrointestinal infections significantly decreased, reaching its lowest point in 2021. Given the sharp rise in cases and the limited diagnostic capacity, there is a pressing need to apply real-time PCR methods for the detection and characterization of common intestinal pathogens. This study was therefore conducted to identify major causative agents of intestinal infections using molecular techniques and to determine their distribution.

**1.2 Keywords** Bacteria, virus, pathogen

**Aim and Objectives:** The aim of this study was to identify the composition of major intestinal pathogens in hospitalized patients with symptoms of gastrointestinal infections using real-time PCR methods, and to determine the prevalence and antibiotic resistance patterns of *Salmonella* and *Shigella* species.

#### **Objectives:**

- To detect the dominant bacterial and viral pathogens responsible for intestinal infections using multiplex real-time PCR.
  - To statistically analyze and compare the results to assess pathogen distribution and resistance trends.
- 2. Main Part**
- 2.1 Materials and Methods** Multiplex real-time PCR was performed using the Allplex™ GI-Bacteria Assay I & II and Allplex™ GI-Virus Assay (Seegene, South Korea) diagnostic kits. The collected data were analyzed statistically using SPSS version 22, and results were compared to determine pathogen distribution and resistance levels.

**Results:** Between July 1 and September 29, 2023, real-time PCR testing was performed on 285 stool samples collected from patients presenting with symptoms of intestinal infection at the National Center for Communicable Diseases (NCCD) in both Ulaanbaatar and rural areas. Of all tested samples, pathogens were detected in 92.6% of cases, identifying up to 19 different types of causative agents. The proportion of total detected pathogens was as follows: *Shigella* – 46.7%, Enteropathogenic *E.coli* EPEC (eaeA) – 38.2%, Enterotoxigenic *E.coli* ETEC (lt/st) – 26%, Enteraggregative *E.coli* EAEC (aggR) – 25.6%, Norovirus GII (NVG2) – 12.6%, Shiga toxin-producing *E.coli* STEC (stx1/2) – 9.1%, Norovirus GI (NVG1) – 6.9%, *Campylobacter* (Cam) – 6.3%, Sapovirus (SV) – 6.1%, *Salmonella* (Sal) – 4.9%, *Aeromonas* (Aer) – 4.6%, *Clostridium difficile* toxin B (CdB) – 3.9%, Astrovirus (ASV) – 3.6%, *E.coli* O157 – 2.1%, Rotavirus (ROV) – 1.4%, and Adenovirus F (ADV-F) – 0.7%. Antimicrobial resistance of *Shigella* isolates showed resistance to: ampicillin – 92.3% (CI 95%: 80.7–97.25).

### RISK FACTORS OF DELAYED GRAFT FUNCTION IN PATIENTS WITH KIDNEY TRANSPLANTATION

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**Keywords:** DGF, kidney transplantation

**Introduction:** DGF is an early complication after kidney transplantation. Prevalence of DGF is 20-50% in brain-dead donor compared to 4-10% in living donor. DGF affects survival of kidney graft. Objective: To investigate risk factors for DGF after kidney transplantation. Methods: In a retrospective study design, demographic, clinical, and laboratory data were collected from the postoperative monitoring records of kidney transplant cases and were statistically processed using the stata17. The distribution of variables was assessed using the Shaphiro-Wilk test, and differences between means were assessed using the Student T test and one-way ANOVA, and differences between medians were assessed using the Wilcoxon rank sum and Kruskal-Wallis rank test. We also used Spearman correlation, simple and multiple linear regression, logistic regression analysis. Results: Of the 268 recipients, 68(25.56%) were female and 198(74.44%) were male. There were 14 total cases of DGF, or a prevalence of 5.2%, of which 13 were transplanted from brain-dead donors and 1 from a living donor. Age of the recipients was 36(35-39) years, the age of the donors was  $43.8 \pm 0.68$  years, the BMI of the recipients was 22.8(22.3-23.6) kg/m<sup>2</sup>, the postoperative days in hospital was 14(14-15) days, the urine output on the first POD was 5015(4680-5323) ml, the CIT was 71.5(60.3-83.3) min, and the WIT was 42(36-44) min. Postoperative UO decreases by 120 ml for every 1 year increase in donor age ( $b=-120$ , 95%CI:[-979.8;729],  $p=0.033$ ). A 1-min increase in CIT results in a 20-mL decrease in UO ( $b=-20$ , 95%CI:[-34;-6.2],  $p=0.002$ ). UO decreases by 8.4 ml with a 1-min increase in WIT ( $b=-8.4$ , 95%CI:[-14.8;-1.95],  $p=0.012$ ). A 1-unit increase in hematocrit was associated with a 37 mL increase in UO ( $b=37$ , 95%CI:[7.1;57],  $p=0.021$ ). For every 1 increase in WBC count, UO decreases by 12.4 ml ( $b=-12.4$ , 95%CI:[-38.8;8.2],  $p=0.047$ ). Donor age>40 increased the risk by 1.2 times (OR=1.2,  $p=0.05$ ; 95%CI:[1;1.5]), and brain-dead donor increased the risk by 19.37 times (OR=19.37,  $p=0.0001$ ; 95%CI:[-11.3;36.5]), while recipient age<35 reduced the risk by 5 times (OR=0.2,  $p=0.039$ ; 95%CI:[0.04;0.92]). Discussion: Our study found that risk factors such as older donor and recipient age, prolonged cold and warm ischemia time, low HCT, high WBC, and brain-dead donor affect renal graft function. A meta-analysis published in 2025 identified 7 significant risk factors for DGF: prolonged CIT, elevated donor end-stage serum creatinine, extended dialysis vintage, increased HLA mismatch number, higher donor BMI, advanced donor age and recipient diabetes mellitus, which is consistent with some of the results.

## **IMPACTS OF INTRAVASCULAR ULTRASOUND VERSUS ANGIOGRAPHY GUIDED PERCUTANEOUS CORONARY INTERVENTION ON REPEATED REVASCULARIZATION IN PATIENTS WITH STABLE CORONARY ARTERY DISEASE**

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**Keywords:** restenosis, intravascular ultrasound, percutaneous coronary intervention.

**Introduction:** Intravascular ultrasound (IVUS) provides more precise lesion assessment than coronary angiography (CAG) alone in patients with coronary artery disease (CAD). However, the impact of IVUS-guided percutaneous coronary intervention (PCI) on stent restenosis has not been previously investigated in Mongolia.

**Methods:** Patients with stable CAD undergoing IVUS- or CAG-guided PCI were prospectively enrolled. Participants were divided into IVUS-guided and CAG-guided PCI groups. Following the index PCI, patients were followed for up to 12 months to assess stent restenosis. The association between the type of PCI and stent restenosis was analyzed using logistic regression.

**Results:** A total of 52 patients with stable CAD (mean age  $61 \pm 13$  years, 85% male) were included. Each group (IVUS-guided and CAG-guided PCI) comprised 26 patients. The distribution of culprit vessels was comparable between the IVUS-guided (left anterior descending [LAD], 19; left

circumflex [LCx], 4; right coronary artery [RCA], 3) and CAG-guided (LAD, 12; LCx, 8; RCA, 6) PCI groups ( $p = 0.141$ ). The prevalence of intermediate (50–69% luminal narrowing) and severe stenosis (70–99% luminal narrowing) was similar between study groups (0% vs. 7.7% and 96.2% vs. 73.1%, respectively;  $p = 0.066$ ). Disease severity, assessed by SYNTAX score, was also comparable ( $25 \pm 15$  vs.  $23 \pm 12$ ;  $p = 0.680$ ). During the 12-month follow-up, stent restenosis occurred for 8 patients (15.4%). The occurrence of stent restenosis was significantly lower in the IVUS-guided group compared to the CAG-guided group (3.8% vs. 26.9%;  $p = 0.021$ ). Furthermore, IVUS-guided PCI was associated with reduced likelihood of stent restenosis (OR = 0.11, 95% CI 0.01–0.96;  $p = 0.046$ ).

**Conclusion:** IVUS-guided PCI is associated with a reduced likelihood of stent restenosis at 12 months compared to CAG-guided PCI.

## VV-ECMO THERAPY FOR COVID-19

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**Keywords:** ECMO, COVID-19, Survival, Mortality

**Introduction:** On January 18, 2022, the Ministry of Health of Mongolia issued Order No. A/33, titled "On the new approval of temporary guidelines for the diagnosis and treatment of the novel coronavirus infection (COVID-19)." According to this order, extracorporeal membrane oxygenation (ECMO) therapy is recommended for managing severe cases of acute respiratory distress syndrome (ARDS). In August 2020, to enhance preparedness for potential outbreaks of a novel coronavirus, the First State Central Hospital (FSCH) made operational its first heart and lung replacement ECMO machine. Presently, a total of four such machines are operational across the nation. In our nation, the aforementioned treatment was effectively implemented for the first time during the epidemic at the National Center for Communicable Diseases (NCCD) in February 2021, facilitated by the ECMO treatment team associated with the First State Central Hospital (FSCH). Our study was based on the fact that VV-ECMO has been introduced in the medical care services of our country in the most severe cases of COVID-19, yet no significant work has been done to study its complications and mortality.

The aim of the study is to investigate various risk factors influencing mortality in severe cases of COVID-19 and to assess the outcomes of VV-ECMO therapy in Mongolia.

**Materials and Methods:** The study was conducted using a hospital-based retrospective design. The study focused on 66 severe COVID-19 cases admitted to the Intensive Care Units of the National Center for Communicable Diseases (NCCD), First State Central Hospital (FSCH), and Military Central Hospital from February 2021 to July 2022. Data regarding 22 cases that underwent VV-ECMO therapy for respiratory failure with infection, along with 44 patients who met the criteria for VV-ECMO therapy but did not receive it, were retrieved from electronic medical records and intensive care checklists utilizing designated research forms. Statistical analysis of the research data was conducted using SPSS 25 software.

**Results:** The average age of the 66 cases included in our study was  $53 \pm 11.7$  (ranging from 23 to 69) years, with 54.5% (36) being women and 45.5% (30) men. Among cases without VV-ECMO therapy, 4.5% (2) were treated and 95.5% (42) died. Of the cases receiving VV-ECMO therapy, 36.4% (8) were treated and 63.6% (14) died. In instances of VV-ECMO therapy, younger age ( $p=0.001$ ), higher Murray score or lung injury score ( $p=0.023$ ), and unvaccinated status ( $p=0.002$ ) demonstrated statistically significant differences. Multivariate regression analysis revealed that VV-ECMO therapy (HR 0.307, 95% CI 0.131-0.722,  $p=0.007$ ) significantly decreased the risk of death.

**Conclusion:**

1. In severe cases of COVID-19, ECMO therapy is predominantly administered to young individuals, patients with significant lung tissue damage, and those who are unvaccinated. The application of VV-ECMO therapy has reduced the risk of death by 70%.
2. In severe cases of COVID-19, the risk of death is increased by blood acidosis, kidney failure, and acute inflammatory complications. Conversely, the risk of death is reduced by adequate sleep, sedation, prone positioning, and muscle relaxation therapy.

**INCIDENCE, CLINIC MICROBIOLOGICAL CHARACTERISTICS OF BACTERIAL INFECTIONS FOLLOWING LIVER TRANSPLANTATION IN ADULTS: A RETROSPECTIVE COHORT STUDY**

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**Keywords:** liver transplantation, methicillin-resistant *Staphylococcus aureus*, multidrug-resistant organisms

Bacterial infections are a leading cause of morbidity and mortality after liver transplant (LT) with approximately two third of early deaths due to sepsis. Bacterial infections are the most common cause of complications within the first month after LT and are often due to nosocomial organism. 1 Changes in transplant policies and techniques increased the number of LT, including marginal organs and both donors and LT candidates in critical conditions. LT recipients have multiple risk factors for MDRO colonization and infections, including immunosuppression, cirrhosis-related immune-dysfunction, prolonged hospitalization and ICU stay, and previous antibiotic exposure. Patients with end-stage liver disease and those hospitalized in ICU are fragile and at high risk of MDRO colonization. 2 Rectal colonization with MDRO in the pre-LT period is a commonly considered risk factor for developing a MDRO-infection in the post-LT period and it is associated with both increased pre- and post- operative LT mortality as well as prolonged hospital stay and post-LT surgical complications. Among the bacterial pathogens of infection after LT, antimicrobial-resistant species, including methicillin- resistant *Staphylococcus aureus* (MRSA), Gram-negative bacilli such as *Pseudomonas aeruginosa*, and *Clostridioides difficile*, are often involved. In addition, multidrug- resistant (MDR) *Klebsiella pneumoniae* is an emerging pathogen that is difficult to treat. These bacteria develop resistance due to the patients’ prior hospitalizations and the donors’ stay in intensive care units. Further, MDRO infections are frequently not responsive to empiric antibiotic therapy and have limited therapeutic options.

**DIAGNOSTIC PERFORMANCE OF ENDOBRONCHIAL ULTRASOUND-GUIDED TRANSBRONCHIAL NEEDLE ASPIRATION: THE FIRST EXPERIENCE IN MONGOLIA**

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**Keywords:** TBNA, Lung Cancer, Mediastinal Lymphadenopathy

**Background:** Lung cancer remains one of the leading causes of cancer-related mortality worldwide. Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) has become a cornerstone in the minimally invasive diagnosis and staging of thoracic malignancies. This study aimed to evaluate the diagnostic performance, safety, and feasibility of EBUS-TBNA during its first clinical implementation in Mongolia



**Methods** A prospective observational study was conducted at the First Central Hospital of Mongolia between December 2022 and May 2025. Consecutive patients with mediastinal or hilar lymphadenopathy identified by chest computed tomography were enrolled. EBUS-TBNA was performed to obtain cytological samples for diagnosis and staging, particularly in patients with suspected or confirmed lung cancer. Key outcome measures included diagnostic yield, malignancy detection rate, sample adequacy, and procedural safety. Additional diagnostic methods were employed as needed for further evaluation and diagnosis.

**Results:** A total of 44 patients underwent EBUS-TBNA, with 77 lymph node samples obtained. The mean patient age was 52.5 years, and 70.5% were male. The overall diagnostic yield was 70.1% (54/77). Among diagnostic samples, non-small cell carcinoma (38.9%) was the most frequent finding, followed by granulomatous inflammation (11.1%), small cell carcinoma (7.4%), metastatic disease (3.7%), and benign lesions (9.3%). Sixteen samples (29.6%) were unsatisfactory. The average number of passes per lymph node was 2.6. Station 7 (subcarinal) was the most frequently sampled, with a diagnostic yield of 78.6%. Of the 23 non-diagnostic cases, additional diagnostic methods were employed as needed, revealing malignancy in 3 previously negative cases. The malignancy detection rate among diagnostic samples was 50.0%. No procedure-related complications were reported.

**Conclusions:** This study demonstrates that EBUS-TBNA is a safe, feasible, and effective diagnostic modality for evaluating mediastinal and hilar lymphadenopathy in the Mongolian healthcare context. The diagnostic yield and malignancy detection rate are consistent with early international experiences. The absence of complications supports the procedure’s safety, even in a resource-limited setting. Future improvements in diagnostic performance are anticipated with increased operator experience, incorporation of rapid on-site evaluation (ROSE), and strengthening of cytopathology support. These findings provide a foundation for expanding EBUS-TBNA services in Mongolia and underscore its value in thoracic oncology and benign disease evaluation.

## **ASSESSMENT OF METABOLIC CHANGES IDENTIFIED THROUGH PREVENTIVE EXAMINATIONS OF FCHM EMPLOYEES**

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**Keywords:** hypovitaminosis D, glycated hemoglobin,

**Introduction:** Hypovitaminosis D can lead to several skeletal and extra-skeletal outcomes. Older adults are at risk for vitamin D deficiency as both production and metabolism of vitamin D change with aging due to factors, such as reduced sun exposure and reduced production capacity of the skin. Logistic regression analyses were performed to evaluate the association between the prevalence of dyslipidemia and glycated hemoglobin according to age group. Among subjects with higher glycated hemoglobin levels, those in their 40s or over had significantly increased odds for dyslipidemia. The current study found an association between high glycated hemoglobin levels and a diagnosis of dyslipidemia among medical staffs.

**Methods:** The study was conducted from April to June 2023 using a cross-sectional design. Participants included individuals aged 20-69 years and over working at FCHM. All statistical analyses were performed with version R-4.5.1(R studio -2025.05.1-513)

**Results:** A total of 558 people were included in the study. Pearson correlation analysis was performed, and the results show a statistically significant correlation ( $p < 0.05$ ) with a very strong relationship ( $p < 0.001$ ), which is dependent on age and follows the indicators of age progression.

**Conclusion:** Vitamin D production decreases with over age. Marker of lipid metabolism including LDL, HLD, and total cholesterol triglyceride in adults with high HbA1c may need to be monitored, especially for those in their 40s and older.

## MOTHER-TO-CHILD TRANSMISSION OF HEPATITIS

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**Background:** Mother-to-child transmission (MTCT) of hepatitis, primarily hepatitis B virus, is a significant cause of chronic infection in infants. Preventive measures, such as vaccination and immunoglobulins (HBIG) at birth, can greatly reduce the risk of infection in newborns. Here, we evaluated the prevalence of HepB infection among pregnant women and the outcomes of prophylactic treatment for the newborns. The prevalence of viral hepatitis in Mongolia was highest between 1981 and 1991, but since 2012, infection rates have steadily decreased. Despite this decline, viral hepatitis remains one of the leading causes of hepatocellular carcinoma in the country. Mother-to-child transmission (MTCT) of hepatitis, primarily the hepatitis B virus (HBV), is a significant cause of chronic infection in infants. Without intervention, the risk of transmission from an HBV-positive mother to her child is high, particularly if the mother is HBeAg positive. Preventive measures, such as vaccination and the administration of immunoglobulins (HBIG) at birth, can greatly reduce the risk of infection in newborns. A 2007 study found that only 17% of children born to HBV-positive mothers in Ulaanbaatar who received HBIG at birth had protective anti-HepB. This percentage decreased from 31.1% to 16.3% among children aged 7 to 12 years, indicating a decline over time. However, there is still insufficient evidence regarding the prevalence of HBV infection in pregnant women and the outcomes of HBIG treatment in rural provinces.

**Aim:** In this study, we evaluated the prevalence of HBV infection among pregnant women and the outcomes of prophylactic treatment for newborns born to HBV-positive mothers from 2019 to 2025 in Gobi-Altai, Mongolia.

**Materials and methods:** Children born between 2019 and 2022 to mothers infected with HBV were selected for this study. In 2024, anti-HBs antibody titers against the Hepatitis B virus were measured in the serum samples of these children at the Laboratory Department of the Gobi-Altai Provincial General Hospital, utilizing the fully automated immunoassay analyzer Cobas E411 manufactured by ROCHE (Germany). Statistical analysis of the results was conducted using SPSS-23 software. Mean values were compared using ANOVA.

**Results:** Here we found that the prevalence of HBV infection among pregnant women in Gobi-Altai, Mongolia, was 2.1% between 2019 and 2021, slightly higher than the global prevalence of 1.6% as of 2022. Additionally, our report indicates an increasing trend in HBV prevalence among pregnant women, with rates of 1.77% in 2019, 2.2% in 2020, and 2.4% in 2021. This trend poses a challenge for the global strategy to eliminate HepB and for the national program aimed at improving HepB statistics. As of 2022, 14% of newborns worldwide received HBIG treatment, while in Gobi-Altai, this figure was 38.4% for the years 2019-2020. With the inclusion of HBIG treatment at birth for infants born to HBV-infected mothers in the universal healthcare package, coverage reached 100% by 2020. However, immunogenicity remained low, with only 24.1% achieving an anti-HepB titer >100 mIU/mL. An anti-HepB titer ≥10 mIU/mL is widely considered seroprotective, while some studies prefer a titer exceeding 100 mIU/mL for optimal protection. A titer below 100 mIU/mL is typically associated with an increased risk of HBV reactivation, warranting booster vaccinations. In a Chinese cohort, 87.34% (1593/1824) of children had adequate anti-HepB titers (≥100 mIU/mL), while non-response was observed in 0.71% (13/1824). In our study, the non-

response rate was 38.9%, which means 1 in 3 children had anti-HepB titers <10 mIU/ml. Here we did not evaluate the presence of HepB infection among children born to HBV-infected mothers. Anti-HepB titers 2-4 years after birth in vaccinated and HBIG-treated children born to HBV-infected mothers ranged from 2.0 mIU/mL to 1000 mIU/mL. Based on the poor seroprotective rates (anti-HepB titer <10 mIU/ml at 38.9%, 10-100 mIU/ml at 37.0%, and >100 mIU/ml at 24%), it is highly recommended to check for HepB infection among these children and consider booster doses of HepB vaccination.

**Conclusion:** Our study highlights the increasing prevalence of HepB among pregnant women in Gobi-Altai, Mongolia, and the low seroprotection rates among children born to HBV-infected mothers. Further research is needed to assess the presence of HepB infection among younger children and to evaluate the efficacy of HepB vaccination and HBIG treatment in a broader population within the province. Gobi-Altai has initiated a local program aimed at increasing the average life expectancy to above 80 years; however, the findings of this study do not bode well for achieving positive public health outcomes toward this goal.

**Keywords:** HepB immunogenicity, vaccination, HBIG

## **EUS DIAGNOSIS AND TREATMENT OF UPPER GI SUBMUCOSAL TUMOR AT THE FCHM**

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**Keywords:** EUS, submucosal tumor

**Background:** Upper gastrointestinal (GI) submucosal tumors (SMTs) are growths originating from the muscular or submucosal layers of the GI tract, often discovered incidentally during endoscopic procedures and typically asymptomatic. Endoscopic ultrasound (EUS) is a valuable tool for characterizing these tumors, helping to determine their nature (benign or malignant) and guiding treatment decisions.

**Method:** We conducted retrospective study between June, 2022 to May 2024 at the Endoscopic section of the Gastroenterology center (GI center) of The FCHM who are suspicious to the Leiomyoma and GIST. Endoscopic Ultrasound (EUS - Olympus EVIS EUS, EU-ME2 primer plus, UM-s20-20R with 12Mhz) was used for the study. Leiomyoma and GIST are determined as criterion if mucosal has no damage, originated from 2<sup>nd</sup> to 4<sup>th</sup> layer, definite border, similar and hypo-ultrasonic structure. Then we confirmed the diagnosis by pathology after the surgery or endoscopic procedure.

**Result:** In total of 175 patients underwent to EUS and 71 patient suspected as Leiomyoma and GIST. Characteristics of the participants were 55.39 of average age (35-78 years old), female 47(66.1%), and male 24(33.8%). The forty-eight located in the esophagus 48 (67.6% of total, upper 1/3-31.2%, middle 1/3-43.7%, lower 1/3-10.4%) and 21 (29.5% of total, 47.7% at the cardia, 23.8% at the fundus, 19% at the body, 9.5% at the antrum) in the stomach, 4 (5.6%) near the bulbus of duodenum. Most of the esophageal SMT located on the upper and middle 1/3 of the stomach and 64.5% is originated at the submucosal muscular layer. And Most of the stomach SMT is located on the cardia and 76.1% was originated from muscular layer. About duodenal SMT, 50% was originated from submucosal muscular layer. The thirty-seven of the patient went to the mucosal resection who has suspected as GIST and Leiomyoma, EMR for 31, LECS for 2, STER for 2 and open-surgery for 2 cases. Pathologic result confirmed leiomyoma for 26, stromal tumor for 5, neuroendocrine tumor for 2, fatty tumor for 1, cancer for 3 cases. Pathological diagnose was matched with 83.7% of the pre-surgical diagnose.

**Conclusion:** Endoscopic ultrasound has potency to presume the Leiomyoma and GIST by 83.7%. EUS is crucial to determine the depth, growth, size, parallel organ damage, metastasis, location and to choose the treatment option. EMR technique has advantages of lower risk for bleeding, infection, peritonitis, economically efficient, lower rate of complication and lower hospitalization.

## **THE RELATIONSHIP BETWEEN POPULATION DENSITY FACTORS AND AGE MENARCHE IN GIRLS**

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**Keywords:** Mongolia Menarche age, BMI

**Introduction:** Menarche age is influenced by socioeconomic status, environmental factors, population density, and physical characteristics such as height and weight. In Mongolia, there has been few research related to socioeconomic factors with age menarche. Bayanzurkh district is in the southeastern part of Ulaanbaatar city, covering the largest area (1,244.1 km<sup>2</sup>), and has the highest population among districts, with 436,822 residents. Uvs province is situated in northwestern Mongolia, covering an area of approximately 69,585–69,600 km<sup>2</sup> with a population of 84,000.

**Methods:** The study was conducted from April to June 2025 using a cross-sectional design. Participants included individuals aged 12 and over attending secondary schools in the Bayanzurkh district and Uvs province. Body mass index (BMI) was assessed according to the definition provided by the World Health Organization. All statistical analyses were performed with version R-4.5.1 (RStudio2025.05.1-513).

**Results:** A total of 486 girls were included in the study. Out of 286 girls aged 8-18 in Bayanzurkh district, the average age at menarche was 11.84 years. In the study, 44 girls (15.4%) who participated from Bayanzurkh district were 14 years old, while in Uvs province, 12.0% of the participants were 8 years old. In Bayanzurkh district, 31.5% of the girls lived in households with four members, whereas in Uvs province, 37.5% of the girls lived in households with five members. Regarding the mothers' education, 51.0% had a higher education. In contrast, 29.0% of the mothers in Uvs province had only low education. Among 200 girls aged 8-18 in Uvs province, the average age at menarche was 12.97 years. The age at menarche was earlier in areas with higher population density compared to areas with lower population density, and this difference was statistically significant ( $p < 0.0001$ ). In girls aged 12-17, the BMI in Bayanzurkh district was higher compared to girls in Uvs province of the same age group. The age at menarche for girls aged 12-17 in Bayanzurkh district was 1.13 years earlier than in Uvs province. A higher BMI was associated with an earlier age at menarche in both Bayanzurkh district and Uvs province. This correlation was strong in the 14-17 age group, where higher BMI was correlated to earlier menarche.

**Conclusion:** The population density of the province or city where the girls lived had an influence on the average age at which they experienced menarche.

**COMPARISON OF ANGIOGRAPHY DERIVED 3D PHYSIOLOGIC MAPPING  
BETWEEN INTRAVASCULAR ULTRASOUND VERSUS ANGIOGRAPHY GUIDED  
PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH STABLE  
CORONARY ARTERY DISEASE**

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Nasandelger G<sup>1</sup>, Ankhbayar L<sup>1</sup>

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**Introduction:** Angiography derived 3-dimensional coronary physiologic mapping using quantitative flow ratio (QFR) could provide better understanding of the coronary hemodynamics in intravascular ultrasound (IVUS) versus coronary angiography (CAG) guided percutaneous coronary intervention (PCI).

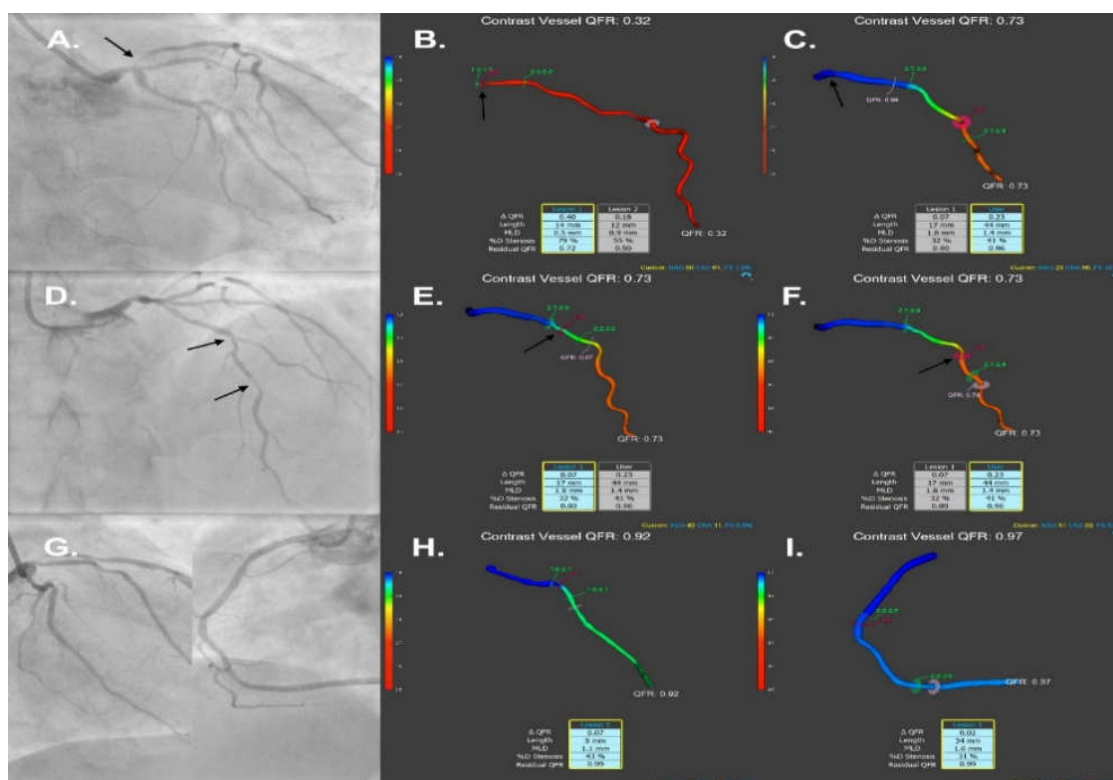
**Methods:** Patients who were suspected of stable coronary artery disease (CAD) and underwent diagnostic CAG were selected. IVUS or CAG guided PCI was performed for patients who had significant CAD on diagnostic CAG. Coronary flow was evaluated using CAG derived quantitative flow ratio (QFR) (Figure 1).

**Results:** A total of 29 participants including 16 healthy controls and 13 patients with significant CAD were included in the present analysis (mean age 60±8 vs. 61±8 years old, p=0.787). For patients who diagnosed with significant CAD, IVUS guided PCI was performed for 6 culprit lesions (LAD, LCx and RCA were culprit vessel for 4, 1 and 1 lesions, respectively) of 4 patients, while CAG guided PCI was performed for 10 culprit lesions (LAD, LCx and RCA were culprit vessel for 5, 2 and 3 lesions, respectively) of 9 patients. Culprit vessel pre-procedural QFR was comparable between IVUS and CAG guided PCI groups (0.54±0.17 vs. 0.49±0.17, p=0.578). Post-procedural QFR was significantly higher in IVUS guided PCI group compared to CAG guided PCI group (0.96±0.03 vs. 0.88±0.07, p=0.034). Furthermore, post-procedural improvement of QFR for LAD was comparable with healthy controls in IVUS guided PCI group (0.95±0.04 vs. 0.91±0.06, p=0.180), while it was significantly lower in CAG guided PCI group (0.83±0.09 vs. 0.91±0.06, p=0.026).

**Conclusion:** In patients with stable CAD, IVUS guided PCI is associated with improved coronary QFR compared to CAG guided PCI and post-procedural improvement of QFR is significantly better as healthy individuals in IVUS guided PCI group than CAG guided PCI group.

Figure 1. Angiography (left column) derived image-based 3D physiological mapping of the coronary flow using the QFR (middle and right column) for the planning of complex PCI for the ostial LAD lesion (panel A-C). LAD, left anterior descending artery; PCI, percutaneous coronary intervention; QFR, quantitative flow ratio.





## INCIDENCE, CLINIC MICROBIOLOGICAL AND CORRELATIVE HISTOPATHOLOGICAL PATTERNS IN MEMBRANOUS NEPHROPATHY

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**Keywords:** Kidney biopsy, Membranous nephropathy, Chronic kidney disease

**Background:** Membranous nephropathy (MN) is among the most common causes of nephrotic syndrome in adults. Kidney biopsy is the gold standard for diagnosing MN and plays an important role in determining the severity of the disease and in determining treatment decisions and regimens. **Objectives:** The aim of this study was to investigate the correlation between the pathological changes in the kidney and their impact on clinical presentations and kidney function in Mongolian patients with MN proven by kidney biopsy.

**Method:** A retrospective study was conducted on 51 cases diagnosed with MN on kidney biopsy performed at the FCHM between 2011 and 2023. Renal function was calculated using the CKD-EPI (2021) formula and classified into the stage of CKD by eGFR. The study excluded secondary MN based on viral markers, tumor markers, and serological tests. Statistical analysis was performed using STATA 15.0 software. The study design was approved by the Ethics Committee of the MNUMS, Mongolia. (№ 2023/3-07)

**Results:** A total of 305 kidney biopsies performed at the FCHM between 2011 and 2023 resulted in the diagnosis of 51 cases of primary MN. The mean age of patients with MN was 40.6±9.3 years, and 36 (70.59%) were male and 15 (29.41%) were female. In the clinical presentation of primary

MN, nephrotic syndrome was present in 76.47%. The analysis of kidney biopsy via LM revealed that 94.12% showed thickening of the glomerular basement membrane (GBM), 88.24% showed holes in the GBM, and 54.9% showed spike-like changes by methenamine-silver staining (Figure 1).

Patients who underwent biopsy later (months) after the diagnosis of glomerulonephritis had a higher incidence of interstitial fibrosis ( $74.6 \pm 98.43$ ,  $p$  value = 0.002). The globally sclerosis was associated with increased systolic blood pressure ( $p$  value = 0.01, 95% CI [0.092, 0.601]) and diastolic blood pressure ( $p$  value = 0.0084, 95% CI [0.104, 0.623] OR 6.25). Light microscopy revealed interstitial fibrosis (95% CI 6.98-9.07,  $p$  value = 0.003) and vascular changes (95% CI [3.73-3.92],  $p$  value = 0.001) that were associated with decreased eGFR. According to the KDIGO guidelines, 15 (29.41%) patients were classified as low risk, 26 (50.98%) as intermediate risk, and 10 (19.61%) as high risk.

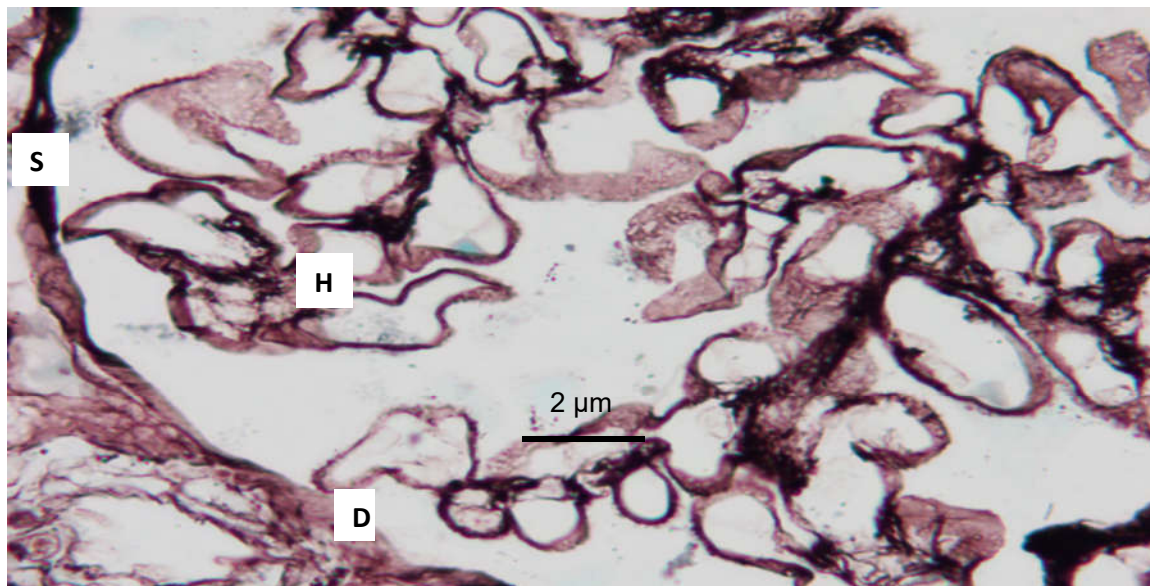


Figure 1. Histopathological features of Membranous nephropathy (LM). Methinamine silver staining, 100\*10 (FCHM, 39 years old female). D- double contour, H- holes, S- Spike-like feature

#### **Conclusions:**

1. In the clinical presentation of primary membranous nephropathy, nephrotic syndrome and hypertension were predominant. Late diagnosis contributed to renal dysfunction.
2. In the pathological features of MN, LM revealed thickening of the glomerular basement membrane and spike-like features, while IF microscopy mostly showed positive IgG and C3.
3. Arterial hypertension was significantly associated with glomerular global sclerosis. Interstitial fibrosis and vascular changes adversely affected renal function.

### **EVALUATE THE EFFECT OF FOUR-SESSIONS INDIVIDUALIZED NUTRITION COUNSELING PROGRAM ON SERUM PHOSPHORUS LEVELS IN HEMODIALYSIS PATIENTS**

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1- The First Central Hospital of Mongolia

2- Medvic Hospital

A comparative study of changes

**Keywords:** Hemodialysis, Hyperphosphatemia, Nutrition

**Introduction:** Hyperphosphatemia is a prevalent and challenging complication in patients undergoing hemodialysis, contributing to vascular calcification and increased mortality risk. Dietary phosphorus intake plays a main role in managing serum phosphorus levels. It is necessary

to evaluate the effect of a individualized nutritional counseling program on hemodialysis serum phosphorus for the first time in Mongolia. Objective: To evaluate the effect of a four-session individualized nutrition counseling program on serum phosphorus levels in hemodialysis patients.

**Methods:** A prospective intervention study was conducted involving 50 hemodialysis patients (three times weekly for the duration of three hours each session). Participants received four personalized nutrition counseling sessions over a four-month period, focusing on reducing dietary phosphorus intake while maintaining adequate protein consumption. Nutritional assessments and laboratory tests were performed at baseline and every month after the start of the intervention. Four sessions of nutrition counseling topics: 1. Optimizing dietary protein intake 2. Limiting high organic phosphorus contain foods 3. Reading food label to detect inorganic phosphorus 4. Practical training to reinforce knowledge Results: Post-intervention exhibited a significant reduction in serum phosphorus levels ( $p < 0.01$ ). Additionally, the calcium-phosphorus product was significantly reduced ( $p < 0.05$ ). Patient knowledge regarding phosphorus management improved, with increased adherence to dietary recommendations.

**Conclusion:** A structured four-session nutrition counseling program effectively lowers serum phosphorus levels in HD patients without compromising nutritional status. This approach offers a feasible and impactful strategy for managing hyperphosphatemia in hemodialysis populations.

### **INCREASING HEPB PREVALENCE AMONG PREGNANT WOMEN AND LOW SEROPROTECTION AMONG THE CHILDREN BORN TO HBV-INFECTED MOTHERS.**

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2- 3. Gobi-Altai General Hospital

**Keywords:** HepB, HBIG, seroprotection

This study found that the prevalence of HBV infection among pregnant women in Gobi-Altai, Mongolia, was 2.1% on average between 2019 and 2021, which is slightly higher than the global prevalence. Also, our report shows an increasing trend of HBV prevalence among pregnant women, with 1.77% in 2019, 2.2% in 2020, and 2.4% in 2024, which is not good news for the global strategy to eliminate HepB and the national program for improving HepB statistics. As of 2022, 14% of newborns received HBIG treatment worldwide. While in Gobi-Altai, this number was 38.4% in 2019-2020. With the inclusion of HBIG treatment at birth for infants born to HBV-infected mothers in the universal healthcare package, the HBIG treatment coverage reached 100% since 2020. However, the immunogenicity remained lower, with only 24.1% achieving an anti-HepB titer  $>100$  mIU/ml. Anti-HBs  $\geq 10$  mIU/mL is widely considered as seroprotective, while some studies prefer an anti-HBs titer exceeding 100 mIU/mL for having a protective effect. An anti-HBs titer less than 100 mIU/mL is usually indicated as a risk factor for HBV reactivation, and booster vaccination is suggested. In a Chinese cohort, the proportion of children with adequate anti-HBs titers ( $\geq 100$  mIU/mL) was 87.34% (1593/1824), while non-response was observed in 0.71% (13/1824). Non-response or children with  $<10$  mIU/ml anti-HepB titer was 38.9%. In this study, we did not evaluate the presence of HepB infection among the children born to HBV-infected mothers. Anti-HBs titers 2-4 years after birth in vaccinated and HBIG-treated children born to HBV-infected mothers ranged from 2.0 mIU/mL to 1000 mIU/mL. Based on the seroprotective rate (anti-HepB titer  $<10$  mIU/ml 38.9%, 10-100 mIU/ml 37.0%,  $>100$  mIU/ml 24%), it's highly recommended to check the presence of HepB infection among the children and suggest booster doses of HepB vaccination. In 2020, Gerelmaa et al. reported that immunogenicity among vaccinated and HBIG-treated 34 Mongolian children was low. This study reveals the increasing HepB prevalence among pregnant women in Gobi-Altai, Mongolia, and low seroprotection among the children born to HBV-infected mothers. Further study is needed to evaluate the presence of HepB infection among younger children and the

efficacy of HepB vaccination and HBIG treatment in the wider population in the province. Gobi-Altai set forward a local program to increase the average age to above 80, and the results found in this study do not promise positive public health outcomes for the goal.

## **A COMPARATIVE STUDY OF CHANGES IN BRONCHOSCOPIC BIOPSIES IN 2016 AND 2024**

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1. Pulmonology and Allergy Center, FCHM

**Keywords:** lung cancer, bronchoscopy

**Background:** Cancer remains one of the leading causes of death worldwide. According to the WHO's 2020 report, breast cancer is the most common cancer, followed by lung cancer, but it is still the leading cause of death. In other words, 2.21 million new cases of lung cancer are diagnosed annually, and 1.80 million people die. In Mongolia, according to 2023 data, the third most common cancer, lung cancer, accounts for 6.5%. Lung cancer is classified into small cell, non-small cell, and rare carcinoid tumors. When considering lung cancer by cell type, 13% are small cell and 87% are non-small cell. 26.7% of people diagnosed with lung cancer live for five years. In other words, lung cancer is a cancer that is diagnosed at a late stage and has a high mortality rate. Therefore, performing a lung biopsy is important for the diagnosis and treatment of cancer. Objectives of the study: Comparatively study the changes detected in bronchoscopic biopsies performed at the First Central Hospital of Mongolia (FCHM) in 2016 and 2024. Materials and methods of the study: A sample of 852 people who underwent a bronchoscopic diagnosis of the FCHM diagnosis in 2024 was included in the descriptive study. The biopsies were sent to the Laboratory of Clinical Pathology. Histological analysis was obtained from 92 of the 852 patients who underwent bronchoscopy biopsy. Of these, 9 were excluded from the study because their histological analysis did not meet the requirements. Therefore, a total of 83 patients with recorded biopsy results were included in the study. The results of the study were processed using SPSS 17 and Microsoft Excel 13.0.

**Results:** 1. In 2024, 51 of 83 biopsies were diagnosed with lung cancer and 32 with other bronchial diseases, compared with 25 of 53 biopsies in 2016 with lung cancer and 28 with other bronchial diseases. The proportion of cancer in biopsy specimens increased in 2024 compared to 2016. 2. In 2024, 51 people were diagnosed with lung cancer by biopsy, of which 36 were squamous cell carcinoma, 6 were adenocarcinoma, 1 was large cell carcinoma, 6 were SCC, and 2 were carcinoid tumors. In 2016, 25 people were diagnosed with lung cancer by biopsy, of which 23 were squamous cell carcinoma, 1 was adenocarcinoma, and 1 was small cell carcinoma. As mentioned above, the incidence of cancer increased in 2024 compared to 2016.



## **THE IMPACT OF NUTRITIONAL EDUCATION FOR PERITONEAL DIALYSIS PATIENTS IN MONGOLIA**

Namuuntsetseg Oyunbaatar, Sanchir Erdenebayar, Bayanjargal Sandag, Galmunkh Dashmend, Mandkhai Nergui

- 1- The Association of Clinical Dietitians
- 2- Mongolia Center for Improvement of Nutrition
- 3- Medvic Hospital

**Keywords:** Nutrition, Education, PD

**Introduction:** Peritoneal dialysis treatment has developed instantly in Mongolia for past five years. Currently, more than 120 patients undergo PD nationwide. These patients lack nutritional education, which predisposes them to protein deficiency and further impair their quality of life. However, there is no study which is conducted among those about their dietary in Mongolia. Therefore, integrated nutrition information and educating them about dietary patterns to follow are an urgent needed for PD patients. **Methods:** This study aimed to evaluate the effectiveness of structured nutrition education in CAPD patients 18 to 60 years at Medvic dialysis center in Ulaanbaatar, focusing on improved dietary knowledge and compliance. A total of 45 patients were randomly assigned into three groups (n=15 per group): Group A (Group Education Sessions) Group B (Online Education Sessions) Group C (Control Sessions) Each group received a total of five educational interventions over a period of five weeks. The educational content covered essential topics including fluid, electrolyte management, protein intake, phosphorus and potassium control, and food label reading. The nutrition education is assessed by interview based on a validated questionnaire. In addition, a biochemical blood test and 24-hour dietary recall methods are used for an nutrition assessment. **Results:** Base line: The rate of mildly-to-moderately malnutrition were at 48.8% among research participants. All patient's energy intake was significantly lower /1328±304kcal/ than the energy requirement. Only 14.2% met the recommended dietary protein intake. **Educational intervention:** The average knowledge assessment score improved from 8.2 /pre-intervention/ to 11.4 /post-intervention/. The proportion of participants scoring ≥10 increased markedly in group A /33.3% - 93.3%/ and moderately in the group B /20.0% - 46.7%/ , while the group C showed minimal change. Correlation analysis between nutrition knowledge scores and biochemical parameters revealed a statistically significant relationship with phosphorus / $r = -0.473$ ,  $p < 0.01$ / and calcium / $r = 0.696$ ,  $p < 0.01$ / levels. Increased nutrition knowledge was associated with lower serum phosphorus and higher calcium levels. Biochemical indicators also showed notable improvements with total protein levels increased significantly / $p=0.01$ /, and creatinine levels decreased / $p=0.05$ / in the group A.

**Conclusion:** This study demonstrated that providing nutrition education to patients led to noticeable improvements in their dietary habits and health status. However, the findings also highlight the need for continuous learning and sustained application of the acquired knowledge. Ongoing support and adherence to nutrition guidelines are essential to maintain these positive changes over time.





## **HISCL-800 ИММУНОЛОГИЙН БҮРЭН АВТОМАТ АНАЛИЗАТОР**

### **Хүчин чадал:**

100 сорьц/цагт, урвалын хугацаа 17 мин

### **Хэмжих арга:**

CLEIA (Химолюминесценц энзимиммуны арга)

### **Хэмжих параметр:**

HBsAg, HBsAb, HBcAb, HBeAg, HBeAb, HCVAb, TPAb, TnT, HIV Ag+Ab, AFP, CEA, PSA, CA19-9, CA125, Insulin, TSH, FT3, FT4, M2BPGi, KL-6, PIVKA II, C-Peptide, PCT



**ХҮРДАН**

**БҮХ ҮЗҮҮЛЭЛТИЙН УРВАЛЫН ХУГАЦАА 17 МИНУТ**

**МЭДРЭГ**

**НАЙДВАРТАЙ ЗӨВ ШИНЖИЛГЭЭ**

**БАГА СОРЬЦ**

**10-30 МКЛ ХЭМЖЭЭНИЙ СОРЬЦ АШИГЛАНА**

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## ALLIED SCIENCES SUBSECTION

### DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF MONGOLIAN MONOSYLLABIC WORDS FOR WORD RECOGNITION TESTING

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**Keywords:** Word Recognition, Monosyllabic Words, Psychometric Function

**Introduction:** Speech audiometry is a standardized tool used to assess hearing and auditory function, requiring test materials in the native language of the target population. Since the phonetic characteristics of a language affect speech perception and test outcomes, phonetically balanced words specific to each language are necessary. Therefore, this study aimed to develop a set of Mongolian monosyllabic word lists suitable for measuring Word Recognition Scores (WRS) and to evaluate their validity using psychometric function analysis.

**Methods:** In the first phase, 220 Mongolian monosyllabic words that are widely recognized and commonly used in daily conversations by the general population were selected from various linguistic sources and phonemically balanced. These words were digitally recorded by a professional female voice artist in a sound studio, and their intensity levels were normalized using the root mean square (RMS) value at 1000 Hz. In the second phase, word recognition tests were administered to 50 normal-hearing participants aged 18 to 29 years. The test was conducted in a sound-treated booth, with words presented at intensity levels ranging from -4 to 18 dB HL in 2 dB steps. The 220 words were randomly divided into four blocks of 55 words each. In the third phase, psychometric functions were generated using logistic regression analysis. To determine statistical differences between the lists and half-lists, chi-square ( $\chi^2$ ) tests and one-way analysis of variance (ANOVA) were applied.

**Result:** From the original pool of 220 words, the 200 most perceptible monosyllabic words were selected based on recognition accuracy across presentation levels. These were divided into four balanced 50-word lists and eight 25-word half-lists. Psychometric functions were calculated for each list using logistic regression. The average slope at the 50% threshold was 10.43%/dB, and the slope between 20–80% recognition ranged from 8.61 to 9.38%/dB. Statistical analyses showed no significant differences in recognition scores or intensity levels across lists and half-lists, confirming their equivalence. Intensity adjustments ( $\leq \pm 0.3$  dB) were applied to standardize the 50% threshold across all lists (mean = 6.16 dB HL). The results demonstrate that the developed Mongolian monosyllabic lists are phonetically and perceptually homogeneous, making them suitable for clinical and research use.

**Conclusion:** This study developed a standardized set of Mongolian monosyllabic word lists with consistent psychometric properties. These materials are suitable for use by otologists and audiologists in clinical assessments and speech audiometry research in Mongolia.

**EXPRESSION OF PLASMA P-TAU217 AND NFL IN POSTOPERATIVE COGNITIVE DYSFUNCTION AMONG ELDERLY PATIENTS AFTER BILATERAL STELLATE GANGLION BLOCKADE**

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**Keywords:** P-tau217 ,NFL,POCD

**Objective:** To explore the application value of plasma phosphorylated tau-217 (p-tau217) and neurofilament light chain (NFL) in the screening of postoperative cognitive dysfunction (POCD) in elderly patients undergoing spinal surgery, and to evaluate the intervention effect of bilateral stellate ganglion blockade (BSGB) on postoperative neuropathological injury.

**Methods:** This was a single-center, randomized, controlled, double-blind study. A total of 252 elderly patients ( $\geq 65$  years old) scheduled for spinal surgery under general anesthesia were enrolled. The experimental group received BSGB before anesthesia (5 mg compound betamethasone + 0.2% lidocaine, 5 ml per side, n=125), and the control group received an equal volume of 0.9% sodium chloride solution (n=122). Cognitive dysfunction was diagnosed as Mini-Mental State Examination (MMSE)  $< 27$  and Montreal Cognitive Assessment (MoCA)  $< 26$ . Chi-square test, Mann-Whitney U test, etc., were used to analyze intergroup differences. Plasma p-tau217 and NFL levels were measured before surgery, and on postoperative days 1 and 3.

**Results:** There were no significant differences in plasma p-tau217 and NFL levels between the two groups before surgery ( $P > 0.05$ ). On postoperative day 1, the p-tau217 level in the control group increased significantly compared with preoperation ( $P < 0.001$ ). Although the experimental group also showed an increase, the amplitude was significantly lower than that of the control group (Wald<sup>2</sup>=28.348,  $P < 0.001$ ). The NFL level in the control group increased significantly ( $P < 0.001$ ), while there was no obvious change in the experimental group ( $P > 0.05$ ), and it was significantly lower than that in the control group (Wald<sup>2</sup>=4.200,  $P = 0.040$ ). On postoperative day 3, the levels of p-tau217 and NFL in the control group decreased compared with those on postoperative day 1 but were still higher than preoperation ( $P < 0.05$ ). The p-tau217 in the experimental group returned to the preoperative level ( $P > 0.05$ ), and NFL remained stable. Statistical differences were observed between the two groups (p-tau217: Wald<sup>2</sup>=9.926,  $P = 0.002$ ; NFL: Wald<sup>2</sup>=22.587,  $P < 0.001$ ).

**Conclusion:** BSGB can inhibit the abnormal elevation of p-tau217 and NFL, reduce nerve injury, and promote index recovery in elderly patients undergoing spinal surgery, which may reduce the risk of POCD and provide a new idea for perioperative brain protection.



## **EVALUATION OF CORNEAL ENDOTHELIAL PARAMETERS IN TYPE 2 DIABETIC PATIENTS USING SPECULAR MICROSCOPY**

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**Keywords:** Endothelial cell density

**Background:** The corneal endothelium, composed of hexagonal cells forming the innermost layer of the cornea, plays a vital role in maintaining corneal transparency and normal thickness. These cells lack regenerative capacity, and their number gradually decreases with age, accompanied by structural degeneration. Globally, the prevalence of diabetes mellitus has risen dramatically, reaching epidemic proportions, particularly in developing countries. In Mongolia, the prevalence of diabetes reached 10% in 2019, nearly tripling since 1999. Diabetes can affect multiple parts of the eye. Increased blood viscosity, prolonged hypoxia, and chronic inflammation associated with diabetes can lead to structural and functional alterations in corneal endothelial cells, ultimately compromising corneal clarity and visual acuity.

**Materials and Methods:** This analytical cross-sectional study included 160 diabetic patients and 160 healthy individuals, selected through random sampling. All participants underwent a comprehensive ophthalmic examination. Non-invasive specular microscopy was used to assess central corneal thickness and endothelial morphological parameters, and comparisons were made between the two groups.

**Results:** The mean age of participants was  $57.4 \pm 8.2$  years in the control group and  $59.7 \pm 9.1$  years in the diabetic group, with no statistically significant difference ( $P > 0.05$ ). The mean endothelial cell density (ECD) in the diabetic group was  $2599.75 \pm 242.53$  cells/mm<sup>2</sup>, significantly lower than that in the control group  $2768.12 \pm 263.21$  cells/mm<sup>2</sup> ( $P < 0.001$ ). The central corneal thickness was significantly higher in the diabetic group  $547.27 \pm 28.78$  μm compared to the control group  $523.24 \pm 32.7$  μm ( $P < 0.001$ ). Among patients with a diabetes duration exceeding 10 years, the coefficient of variation (CV) in cell size was significantly increased, and the percentage of hexagonal cells was decreased ( $P < 0.05$ ). In patients with poor glycemic control, central corneal thickness and the coefficient of variation increased, while the percentage of hexagonal cells decreased, showing statistically significant differences ( $P < 0.05$ ).

**Conclusion:** Diabetes mellitus leads to a reduction in corneal endothelial cell density and induces morphological abnormalities such as polymegathism and pleomorphism. A decrease in cell density indicates more severe structural damage. In diabetic patients, corneal dysfunction may be subclinical. Therefore, thorough preoperative corneal assessment is essential to guide the selection of safe and appropriate intraocular surgical techniques.



## **THE ASSESSMENT OF C-SHAPED CANAL OF PERMANENT SECOND MOLAR AMONG MONGOLIAN ADULTS**

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**Keywords:** Radiograph, Melton's, root

C-shaped canal configuration is mostly found in the mandibular second molar among South East Asians. The morphological characteristic of a C-shaped canal is the presence of a fin or web connecting the individual canal, making it difficult for cleaning, shaping, and obturation, there are risks of leaving debris in the canal cavity and perforation of the canal wall. Study aim to assess of the C-shaped root canal morphometry of the permanent second molar.

**Methods:** The retrospective study was conducted in the CBCT images, was taken at Central dental hospital, MNUMS, since July 2014 (ethical approval 2024/3-02-15). CBCT images were selected according to inclusion criteria and measured by OnDemant 3D software. The root canal morphometric parameter of the permanent second molar consisted of a number of roots, a number of root canals, the root canal cavity shape by Vertucci's classification and Melton's classification. Statistical analysis was performed using SPSS27 software.

**Results:** Among the 96 CBCT images of individuals aged 15–57, a total of 332 permanent second molars; 174 maxillary and 158 mandibular teeth were analyzed.1. The number of roots among permanent second molars, the findings revealed that 83(25%) had a single, 143(43%) two, and 105(32%) three rooted teeth. Regarding the number of root canals, 21(6.4%) of them had one, 103(31.3%) had two, 191(57.5%) had three, and 16(4.8%) had four canals, statistically ( $p < 0.05$ ).2. The root canal shape using Vertucci's classification, the maxillary teeth showed the following distribution: Type I – 84.2%, Type II – 1.9%, Type III – 0.2%, Type IV – 11.3%, Type V – 1.4%, and Type VIII – 1%. For mandibular: 59.1%, 4.6%, 2.8%, 25.8%, 5.4%, and 2.3%, respectively.3. The prevalence of C-shaped canals in permanent second molars, classified using Melton's system, was 11.4% in the maxilla and 29.1% in the mandible. According to the classification of C-shaped canal types: C1 type was found in 55%, C2-18%, C3-15%, and C4-12% of cases.

### **Conclusion:**

1. The maxillary permanent second molars of Mongolian individuals most commonly had 3 canals in 3 roots and mandibular ones had 3 canals in 2 roots.
2. Vertucci Type I canal configuration was predominant in the permanent second molars of Mongolian individuals.
3. C-shaped canals were more frequently observed in the mandibular permanent second molars than maxillary, with the C1 Type being the most common among the classifications.

## **THE IMPACT OF SQUARE-STEPPING EXERCISE ON COGNITIVE FUNCTION, PHYSICAL PERFORMANCE, AND GAIT IN OLDER ADULTS: A PILOT STUDY**

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**Keywords:** Square-Stepping-Exercise, Cognitive-Function, Older-Adults

**Background:** Declines in cognitive function, physical performance, and gait associated with aging significantly impair independence, quality of life in older adults. Square Stepping Exercise (SSE)

is a low-cost, simple, structured motor-cognitive training program that has been shown internationally to reduce fall risk and improve functional performance, though its implementation and outcomes have not been well studied in Mongolia. This study aimed to analyze the effectiveness of a short-term SSE program in an outpatient rehabilitation setting.

**Methods:** A prospective hospital-based case series was conducted with 22 older adults aged 60 years and above attending the outpatient rehabilitation department at the First Central Hospital of Mongolia. Participants completed six SSE sessions over two weeks. Baseline and post-intervention assessments evaluated cognitive function using the Montreal Cognitive Assessment (MoCA) and Trail-Making Test Part A (TMT-A); physical performance using the Short Physical Performance Battery (SPPB) and Timed Up-and-Go (TUG) for mobility; and gait parameters, including walking speed, cadence, and stride length. Statistical analyses were conducted using SPSS v27, and results with  $p < 0.05$  were considered significant.

**Results:** MoCA scores increased by 2.4 points ( $p < 0.001$ ,  $d = 0.82$ ), and TMT-A completion time decreased by 6.8 seconds ( $p = 0.007$ ,  $r = 0.41$ ), indicating improved cognitive function. SPPB total scores increased by 1.8 points ( $p < 0.001$ ,  $d = 0.95$ ), and TUG times decreased by 1.7 seconds ( $p < 0.001$ ,  $d = 0.88$ ), reflecting enhanced physical performance. Gait improved significantly, with walking speed increasing by 0.17 m/s ( $p < 0.001$ ,  $d = 0.90$ ), cadence by 9.45 steps/min ( $p < 0.001$ ,  $d = 0.78$ ), and stride length by 0.12 m ( $p < 0.001$ ,  $d = 0.85$ ).

**Conclusion:** Implementing a short-term SSE program in outpatient rehabilitation significantly improves cognitive function, physical performance, and gait in older adults, thereby enhancing independence and reducing fall risk. Larger randomized controlled trials are needed to confirm these findings and evaluate long-term benefits.

## ANALYSIS OF THE IMPACT OF SEXUALLY TRANSMITTED INFECTIONS ON MALE INFERTILITY AMONG MONGOLIAN MEN USING POLYMERASE CHAIN REACTION

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**Keywords:** Semen, M.genitalium, C.trachomatis

**Background:** Recent studies have indicated that male infertility is on the rise due to influence of modern technological advances, sexually transmitted infections (STIs), and other contributing factors. In Mongolia, however, there is a notable lack of studies investigating the association between male infertility and STIs, which served as the rationale for conducting this study. Objective To investigate the impact of sexually transmitted infections on male infertility and associated semen parameters.

**Methods:** This hospital-based cross-sectional study was conducted at the “Altan Zor” Men’s Clinic between October 2024 and May 2025. Semen analyses were carried out in accordance with the World Health Organization’s 2020 guidelines. Pathogens of STIs, including C. trachomatis, M. genitalium, HPV-18, among others, were identified using real-time polymerase chain reaction (PCR). Results Of the 814 patients included in the study, 66.5% (n= 541) had normozoospermia (normal semen profiles), of whom 58.0% (n= 314) tested positive for STI. Among the remaining 33.5% (n=273) with abnormal semen parameters (infertility), 65.9% (n=180) were STI-positive. A comparative analysis was conducted between STI-negative individuals with normozoospermia and STI-positive individuals with abnormal semen parameters. the prevalence of specific pathogens in each group was as follows: • C. trachomatis: 28 cases (5.2%) vs. 25 cases (9.2%) ( $p = 0.03$ ) • M. genitalium: 14 cases (2.6%) vs. 15 cases (5.5%) ( $p = 0.035$ ) • U. parvum: 101 cases (18.7%) vs. 68

cases (24.9%) ( $p=0.03$ ) • HPV-18: 6 cases (1.1%) vs. 9 cases (3.3%) ( $p=0.028$ ) • *Candida albicans*: 14 cases (2.6%) vs. 15 cases (5.5%) ( $p=0.035$ ) • *Trichomonas*: 4 cases (0.7%) vs. 9 cases (3.3%) ( $p=0.006$ ) These differences were statistically significant. Comparing semen characteristics between the groups revealed the following: • Semen Volume (mL):  $2.87 \pm 1.22$  vs.  $2.22 \pm 1.09$  — decreased ( $p=0.001$ ) • Semen Viscosity:  $1.01 \pm 4.35$  vs.  $2.56 \pm 6.70$  — increased ( $p=0.003$ ) • Vitality (% live sperm):  $77.55 \pm 10.69$  vs.  $57.73 \pm 23.29$  — decreased ( $p=0.001$ ) • Normal Morphology (%):  $30.00 \pm 0.00$  vs.  $27.08 \pm 8.81$  — decreased ( $p=0.001$ ) • Motility (PR, NP, AB, C) (%):  $46.52 \pm 9.08$  vs.  $27.61 \pm 14.44$  — decreased ( $p=0.001$ ) • Progressive Motility (A + B) (%):  $40.37 \pm 7.41$  vs.  $23.14 \pm 12.21$  — decreased ( $p=0.001$ ) • Non-Progressive Motility (Grade C) (%):  $6.15 \pm 2.16$  vs.  $4.28 \pm 2.49$  — increased ( $p=0.001$ ) • Immotile Sperm (Grade D) (%):  $53.66 \pm 9.06$  vs.  $64.56 \pm 22.22$  — increased ( $p=0.001$ ) • Sperm Concentration (million/mL):  $100.30 \pm 30.36$  vs.  $65.09 \pm 51.13$  — decreased ( $p=0.001$ ) • Total Sperm Count (million/ejaculate):  $274.18 \pm 137.53$  vs.  $140.05 \pm 135.55$  — decreased ( $p=0.001$ ) • Seminal Leukocytes ( $10^6$ /mL):  $48.19 \pm 41.85$  vs.  $70.69 \pm 46.69$  — increased ( $p=0.001$ ) • Urethral Leukocytes ( $10^6$ /mL):  $2.74 \pm 19.77$  vs.  $11.83 \pm 40.24$  — increased ( $p=0.001$ ) All observed differences were statistically significant between the compared groups.

**Conclusion:** The presence of *C. trachomatis*, *M. genitalium*, *U. parvum*, HPV-18, *Candida albicans*, and *Trichomonas* was significantly associated with impaired semen quality and reduced male fertility potential.

## THE IMPACT OF SPERM PARAMETERS ON INTRAUTERINE INSEMINATION OUTCOMES IN MALE FACTOR INFERTILITY

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**Background:** Male infertility accounts for approximately 20% of infertility cases, while 38% are female-related, 27% involve both partners, and 15% remain unexplained, according to the World Health Organization. A global decline in male reproductive potential has been reported, with marked reductions in sperm concentration (SC) and total sperm count (TSC) in North America, Europe, Australia, and New Zealand. Levine et al. (2018) demonstrated a 56% decline in sperm count over the past five decades, while Skakkebaek et al. (2022) linked this decline to reduced testosterone levels, prostate cancer, and congenital male reproductive anomalies. This trend is predicted to continue, contributing to rising rates of male infertility. Intrauterine insemination (IUI), which involves sperm washing and intrauterine deposition, remains a first-line treatment for mild to moderate male factor infertility.

**Objective:** To assess the prognostic value of post-wash motile sperm count in predicting IUI outcomes in male factor infertility.

**Methods:** We retrospectively analyzed 163 couples with confirmed male factor infertility who underwent IUI at the RMC IVF Center between 2018 and 2021. Female partners' cycles were monitored with ultrasound and serum hormone assays. At ovulation, semen samples were processed using a commercial sperm washing kit (Kitazato, Japan) and inseminated intrauterinely. Outcomes were evaluated by serum hCG, ultrasonography, and live birth data.

**Results:** The mean age of male participants was  $35.4 \pm 5.8$  years. Mean semen parameters were: total sperm count  $132.6 \pm 9.5$  million, sperm concentration  $50.8 \pm 3.5$  million/mL, motility  $71.4\% \pm 12.6$ , progressive motility  $47.9\% \pm 15.3$ , and normal morphology  $2.99\% \pm 1.34$ . Overall, the clinical pregnancy rate was 15.3% (25/163), miscarriage rate 6.7% (11/163), and live birth rate 8.6% (14/163). In the subgroup with post-wash motility  $>95\%$ , clinical pregnancy was 19.6% (11/56),

miscarriage 36.4% (7/19), and live birth 50% (7/14). In contrast, with motility <95%, clinical pregnancy was 13.1% (14/107; OR 1.62, 95% CI 0.68–3.86), miscarriage 50% (7/14; OR 1.75, 95% CI 0.34–8.79), and live birth 50% (7/14; OR 2.04, 95% CI 0.67–6.14).

**Conclusion:** Lower post-wash motile sperm percentages (<95%) are associated with a higher risk of miscarriage and reduced live birth rates following IUI. These findings underscore the prognostic significance of sperm quality assessment in male factor infertility.

## **ASSESSMENT OF PHARMACISTS’ KNOWLEDGE ON PHARMACEUTICAL WASTE MANAGEMENT IN PUBLIC PHARMACIES IN ULAANBAATAR**

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**Keywords:** Pharmaceutical waste, Pharmacy

A cross-sectional study was conducted among 260 pharmacists working in public pharmacies across the nine districts of Ulaanbaatar, Mongolia. The aim was to assess their knowledge regarding pharmaceutical waste management and identify influencing factors. Among the respondents, 93.5% were female, and the mean age was  $30.8 \pm 5$  years. Regarding educational background, 14.2% had an associate degree, 78.2% held a bachelor’s degree, 6.9% had a master’s degree, and 0.4% held a doctoral degree. In terms of professional ranking, 12.3% were senior pharmacists, 6.9% were consultants, while 80.5% had no official rank. The average work experience was  $5 \pm 5$  years. With respect to team structure, 49.8% worked in pharmacies with 1–2 pharmacists, 36% with 3–4, 8.4% with 5–8, 1.9% with 9–15, and 3.9% with more than 15 pharmacists. In terms of organizational type, 41% worked in chain pharmacies and 59% in privately owned (“solo”) pharmacies. Pharmacy locations included residential buildings (47.7%), commercial centers (29%), private homes in ger districts (8.8%), and healthcare institutions (13.6%). The average knowledge score related to pharmaceutical waste management, measured using a 5-point Likert scale, was 3.3. This score indicates a moderate but insufficient level of knowledge. Statistical analysis revealed that knowledge levels were significantly associated with educational attainment ( $p=0.002$ ), years of work experience ( $p=0.001$ ), the number of fellow pharmacists at the workplace ( $p=0.001$ ), as well as the type (chain or solo) and location of the pharmacy ( $p=0.005$ ). These findings underscore the urgent need for regular training programs and the implementation of standardized guidelines on pharmaceutical waste management. Enhancing pharmacists’ knowledge in this area is critical to ensuring public safety and minimizing the environmental risks posed by improper pharmaceutical waste disposal.

## **HISTOPATHOLOGICAL ASSESSMENT OF RESECTED BRAIN TISSUE FROM EPILEPTIC FOCI**

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**Keywords:** Focal Cortical Dysplasia

**Abstract:** Epilepsy is a chronic neurological disorder characterized by recurrent seizures arising from excessive neuronal electrical activity. Pharmacoresistant epilepsy (PRE) is most commonly driven by structural cortical abnormalities, with focal cortical dysplasia (FCD) representing a leading cause. Epilepsy can occur at any age but is more prevalent in young children (under 5 years) and older adults (50–60 years). In Mongolia, the number of registered epilepsy cases rose

significantly from 6,733 in 2003 to 12,144 in 2012, indicating an annual increase of approximately 600–700 cases many of which were pharmacoresistant. Long-term use of antiepileptic drugs can have adverse effects on individual health and the economy, leading to a preference for surgical interventions. In 2011, the International League Against Epilepsy (ILAE) convened its first consensus on cortical dysplasia, revising the 2004 classification. This update was instrumental in enhancing etiological understanding and guiding therapeutic decisions.

**Methods:** This case study was carried out from 2019 to 2024 in the National Center for Pathology, Mongolia. A total of 61 patients who undergo surgery due to chronic epilepsy. After adjustment of possible predictors, such age, gender, anatomical location and histological diagnosis were done using light microscope Olympus, according to the ILAE 2011 Classification of the epilepsy.

**Result:** In this study, out of 61 cases, 27 (44.2%) were female, 34 (55.7%) were male. Prevalence of age group is higher distributed in 30-39 (31.1%). The most frequent anatomical site was temporal lobe, 40 (62%). According to the revised ILAE 2011 Classification of the epilepsy, 4 (6.5%) were Ia, 7 (11.4%) were Ib, 3 (4.9%) were Ic, 6 (9.8%) were IIa, 6 (9.8%) were IIb, 30 (49.2%) were IIIa, 2 (3.27%) were IIIb, 2 (3.27 %) were IIIc, 1 (1.6%) was IIId out of 61 cases, respectively.

**Conclusion:** In a study focusing on focal cortical dysplasia (FCD), the most prevalent type was found to be FCD type IIIa, accounting for 49.2% of cases, and it was frequently associated with hippocampal sclerosis. The age group with the highest incidence of FCD was between 30 and 39 years old, with no significant difference in prevalence between males and females.

## **IMPACT OF BOOSTER VACCINATION AGAINST COVID-19 ON INFECTION AND HOSPITALIZATION RATES DURING THE MASS VACCINATION IN MONGOLIA**

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**Keywords:** Effectiveness, Hospitalization, COVID-19

In this study, we observed the effectiveness of booster vaccination in preventing new COVID-19 infection cases and related hospitalizations among population groups that received a primary vaccination series. Booster vaccination began on August 31, 2021, at the recruitment stage (May 2022). As of May 2022, 64% of the total Mongolian population had received two priming doses of a COVID-19 vaccine, and 31% had received a booster dose. We observed 1,251 participants (459 males and 792 females, mean age  $41.5 \pm 14.5$  [18 – 93] years), over a six-month period from the start of booster immunization, September 1, 2021, to February 28, 2022. All participants were antibody naïve and received two doses of one of four types of vaccines used in the nationwide vaccination campaign. During the observation period, we identified 449 new infection cases, accounting for 35.9% of all participants, and 150 subsequent hospitalizations, representing 12.0% of all participants. We compared infection and hospitalization rates among groups of vaccinees using logistic regression statistics and calculated vaccine effectiveness (VE) for participants who received a booster vaccination using the formula:  $VE = 1 - (\text{vaccinated rate} / \text{unvaccinated rate}) \times 100$ . Participants who did not receive booster vaccination demonstrated a dramatically increased infection rate compared to participants who received booster vaccination (OR = 1.5; VE = 22.0%,  $p < 0.005$ ). In particular, booster vaccination showed a significantly greater protective effect against new infections in frontline employees (OR = 2.2; VE = 36.0%,  $p < 0.001$ ) and reduced hospitalizations in the increased risk population (OR = 4.0; VE = 67.0%,  $p < 0.005$ ). No significant differences were found in VE when comparing participants by seroconversion rate after initial vaccination and the types of vaccine used for booster vaccination.



Therefore, we concluded COVID-19 booster vaccinations effectively enhanced protection against new SARS-CoV-2 infections among frontline healthcare workers and government employees, as well as individuals at higher risk for severe disease, thereby reducing their risk of hospitalization.

## **PREDICTIVE FACTORS OF LOCAL RECURRENCE AND OVERALL SURVIVAL IN PATIENTS WITH HEPATOCELLULAR CARCINOMA TREATED WITH TRANSARTERIAL CHEMOEMBOLIZATION**

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**Keywords:** HCC, lipiodol, TACE

**Introduction:** Hepatocellular carcinoma (HCC) is the third most common cause of cancer-related death worldwide (incidence rate of 16 per 100,000 people) with 700,000 deaths annually attributed due to the hepatocellular carcinoma. Curative treatment of the hepatocellular carcinoma includes partial surgical resection of liver segment, radiofrequency ablation (RFA) and transarterial chemoembolization (TACE), but more than 50% of cases are diagnosed in the advanced stages. Several research studies have shown that local recurrence often occurs after transarterial chemoembolization. And several risk factors have been identified as contributing local recurrence after transarterial chemoembolization.

**Objective:** To determine predictive risk factors of local recurrence after transarterial chemoembolization (TACE) and to compare the efficacy and safety of long-versus short-interval of transarterial chemoembolization (TACE) in hepatocellular carcinoma (HCC) patients.

**Methods:** This retrospective cohort study involved 500 patients diagnosed with hepatocellular carcinoma who underwent transarterial chemoembolization at the Angiography Department of Second State Central hospital between 2021 and 2025. The patients were divided into a short-interval group (SIG) and a long-interval group (LIG) based on the median TACE interval of the first two sessions with subgroup of BCLC grade. The data analysis was performed using STATA software program. The overall survival was calculated as the interval between the date of initial TACE and the last follow-up. We used the Kaplan-Meier method and logistic regression test to estimate and compare overall survival.

**Results:** The results of the study indicated that the lipiodol uptake was  $205.59 \pm 76.06$  HU ( $p=0.041$ ) and the tumor size was  $4.18 \pm 2.79$  cm ( $p=0.010$ ). These factors were found to have a significant impact on the occurrence of local recurrence after transarterial chemoembolization. The median TACE interval was 7.5 months and 58.6% of patients have short interval ( $\leq 7.5$  months) and 41.4% have long interval ( $\geq 7.5$  months) of TACE treatment. TACE interval plays important role for determining overall survival. The long interval group had a longer overall survival than the short interval group in Barcelona Clinic liver cancer (BCLC) stage C patients.

**Conclusion:** Non-compact lipiodol uptake ( $<200$  HU) and tumor size are important risk factors influencing the local recurrence after transarterial chemoembolization in patients with hepatocellular carcinoma. A long interval between the first two sessions of TACE resulted in a better overall survival than a short interval in patients with BCLC C-stage HCC.

## CHANGES IN SODIUM AND POTASSIUM LEVELS IN STORED BLOOD

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**Keywords:** hyperkalaemia, hyponatraemia, RBC

**Introduction:** Blood transfusion is an essential medical procedure used to treat acute blood loss and support perioperative care. However, red blood cell (RBC) units undergo biochemical and structural changes during storage, known as "storage lesions." These changes are clinically important, especially during massive transfusions or transfusions in neonates and critically ill patients. **Methods:** This observational study was conducted at the National Center for Transfusion Medicine (NCTM) of Mongolia from June to August 2022. A total of 20 packed red blood cell (pRBC) units were collected from donors and stored under standard conditions (+2°C to +6°C) using SAG-M anticoagulant. Electrolyte levels were measured on days 1, 7, 14, 21, 28, 35, and 42 using the ion-selective electrode method on a Mindray BS-800M automated biochemical analyzer. The data were analyzed using Stata 14.

**Result:** The results revealed significant changes in electrolyte levels over the 42-day storage period. Potassium concentration increased from 8.3±3.2 mmol/L on day 1 to 50.9±5.4 mmol/L on day 42, with an average rise of 7.1 mmol/L per week. This change was statistically significant ( $p<0.0001$ ) and showed a very strong positive correlation with storage time ( $r=0.94$ ). Sodium levels decreased from 144.4±4.4 mmol/L on day 1 to 113.8±5.8 mmol/L on day 42, with an average reduction of 5 mmol/L per week. This decline was also statistically significant ( $p<0.0001$ ) and showed a strong negative correlation with time ( $r=-0.84$ ).

**Conclusion:** Potassium increased significantly with storage duration, while sodium decreased. All changes were statistically significant. Potassium had a very strong positive correlation with storage time ( $r=0.94$ ), sodium had a strong negative correlation ( $r=-0.84$ ).

**Discussion:** These results are consistent with previous international studies and highlight the risk of hyperkalemia, hyponatremia, and acid-base imbalance associated with transfusing older blood. The findings are particularly important for neonates and patients with heart or kidney conditions. This study, the first of its kind in Mongolia, emphasizes the need to consider blood storage duration when planning transfusions. Using fresher or washed RBCs may be safer for high-risk patients.

## NEW CHALLENGE FETAL THERAPY FOR NCMCH IN MONGOLIA

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**Keywords:** Fetal therapy, Twin

**Background and Objectives:** A maternal and fetal medicine team has been established for National Center Maternal and Child Health (NCMCH) at the Mongolian and fetal diagnostic and treatment has been gradually introduced and localized in Mongolia. In the last 5 years, the introduction of new fetal treatment technologies has been evaluated.

**Materials and Methods:** The cases of fetal treatment newly introduced in Mongolia by the Mongolian National Center Maternal and Child Health were evaluated.

**Results:** Clinical guidelines for 6 fetal treatment methods were developed and successfully implemented in 40 cases. 65% ( $n=26$ ) of the treatments were fetoscopic laser and ultrasound-

assisted treatment of placental transfusion disorders. Prolonged the average gestational age of the treated fetus was  $48.25 \pm 34.66$  days and 39 (53.4%) of the 75 fetuses were born and discharged from the hospital for home care.

**Conclusion:** Laser therapy for placental transfusion has been successfully introduced and in many cases, it is possible to localize it under health insurance.

## ENVIRONMENTAL TOBACCO SMOKE AS A RISK FACTOR FOR ORAL PIGMENTATION: AN EVIDENCE-BASED ASSESSMENT

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**Keywords:** Environmental\_tobacco\_smoke, Gingival\_melanosus, Public\_health

**Introduction:** Environmental tobacco smoke (ETS), also known as passive smoking, is a major public health concern, exposing approximately one-third of the global population to harmful chemicals. The ability of nicotine and other tobacco-related substances to accumulate in melanin-containing tissues has been demonstrated, notably causing discoloration of oral mucosa in active smokers. However, the correlation between ETS and oral pigmentation (OP) among passive smokers remains controversial and requires further clarification. This systematic review and meta-analysis aim to evaluate the existing evidence regarding the impact of ETS exposure on the incidence of oral pigmentation in passive smokers, highlighting the association and potential implications for public health.

**Method:** A comprehensive literature search was conducted from August to December through databases including MEDLINE, Web of Science, Embase, CINAHL, Scopus, and supplementary searches in Google Scholar and Academia. Inclusion criteria encompassed passive smokers of any gender, age, or ethnicity, with exposure to ETS and oral pigmentation outcomes. The methodological quality of included studies was assessed using the Mixed Methods Appraisal Tool (MMAT). Meta-analysis was performed using odds ratios (ORs) and 95% confidence intervals (CIs), with subgroup analyses for age, allocation methods, and pigmentation assessment tools.

**Result:** Of the 112 records identified, 13 studies, originating from five countries, met the inclusion criteria. Data for meta-analysis were extracted from 8 individual studies with potential outcome domain, involving 953 ETS-exposed and 1129 ETS-unexposed participants. Second-hand smoking showed a significant effect on the overall incidence of OP (OR=2.35, 95% CI=1.46-3.78,  $p < 0.001$ ), meaning the exposure is positively associated with outcome based on the random-effect model (Chi<sup>2</sup>=28.19,  $p < 0.001$ , I<sup>2</sup>=75%), which is depicted in Fig. 1. Moreover, meta-regression was conducted involving year of publication, sample size, prevalence of ETS and physiological pigmentation, country, assessment tool, allocation and, age. Amongst all, sample size was the major factor affecting between-study heterogeneity statistically significant ( $R^2=1$ ,  $Q=23.22$ ,  $df=1$ ,  $p < 0.001$ ).

**Conclusion:** This systematic review and meta-analysis confirm a significant association between ETS exposure and increased incidence of oral pigmentation in passive smokers, regardless of age and gender, emphasizing esthetic and health implications for vulnerable populations. OP could serve

as a useful clinical indicator of chronic ETS exposure, aiding public health efforts by highlighting the risks of passive smoking. ETS-induced OP has potential as a simple, accessible screening tool to educate families, assess risks, and support the development of smoke-free policies and preventive strategies.

## **STUDY RESULTS ON THE CONTAMINATION AND DISTRIBUTION OF ANTIMICROBIAL-RESISTANT MICROORGANISMS ON SURFACES IN A MULTISPECIALTY HEALTHCARE ENVIRONMENT**

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**Keywords:** mdro, HAI, Contamination

The World Health Organization (WHO) identifies multidrug-resistant organism (MDRO) infections as a “silent pandemic” threatening global health. A significant portion of healthcare-associated infections (HAIs) are caused by MDROs, which persist on surfaces and spread easily through healthcare personnel, increasing cross-contamination risks. MDROs compromise treatment, limit therapy options, prolong hospital stays, and raise healthcare costs. Understanding environmental contamination and MDRO transmission is crucial for effective infection prevention and control (IPC).

### **Aim**

To evaluate the extent of bacterial contamination on high-touch surfaces within hospital wards of varying functions and care settings during non-outbreak periods, and to determine the prevalence of multidrug-resistant bacteria (MDRB).

1. To assess the bacterial growth status from swab samples collected from frequently touched surfaces in selected hospital wards.
2. To identify and determine the prevalence of multidrug-resistant bacterial strains isolated from those surfaces

**Methods:** This study employed a hospital-based, cross-sectional (point-in-time) survey design. Swab samples were collected from high-touch surfaces located within wards providing various types of medical care, during non-outbreak periods. result: A surveillance study was conducted to identify multidrug-resistant organisms (MDROs) in frequently touched areas of an 800-bed specialized tertiary hospital. A total of 152 swab samples were collected—26.3% (n=40) from the hands of healthcare workers and 73.6% (n=112) from high-risk surfaces such as equipment, room furnishings, and other materials involved in daily patient care activities. Among the total swab samples, 71.1% (n=108) showed no bacterial growth, while 28.9% (n=44) tested positive for bacterial presence. Other detected pathogens included *Acinetobacter baumannii* complex 18.2% (n=8), *Pseudomonas aeruginosa* 13.6% (n=6), *Escherichia coli* – 15.9% (n=7), *Klebsiella pneumoniae* 4.5% (n=2), *Enterobacteriaceae* – 6.8% (n=3), and a combined of 11.3% (n=5) MRSA, *Serratia marcescens*, *Aeromonas salmonicida*. Among these isolates, 34% (n=15) were confirmed to be multidrug-resistant (MDR). Regarding surface contamination, the most common MDRO-positive sites were Sink faucets – 46.6% (n=7), Bed surfaces – 33.3% (n=5), Electric kettle handles – 20% (n=3).

### **Conclusion**

1. The detection of multidrug-resistant organisms (MDROs) on the most frequently touched hard surfaces in the hospital environment indicates an increased risk of hospital-acquired infections. This can negatively impact the length of hospital stay and the recovery process of patients
2. The presence of MDROs varies statistically significantly depending on the type and purpose of the surfaces from which swab samples were collected ( $p<0.001$ ). To prevent MDRO transmission, it is essential to improve healthcare workers' attitudes, strictly follow infection control protocols, and ensure better access to human resources, equipment, reagents, disinfectants.

## ASSESSING THE APPROPRIATE URINARY CATHETERIZATION IN SPECIALIZED HOSPITALS

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**Keywords:** CAUTI, UTI

**Background:** Urinary catheters are a commonly used medical device in clinical practice. It is estimated that 10-15% of inpatients use urinary catheters during treatment, and the incidence of catheter associated urinary tract infection is 12.9-24% in developing countries. The rationale for this study is that there is a need to conduct research in this area and evaluate their appropriate use, as unnecessary or inappropriate use of urinary catheterization can lead to prolonged hospital stays, increased unnecessary costs, and increased incidence of urinary tract infections.

**Methods:** A cross sectional study to assess the appropriate use of urinary catheters with specially formulated checklists and to assess the level of pain and discomfort with questionnaire in 207 inpatients with urinary catheters in specialized hospitals between December 1, 2024 and February 28, 2025. Statistical analysis was performed using MS-Excel and SPSS 26.

**Results:** Of the 207 patients included in the study, 81.7% (n=169) were inpatients, 18.3% (n=38) were emergency room patients, and the mean age was 58±16.06. 66.1% (n=137) of the patients used the urinary catheter for appropriate indications, while 33.8% (n=70) of patients used urinary catheters for inappropriate indications, most commonly for prolonged urinary output monitoring [32.8% (n=23)], pre and postoperative patients [70% (n=46)], and for emergency [(18.8% (n=39))]. 10% (n=21) of patients attempted to remove the urinary catheters due to discomfort and 2% (n=5) of cases used the urinary catheters for inappropriate indications. Bacteriological examination was not performed in 53% (n=90) of the patients who used a urinary catheter for more than 48 hours, and urinary tract infection was detected in 16 cases, 2 cases were inappropriate use. When examining urine test results, red blood cells were increased in 18 (40%), white blood cells in 14 (32%), and bacteria in 7 (16%) cases in patients who had used a urinary catheter for more than 48 hours. Patients with diabetes (OR=4.442), male patients (OR=1.085), patients over 65 (OR=1.4) were at high risk of urinary tract infection. In 27% (n=43) cases without any indication for antibacterial therapy, the total unnecessary antibacterial therapy cost was 653,493₮. The use of antibacterial drugs and post-urinary test results were statistically significant (p = 0.036).

**Conclusion:** Inappropriate urinary catheterization was identified in 70 (33.8%) cases, with prolonged urinary catheterization when not needed being a common cause. Appropriate urinary catheterization can reduce unnecessary costs, urinary tract infection and patients discomfort during treatment. Regular monitoring is needed to reduce inappropriate urinary

## CURRENT BIG DATA TRANSITION IN THE HEALTH SECTOR OF MONGOLIA AND ITS ECONOMIC BENEFITS

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**Keywords:** Big data, patient medical history, electronic data, paper-based data, economic transition  
In the health sector, patient medical history information is archived in the respective health institutions and personal medical records to preserve and monitor the use of big data. Patient history data collected based on standardized forms aimed at generating statistical indicators for the health



sector. To explore the content of this data, an analysis conducted on inpatient medical histories stored at the First Central Hospital and the National Center for Maternal and Child Health.

The content analysis based on the process of big data generation in the health sector and its usage as prescribed by medical documentation formats and relevant legal regulations. The study categorizes big data in health into two types-paper-based and electronic—indicating that personal medical data generated in both formats. Currently, such data is mainly used for research purposes by medical professionals and researchers.

## **SATISFACTION SURVEY IN SPECIALIZED HOSPITALS DURING INPATIENT AND OUTPATIENT SERVICES**

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**Keywords:** Healthcare service quality, satisfaction, evaluation indicator

The WHO emphasizes that patient satisfaction is a key indicator of healthcare system, reflecting public trust and service quality. Regular evaluation helps improve healthcare accessibility and efficiency. Satisfaction encompasses multiple factors, including service quality, staff interactions, environmental conditions, and information clarity. This study aims to assess satisfaction at specialized hospitals, identify different influencing factors, and generate evidence-based data for quality policy development.

1. The overall satisfaction ratings of outpatient and inpatient services align with international satisfaction assessment standards.
2. When analyzing the factors influencing satisfaction with outpatient and inpatient services, statistically significant associations ( $p < 0.001$ ) with overall satisfaction include appointment scheduling coordination, communication with nurses, physicians' hand hygiene, the hospital's internal environment, and the quality of support services.

## **INFECTION PREVENTION AND CONTROL**

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**Keywords:** Infection prevention and control, infection risk, bacterial contamination disinfection, cleaning towel

The World Health Organization has identified improving the quality of infection prevention and control (IPC) systems in healthcare facilities and improving the quality of health care delivery as one of the key public health issues. IPC is a set of practices that prevent and control exposure to healthcare-associated infections among healthcare workers, patients, their families, and others. In order 1. The procedures for washing and disinfecting cleaning towels in the intensive care units (ICUs) vary across departments. Analysis of the average knowledge scores related to towel processing and the correlation with bacteriological swab results revealed statistically significant associations in Departments C ( $p = 0.032$ ) and B ( $p = 0.047$ ). 2. Bacteriological analysis showed that 8% ( $n = 2$ ) of towel

## CONTAMINATION OF HEALTHCARE ENVIRONMENTAL SURFACES

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**Keywords:** MDRO, HAI

The World Health Organization (WHO) has characterized infections caused by multidrug-resistant organisms (MDROs) as a "silent pandemic" that poses a profound threat to global public health. At the international level, healthcare-associated infections (HAIs) are recognized as one of the major challenges to ensuring patient safety and improving the quality of healthcare delivery.

**Aim: To evaluate**

1. The detection of multidrug-resistant organisms (MDROs) on the most frequently touched hard surfaces in the hospital environment indicates an increased risk of hospital-acquired infections. This can negatively impact the length of hospital stay and the recovery process of patients.
2. The presence of MDROs varies statistically significantly depending on the type and purpose of the surfaces from

## PREDICTION OF SILENT BRAIN METASTASIS IN PATIENTS WITH T1 AND T2 LUNG ADENOCARCINOMA ON F-18 FDG PET/CT: IS THERE AN ADDITIVE ROLE TO GUIDE FURTHER BRAIN EVALUATION IN PATIENTS WITH EARLY T-STAGE ON CHEST CT?

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**Purpose:** F-18 FDG PET/CT is widely used for the diagnosis and staging in patients with NSCLC. However, its relatively low sensitivity to detect brain metastasis is one of limitations of PET/CT, as brain metastasis are not uncommon even in patients with early stage NSCLC. The purpose of this study was to evaluate an additive role of PET/CT to predict brain metastasis in patients with T 1 and T 2 adenocarcinoma of lung

**Methods:** A total of 395 neurologically asymptomatic lung adenocarcinoma patients with T 1 and T 2 on chest CT from 2011 to 2014 were enrolled, consecutively. All patients underwent chest CT, F-18 FDG PET/CT and MRI as a part of initial staging. TNM-staging (T CT, N CT and M CT) were determined on diagnostic CT scans according to the AJCC staging system (7<sup>th</sup> edition). SUV and metabolic-volumetric parameters of primary tumors (T PET) were obtained and N/M re-staging (N PET, M PET) were determined on PET/CT.

**Result:** Of 395 patients enrolled, 51 patients (13%) had brain metastasis on brain MRI (n=43) and/or follow-up imaging studies (n=8). PET/CT detected extrathoracic metastasis except brain in 26 in addition to the thoracic metastasis (n=97) on chest CT. In multivariate analysis, N CT and M

CT staging on CT (HR 5.41; P<0.001, HR1.98; P<0.001) and N PET and M PET staging (HR 3.1; P=0.056, HR37.3; P<0.001) had significant associations with the occurrence of brain metastasis, respectively. The rate of silent brain metastasis was 0.6% in M 0 and N 0 and 0.5% in Stage IIA or less by PET/CT, and those were 0.9% and 1.3% by CT in patients with T1 and T2 lung adenocarcinoma on chest CT.

**Conclusion:** Silent brain metastasis was not uncommon and its incidence rate was more than 1%, even in the early stage of lung adenocarcinoma in our data. Additive roles of F-18 FDG- PET/CT to predict silent brain metastasis in patients with T 1 and T 2 lung adenocarcinoma on chest CT were definitely achieved by detecting extrathoracic metastasis (M PET ). N-staging (N PET ) and higher metabolic activity (T PET ) on PET/CT also had significant associations with silent brain metastasis, but their additive roles to predict brain metastasis had marginal statistical significances.

## **FACTORS INFLUENCING THE CHOICE OF ORAL AND MAXILLOFACIAL SURGERY AS A SPECIALTY AMONG MONGOLIAN DENTAL GRADUATES**

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**Keywords:** Medical science, Oral and Maxillofacial Surgery, Undergraduate Training

**Background:** While the specialization choices and future career trends of British medical students were extensively studied by Goldacre, Maudsley, and Taylor over a decade ago, there remains a notable gap in the literature regarding the specialty preferences of dental graduates in Mongolia—particularly in the field of oral and maxillofacial surgery (OMFS). Understanding these preferences is essential for informing workforce development and healthcare policy in the region. Objective: To investigate the factors influencing the choice of oral and maxillofacial surgery (OMFS) as a specialty among graduating dental students and recent graduates pursuing OMFS in Mongolia. The choice to specialize in oral and maxillofacial surgery among graduating dental students in Mongolia is strongly influenced by personal motivation and self-belief, as well as the lessons learned and practical experiences gained during undergraduate training.

## **CLINICAL PHYSIOLOGICAL INTERVENTIONS TO ENHANCE THE PERFORMANCE OF MONGOLIAN BASKETBALL PLAYERS**

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**Keywords:** physiology, supplementation, recovery

**Introduction:** Basketball is a high-intensity sport that requires continuous engagement of both aerobic and anaerobic energy systems, as well as considerable muscle strength and endurance. Such high-intensity movements increase glycogen utilization in muscles, which can lead to fatigue. A critical factor influencing athletic performance is lung capacity, which can be assessed through maximum voluntary ventilation (MVV). MVV reflects the efficiency of oxygen transport

throughout the athlete’s body. Neurophysiological methods have emerged as supportive strategies to enhance nervous system function, improve speed, endurance, and mental health. These methods involve a multidisciplinary approach that integrates psychology, physiology, nutrition, and exercise science. Interventions such as balance training, recovery therapies (e.g., red light therapy and cryotherapy), and proper nutrition—including proteins, antioxidants, vitamins, and minerals—contribute to recovery processes, enhance movement control during games, and improve overall physical readiness and running stability. This study aimed to investigate how neurophysiological approaches support and enhance the performance of professional basketball players in Mongolia. **Objective:** To evaluate certain neurophysiological parameters of basketball players, analyze the effects of aerobic and anaerobic training, and assess the significance of nutrition and physical recovery

**Materials and Methods:** All data were analyzed using non-parametric methods due to violations of normality. Three repeated measurements were collected over 2 months. Within-subject differences across timepoints were tested with the Friedman test ( $\chi^2$ ). Post-hoc pairwise comparisons were conducted using the Wilcoxon Signed-Rank Test with Bonferroni correction. Analyses were performed in SPSS version 26, with significance set at  $p < 0.05$ . These tests assessed whether variables changed systematically over time, reflecting the intervention’s impact.

**Results:** Table 1 presents the initial and final physical measurement results of the players from the “Erdenet Miners” team in the Mongolian Basketball League.

#### **THE EFFICACY AND DIAGNOSTIC RADIOACTIVE IODINE TREATMENT PERFORMED AT THE DEPARTMENT OF NUCLEAR DIAGNOSTICS CENTER IN THE FIRST CENTRAL HOSPITAL WELL- DIFFERENTIATED THYROID CANCER WITH DISTANT METASTASIS**

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**Keywords:** Radioactive iodine I131; Well differentiated Thyroid cancer; Thyroglobulin; Whole body scan

**Purpose:** The purpose of this study is to investigate the effect of iodine-131 treatment and the patient’s quality of life after total thyroidectomy in patients with well-differentiated cancer tumors of the thyroid gland. In order to achieve the above objectives, the following objectives have been set. It includes:

**Methods:** Radioactive iodine (I-131) therapy remains a key component in the management of well-differentiated thyroid carcinoma (DTC), particularly after total thyroidectomy in patients with residual or metastatic disease. This study reviewed the clinical outcomes of 186 DTC patients treated at a national referral center in Mongolia and confirmed the high efficacy of I-131 therapy.

**Result:** A total of 186 patients were collected retrospectively in this study. The genders of sample distribution between the patients were 26 males (9%) and 160 females (91%). The most affected age group in the study was found in the second group (30-40) with a percentage of 27.66%, while the lowest percentage was found in the fifth group (60-70) with a percentage of 7.09%. Among the patients participating in the study, 161 papillary cell tumors (91%) and 25 follicular cell tumors (8.7 %) accounted for the number of tumor cells. After treatment, 17 (9.1 %) of the study participants had lung metastases, 6 (3.2 %) had bone metastases, 97 (52 %) had neck lymph node metastases, and 32 (17 %) had large residual tissue. but there are 34 or (18 %) without residual tissue or metastases.

**Conclusion:** According to the results of our study, females have more risk than males for DTC. Besides, the prognostic value for the female is lower than male. Also, the middle age group between 30-50 is the more affected group, with papillary cell carcinoma accounting for the majority. Finally,

dose of iodine 131 treatment is determined after determining the patient's risk level, and high-dose iodine-131 treatment in high- and medium-risk patients destroys neck lymph node metastases and residual thyroid tissue, distant metastases, especially lung and bone metastases, and its presence in the whole body image after treatment. The disappearance of absorption and the reduction of blood Tg levels in the majority of participants in our study confirm that this treatment is very effective.

## **RESULTS OF VIRAL AND BACTERIAL PATHOGENS DETECTED IN CHILDREN HOSPITALIZED WITH PNEUMONIA**

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**Keywords:** RT-PCR, influenza, SARS-CoV-2, pneumonia

**Introduction:** Respiratory viral and bacterial infections are among the leading causes of hospitalization and mortality worldwide, particularly affecting children, the elderly, and immunocompromised individuals. Detecting the causative pathogens is essential for understanding the epidemiology, prevention, management, and treatment of severe respiratory tract infections. Molecular diagnostic methods offer high sensitivity and speed, enabling the simultaneous detection of viral and bacterial co-infections. This study aimed to identify multiple respiratory pathogens in hospitalized children with moderate to severe acute respiratory infections (ARIs).

**Methods:** We conducted a cross-sectional study involving 100 hospitalized participants at the National Center for Mothers, Newborns, and Women II. The study utilized questionnaires and laboratory analysis methods. Nasopharyngeal swabs were collected from the participants using sterile swabs and transported in Universal Transport Medium (UTM) (Jiangsu, China). After nucleic acid extraction using the STARMag 96 ProPrep C assay, the samples were analyzed with the Seeprep 32 automated analyzer (Seegene Inc., Korea). Real-time polymerase chain reaction (PCR) analysis was performed using the Allplex RV Master Assay and Allplex PneumoBacter Assay (Seegene Inc., Korea) with the CFX-96 system (Bio-Rad Inc., USA).

**Results:** The prevalence of viral infections in the study population included: influenza type A (4%, n=4), influenza type B (3%, n=3), total influenza virus (14%, n=14), respiratory syncytial virus (18%, n=18), adenovirus (10%, n=10), rhinovirus (20%, n=20), and SARS-CoV-2 (5%, n=5). No bacterial infections such as *B. parapertussis* or *L. pneumophila* were detected. However, the identified bacterial infections included *B. pertussis* (1%, n=1), *C. pneumoniae* (2%, n=2), *H. influenzae* (43%, n=43), *M. pneumoniae* (52%, n=52), and *S. pneumoniae* (45%, n=45). Among the participants, 43% had a viral infection alone, and 14% had a viral co-infection. Bacterial infections were detected individually in 40% of cases, with co-infections present in 46% of bacterial cases.

**Conclusion:** Neither Metapneumovirus, *B. parapertussis*, nor *Legionella pneumophila* were detected in the study participants (0%). Among the viral infections, respiratory syncytial virus (18%, n=18) and rhinovirus (20%, n=20) had the highest prevalence. For bacterial infections, *H. influenzae* (43%, n=43), *M. pneumoniae* (52%, n=52), and *S. pneumoniae* (45%, n=45) were the most commonly detected.



## NUTRITIONAL STATUS OF CANCER PATIENTS IN MONGOLIA

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**Keywords:** malnutrition, cancer, Mongolia

**Background:** Cancer is a major global health burden, responsible for nearly 17% of all deaths and ranking as a leading cause of premature mortality from noncommunicable diseases, with 20 million new cases and nearly 10 million deaths reported worldwide in 2022. Malnutrition is frequently observed in people living with cancer, with prevalence ranging from 20% to 70%, depending on tumor type, disease stage, and clinical setting. Evidence from high-income countries suggests that 10–20% of cancer-related deaths are attributable to malnutrition rather than the cancer itself. Early nutrition intervention has been shown to reduce complications, improve treatment tolerance and quality of life, and may lower mortality in malnourished individuals. However, in Mongolia, the evaluation of malnutrition among people living with cancer is limited and not systematically reported. This study aims to evaluate the prevalence and characteristics of malnutrition in this population using a standardized assessment tool.

**Methods:** This retrospective study analyzed data from 384 individuals treated at the National Cancer Center of Mongolia between September 2024 and May 2025. Collected variables included PG-SGA score, treatment type and order, age, sex, weight change, and functional status. Malnutrition was defined as a PG-SGA score  $\geq 4$ . Descriptive statistics and stratified analyses were conducted.

**Results:** The mean age of participants was 56.29 years, with most being women. The most common cancer types were liver ( $n = 107$ ), stomach ( $n = 84$ ), and breast ( $n = 44$ ). The mean PG-SGA score was 7.52 (SD: 4.32), with higher scores in head and neck (10.91), pancreatic (10.11), esophageal (8.54), colorectal (8.00), and kidney (7.56) cancers. Frequent symptoms included dry mouth (39.1%), nausea (35.4%), and constipation (29.2%). Average weight loss was 8% of body weight, and 20.3% reported reduced functional ability. Surgery (57.5%) was the most frequent initial treatment. Chemoradiotherapy was associated with the highest PG-SGA scores (mean = 12.8).

**Conclusion:** Malnutrition is highly prevalent among people living with cancer in Mongolia, particularly those with gastrointestinal cancers. Cancer mortality is also disproportionately high compared to incidence, and one contributing factor is malnutrition—which weakens immunity, reduces treatment effectiveness, and increases complications. Patients receiving co-therapies like chemoradiotherapy are especially vulnerable to severe malnutrition. Therefore, nutrition support should be integrated into cancer care at all stages—before, during, and after treatment. Early detection through tools like the PG-SGA, combined with personalized nutrition care, can improve treatment tolerance, reduce complications, enhance quality of life, and lower cancer-related mortality.

## NEUROVALEN IN MONGOLIAN HERBAL MEDICINE

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**Keywords:** Neurovalen, traditional medication, stress, mice, behavior test

Neurovalen is a Mongolian herbal medicine used for nervous disorders. It contains valerian, Siberian motherwort, nutmeg, and Baikal skullcap. It helps with neurosis symptoms and cardiovascular issues. Its effect on stress is unknown. This study examines Neurovalen’s impact on stress. Overall, Neurovalen administration significantly reduced stress-related behaviors in mice. Treated animals showed increased activity, exploration, and sucrose preference, along with less

despair and anxiety-like responses compared to controls. These findings indicate that Neurovalen has a marked anti-stress effect.

### **PREOPERATIVE RISK ASSESSMENT LEADING VENOUS THROMBOEMBOLISM USING THE CAPRINI RISK ASSESSMENT MODEL IN ELECTIVE SURGICAL PATIENTS OF FIRST CENTRAL HOSPITAL OF MONGOLIA**

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**Keywords:** Caprini Risk Assessment Model, thromboembolism, surgery risk, preoperative assessment, VTE guidelines, surgery patients

**Introduction:** Venous thromboembolism (VTE) is a leading cause of preventable morbidity and mortality in surgical patients. Despite international recommendations for standardized VTE risk assessment, there is limited implementation in many countries, including Mongolia. This study aimed to assess preoperative VTE risk using the Caprini Risk Assessment Model (Caprini RAM) and to explore its applicability in routine surgical practice [1–4].

**Methods:** A total of 3366 adult patients undergoing elective surgery between January 1 and June 20, 2025, at the First Central Hospital of Mongolia were evaluated using the Caprini RAM. The Caprini RAM includes 40 risk factors such as age, medical history, comorbidities, immobility, and surgical type. Each factor was assigned a score based on its VTE risk contribution and total scores were calculated. Based on international guidelines, the Caprini RAM classifies patients into five risk categories: very low (0), low (1–2), moderate (3–4), high (5–8), and very high ( $\geq 9$ ). Although the original Caprini model defines high risk as  $\geq 5$ , we further subclassified patients with a score of  $\geq 9$  as ‘very high risk’ to reflect the significantly elevated VTE risk observed in this group in previous literature and large cohort studies [5,6,10]. Data were analyzed using SPSS version 26.

**Results:** Of the 3366 patients, 0.39% were classified as very low risk, 33.5% as low risk, 46.1% as moderate risk, 18.2% as high risk, and 1.81% as very high risk (Figure 1). The highest risk surgeries were predominantly found joint replacement (15%), liver (14.3%), and kidney transplantation (5%). In contrast, low-risk profiles were mostly observed in ophthalmic, maxillofacial, and ENT surgeries (Figure 2).

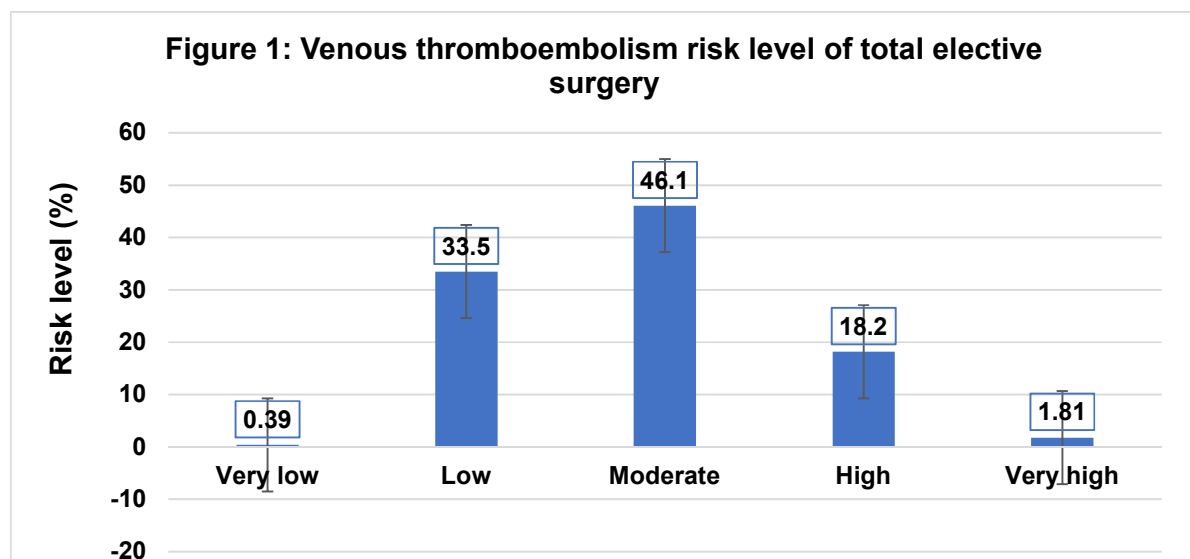


Figure 1: Distribution of preoperative VTE risk levels was as follows: very low risk (0 points): 13 patients (0.39%), low risk (1-2 points): 1128 patients (33.5%), moderate risk (3-4 points): 1553 patients (46.1%), high risk (5-8 points): 611 patients (18.2%), very high risk ( $\geq 9$  points): 61 patients (1.81%).

Conclusions: The Caprini RAM proved feasible for preoperative VTE risk stratification in a high-volume surgical center in Mongolia. Its use revealed that a substantial proportion of patients were at moderate to high risk, warranting targeted prophylaxis. Incorporating the Caprini RAM into routine surgical care could enhance patient safety and guide evidence-based thromboprophylaxis protocols in Mongolian healthcare settings.

## **ETIOLOGIC SPECTRUM OF OPTIC DISC EDEMA IN MONGOLIA: CLINICAL INSIGHTS FROM A RESOURCE- LIMITED SETTING**

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**Keywords:** Optic disc edema, Optic neuropathy, Visual outcomes, Etiologic spectrum, Resource-limited settings

**Introduction:** In Central Asia, particularly in sparsely populated countries like Mongolia, the causes and clinical features of optic disc edema are poorly understood. To date, no national epidemiological data exist on optic neuritis or multiple sclerosis (MS) in Mongolia, limiting understanding of disease burden and distribution.

**Aim:** To characterize the etiologic spectrum and clinical features of optic disc edema in a Mongolian tertiary care center and to identify diagnostic patterns that may inform clinical decision-making in resource-limited settings.

**Methods:** A retrospective chart review (2020–2024) and prospective case inclusion (2025) were conducted at a tertiary eye hospital in Mongolia. Patients with clinically confirmed optic disc edema were included. Data on age, sex, laterality, ocular pain, visual acuity, and fundus findings were collected. Cases were classified by presumed etiology and analyzed to identify distinguishing clinical features. Visual outcomes were assessed by comparing initial and final best-corrected visual acuity (BCVA). Profound visual impairment was defined as BCVA  $\leq 0.05$  (Snellen equivalent  $\leq 20/400$ ) in at least one eye. Statistical comparisons were performed using non-parametric tests and multivariate regression.

**Results:** Seventy patients with optic disc edema (26 male, 44 female) were analyzed. The most common etiologies were demyelinating optic neuritis (25.7%), inflammatory (15.7%), infectious (14.2%), and ischemic (12.8%, including NAION and AION). Less common causes included diabetic and orbital compressive optic neuropathies. Visual outcomes varied by etiology: demyelinating, inflammatory, and diabetic-related cases showed the greatest improvement, while ischemic optic neuropathies had minimal recovery. Overall, 20% (14/70) of patients presented with profound visual loss. Although there was no statistically significant difference in final visual acuity improvement between etiologies ( $p = 0.246$ ), the initial BCVA remained the strongest predictor of visual outcome.

**Discussion:** The findings of this study highlight a diverse etiologic spectrum of optic disc edema in Mongolia, consistent with global literature showing demyelinating and inflammatory causes as the most prevalent in non-ischemic cases. A similar distribution was reported in tertiary centers in India and Turkey, where demyelinating optic neuritis comprised over 30% of cases. The proportion of infectious and inflammatory etiologies in our cohort (29.9%) also parallels studies from regions with limited access to early neuroimaging, where tuberculosis, syphilis, and idiopathic uveitis remain common. The poor visual prognosis associated with ischemic etiologies such as NAION and AION mirrors findings from Western cohorts, where age and vascular risk factors are strong

predictors of outcome. In contrast, demyelinating and inflammatory optic neuropathies demonstrated meaningful visual recovery, consistent with outcomes observed in studies from China and Southeast Asia. The overall rate of profound visual impairment (20%) underscores the need for early diagnosis and access to appropriate treatment in resource-constrained settings.

**Conclusion:** Optic disc edema in Mongolia presents with a diverse etiologic spectrum. Demyelinating and inflammatory causes are most frequent, with variable visual outcomes by etiology. Recognizing key clinical patterns can aid diagnosis and management, especially in resource-limited settings where ancillary testing may be delayed or unavailable.

## **CLINICAL OUTCOMES OF EARLY REHABILITATION FOLLOWING HEPATIC TRANSPLANTATION SURGERY**

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3-

**Keywords:** Hepatic transplantation, rehabilitation

Hepatic transplantation is a life-saving major surgical procedure performed in patients with end-stage hepatic failure or complete hepatic dysfunction. In 2021, a total of 34,944 hepatic transplantation surgeries were performed worldwide. According to a 2023 report, the highest numbers of hepatic transplant procedures have been reported in South Korea, the United States, and Western European countries. As of 2025, more than 500 hepatic transplantation surgeries have been performed in Mongolia, 328 of which were performed at the First Central Hospital of Mongolia (FCHM). Initiating early rehabilitation in hepatic transplant recipients plays a critical role in improving physical function, reducing muscle weakness and fatigue, mitigating post-transplant fatigue syndrome, and enhancing performance in activities of daily life. It also facilitates recovery from critical illness and improves outcomes during the intensive care phase. Early rehabilitation is recognized as a safe and low-risk intervention in this patient population. However, in Mongolia, there is a lack of published data regarding the clinical outcomes of early postoperative rehabilitation following hepatic transplantation, which is the primary rationale for conducting the current study. To the best of our knowledge, this is the first study in Mongolia to evaluate the outcomes of early rehabilitation intervention following hepatic transplantation. Early rehabilitation may be effective in preventing loss of muscle strength and mass, reducing fatigue, enhancing functional mobility, and improving overall quality of life. The findings of our study are consistent with previous studies. In our cohort, baseline assessments were conducted on postoperative days 2–3, and outcomes were evaluated again at the time of hospital discharge (10–14 days post-transplant). This approach was proved effective in capturing short-term improvements attributable to early rehabilitation. Our results are consistent with those results by Herold J. Metselaar (4) and Yüksel Ergene T and Karadibak (5). In their study, Yüksel Ergene T and Karadibak demonstrated that postoperative rehabilitation in hepatic transplant recipients led to improved strength in both peripheral and respiratory muscles, along with reduced fatigue. Their findings also showed that resistance exercises enhanced the strength of the deltoid, quadriceps, and forearm muscles and significantly improved patients' performance in daily activities. One limitation of our study was the small sample size and the short duration of rehabilitation, limited to the inpatient stay at the organ transplantation center. Future studies involving a larger cohort and longer follow-up period are needed to further validate the effectiveness of early rehabilitation in this patient population.

## **A STUDY ON FACTORS RELATED TO THE EFFICACY OF TRIPLE THERAPY IN PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA**

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3-

**Keywords:** HCC targettherapy SurvivalBackground/Aims: Liver cancer is one of the most common cancers worldwide and its incidence is rising in Western countries. Worldwide, it has a mortality to incidence ratio of 0.91, occurs 2.3 times more frequently in men than in women, and 72% of new cases are diagnosed in Asia. Hepatocellular carcinoma (HCC) is often detected in later stages and is the second deadliest cancer globally. The aim of this study was clinical and pathological data and survival analysis of triple therapy (intervention therapy + anti PD1 + lenvatinib) to identify the important factors that influence OS and PFS.

**Methods:** 216 patients with advanced HCC were treated with HAIC/TACE + lenvatinib + anti-PD1. OS and PFS are the primary endpoints and clinicopathological factors including gender, age, etiology (HBV/Others), tumor stage (CNLC), liver cirrhosis, liver function (ALT/AST/SGPT/TB/ALB, Child-Pugh, ALBI score), systemic inflammation factors (NLR, PLR) were analyzed to explore the association between important factors with triple therapy.

**Results:** The mean OS and median PFS for the entire patient population was 48.2 and 30.7 months, respectively. Univariate analysis showed that Status of hepatitis (HR=4.448; 95% CI:16.783-34.217 P=0.035), Hepatic vein thrombosis (HR=4.988; 95% CI:20.290-40.543 P=0.029), Number of TACE/HAIC (HR=4.988; 95% CI:20.990-40.543 P=0.004), and ECOG PS (HR=4.989; 95% CI:20.989-40.546 P=0.045) meanwhile Status of hepatitis (P=0.049) CNLC staging (HR=2.765; 95% CI:42.843-53.681 P=0.039) and AFP level (P=0.002) were found to be important risk factors for PFS and OS, respectively. In multivariate Cox regression analysis, Hepatic vein thrombosis (HR:1.913; 95% CI: 1.057-3.463; P=0.032), number of TACE/HAIC (HR: 2.121; 95% CI: 1.252-3.593; P=0.005) and ECOG PS (HR:0.517; 95% CI: 0.268-0.998; P=0.049) were independent risk factors for PFS and CNLC staging (HR:4.061; 95% CI: 0.959-17.193; P=0.009) and AFP level (HR:33.084; 95% CI: 0.818-1338.27; P=<.001) were independent risk factors for OS. Status of hepatitis was only independent factor for both PFS (HR:0.247; 95% CI: 0.060-1.013; P=0.014) and OS (HR:0.040; 95% CI: 0.000-6.033; P=0.009).

**Conclusions:** The result of our study triple combination therapy showed that status of hepatitis is only independent factor for both OS and PFS with patients with advanced stage HCC. Number of TACE/HAIC. ECOG PS, Hepatic Vein Thrombosis was independent risk factor for PFS and AFP and CNLC staging was important and independent risk factor for OS. Further studies are required to validate these findings.

## **DETERMINING THE CLINICAL SIGNIFICANCE OF CLOSTRIDIODES DIFFICILE DETECTION USING GASTROINTESTINAL PATHOGEN PANEL TESTING**

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**Background:** *Clostridioides difficile* (*C. difficile*) is known to colonize the gastrointestinal tract and is a leading cause of healthcare-associated diarrhea. Testing for *C. difficile* is generally not recommended in children under two year of age and need to be considered when no other pathogens are identified. Additionally, antibiotic use can disrupt the gut microbiota, increasing susceptibility to infection. Treating *C. difficile* alongside other infections with multiple antibiotics can raise the risk of recurrence and complications. Co-infections also complicate differential diagnosis and may prolong illness duration. Therefore, when *C. difficile* is detected through syndromic panel testing, it is essential to assess its clinical relevance and determine appropriate treatment strategies.

**Aim:** To identify gastrointestinal pathogens using multiplex PCR in hospitalized patients diagnosed with intestinal infections and to evaluate and compare cases in which *C. difficile* was detected.

**Materials and methods:** A case series study was conducted at the National Center for Communicable Diseases (NCCD) during August–September 2023. Stool samples from hospitalized patients with gastrointestinal infections were analyzed using the Allplex™ GI-Bacteria Assay I/II and GI-Virus Assay (Seegene, South Korea), which detect 14 bacterial and 6 viral pathogens.

**Results:** Among 245 hospitalized patients, *C. difficile* was detected in 3.5% (10 patients), of whom 8 were male. Patients ranged in age from 1 month to 48 years, with 6 (60%) under the age of 1. In 2 cases (20%), *C. difficile* was the sole pathogen identified; in 8 cases (80%), co-infections were present. Co-infections included astrovirus in 1 case and 2–4 bacterial pathogens in 7 cases. Bacterial co-infections consisted of *Campylobacter* spp. in 2 cases (20%), *Shigella* in 1 case (10%), and pathogenic *E. coli* in 6 cases (60%), specifically EAEC/EPEC (2 cases), EAEC (1), EPEC (2), and ETEC (2). Viral co-infections included norovirus and sapovirus in 1 case each, and astrovirus in 2 cases (20%). All patients presented with symptoms such as diarrhea, loss of appetite, and abdominal pain. Mucus in stool was observed in 90% (9/10) of patients, tenesmus in 80% (8/10), bloody stool in 60% (6/10), and fatigue in 90% (9/10). Additionally, 60% (6/10) had a fever (mean temperature: 38.5°C), along with nausea and vomiting. Treatments included cephalosporins (ceftriaxone, cefixime) in 9 patients diagnosed with *E. coli* infection (n=2), rotavirus enteritis (n=2), and unspecified shigellosis (n=4). Probiotics (Linex, Liprolac) were administered in 8 cases. All patients received oral rehydration therapy, and 9 patients received intravenous fluids.

**Conclusion:** In 80% of *C. difficile*-positive cases, co-infections with other bacterial or viral pathogens were identified. Notably, 60% of affected patients were under the age of one. Since *C. difficile* positivity may indicate colonization rather than active infection, further research is needed to better define its clinical and epidemiological significance.

**Keywords:** *Clostridioides difficile*, diarrhea, antibiotics, co-infection, probiotics

## POSITIVE VARIABLE IN TREATMENT OUTCOMES: THE EFFECT OF PSYCHOLOGICAL CONSULTING ON THE INPATIENT RESULTS

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In contemporary clinical care, quality is no longer assessed solely through diagnostic accuracy, pharmacological interventions, or procedural efficiency, but increasingly through patient satisfaction, psychological well-being, expectation management, and active engagement in the treatment process. In inpatient settings, patients frequently experience emotional distress, uncertainty, and heightened It is therefore essential to institutionalize psychological support as a core component of hospital-based treatment. Implementing a structured model supported by trained personnel, appropriate physical space, and sustainable protocols could meaningfully enhance patient outcomes, reduce psychological burden, and improve the overall quality of care in inpatient settings.



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## NURSING SUBSECTION

### ANALYSIS OF THE USE OF ANESTHETIC DRUGS IN FIRST CENTRAL HOSPITAL OF MONGOLIA

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**Keywords:** Anesthesia, Medications, Usage

**Introduction:** Anesthesia is an indispensable part of modern surgery, influencing not only pain relief but also supporting respiratory, cardiovascular systems, and preventing complications during recovery. With the increasing number and types of surgeries in Mongolia each year, there is a noticeable rise and change in the use of anesthetic agents. The use of drugs such as propofol, sevoflurane, thiopental sodium, and ketamine during anesthesia is changing every year, and evaluating their usage over the years is essential for medical standards, training, and resource planning. Since there has been no comprehensive analytical research on this topic in Mongolia, this study is considered to be of significant importance.

**Objective:** To study the types of surgeries performed at the First Central Hospital of Mongolia from 2020 to 2024 and to analyze the quantity and trends of anesthetic drugs used, as well as to compare changes over the years.

**Methods:** Using a retrospective study method, we collected data on anesthesia drug administration records, consolidated reports, and the surgical handover information from the Anesthesiology and Surgery Department of the First Central Hospital of Mongolia. We classified the types of anesthesia and the quantity and types of drugs used, processed this information using Excel and Statistical Package for the Social Sciences (SPSS) programs, and evaluated the numeric data by calculating growth rates and the Compound annual growth rate (CAGR) for conclusions.

**Result:** Surgical Cases (2020–2024): **Total surgeries:** 10,298 in 2020 → 12,874 in 2024 (increased by 25%, CAGR = 5.7%).

By Type of Anesthesia:

- General anesthesia: 5,147 → 7,016 (increased by 36.3%, CAGR = 8%),
- Spinal anesthesia: 4,599 → 3,481 (decreased by 24.3%, CAGR = –6.8%)
- Intravenous sedation: 552 → 353 (decreased by 36%, CAGR = –11.2%)

According to the results, not only the number of surgeries but also the structure and volume of general anesthetic drug use significantly changed during 2020–2024. This may be related to the introduction of new technologies in surgical practice at the First Central Hospital of Mongolia, as well as the development of high-risk and organ transplantation surgeries. The decline in spinal and intravenous sedation anesthesia may be attributed to the fact that secondary-level hospitals have gained the capacity to perform certain types of surgeries. In terms of drug utilization, the use of Propofol increased from 1,175 to 4,954, a 4.2-fold rise, while Fentanyl sharply increased to 37,333 in 2024. This indicates that in anesthetic practice, these drugs are increasingly preferred for their safety and efficacy, and it also reflects the growing need to improve pain management and postoperative recovery monitoring. Moreover, the use of traditional anesthetic agents such as thiopental sodium, ketamine, and isoflurane has declined, which is associated with the shift towards newer agents that allow safer monitoring and faster postoperative recovery. This reflects a more refined approach to ensuring anesthetic safety, facilitating smoother emergence, preventing complications, and better controlling postoperative pain. The use of adjuvant drugs such as dexamethasone, ondansetron, acetaminophen, methamisole, and Ketoprofen has sharply increased, which is related to the wider application of multimodal and combined treatment approaches. These medications play an important role not only in pain relief but also in controlling postoperative



nausea, vomiting, and inflammatory processes, thereby having a significant impact on the clinical decision-making of nurses. Therefore, these changes in anesthetic drug use reflect not only a shift in drug selection but also an improvement in the quality and standards of anesthesia care, demonstrating the establishment of a multifaceted, patient-centered approach that prioritizes patient safety and comfort. In the context of our country, nurses do not independently make decisions regarding drug use; however, they play a critical role in ensuring the implementation of treatment according to physicians' instructions, monitoring adverse drug effects, and providing high-quality support during recovery. Therefore, these changes provide essential information for future drug planning, stock management, training, and the development of clinical guidelines, while also highlighting the need to more precisely define the role of nursing in anesthetic care.

## **PREOPERATIVE RISK EVALUATION BY ASA-PS CLASSIFICATION IN SURGICAL PATIENTS: IMPLICATIONS FOR ANESTHESIA AND PERIOPERATIVE CARE**

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**Keywords:** Anesthesia, ASA classification, Risk stratification

**Introduction:** The outcome of surgical procedures depends not only on the surgical technique and quality of care, but also on multiple patient-related factors such as general health status, comorbidities, and age. Internationally, the American Society of Anesthesiologists (ASA) physical status classification is widely used as a simple and effective tool to assess preoperative risk. This classification provides valuable insight into predicting perioperative complications and mortality.

However, in Mongolia, studies related to the use and distribution of ASA-PS classifications remain scarce, limiting the development of risk-based management and quality improvement in anesthesia care. Therefore, this study aims to determine the ASA-PS classification of patients undergoing surgery and analyze its distribution across surgical departments. By doing so, it seeks to highlight the significance of risk assessment and contribute to improving perioperative management and the overall quality of anesthesia care.

**Methods:** This study was conducted at the Department of Anesthesiology and Surgery, The First Central Hospital of Mongolia. We retrospectively reviewed the anesthesia records of 4,356 patients who underwent surgery between January and May 2025. Data were analyzed using the Statistical Package for the Social Sciences (SPSS).

### **Results:**

| Departments     | ASA I    | ASA II       | ASA III     | ASA IV    | ASA V    | Total |
|-----------------|----------|--------------|-------------|-----------|----------|-------|
| General Surgery | 4 (0.3%) | 1002 (72.6%) | 350 (25.4%) | 24 (1.7%) | 1 (0.1%) | 1381  |
| Urology         | 4 (0.5%) | 665 (75.1%)  | 211 (23.8%) | 6 (0.7%)  | 0 (0.0%) | 886   |
| Proctology      | 3 (0.6%) | 444 (83.9%)  | 77 (14.6%)  | 5 (0.9%)  | 0 (0.0%) | 529   |
| Ear Nose Throat | 4 (0.8%) | 461 (90.2%)  | 45 (8.8%)   | 1 (0.2%)  | 0 (0.0%) | 511   |
| Maxillofacial   | 4 (1.2%) | 299 (90.9%)  | 26 (7.9%)   | 0 (0.0%)  | 0 (0.0%) | 329   |
| Ophthalmology   | 0 (0.0%) | 79 (85.9%)   | 13 (14.1%)  | 0 (0.0%)  | 0 (0.0%) | 92    |



| Departments    | ASA I     | ASA II       | ASA III     | ASA IV    | ASA V    | Total |
|----------------|-----------|--------------|-------------|-----------|----------|-------|
| Orthopedic     | 1 (0.3%)  | 240 (75.7%)  | 74 (23.3%)  | 2 (0.6%)  | 0 (0.0%) | 317   |
| Neurosurgery   | 1 (0.5%)  | 105 (53.6%)  | 83 (42.3%)  | 5 (2.6%)  | 2 (1.0%) | 196   |
| Cardiovascular | 0 (0.0%)  | 62 (71.3%)   | 23 (26.4%)  | 2 (2.3%)  | 0 (0.0%) | 87    |
| Interventional | 0 (0.0%)  | 18 (64.3%)   | 10 (35.7%)  | 0 (0.0%)  | 0 (0.0%) | 28    |
| <b>Total</b>   | 21 (0.5%) | 3375 (77.5%) | 912 (20.9%) | 45 (1.0%) | 3 (0.1%) | 4356  |

### Conclusions:

In our study, the ASA physical status classifications of 4,356 surgical patients were analyzed by surgical departments. The results showed that 77.5% of patients were classified as ASA II and 20.9% as ASA III, indicating that the majority of surgical patients had mild to moderate systemic disease.

By department, the General Surgery Department had the highest number of operations (1,381 patients, 31.7%), with most classified as ASA II (72.6%) and ASA III (25.4%). In contrast, a higher proportion of patients in the Neurosurgery Department were classified as ASA III or above (45.9%), highlighting the need for special attention to anesthesia and surgical risk management in this group. Therefore, anesthesia management and resource allocation strategies should be tailored to departmental characteristics, with particular focus on high-risk patients classified as ASA III and above.

## A STUDY ON THE RISK FACTORS FOR FOOT COMPLICATIONS IN PATIENTS WITH TYPE 2 DIABETES AND GENDER DIFFERENCES

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**Keyword:** Diabetes, risk factors

**Rationale** The global prevalence of diabetes is projected to reach 589 million people aged 20-79 by 2024 and 853 million by 2050. To evaluate foot complications in patients with diabetes, investigate risk factors, and determine gender differences among the factors.

**Methods:** The study analyzed data from a total of 225 patients who underwent foot examinations at the Endocrinology and Diabetes Center of the First Central Hospital of Mongolia in 2024.

- Glycated hemoglobin (HbA1c) and foot care were evaluated.
- Foot complications were assessed through visual observation, palpation, physical examination, and instrument-based tests.
- Foot sensory tests included (touch, pressure, pain, vibration, temperature).

The control examination for HbA1c levels was interpreted according to clinical guidelines: <6.5% indicated good control, 6.6-7.4% indicated moderate control, and 7.5% indicated poor control. In assessing diabetes self-monitoring and foot care, a questionnaire used by the International Diabetes Federation over the last 7 days was employed.

**Statistical analysis:** The study data was processed using EXCEL software, with differences between indicators analyzed using Pearson's Chi-square, and means differences assessed using the T-test. A p-value <0.05 was considered statistically significant

**Results:** Among the 225 participants 42.7% (96) male and female 57.3% (129), the average age was 57.8±8.8 years, with an average duration of diabetes of 8.1±2.6 years. In terms of the duration

of diabetes, among males, 9.5% (9) had diabetes for 1-5 years, 30.2% (29) for 6-10 years, and 60.4% (58) for over 10 years. Among females, 16.3%(21) had diabetes for 1-5 years, 59.7% (77) for 6-10 years, and 24% (31) for over 10 years, showing there is a gender differences for duration of diabetes ( $p<0.001$ ). In assessing nerve damage in the feet, among males, 62.5%(60) showed reduced vibration sensation, 60.4%(58) showed reduced warm sensation, and 37.5% (36) showed reduced cold sensation. Among females, 26.4%(34) showed reduced vibration sensation, 32.6%(42) showed reduced warm sensation, and 14%(18) showed reduced cold sensation, indicating that males were more prone to peripheral neurological complications. The average HbA1c values was  $9.3\pm1.6$ , with 81.3%(78) males having poor control, compared to 56.3% (73) females, indicating a gender difference ( $p<0.0001$ ). In assessing foot care in the last week, all 96 (100%) males reported not caring for their feet, while among females, 31.8%(41) cared for their feet every day, 16.3% (21) 2-4 times a week, and 51.9%(67) did not care for their feet at all, suggesting statistically significant better foot care among women with diabetes ( $p<0.002$ ).

### **Conclusion**

- In our study, 44.5% of 225 patients with type 2 diabetes are at risk of diabetic foot complications.
- The research indicates that factors such as a longer duration of diabetes ( $p<0.001$ ), elevated HbA1c levels ( $p<0.0001$ ), and inadequate foot care in the last week ( $p<0.002$ ) are common contributors to the risk of developing foot complications due to diabetes.
- Our findings show that diabetic foot complications, poor self-monitoring of diabetes, high HbA1c levels, irregular daily foot care, and a longer duration of the disease are statistically significant factors leading to a higher incidence of foot complications in men compared to women. (Table.4)

HbA1c, years with diabetes and foot complication indicators by gender

Table.4

| Indicators                  | Men (%) | Women (%) | P-value |
|-----------------------------|---------|-----------|---------|
| HbA1c monitoring            | 81.3    | 56.6      | <0.0001 |
| Years of diabetes diagnosis | 60.4    | 24        | <0.001  |
| Foot care                   | 100     | 51.9      | <0.002  |
| Thermal perception          | 60.4    | 32.6      | <0.001  |
| Cold perception             | 37.5    | 14        | <0.05   |
| Vibratory perception        | 62.5    | 26.4      | <0.05   |

### **A STUDY ASSESSING THE PSYCHOLOGICAL STATUS OF PATIENTS WITH RENAL FAILURE USING THE SPIELBERGER-HANIN METHOD**

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**Keywords:** Chronic kidney disease, Anxiety, Depression

**Background:** Chronic kidney disease (CKD) significantly deteriorates patients' overall quality of life, negatively affecting both physical and psychological well-being. The condition is often accompanied by emotional disturbances such as anxiety, fear, and depression, which lead to maladaptive psychological responses, impaired functioning, and poor treatment outcomes. These factors collectively diminish patients' ability to adapt and have a considerable negative impact on their quality of life.

In Mongolia, there has been limited systematic research on the psychological status of patients with CKD. The Spielberger State-Trait Anxiety Inventory (STAI) is a reliable tool to evaluate anxiety levels in patients with CKD. It enables assessment of both state (situational) and trait (chronic) anxiety. Such tools provide opportunities to identify psychological issues that may not be obvious but can significantly affect quality of life.

Therefore, assessing the psychological status of patients with CKD is crucial. Determining when psychological support is required and providing timely interventions may improve their quality of life, treatment adherence, and overall clinical outcomes.

**Objective:** To determine the level of anxiety and depression among patients with chronic kidney disease (both those undergoing dialysis and those not on dialysis) using the Spielberger State-Trait Anxiety Inventory (STAI) and the Hamilton Depression Scale (HAM-D), and to identify the need for psychological support.

**Materials and methods:**

- **Study type:** Quantitative research
- **Sample:** 60 patients with chronic kidney disease (aged 18–70 years, including both dialysis and non-dialysis patients)
- **Instruments:**
  - Spielberger State-Trait Anxiety Inventory (STAI)
  - Hamilton Depression Scale (HAM-D)
- **Data processing:** SPSS 22.0 software was used for statistical analysis

**WORK-RELATED STRESS AND CONTRIBUTING FACTORS AMONG NURSES  
AT THE FIRST CENTRAL HOSPITAL OF MONGOLIA**

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**Keywords:** Nurse, Work-related stress, First Central Hospital of Mongolia (FCHM)

**Introduction:** Nurses are providing direct patient care under a strenuous psychological and physical workload. According to the relevant Mongolian standards, the recommended nurse-to-doctor ratio should be within the 2.0:1 to 2.5:1 range. However, the national average remains at around 1:1, at 1:0.8 in Ulaanbaatar<sup>1</sup> and as low as 1:0.7 at the First Central Hospital of Mongolia (FCHM).

In addition to workforce shortages, societal perceptions that regard nurses as second-rate professionals or mere assistants to doctors, along with low wages, unfavorable working conditions, psychological and physical strain, and unsupportive leadership are serving as risk factors that are reducing nurses' professional value and increasing their job-related stress.

Work-related stress directly and indirectly affects nurses' mental and physical health, as well as their job performance. The purpose of this study is to assess the work-related stress level among nurses at FCHM and to identify key contributing factors.

**Methodology:** The study was conducted in March 2025, employing a quantitative research design and included a total of 67 nurses from three surgical and three internal medicine departments at the FCHM. To assess the level of work-related stress, the Workplace Stress Test<sup>2</sup> developed by British psychologist David Fontana (1989) was employed. To further identify the key contributors to nurses' workplace stress, a comprehensive questionnaire consisting of 53 items was administered. The instrument was developed based on the following standardized tools and adapted to the local context: demographic and background information; “WFun – Work Functioning Impairment Scale”<sup>3</sup> by the University of Occupational and Environmental Health, Japan, to evaluate work performance; The CDC's Health-Related Quality of Life (HRQOL)<sup>4</sup> questionnaire to assess physical and mental health status (Moriarty, 2003); Brief Job Stress Questionnaire (BJSQ)<sup>5</sup> developed by Japanese researchers (Inoue A., 2014) to assess workplace stress and influencing factors.

A student t-test was conducted to examine differences in stress levels based on potential contributing factors. To determine the relationships between stress levels and influencing variables, Spearman's rank correlation analysis was used.

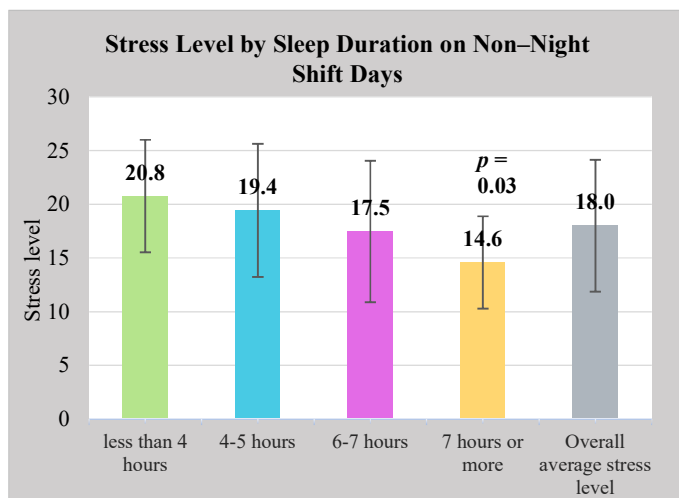


Figure 1.

When participants were grouped based on their average hours of sleep on non-night shift days, those who slept 7 hours or more had the lowest average stress score (14.6), which was statistically significant ( $p = 0.03$ ).

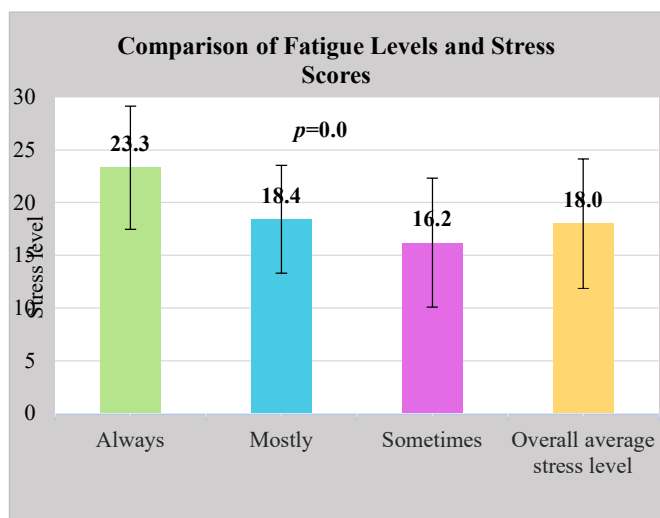


Figure 2.

According to the analysis results, nurses who reported frequently feeling fatigued had the highest average stress scores, which was statistically significant compared to the overall sample mean ( $p = 0.02$ ).

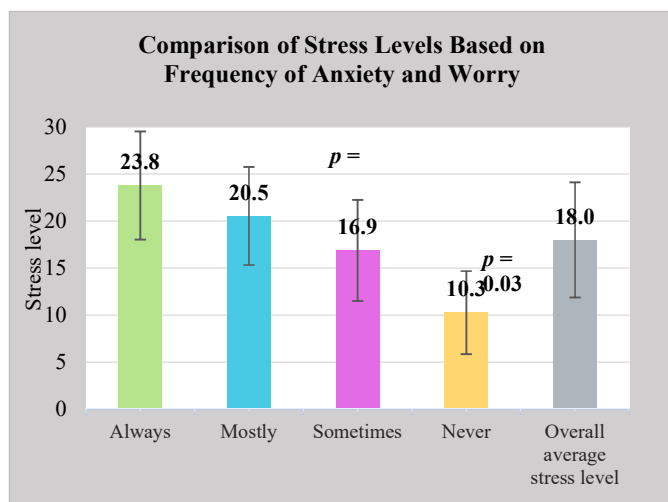


Figure 3.

illustrates the differences in average stress scores among nurses based on the frequency of experiencing anxiety and worry.

Statistically significant differences were found when comparing the overall mean stress score with the groups who reported feeling anxious "Always" ( $p = 0.02$ ) and "Never" ( $p = 0.03$ ).

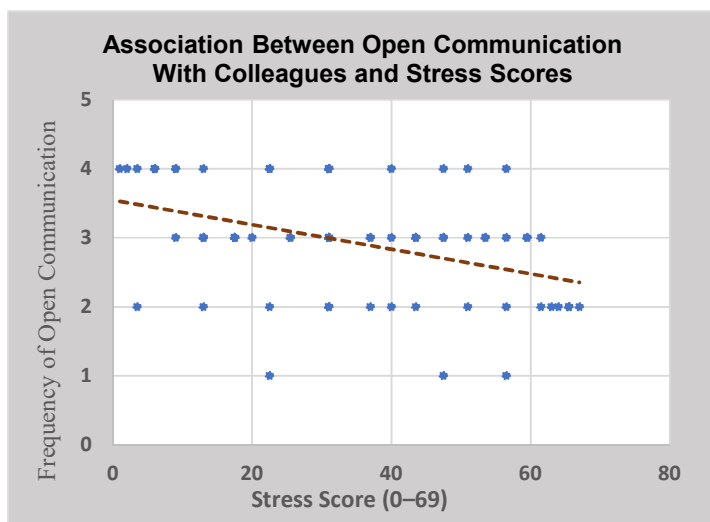


Figure 4.

The graph shows that poor communication has increased their overall stress levels, This negative association was statistically significant ( $r = -0.4$ ,  $p = 0.001$ ).

**Results:** Following factors were significantly correlated with increased stress levels: Hours of sleep on non-night shift days ( $r = -0.3$ ), inability to consistently communicate openly with colleagues ( $r = -0.4$ ), lack of work autonomy ( $r = -0.4$ ), anxiety ( $r = 0.5$ ), feelings of depression ( $r = 0.5$ ), feeling mentally unsettled ( $r = 0.3$ ), lack of motivation or purpose ( $r = 0.4$ ), frequent irritability or frustration ( $r = 0.5$ ), emotional exhaustion ( $r = 0.4$ ), constant fatigue ( $r = 0.4$ ), restlessness ( $r = 0.4$ ).

**Discussion:** In this study, 59.7% experienced moderate stress, 35.8% low stress, and 4.5% high levels of stress. These findings are consistent with Otgonbaatar (2025)<sup>6</sup>, who reported 58.1% low, 29.2% moderate, 7.2% high, and 5.5% very high stress among tertiary hospital nurses based on salivary alpha-amylase testing. Stress-contributing factors were also found to be similar, such as anxiety, fatigue, and poor workplace communication.

## NURSING CARE IN FOURNIER'S GANGRENE

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**Keywords:** Fournier's gangrene, wound, nursing care

**Background:** Fournier's gangrene is a rapidly progressing necrotizing infection involving the scrotum, perineum, thighs, and abdominal wall, with a high mortality rate. It was first described by the French dermatologist Jean Alfred Fournier in 1883 in a male patient. Many researchers have noted that surgical and antibiotic treatments are often ineffective due to polymicrobial or monomicrobial causes of the disease. About 50% of cases are related to trauma of the perineum and genitalia, insertion of foreign bodies under the skin in non-clinical settings, piercings, perianal infections, and chronic alcoholism, while in 5% of cases the cause remains unclear. In cases admitted with Fournier's gangrene, specific nursing care is essential, as it directly influences treatment outcomes. To improve the quality of nursing care and evaluate its effectiveness, this study was conducted.

### Aim

To study the specifics of nursing care for patients with Fournier's gangrene.

### Objectives

1. To investigate the etiological factors of Fournier's gangrene cases treated between 2015–2024.
2. To analyze bacterial culture results, antibiotic resistance, and sensitivity.
3. To define the nursing care characteristics for Fournier's gangrene patients.



**Design:** Non-experimental (correlational).

**Results:** From 2015 to 2024, 36 cases of Fournier’s gangrene were treated. Out of these, 33 patients survived, while 3 patients died. The patients aged 40–49 years accounted for 38.9% (14 cases). Bacterial culture was performed at every initial surgical intervention, and *Staphylococcus aureus* (MRSA) was isolated in 36% of cases. The living conditions of the patients were as follows: ger (Mongolian traditional dwelling) – 20 patients (55.6%), house – 13 patients (36.1%), and apartment – 3 patients (8.3%). In terms of marital status, 24 patients (66.6%) were married, and 12 patients (33.4%) were single. Socioeconomic status was reported as low income in 20 patients (55.6%), middle income in 13 patients (33.4%), and high income in 3 patients (8.3%). Regarding alcohol consumption, 26 patients (72%) reported heavy drinking.

**Conclusion:**

1. Among 36 cases, patients aged 40–49 years comprised 38.9%, and 38.9% of cases were caused by foreign body insertion (e.g., vaseline injection).
2. *Staphylococcus aureus* (MRSA) was isolated in 36.1% of cases.
3. Most patients received whole-body and partial cleansing 2–3 times per day.

## IMPLEMENTATION OF ENDOSCOPY SAFETY CHECKLIST

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**Introduction:** According to the World Health Organization, the implementation of customized safety checklists can improve procedural outcomes and reduce human errors<sup>1</sup>. However, there is no guidance on how best to implement GI endoscopy checklists or solid high-level data regarding any measure of their usefulness including mortality rates, adverse event rates or endoscopy completion rates<sup>5</sup>. Hence, there is a real need for more studies centered on assessing not only the usefulness of an endoscopy safety checklist, but also for identifying the best implementation strategies.

**Study aim:**

In this paper, we aim to customize and implement a safety checklist in our GI endoscopy unit.

**Study design:** A comprehensive literature search was performed to identify the use of “checklist” and “endoscopy” MeshTerms from 1997 to 2025 using PubMed databases. We summarized overall papers and checklists, developed a personalized checklist.

**Result:** A total of 117 citations were identified. After review, we selected 8 studies that used a gastrointestinal endoscopic checklist. We collected all individual items from all 8 checklists and selected 15 items that were included in at least three checklists, developed a personalized checklist that includes the steps to be followed before, during and after the endoscopic procedure.

**Conclusion:** The checklist is a simple, inexpensive, effective tool that has the potential to promote reliable safe endoscopy partly through a system of robust checks, strategies for augmented patient safety, but also by enhancing team work in endoscopy.

## **NEW APPROACH TO IMPROVING THE QUALITY OF OUTPATIENT CARE: INTEGRATION OF PSYCHOLOGICAL AND CLINICAL SERVICES**

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**Background:** Outpatient day services, though brief, significantly impact patients’ psychological state, expectations, and responsiveness. Treatment outcomes depend not only on clinical approaches but also on psychological factors such as emotional status, environment, and trust. WHO emphasizes the integration of clinical and psychological support in primary healthcare. Countries applying “Integrated Behavioral Health Care” have reported higher patient satisfaction and better treatment outcomes.

**Objective:** To determine the impact of integrating psychological counseling into one-day outpatient services on patient satisfaction, psychological well-being, and treatment effectiveness.

**Methods:** A comparative study was conducted with two groups—those who received counseling (n=40) and those who did not (n=40)—using both quantitative and qualitative methods.

**Results:** The average satisfaction score was significantly higher in the counseling group (2.81) compared to the non-counseling group (2.36;  $p = 0.0098$ ). Although anxiety levels decreased in the counseling group, the difference was not statistically significant ( $p = 0.50$ ). The counseling group also demonstrated higher expectations for treatment outcomes, stronger trust in healthcare providers, and greater willingness to recommend the service. The perceived need for counseling was notably higher in the counseling group (4.13) than in the non-counseling group (1.54). From the provider perspective, 65% reported the presence of a psychologist position, and over 60% indicated that 10–15 minutes of counseling per patient per day was feasible. However, 87.2% identified the lack of a designated counseling space as a barrier to implementation.

**Conclusion:** The integration of psychological counseling into outpatient care significantly improves patient satisfaction and enhances trust and perceived treatment value. Despite logistical challenges such as inadequate counseling space, the development of a four-step brief counseling model (“Listen–Clarify–Support–Recommend”) and a three-phase implementation framework demonstrates strong potential for practical and effective incorporation of psychological support in outpatient settings.

## **WORKLOAD ASSESSMENT THROUGH JOB MAPPING OF NURSES AT THE COLORECTAL SURGERY DEPARTMENT**

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**Keywords:** nursing workload, job mapping, colorectal surgery, chemotherapy, time-motion study, staffing

**Background:** Efficient time utilization and labor distribution among healthcare professionals are essential for evidence-based workforce planning and optimal patient care. This study aimed to assess the workload of nurses in the Colorectal Surgery Department by conducting a structured job mapping.

**Methods:** A time-motion observational study was conducted on June 9, 2025, from 08:00 to 16:30, using the methodology outlined in the joint orders A/185 and A/252 issued by the Ministry of Labor and Social Protection and the Ministry of Health. Activities were recorded and classified based on labor expenditure categories.

**Results:** During the observation, the unit managed 27 patients, including 7 receiving chemotherapy. A total of 63 types of nursing activities were performed with 577 repetitions. Of these, 43 tasks were executed by nurses, with 23 being direct care activities. Chemotherapy preparation and administration required 15–20 minutes per patient, with infusion durations ranging from 90 to 180 minutes. Vital signs were monitored every 2 hours according to chemotherapy protocols. Team-based task execution was common, with no delays, idle time, or deviations from duties observed. Statistical analysis revealed a significant correlation between activity frequency and staffing levels ( $p = 0.002$ ,  $p = 0.0001$ ).

**Conclusion:** The current workload justifies the staffing of two nurses per shift. However, increasing patient numbers—particularly those undergoing chemotherapy—can lead to extended working hours, indicating the need for potential staffing adjustments.

## **STUDY ON THE STRESS EXPERIENCED BY NURSES PROVIDING CARE FOR CRITICALLY ILL CANCER PATIENTS AND OTHER CRITICALLY ILL PATIENTS**

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**Background:** The Center for Hematology and Bone Marrow Transplantation is the only national-level facility in Mongolia that provides medical services to patients with hematological cancers. This center conducts chemotherapy and stem cell transplantation. Hematological cancers predominantly affect young individuals in their most productive years. Treatments for these types of cancers include both pharmacological and stem cell-based therapies.

Since 2014, stem cell transplantation has been available in Mongolia. However, patients without suitable donors or with cancer types not treatable in Mongolia often seek expensive treatments abroad, creating significant financial burdens on families. A 2023 study by T. Bayarmaa et al. titled “*Study on the Challenges Faced by Leukemia Patients Undergoing Chemotherapy*” showed that 100% of nurses reported experiencing fear and stress, and 30% reported insomnia. These findings align with some of the results in our current research.

Patients with advanced-stage hematological cancer often suffer a decreased quality of life, severe pain, and high mortality rates. Nurses who care for these patients face increased workloads and emotional pressure from both the patients and their families, contributing to stress.

Stress can be classified as either short-term or long-term. Although nurses may experience what appears to be temporary stress, the repetitive and continuous exposure throughout their careers makes it a persistent issue.

This study aims to compare and analyze the workload and stress experienced by nurses caring for critically ill patients at the National Cancer Center and other departments (Internal Medicine and Surgery) of the National Center for Public Health (UNTE).

**Objective:** To compare the levels of stress experienced by nurses providing care to critically ill cancer patients and nurses caring for other critically ill patients.

### **Goals:**

1. To assess and compare nurses’ stress levels using a survey method.
2. To develop recommendations for supporting the mental health of nurses in the workplace.

**Materials and Methods:** A qualitative research approach was employed, primarily using a survey method. Data was collected from nurses working at the National Cancer Center’s Bone Marrow Transplant Unit and from nurses in two internal medicine and two surgical departments at UNTE. The study surveyed 45 nurses in total between January 3, 2025, and June 15, 2025.

| No. | Selected Departments          | Nurses Surveyed | Patient Records Reviewed |
|-----|-------------------------------|-----------------|--------------------------|
| 1   | Bone Marrow Transplant Center | 9               | 6                        |
| 2   | Gastroenterology Center       | 9               | 6                        |
| 3   | Pulmonology Center            | 9               | 6                        |
| 4   | Internal Medicine Unit 2      | 9               | 6                        |
| 5   | Surgical Center               | 9               | 6                        |
|     | <b>Total</b>                  | <b>45</b>       | <b>30</b>                |

### **Methodology Quantitative Research**

**Survey Method:** A survey was conducted with 45 nurses working with critically ill patients at the Bone Marrow Transplant Center and internal medicine and surgical departments. The survey included general demographic questions and specific items regarding stress experienced in the workplace.

### **Qualitative Research**

**Document Analysis:** A qualitative review of 30 patient records (6 from each department) was conducted using a 10-question evaluation sheet.

**Data Processing:** Survey responses were processed using Microsoft Excel and standard statistical methods commonly used in social research.

### **Conclusion:**

1. Workplace stress among nurses increases with the number of critically ill patients. Stress levels were significantly higher at the Bone Marrow Transplant Center compared to other departments.
2. Recommendations for psychological support should be developed and provided to nurses in all departments with high numbers of critically ill patients to mitigate workplace stress

## **SLEEP OF NURSES ON SHIFT STUDYING QUALITY**

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**Background of the research work:** Shift Nursing refers to providing Nursing care services 24 hours a day in accordance with standard nursing care guidelines and instructions at a professional level according to a protective schedule. There is increasing scientific and research evidence that night shift work alters the natural Homeostatic and Circadian rhythm sleep processes and significantly affects the health, mood, sleep, family, interpersonal relationships, and work performance of shift nurses. The internal clock, or circadian rhythm, is the natural sleep-wake cycle that governs our bodies. Many factors affect this cycle, including light, darkness, temperature, and diet. When circadian rhythms are disrupted, fatigue, sleepiness, and other health problems can occur.

The purpose of the research work: to determine the quality of sleep and some factors affecting it by determining the changes in the sleep of nurses on shift

Objectives of the research work 1. To determine the sleep quality index of shift nursing nurses. 2. To detect the negative consequences related to the quality of sleep of shift nursing nurses

Research design, methods and materials: As part of the 1st objective of the study, data was collected using the Pittsburgh Sleep Quality Index (PSQI) in a moment model and quantitative method to determine the sleep quality of nurses on shift.

As part of the 2nd objective of the study, in order to detect the socio-psychological factors related to the quality of sleep of the nursing staff, quantitative psychological changes using the moment

model were conducted according to the Patient Health Questionnaire-9 (PHQ-9). When considering the reliability of the study in terms of Cronba's alpha value, it was 0.781, which was confirmed as a reliable and valid study.

**Research results:** The relationship between sleep quality and psychological distress: circadian rhythms are disrupted, fatigue, sleepiness, and other health problems can occur.

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**Research results:** The relationship between sleep quality and psychological distress:

When considering the psychological status of nurses with good sleep quality, there is a statistically significant or difference between those with mild depression and minimal depression, while nurses with poor sleep quality have moderate and severe psychological depression ( $P=0.05$ ).

Findings: 91.0% ( $n=79$ ) of the 87 nurses who participated in the study had poor sleep quality when evaluated by the PSQI method.

Age structure has positive and strong correlation with sleep quality category  $R=0.821^{**}$  Sig 0.000. It is directly related to the age structure of the demographic questionnaire. Nurses with poor sleep quality have moderate and severe psychological distress ( $p=0.05$ ), sleep quality affects psychology.

## **THE IMPACT OF INTERDEPARTMENTAL ROTATION OF NURSES AT THE FIRST CENTRAL HOSPITAL OF MONGOLIA ON WORK PERFORMANCE AND MENTAL WELL-BEING**

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**Background:** In Mongolia, due to workforce shortages and the heavy workload of nursing positions, it has become common practice for health organizations to rotate nurses across departments. During times of increased hospital workload, this measure is considered a short-term strategy to optimize work organization and maintain the quality of patient care. Such arrangements may enhance professional skills and facilitate efficient use of organizational resources. However, they also pose risks of increased stress, reduced work performance, lower job satisfaction, and difficulties in adaptation. A 2023 study in Korea revealed that interdepartmental rotation increased nurses' stress levels, resulting in decreased performance and professional competence. In contrast, a study in China found that such rotation improved nurses' skills, knowledge, and overall patient care outcomes. While international studies report both positive and negative impacts, there has been little research in the Mongolian context, providing the rationale for this study.

**Methodology:** This study employed a mixed-method design, combining quantitative and qualitative approaches. It was conducted between January 2024 and February 2025 in the internal medicine and surgical departments of the First Central Hospital of Mongolia. A total of 87 nurses



participated, of whom 50 were selected according to the study criteria. Data were collected through structured questionnaires, and quantitative data were analyzed using frequency, percentage, and mean scores. Qualitative data were processed using content analysis to identify recurring themes.

**Results:** Among the participants, 66% had rotated to another department 1–2 times, while 34% had done so 3–5 times. Of these, 64% worked in surgical wards and 36% in internal medicine wards. Regarding workplace relationships in the rotated departments, 40% evaluated them as negative, 20% as neutral, and 40% as positive. In terms of perception, 44% of the nurses supported interdepartmental rotation, while 56% did not. Reported challenges included: 44% noted that the receiving departments did not provide sufficient guidance on specialized tasks, 16% reported being assigned severely ill patients, 40% felt undermined by physicians who expressed that they lacked essential knowledge.

**Conclusion:** Interdepartmental rotation at the First Central Hospital of Mongolia supports short-term workforce optimization and effective resource utilization. However, in the long term, it may negatively affect nurses’ psychological well-being and job performance. Approximately 80% of the participating nurses reported experiencing stress, adaptation difficulties, lack of confidence, and insufficient motivation or job satisfaction support—findings consistent with a Korean study (Cho et al., 2023). Therefore, implementing interdepartmental rotation with structured planning, incentives, and psychological support could foster better organizational performance and workforce stability.

## **ASSESSMENT OF THE PSYCHOLOGICAL STATE OF PATIENTS DURING THE WAITING PERIOD FOR BIOPSY RESULTS**

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**Keywords:** psychology, biopsy, anxiety, cancer, patient assessment

**Background:** Cancer has existed alongside humankind since ancient times. Historical records suggest that the earliest known case of cancer was documented in ancient Egyptian medical texts around 3000 BCE. Cancer is characterized by the uncontrolled growth of abnormal cells, spreading throughout the body and affecting healthy tissues. It is estimated that 90–95% of all cancers are caused by environmental factors and harmful human behaviors.

Biopsy is performed when there are no other definitive diagnostic alternatives. It is a critical tool for determining the nature, extent, and potential prognosis of a disease, including cancer. During this process, a sample of tissue is collected and examined in the laboratory to detect malignancy or other abnormalities. Hearing the word "cancer" is emotionally distressing for any patient. However, having psychological knowledge and support during this time significantly helps patients to cope and improves treatment outcomes. While extensive studies have been conducted globally—such as in the U.S., where 25–45% of patients experience severe anxiety during the diagnostic waiting period—no such research is available at the national level in Mongolia.

In the U.S., the Society of Surgical Oncology emphasized in 2012 the need to assess the stress levels of all patients at the time of cancer diagnosis. A framework for evaluating physical discomfort, emotional concerns, daily activities, and family issues was also introduced. We believe Mongolia must begin implementing similar measures.

Currently, in Mongolia, it takes up to 14 days to receive biopsy results. During this waiting period, many patients experience high levels of stress and fear of receiving bad news. This study aims to highlight the psychological state of patients during this critical time.

**Objective:** To evaluate the psychological condition of patients during the waiting period after undergoing a cancer-related biopsy.

**Methodology:** A total of 50 patients who underwent outpatient biopsy procedures at the National First Central Hospital were selected through random sampling. Their psychological state was assessed using the standardized 40-question Spielberg-Hanin anxiety questionnaire. Data analysis was conducted using SPSS version 20.

**Results:** The study included 50 participants aged between 25 and 70 years: 38 men and 12 women. Breakdown by cancer type:

- Stomach cancer – 12 cases
- Blood cancer – 16 cases
- Liver cancer – 4 cases
- Colorectal cancer – 10 cases
- Prostate cancer – 7 cases
- Kidney cancer – 1 case

Anxiety levels based on the Spielberg-Hanin scale during the result waiting period were as follows:

- **10%** (5 patients): very high anxiety (score 3.5–4.0)
- **28%** (14 patients): high anxiety (score 3.0–3.4)
- **52%** (26 patients): moderate anxiety (score 2.0–2.9)
- **10%** (5 patients): low to moderate anxiety (score 1.5–1.9)

Biopsy results revealed:

- **8%** (4 patients): confirmed cancer diagnosis
- **92%** (46 patients): no cancer detected

**Conclusion:** The findings show that most patients experience moderate to high levels of anxiety while waiting for biopsy results, regardless of the eventual outcome. This highlights the urgent need for psychological support and counseling services during this diagnostic period.

#### **PREVALENCE AND FORMS OF ELDER ABUSE, AND THE STATUS OF RECEIVING HELP DUE TO ABUSE**

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**Background:** "From the national perspective, it is expected that by 2050, one in five people worldwide will be an elderly person, so we must plan future activities based on the needs and demands of the elderly." In our country, the National Center for Anti-Violence and the Mongolian Senior Citizens' Association jointly conducted a survey involving 943 elderly people, which found that 67.8% of the elderly are subjected to family violence and abuse, which requires further detailed study.

**Aim:** Propósito: Estudiar los tipos de violencia y actos violentos de las personas mayores en Ulaanbaatar.

**Materials and methods:** La investigación se realizó mediante un diseño de un momento y los datos se recopilaban combinando métodos de investigación cuantitativos y cualitativos mediante un muestreo dirigido. El estudio tiene 2 fases. 1st: El tamaño de la muestra se basa en el número de personas mayores que han trabajado en los centros para personas mayores de los 6 distritos de Ulaanbaatar en los últimos 3 años como población de origen. Utilizando la Tarjeta 1, se incluyeron en el estudio 962 personas en centros para personas mayores, hospitales para personas mayores, hogares y centros comerciales en 6 distritos de la ciudad de Ulaanbaatar. 2nd: Based on the records of 243 elderly people who had been subjected to violence in the last 5 years at the temporary shelter of the National Center for Anti-Violence in Ulaanbaatar, the temporary shelter under the General Police Department, the one-stop service of Sukhbaatar District, the one-stop service of the National

Center for Anti-Violence, and the one-stop service of the Forensic Medicine, two groups of 141 questionnaires were used. El procesamiento estadístico se realizó mediante el software SPSS-24.0 y se utilizó la prueba de regresión multivariada; el valor de  $P < 0,05$  se consideró estadísticamente significativo. Se realizó de acuerdo con la aprobación del Comité de Ética en Investigación de ASHUU No. 2019/3-08.

**Results:** Our study included 962 elderly people aged 55-96 years, with a mean age of  $65.6 \pm 7.49$ . Of the respondents, 487 reported experiencing some form of violence, a prevalence of 50.6%. The types of violence were physical (161, 16.7%), emotional (295, 30.7%), sexual (26, 2.7%), neglect (255, 26.5%), and economic (268, 27.9%). This suggests that any type of violence is accompanied by emotional violence ( $p < 0.05$ ). Of the 243 elderly people who sought help for violence, 214 (88.1%) were women. Due to violence, 26 (11%) of the victims visited the temporary shelter of the National Center for Combating Violence, 103 (42.4%) the one-stop service of the National Center for Traumatology, 42 (17.3%) the one-stop health service of Sukhbaatar District, and 43 (17.7%) the one-stop service of the forensic hospital. Of the elderly victims of violence, 97.1% ( $n=236$ ) were subjected to emotional violence, 88.9% ( $n=216$ ) to physical violence, 42.9% ( $n=102$ ) to economic violence, 18.1% ( $n=44$ ) to neglect, 7.4% ( $n=18$ ) to sexual violence, and 91.8% ( $n=223$ ) to combined forms of violence. ( $p=0.005$ ).

**Conclusion:** The prevalence of violence among the elderly surveyed is 50.6%, and violence is experienced in a combined form. This shows that in any case of violence, emotional violence is also experienced. When considering the organizations that provided assistance due to violence: 42.4% of those who approached the one-stop service of the National Center for Traumatology and Deformity sought help when they needed medical help due to violence. ( $p < 0.05$ )

Keywords: elderly, violence, assistance,

## **DETERMINING THE NEED FOR A MODEL NURSING HISTORY FORMAT AT THE JOINT CENTER**

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**Title:** Evaluation of Nursing Documentation Practices and the Need for a Specialized Nursing History Format at a Joint Surgery Center

**Background:** By Order No. 450 issued by the Minister of Health in 2013, a standardized nursing history form was approved and implemented. This order was reaffirmed in 2019 through Order No. 611, with no major content revisions. Before 2013, there was documented evidence that official nursing care records were not consistently maintained. The Joint Center is a specialized surgical unit performing both open and arthroscopic joint procedures, and more recently, orthopedic oncology surgeries. According to a 2024 study by P. Narantsetseg et al., there is a recognized need for a model nursing history format tailored to the specific needs of nurses at this center. Reimbursement claims submitted to the National Council of Health Insurance are often subject to deductions due to generalized or insufficient nursing documentation, highlighting a lack of specialized nursing content. This issue provides the basis for developing a new, specialized nursing history format.

**Materials and Methods:** A qualitative document analysis was carried out using 50 nursing history records completed at the Joint Center of the FCHM. Four types of nursing records were included. The analysis followed the nursing documentation standards outlined in Order No. 611 (2019). An evaluation tool consisting of 10 questions was developed and applied.

**Results:** Patient demographics: 62% (31) were aged 20–30, and 38% (19) were aged 31–40. Gender: 58% (29) male, 42% (21) female. Medical diagnoses (multiple responses): 70% (35) had joint tumors, 24% (12) were undergoing chemotherapy, and 18% (9) had other conditions. Nursing complications: 82% (41) had limited mobility, 80% (40) experienced fear or stress, 68% (34) had pain, 52% (26) had abnormal vital signs, and 80% (40) were at risk of infection. Other issues included fatigue (41%),

oxygen needs (16%), suppurative wounds (12%), and fever (18%). Nursing diagnoses were documented as follows: #39 in 100% of cases, #6 in 82%, #33 in 56%, #46 in 46%. Overall, nursing diagnoses were correctly selected in 72% of cases, with care planning performed in 82% and critical care planning in 58%.

**Conclusion:** Nursing documentation lacked depth and variety, failing to capture the complexity of joint surgery nursing care. A specialized nursing history format is recommended to improve accuracy and reflect the unique needs of the Joint Center.

**Keywords:** Specialized nursing documentation

## ASSESSMENT OF STAFF SKILLS IN SPD UNIT OF SOME HOSPITALS

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**Keywords:** sterilization, hospital-acquired infections, and safe surgery

**Background:** Healthcare-associated infections represent a global concern, with an average of 8.7% of hospital patients suffering infectious complications. Surgical site infections (SSIs) are particularly common and are regarded as preventable complications.

**Aim:** To assess the staff skills in the SPD unit of district hospitals.

**Materials and methods:** We conducted the study using a descriptive research method and assessed the staff skills in the SPD unit of some hospitals using the WHO Safe Surgery checklist.

**Results:** The average age of the staff included in the study was  $46.69 \pm 6.5$  years. Of the participants, 97.4% (38 individuals) were women, and 2.6% (1 individual) were men. A total of 39 staff members were evaluated over 156 observations using four different criteria sheets. These evaluations were conducted periodically, with assessments occurring four times. The first criteria sheet focused on the proper use of protective clothing. Out of the 156 observations, 71 instances (45.5%) showed that staff had fully covered their hair, while 99 instances (63.6%) indicated that staff wore closed shoes as required. The second criteria sheet evaluated the performance of sterilization procedures, including the use of chemical and biological indicators, recording, and signing sterilization records. In this category, performance was exemplary, with 100% compliance observed. Finally, the staff's adherence to disinfection control protocols was assessed. The results indicated that staff demonstrated a strong understanding and execution of these practices, reflecting good overall performance in this area.

**Conclusion:** When assessing the sterilizer staff skills in hospitals, it was noted that the use of protective clothing among sterilization staff was inadequate. Many staff members did not fully adhere to the recommended guidelines for wearing appropriate protective gear during sterilization procedures. Regarding the performance of steam sterilization instruments, the results were generally average, indicating that while the equipment was used appropriately in some instances, there were areas that required improvement in terms of efficiency and thoroughness.

In terms of monitoring and disinfection after each sterilization cycle, the staff showed relatively good performance.

## **ASSESSMENT OF HEALTH KNOWLEDGE AMONG VISITORS OF THE HEALTH PROMOTION CENTER**

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**Keywords:** Health education, knowledge level, prevention, health literacy

**Introduction:** Health education plays a crucial role in disease prevention and improving quality of life. Individuals' knowledge and awareness of their own health significantly influence their health behaviors. This study aimed to assess the level of health knowledge among visitors to the Health Promotion Center of the First Central Hospital of Mongolia (FCHM) during the first half of 2025, in order to improve the quality and effectiveness of future health education services.

**Methodology:** A descriptive, cross-sectional quantitative study was conducted among 150 individuals aged 18 and older. Data were collected through a structured self-administered questionnaire consisting of two sections: demographic information and health knowledge. The knowledge section included 16 questions across four categories: nutrition, physical activity, disease prevention, substance use (alcohol and tobacco), and chronic diseases (hypertension, diabetes, cardiovascular, and digestive diseases). Knowledge levels were categorized as High, Moderate, and Low.

**Results:** Of the respondents, 68% were from Ulaanbaatar and 32% from rural areas; 64% were female. The majority (62%) were aged 25–45, and 70% held higher education degrees.

- **High knowledge level** – 28% (mainly in preventive screening knowledge)
- **Moderate knowledge level** – 54% (notably in cardiovascular and hypertension knowledge)
- **Low knowledge level** – 18% (particularly low in diabetes-related knowledge)

Key influencing factors included educational background, source of health information (54% used internet and social media), and participation in health education sessions (30% of those who attended scored higher).

**Conclusion:** Most participants had a moderate level of health knowledge, which may contribute to insufficient adoption of preventive health behaviors. Improving accessibility, consistency, and quality of health education is essential. Education level, information source, and training participation were significant determinants of knowledge levels.

### **Recommendations:**

- Integrate health education into all levels of formal education
- Ensure that training and educational materials are continuous, accessible, and tailored to the target audience
- Use mass media and social networks to actively deliver reliable health information
- Encourage visitors to participate in interactive quizzes to reinforce key health knowledge

## **ASSESSING QUALITY OF LIFE AND BEHAVIOR IN MENOPAUSAL WOMEN**

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**Keywords:** Quality of life, menopausal symptoms, contributing factors, behavior

**Background:** Globally, the quality of life and health issues of women in the menopausal age group are being extensively studied. In Mongolia, although research in this area has been conducted, most of it has focused on clinical symptoms, hormonal changes, and hormone replacement therapy.



**Objective:** To assess the quality of life and behaviors of menopausal women and to identify the factors influencing their quality of life.

**Materials and Methods:** This study was conducted using a non-probability snowball sampling method and standard clinical questionnaires. Data collection took place from December 2024 to February 2025. The sample included 200 women aged 45–60 from all 9 districts of Ulaanbaatar. The questionnaire consisted of 59 questions across 4 sections, including demographic and behavioral questions, a menopause rating scale, and a quality-of-life assessment. Statistical analysis was conducted using STATA 14.0, including descriptive and inferential analysis.

**Results:** The average age of the participants was  $50.98 \pm 4.59$  years. Menopausal symptoms were assessed using the Menopause Rating Scale (MRS), with scores ranging from 0 to 33 and an average of  $13.78 \pm 7.6$ . The most common symptoms included physical and emotional exhaustion, joint and muscle discomfort, hot flashes, and sweating. The MENQOL (Menopause-Specific Quality of Life Questionnaire) scores ranged from 29 to 190, with an average of  $89.2 \pm 30.9$ . MENQOL consists of four domains: vasomotor

symptoms, psychosocial symptoms, physical symptoms, and changes in sexual life, with physical symptoms being the most prominent. Increased BMI and higher alcohol and tobacco use were significantly associated with lower quality of life. Conversely, higher employment status, income level, educational attainment, and physical activity were statistically significantly associated with better quality of life.

**Conclusion:** About 50% of the women reported dissatisfaction due to menopausal symptoms. The study also found a high rate of alcohol and tobacco use among participants. The key factor influencing women's quality of life were physical activity, body mass index, educational level, employment status, income level, and alcohol and tobacco use.

#### **ASSESSMENT OF NURSES' KNOWLEDGE, COMPETENCE, AND RESOURCE AVAILABILITY IN STOMA CARE**

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**Background:** A stoma may be created as a result of infection, malignancy, surgical complications, or congenital malformations. In the United States, an estimated 750,000 to 1,000,000 individuals are living with a stoma, and approximately 150,000 new ostomy surgeries are performed each year. Patients with a stoma require specialized nursing care due to significant physical and functional changes. However, the quality of care is often hindered by several factors, including insufficient knowledge among general nurses, heavy workloads in postoperative settings, a limited number of specialized stoma care nurses, and the common practice of delegating stoma care only to these specialists. As a result, many nurses report uncertainty when managing stoma wounds and evaluating peristomal skin conditions, especially when encountering such tasks for the first time. Evaluating nurses' knowledge, experience, and attitudes is therefore essential to identify gaps and implement evidence-based strategies for improving stoma care.

**Materials and Methods:** This cross-sectional descriptive study was conducted at the First Central Hospital of Mongolia (FCHM). The study population consisted of registered nurses working in departments with high stoma patient volumes: general surgery (n=28), emergency care (n=20), and intensive care units (n=16). Inclusion criteria were: (1) current employment as a registered nurse,

(2) minimum six months experience in the respective department, and (3) direct patient care responsibilities. Exclusion criteria included temporary staff, student nurses, and administrative personnel.

Data were collected using a structured questionnaire entitled "Care of Patients with a Stoma: Knowledge of Healthcare Workers and Quality of Care," developed in accordance with guidelines from the World Health Organization (WHO) and the Wound, Ostomy, and Continence Nurses Society (WOCN). The instrument consisted of four sections: (1) demographic characteristics, (2) knowledge assessment (25 multiple-choice questions), (3) self-perceived competence (5-point Likert scale), and (4) resource availability assessment.

Statistical analysis was performed using SPSS version 28.0. Descriptive statistics included means, standard deviations, frequencies, and percentages.

**Results:** A total of 64 female nurses participated, with a mean age of  $35.02 \pm 11.08$  years. Participants were from General Surgery (43.8%), Emergency (31.3%), and Intensive Care (25.0%) departments. Among them, 42.2% had  $\geq 10$  years of experience; 37.5% held diplomas, 50.0% bachelor's degrees, and 12.5% master's degrees. Confidence in managing the intestinal lumen and pouch was low: only 20.3% felt completely confident, while 54.7% were unsure. Similarly, 54.7% could assess peristomal skin integrity; 45.3% were unsure. Half (50.0%) were unsure about preparing patients for home care, and 56.3% were unsure about managing complications. Regarding supplies, 60.9% reported insufficient stock of gastric pouches, and 71.8% cited poor availability of other related materials, indicating widespread resource shortages.

**Conclusion:** The study demonstrates notable deficiencies in nurses' knowledge, training, and access to resources related to stoma care, which may negatively impact the quality of patient outcomes. Strengthening targeted training programs and improving the availability of essential stoma care resources are critical steps toward enhancing care for patients living with a stoma.

**Keywords:** stoma care, nursing competence, healthcare resources, patient safety, clinical education

## EVALUATION OF INTRAOPERATIVE BLOOD TRANSFUSION: A SINGLE-CENTER EXPERIENCE

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**Introduction:** Intraoperative blood transfusion plays a critical role in maintaining organ oxygenation and hemodynamic stability during major blood loss. Timely administration of blood products such as red blood cells, fresh frozen plasma, and platelets is essential, and individualized transfusion planning can improve clinical outcomes.

**Methods:** This retrospective, evidence-based study analyzed surgical cases ( $n = 26,677$ ) performed at the First Central Hospital of Mongolia (FCHM) between 2022 and 2024. Data on transfusion volume and type of surgery were compared.

### **Results:**

Among the total surgical cases, intraoperative blood transfusion was performed in 1.2% ( $n=319$ ). Of these, 19.4% ( $n=62$ ) were emergency surgeries, while 80.6% ( $n = 257$ ) were elective procedures. Within the elective group, 59.1% ( $n = 152$ ) were liver transplantations, and 40.9% ( $n = 105$ ) comprised other types of surgeries (general, orthopedic, colorectal, ENT, neurosurgical, and urologic). Compared with 2022, intraoperative blood transfusion cases increased by 21% in 2024.

**Conclusion:** At FCHM, the frequency of intraoperative blood transfusion has shown a year-on-year increase, predominantly in elective surgeries.

**Discussion:** The average transfusion volume during liver transplantation was comparable to international benchmarks, whereas transfusion requirements in other surgical specialties were relatively lower. Nevertheless, the overall upward trend in transfusions highlights the importance of rational utilization. Careful perioperative planning and risk mitigation are essential to optimize

patient outcomes. Furthermore, enhanced training and education on transfusion safety among anesthesia nurses remain a critical need.

## **ASSESSMENT OF “EMOTIONAL STABILITY” OF DOCTORS AND NURSES**

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**Keywords:** Psychology, cognition, emotion, stability

**Research background:** Psychology is the science that helps to discover how the human brain works, how people learn

work evaluation, increase human performance, and choose a healthy lifestyle. Understanding the human body, mental activity, social interaction, and lifestyle is the basis for self-knowledge.

The WHO and the International Psychological Association have researched that 1 in 8 people in the world have a mental disorder, 1 in 4 people have mental health problems, and 1 in 2 people have problems. Therefore, we began to study emotional stability, one of the cognitive processes, in order to understand personality and better communicate and understand other people, and to create a life full of happiness and success.

**Study Objectives:** Evaluation of “Psychological Stability” among the residents of the Departments of Maxillofacial Surgery, Otolaryngology and Ophthalmology of the First State Central Hospital

**Materials and Methods:** 15 questionnaires of the Daniel Goleman – Surgery Acceptance Summary Test were collected from the residents of the Departments of Maxillofacial Surgery, Otolaryngology and Ophthalmology of the First State Central Hospital, and the scores were combined and entered into Microsoft Excel.

**Results:** Out of the total number of participants in the study, 101 (100%) were male, 28 (27.7%) were male, and 73 (72.2%) were female. 40 (39.6%) were ENT surgeons, 25 (24.7%) were Maxillofacial surgeons, and 36 (35.6%) were ophthalmologists.

**Questionnaire scale score:** 29 (28.7%) with 15-34 points have poor emotional expression and are prone to stress, 35-55 points: 61 (60.3%) have normal emotional expression and have the ability to learn and develop further, and 11 (10.8%) have an interesting answer that their emotional expression is at an incredibly high level.

**Conclusion:** The level of emotional expression among the nurse, doctors and residents of the Departments of Maxillofacial Surgery, Otolaryngology and Ophthalmology of the First Central Hospital of Mongolia is 61% normal, and they are reminded to learn and develop their emotional competence by learning changes. The excellent productivity level of 11% is that they are working with more opportunities to develop themselves and continue to work, but they have poor listening skills and are facing problems with self-harm.

## **NURSING CARE AT THE CENTER OF HEMATOLOGY AND BONE MARROW TRANSPLANTATION IN MONGOLIA**

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**Keywords:** Hematopoietic stem cell transplantation, Nursing care, Qualitative study

Experience from some countries around the world shows that the development of any sector is based on continuous improvement, effective learning from good practices, sustainable human resources, reducing the risk of errors, and developing the specific skills of professional activities. Nursing science is also developing according to this standard, and the active participation of professional

nurses, researchers, and scientists at the international level is becoming an important impetus for us to provide qualified nursing care. In nursing care for patients with leukemia during chemotherapy and blood stem cell transplantation, the participation, knowledge, skills, experience, and attitude of nurses are important factors that directly affect the outcome of treatment. In Mongolia, it is necessary to identify the characteristics of nurses' work, current issues, and knowledge and education needs to improve the quality of nursing care during chemotherapy and blood stem cell transplantation. According to the results of the study by Brazilian and Canadian scientists Kaoana Lima and Elizabeth Bernardino, a study was conducted on the importance of nurses' knowledge and experience in providing quality nursing care during blood stem cell and bone marrow transplantation. In Mongolia, the first central hospital in the country that provides this type of care has a total of 13 nurses, including 1 senior nurse, 1 coordinating nurse, 1 child care leaver, and 10 shift nurses. The main goal of this study is to improve the quality of nursing care provided to patients with blood cancers by identifying the nurses' work experience, knowledge level, difficulties they face during their work, and the support and understanding they need. 1. This study is a rapidly developing field in Mongolia, and it is important for nursing professionals to improve the understanding of the difference in perception and talk about blood stem cell transplantation as a surgical treatment. 2. It is important to thoroughly study nursing research and develop training and recommendations for nursing care in line with international trends. 3. It is believed that this is a fundamental study that will further improve the knowledge, skills and understanding of nurses and increase their sustainable work, value and appreciation as good examples in nursing practice.

## **VIRTUAL NURSING - INNOVATIVE NURSING CARE MODEL**

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**Keywords:** Virtual nursing, nursing workforce, ANA principles, Inova Health System, healthcare innovation, artificial intelligence.

**Abstract:** Healthcare systems are confronting unprecedented challenges, including persistent nursing shortages, high turnover, rising patient acuity, and widening equity gaps. Traditional care models are no longer sufficient to meet these demands. Virtual nursing has emerged as an innovative solution, leveraging remote technologies to extend the reach of nurses, improve patient engagement, and create sustainable models of care delivery.

This presentation examines the evolution of virtual nursing in the United States, grounding the discussion in the American Nurses Association (ANA) Principles for Virtual Nursing Practice. These principles highlight the importance of accountability, ethics, patient rights, and professional competence in virtual care. A central case example is the Inova Health System Virtual Nursing Model, where remote nurses support admissions, discharges, patient and family education, documentation, and clinical mentoring. Early outcomes demonstrate enhanced nurse satisfaction, improved patient experiences, and measurable operational efficiencies, though challenges remain in technology integration, role clarity, cost, and equity.

The session also explores how artificial intelligence (AI) can augment, rather than replace, nursing practice by streamlining documentation, enhancing predictive analytics, and supporting workflow management. Ultimately, virtual nursing—when grounded in policy, ethics, and evidence—offers a scalable and sustainable path to healthcare transformation.

## NURSING DIAGNOSIS IMPLEMENTATION RESEARCH

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**Keywords:** Nursing diagnosis, implementation, internal medicine, nurse knowledge, workload, research, methodology, evaluation

**Abstract:** The nursing diagnosis plays a vital role in helping nurses assess patients' health issues, develop care plans, and implement nursing interventions effectively. Both international and national studies have shown that the implementation of nursing diagnoses largely depends on nurses' knowledge, skills, organizational support, and documentation systems.

The aim of this study is to examine the implementation of nursing diagnoses among nurses working in the internal medicine wards of the First Central Hospital of Mongolia. A total of 30 nurses from the Departments of Pulmonology and Allergy, Gastroenterology, and Nephrology participated in the study. Data were collected using interviews, questionnaires, and document reviews.

### Results:

- 45% of nurses reported being unable to make multiple diagnoses due to heavy workloads.
- 33% found it difficult to develop and implement care plans for some diagnoses.
- 22% stated that they were unable to include multiple issues in the diagnostic classification system.

**Conclusion:** Nurses assess patients, establish diagnoses, and implement care plans based on their department's specific characteristics. However, limitations such as systemic restrictions, heavy workload, and lack of sufficient knowledge pose challenges in the implementation process. The findings of this study are significant for developing policies and methodologies to improve the quality and application of nursing diagnoses.

The study was conducted using a cross-sectional design.

## STUDY ON GASTRIC ENDOSCOPY PREPARATION AND GASTRIC CLEANLINESS

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**Introduction:** Upper gastrointestinal endoscopy is one of the most effective methods for early detection of gastric cancer. Patients are usually instructed to fast before the procedure, but in practice, retained gastric fluids such as saliva are common, impairing diagnostic accuracy. This highlights the need to evaluate different preparation methods.

**Methods:** Study period: June 2025 Participants: 54 patients Groups:

- Group A: No additional preparation
- Group B: Drank 200–300 ml of water before endoscopy
- Group C: Took an antifoaming agent before endoscopy

Cleanliness of the esophagus, stomach, and duodenum was scored.

### Results:

- Mean age: 56.5 ± 11.7 years, 29.6% male
  - gastric\_endoscopy\_study\_fancy\_en (2) Group A – 15.8 hrs,
  - Group B – 16.6 hrs,
  - Group C – 15.7 hrs

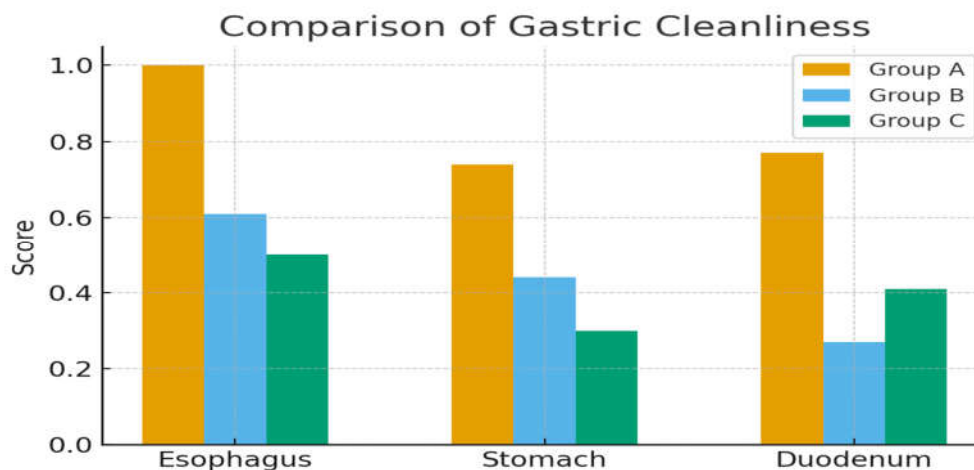
No significant difference,  $p > 0.05$



Table 1. Mean Cleanliness Scores

| Group   | Esophagus | Stomach | Duodenum |
|---------|-----------|---------|----------|
| Group A | 1.0       | 0.74    | 0.77     |
| Group B | 0.61      | 0.44    | 0.27     |
| Group C | 0.5       | 0.3     | 0.41     |

Group A showed significantly higher scores than Group B ( $p<0.0001$ ) and Group C ( $p<0.003$ ). No difference was observed between Groups B and C.



**Conclusion:** Drinking water or using an antifoaming agent before endoscopy did not improve gastric cleanliness. Simple fasting alone was the most effective preparation method.

## NECK AND SHOULDER PAIN WITH SCAPULAR DYSKINESIS IN COMPUTER OFFICE WORKERS

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1. Physical therapist of Rehabilitation unit

2.

**Background:** and Objectives: Computer office workers spend a great amount of time in front of computers, and neck and shoulder problems have increased as a result. Musculoskeletal pain has become common among computer office workers with poor workstation ergonomics. SD is not an injury but is related to shoulder injuries. However, studies have recently reported that neck pain is also related to SD. Compared to the healthy population, those with neck pain show altered scapular position and/or movement. Proper alignment and function of the scapula are very important because the link between the scapula and humerus must work efficiently to deliver force. SD can create mechanical dysfunction between the neck and scapula, which share muscle attachments, possibly causing recurrent neck pain. SD can also contribute to neck and shoulder pain and increase the risk of shoulder pain by 43%. Therefore, those who spend long periods working on a computer might be at risk of developing SD, which can lead to neck and shoulder pain. Scapular dyskinesis (SD) is associated with neck and shoulder pain. However, SD in computer office workers has not been elucidated. We aimed to investigate the prevalence of SD, neck and shoulder pain, disability, and working hours in computer office workers. **Materials and Methods:** In total, 50 computer office workers participated in this study. The results of a scapular dyskinesis test (SDT), lateral scapular slide test (LSST), neck disability index (NDI), shoulder pain and disability index (SPADI), visual analog scale (VAS) scores of the neck and shoulder, and working hours were recorded. **Results:** 48 computer office workers (96 %) had SD. Computer office workers with SD had significantly higher

NDI neck VAS, and dominant shoulder VAS scores. The LSST results showed a significantly greater distance in participants with SD.

**Conclusions:** The prevalence of SD was very high in computer office workers, and neck and shoulder pain were more prevalent in workers with obvious SD.

## **STUDY ON PATIENTS’ DISABILITY IN ACTIVITIES OF DAILY LIVING**

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**Keywords:** lower back pain, disability, patient

**Introduction:** According to the Global Burden of Disease Study 2021, low back pain (LBP) affected an estimated 619 million individuals worldwide in 2020, and its prevalence is expected to reach 843 million by 2050. Evidence from the Department of Neurosurgery at State Third Central Hospital named after Shastin indicated that over the past five years, the number of surgical interventions for spinal disorders—particularly those caused by intervertebral disc herniation compressing the spinal cord and nerve roots—has increased approximately 4–5 fold. Moreover, the majority of patients who sought treatment abroad were diagnosed with this condition. Statistical data from the First Central Hospital of Mongolia in 2023 further showed that, among 477 neurosurgical procedures performed, endoscopic discectomy for intervertebral disc herniation accounted for 18.5% (89 cases), decompression surgery for spinal stenosis for 3.4% (16 cases), posterior lumbar fixation for 7.5% (36 cases), and minimally invasive surgical (MIS) fixation for 1.7%. These findings highlight the growing clinical and public health significance of spinal pathologies, providing the rationale for conducting the current study.

**Objective:** The study is aimed at investigating the disability in activities of daily living among patients who underwent spinal surgery.

**Material and methods:** In this study, a total of 50 patients who underwent spinal surgery at the Neurology Clinical Center of the First Central Hospital of Mongolia were randomly chosen. Disability in activities of daily living was evaluated using the Oswestry Disability Index (ODI), and data were statistically analyzed with SPSS version 25.0.

**Result:** A total of 50 patients were included in the study, of whom 40% (n=20) were male and 60% (n=30) were female, with a mean age of  $46.54 \pm 12.79$  years. The mean Oswestry Disability Index (ODI) score for disability in activities of daily living was  $72.44 \pm 14.61$ . Preoperative assessment of disability among patients undergoing spinal surgery showed that 2% (n=1) had mild disability, 20% (n=10) had moderate disability, 46% (n=23) had severe disability, and 32% (n=16) were completely disabled. When stratified by gender, 3.3% (n=1) of females had mild disability; 20% (n=4) of males and 20% (n=6) of females had moderate disability; 50% (n=10) of males and 43.3% (n=13) of females had severe disability; and 30% (n=6) of males and 33% (n=10) of females were completely disabled ( $p < 0.001$ ).

**Conclusion:** Preoperatively, all patients who underwent spinal surgery demonstrated disability in activities of daily living, ranging from mild impairment to complete disability, with a significant difference observed between males and females ( $p < 0.001$ ).

## **NEW APPROACH TO IMPROVING THE QUALITY OF OUTPATIENT CARE: INTEGRATION OF PSYCHOLOGICAL AND CLINICAL SERVICES**

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National Council for Accreditation of Education<sup>2</sup>

**Background:** Outpatient day services, though brief, significantly impact patients’ psychological state, expectations, and responsiveness. Treatment outcomes depend not only on clinical approaches but also on psychological factors such as emotional status, environment, and trust. WHO emphasizes the integration of clinical and psychological support in primary healthcare. Countries applying “Integrated Behavioral Health Care” have reported higher patient satisfaction and better treatment outcomes.

**Objective:** To determine the impact of integrating psychological counseling into one-day outpatient services on patient satisfaction, psychological well-being, and treatment effectiveness.

**Methods:** A comparative study was conducted with two groups—those who received counseling (n=40) and those who did not (n=40)—using both quantitative and qualitative methods.

**Results:** The average satisfaction score was significantly higher in the counseling group (2.81) compared to the non-counseling group (2.36;  $p = 0.0098$ ). Although anxiety levels decreased in the counseling group, the difference was not statistically significant ( $p = 0.50$ ). The counseling group also demonstrated higher expectations for treatment outcomes, stronger trust in healthcare providers, and greater willingness to recommend the service. The perceived need for counseling was notably higher in the counseling group (4.13) than in the non-counseling group (1.54). From the provider perspective, 65% reported the presence of a psychologist position, and over 60% indicated that 10–15 minutes of counseling per patient per day was feasible. However, 87.2% identified the lack of a designated counseling space as a barrier to implementation.

**Conclusion:** The integration of psychological counseling into outpatient care significantly improves patient satisfaction and enhances trust and perceived treatment value. Despite logistical challenges such as inadequate counseling space, the development of a four-step brief counseling model (“Listen–Clarify–Support–Recommend”) and a three-phase implementation framework demonstrates strong potential for practical and effective incorporation of psychological support in outpatient settings.

## **ENHANCING CHILD HEALTH SURVEILLANCE: ORAL PIGMENTATION AS A NURSING TOOL FOR DETECTING ENVIRONMENTAL TOBACCO SMOKE EXPOSURE**

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**Introduction:** The cigarette is the deadliest artifact of human civilization and releases 7,357 chemical compounds into the atmosphere as aerosol particles, including many toxins and carcinogens. Therefore, it not only affects consumers themselves, but also the surrounding people,

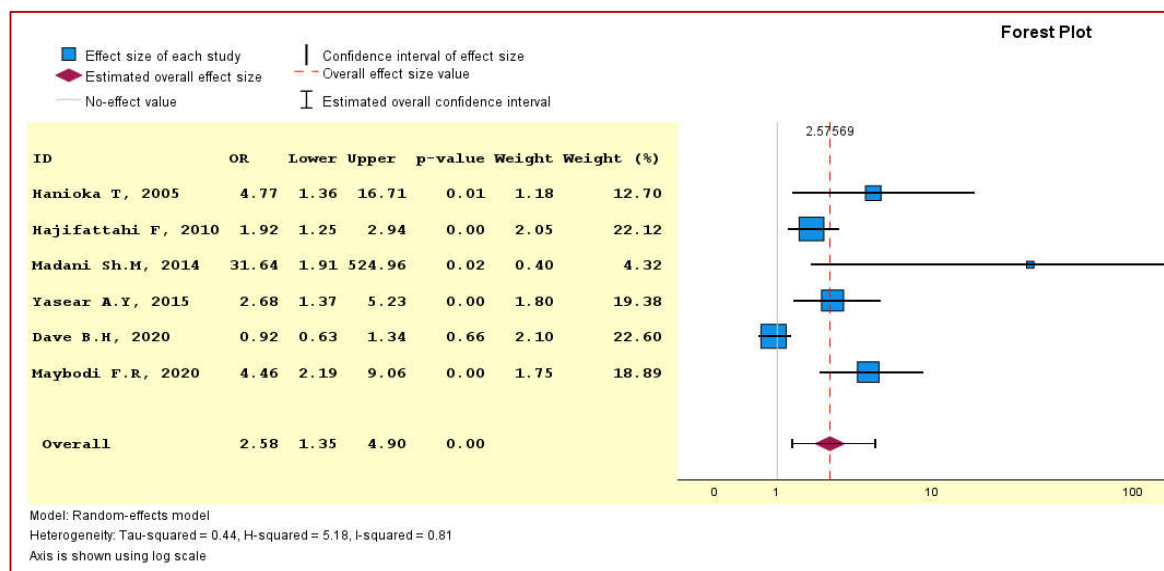
which is called passive smoking, aka involuntary smoking, or second-hand smoking (SHS). ETS poses significant health risks, particularly for vulnerable populations such as children. Oral pigmentation (OP) in passive smokers serves as a potential biomarker indicating chronic exposure to ETS, which is increasingly relevant for pediatric health assessments in nursing practice. Hence, this study systematically reviewed and analyzed the literature to determine the association between exposure to ETS and oral pigmentation, specifically in children.

**Methods:** We conducted a comprehensive literature search from August 1st to December 1st using databases including MEDLINE, Web of Science, CINAHL, Embase, and Scopus. Studies published from 2000 onward were included based on specific criteria: children exposed to ETS, oral pigmentation as the outcome, and control groups unexposed to ETS. The methodological quality of studies was assessed using the Mixed Methods Appraisal Tool (MMAT, 2018). Meta-analysis was conducted to synthesize data, with odds ratios (OR) and confidence intervals (CI) calculated.

**Results:** Finally, 7 studies met inclusion criteria in this study were written in English between 2005-2020 were written in English, originating from 5 Asian countries, and were conducted through 4 cohort, 1 case-control, and 2 cross-sectional studies. Syntheses were conducted 6 of acceptable quality, a total of 733 ETS-exposed and 849 unexposed children were analyzed. Significant positive association between ETS exposure and oral pigmentation was observed (OR=2.58, 95% CI=1.35-4.95,  $p=0.004$ ) (**Fig 1**). Subgroup analysis indicated consistent results regardless of gender, race, assessment tools, and methodological approaches. Additionally, dose-response effects based on duration and severity of ETS exposure were significant, emphasizing increased vulnerability among younger children.

**Conclusion:** Exposure to environmental tobacco smoke significantly increases the incidence of oral pigmentation in children, highlighting the potential for this easily identifiable marker to inform pediatric healthcare assessments. Nurses play a crucial role in recognizing and educating families about ETS-induced oral pigmentation as a visual indicator of chronic tobacco exposure, promoting smoking cessation efforts, and advocating for smoke-free home environments.

**Keywords:** oral pigmentation, pediatric nursing, passive smoking



**Figure 1.** Forest plot illustrating the association between environmental tobacco smoke exposure and oral pigmentation in children

## **УНТЭ-ИЙН ЭМЧИЛГЭЭНИЙ ХООЛОНД НЭВТРҮҮЛЖ БУЙ СЭТ ХООЛ БОЛОН УЛАМЖЛАЛТ ХООЛЫГ ХАРЬЦУУЛАН ҮР ДҮНГ ТООЦСОН НЬ**

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**Түлхүүр үг :** Эмчилгээний сэт хоол, уламжлалт хоол

**Үндэслэл:** Дэлхий дахинд насанд хүрсэн нийт хүн амын 35% нь бодисын солилцооны хам шинжтэй байна. Үүнээс эрэгтэй 14,9%, эмэгтэй 16,8%, 4 хүн тутмын 1 нь бодисын солилцооны хам шинжтэй байна. Цаашид 2025 он гэхэд 50% хүрэх магадлалтай хэмээн дэлхийн эрүүл мэндийн байгууллага мэдээлжээ. Монгол улсын хэмжээнд 15-49 насны эрэгтэйчүүдийн 48,8%, эмэгтэйд 46,2% нь биеийн жингийн илүүдэл ба таргалалттай гэж “хүн амын хоол тэжээлийн байдал” үндэсний 5-р судалгаагаар гарчээ. Бодисын солилцооны хам шинжийн өөрчлөлттэй хүмүүст зүрх судасны эмгэг 2 дахин, чихрийн шижин 5 дахин, зүрхний шигдээс, цочмог цус харвалт зэрэг амь насанд халгаат хүндрэлээр нас барах эрсдэл 3 дахин өндөр байдаг. УНТЭ – ийн хоол эмчилгээ нь Эмчилгээний хоол, энгийн хоол гэсэн үндсэн хоёр хэсэгтэй ба эмчилгээний хоол нь тус эмнэлгийн ЧХХСМЗТ, Уралоги Андарлоги, Зүрхний тасаг гэсэн нийт 3 –н тасагт туршилтаар хэрэгжиж эхлээд байгаа. Энэхүү туршилтын хугацаанд өвчин бүрийн нэршилээр ялангуяа хавсарсан өвчнүүдээр дэд бүлэг болон орсон байгаа. Жишээлбэл Чих хамар хоолойн өвчний дотор хоолойны өвчтэй хүний хоол гэсэн дэд бүлэг орсон байх жишээтэй хоолыг сэтээр нэвтрүүлээд 1,6 жилийн хугацаа өнгөрсөн байна. Энэхүү хугацаанд уламжлалт хоол болон сэт хоолны чанар, порц, төрөл, үйлчлүүлэгчийн сэтгэл ханамжийг судлан цаашид хэрэгжүүлэх үр дүнтэйг нь сонгох хэрэгцээнд тулгуурлан судлах нь бидний судалгааны үндэслэл болсон.

**Зорилго:** УНТЭ-ийн эмчилгээний хоолонд нэвтрүүлж буй сэт хоол болон уламжлалт хоолыг харьцуулан үр дүнг тооцох

**Зорилт:**

1. Эмчилгээний сэт хоолны чанар, порц, төрөл, үйлчлүүлэгчийн сэтгэл ханамжийг судлах нь.
2. Эмчилгээний уламжлалт хоолны чанар, порц, төрөл, үйлчлүүлэгчийн сэтгэл ханамжийг судлах нь.

**Арга, аргачлал:** Эрүүл мэндийн сайдын 2023оны А/404-р тушаалын хавсралтыг үндэслэн ЧХХСМЗТ-с 2024 онд хэвтэн эмчлүүлсэн нийт 1593 үйлчлүүлэгчдээс 250-н үйлчлүүлэгчийг санамсаргүй түүвэрийн аргаар УНТЭ-ийн сэтгэл ханамжийн 34 асуумжаас ЧХХСМЗТасгийн эмчилгээ үйлчилгээний онцлогт тохирсон 11 асуумж боловсруулан үүнээс 9 асуумжийг хоолны асуумжаар оруулж сэт хоол болон уламжлалт хоолыг харьцуулан чанар болон тоон аргатай хавсран судалгаанд тоон статистик шинжилгээ хийв.

**Үр дүн:** Судалгаанд хамрагдсан үйлчлүүлэгчдийг нас хүсээр нь авч үзвэл 59,2% буюу 148н үйлчлүүлэгч нь эрэгтэй илүү хувийг эзлэж байна. Эмчилгээний сэт хоол, Уламжлалт хоол 2-ын хоолны амт асуумжинд 174н үйлчлүүлэгч буюу 69.6 % нь сэт хоолонд хоолны амт сайн дунд үнэлгээ өгсөн. 76н үйлчлүүлэгч буюу 30.4% нь уламжлалт хоолонд санал өгсөнөөс 54% нь хоолны амт муу гэсэн үнэлгээ өгсөн нь үйлчлүүлэгчдийн дунд сэт хоолны амт сайн байгааг илэрхийлсэн байна. Эмчилгээний сэт хоол, Уламжлалт хоол 2-ын хоолны төрөл асуумжинд 214н үйлчлүүлэгч буюу 85,6% нь сэт хоолонд сайн дунд үнэлгээ өгсөн. 36н үйлчлүүлэгч буюу 14,4% нь уламжлалт хоолонд санал өгсөнөөс 55,5% нь хоолны төрөл дунд гэсэн үнэлгээ өгсөн нь үйлчлүүлэгчдийн дунд сэт хоолны төрөл сайн байгааг илэрхийлсэн байна. Эмчилгээний сэт хоол, Уламжлалт хоол 2-ын хоолны сэтгэл ханамжтай эсэх асуумжинд 218н үйлчлүүлэгч буюу 87,2% нь сэт хоолонд сэтгэл ханамж сайн дунд үнэлгээ өгсөн. 32н үйлчлүүлэгч буюу 1,28% нь



уламжлалт хоолонд санал өгсөнөөс 56,25% нь сэтгэл ханамж муу гэсэн үнэлгээ өгсөн нь үйлчлүүлэгчдийн дунд сэт хоолны сэтгэл ханамж сайн байгааг илэрхийлсэн байна. Эмчилгээний сэт хоол, Уламжлалт хоол 2-ын хоолны порц асуумжинд 131н үйлчлүүлэгч буюу 52,4% нь сэт хоолонд хоолны порц сайн дунд үнэлгээ өгсөн. 119н үйлчлүүлэгч буюу 47,6% нь уламжлалт хоолонд санал өгсөнөөс 42,8% нь хоолны порц муу гэсэн үнэлгээ өгсөн нь үйлчлүүлэгчдийн дунд сэт хоолны порц сайн байгааг илэрхийлсэн байна.

**Хүснэгт 1 Судалгааны 1, 2-р асуумж – нас хүйс**

| Насаар                            |                |           | Хүйсээр     |             |
|-----------------------------------|----------------|-----------|-------------|-------------|
| 16-69 насны<br>үйлчлүүлэгч<br>250 | 16-27          | 32,8%(82) | Эрэгтэй     | Эмэгтэй     |
|                                   | 28-49          | 22%(55)   | 59,2 %(148) | 40,8 %(102) |
|                                   | 49-64          | 32,4%(81) |             |             |
|                                   | 64-өөс<br>дээш | 12.8%(32) |             |             |

**Хүснэгт 2 Судалгааны 3-р асуумж буюу хоолны амт**

| Эмчилгээний сэт хоол | Сайн       | Дунд     | Муу     |
|----------------------|------------|----------|---------|
| (66.9%)174           | 82 %(142), | 18%(32), | 0%(0)   |
| Уламжлалт хоол       | Сайн       | Дунд     | Муу     |
| (30.4%) 76           | 21 %(34),  | 25%(28), | 54%(14) |

**Хүснэгт 3 Судалгааны 5-р асуумж буюу хоолны төрөл**

| Эмчилгээний сэт хоол | Сайн         | Дунд        | Муу       |
|----------------------|--------------|-------------|-----------|
| (85.6)214            | 89,25%(191), | 10,75%(23), | 0%(0)     |
| Уламжлалт хоол       | Сайн         | Дунд        | Муу       |
| (14.4%) 36           | 8,3 %(3),    | 55,5%(20),  | 36,2%(13) |

**Хүснэгт 4 Судалгааны 7-р асуумж буюу хоолонд сэтгэл ханамж**

| Эмчилгээний сэт хоол | Сайн        | Дунд        | Муу        |
|----------------------|-------------|-------------|------------|
| (87.2%)218           | 92,7%(202), | 7,3%(16),   | 0%(0)      |
| Уламжлалт хоол       | Сайн        | Дунд        | Муу        |
| (12.8%)32            | 12,5%(4),   | 31,25%(10), | 56,25%(18) |

**Хүснэгт 5 Судалгааны 5-р асуумж буюу хоолны порц**

| Эмчилгээний сэт хоол | Сайн      | Дунд       | Муу       |
|----------------------|-----------|------------|-----------|
| (52,4%) 131          | 29%(38),  | 33,6%(44), | 0%(0)     |
| Уламжлалт хоол       | Сайн      | Дунд       | Муу       |
| (47,6%)119           | 27 %(32), | 30,2%(36), | 42,8%(51) |

**Дүгнэлт:** Эмчилгээний сэт хоол нь амт, төрөл, сэтгэл ханамж, порц зэргээрээ уламжлалт хоолноос давуу байгаа нь харагдаж байна. Тодруулбал өглөө өдөр оройны хоол нь 3-4 төрөлтэй

уураг, нүүрс ус, ногоо жимстэй сэт хоол нь шингэц сайтай, өнгө үзэмж сайтай байгаагаас гадна үйлчлүүлэгчийн сэтгэл ханамжид сайнаар нөлөөлж байна гэж үзэж байна.

Үйлчлүүлэгчээс аяга таваг шаардахгүй, хоол порцлохгүй цаанаасаа савалгаатай ирж байгаа нь үйлчлүүлэгчид хялбар байна. Эмчилгээний сэт хоол нь өвчний оношоор үйлчлүүлэгч бүрт тохирсон савалгаатай ирдэг. Тодруулбал энгийн хоол, зутан хоол, чихрийн шижингийн хоол, зоонд хоол гэх мэтээр таатай үйлчилгээтэй байна.

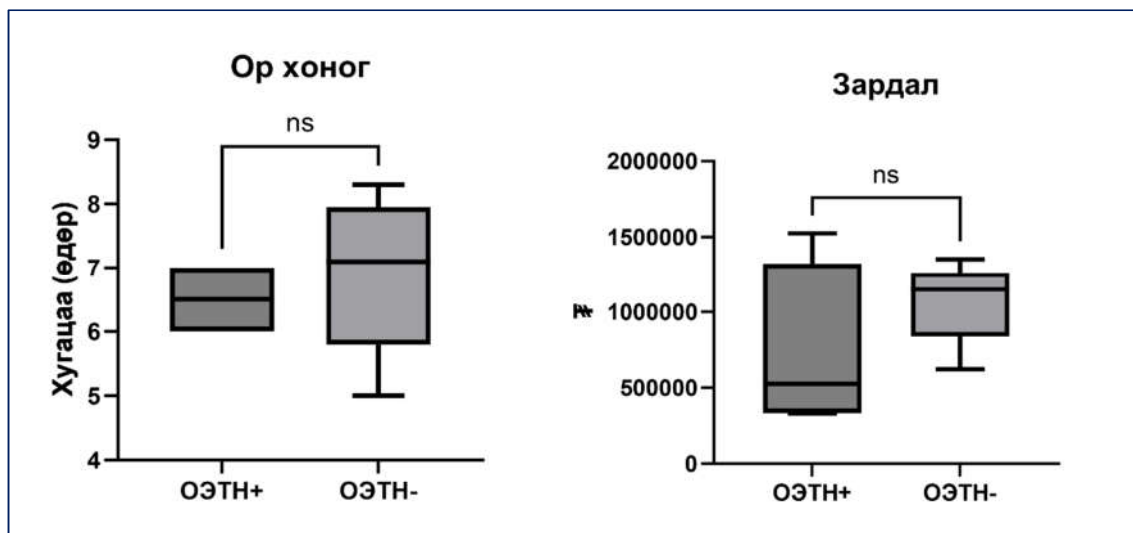
## **ХЭВЛИЙН ШИНГЭНД ОЛОН ЭМЭНД ТЭСВЭРТЭЙ НЯНГИЙН ХАЛДВАР НЬ ЭМЧИЛГЭЭНИЙ ОР ХОНОГ, ӨРТӨГТ НӨЛӨӨЛСӨН БАЙДАЛ**

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**Түлхүүр үг:** халдварлагдсан асцит, олон эмэнд тэсвэртэй нян

**Хураангуй:**

Олон эмэнд тэсвэртэй нян (ОЭТН) гэж гурав буюу түүнээс дээш бүлгийн антибиотикт тэсвэртэй эмгэг төрөгчийг хэлдэг. ОЭТН нь өвчтөний эрүүл мэндийг их эрсдэлд оруулж, эмчилгээний хугацаа, зардлыг нэмэгдүүлдэг сөрөг үр дагавартай. Эдгээр нянгийн халдварын тархалт нь эрүүл мэндийн ажилтны халдвар хамгаалалтын мэдлэг болон иргэдийн эрүүл мэндийн боловсролын мэдлэгээс шууд хамааралтай. Эдгээр мэдлэгүүдийн түвшинг үнэлэх зорилгоор УНТЭ-ийн Гастроэнтерологийн төвийн өвчтөнүүдийн дунд хэвлийн шингэний бактериологийн шинжилгээнд илэрсэн ОЭТН нь эмчилгээний зардал, ор хоногт хэрхэн нөлөөлж байгааг хэмжих, илэрсэн ОЭТН-ийн халдвар нь эмнэлгийн тусламж үйлчилгээтэй холбоотой халдвар (ЭТҮХХ) мөн эсэхийг тодруулахыг зорив. Үүний тулд 2024.05.03-с 2025.05.29-ны хооронд УНТЭ-ийн Гастроэнтерологийн төвд хэвтсэн эмийн эмчилгээтэй, элэгний циррозын оноштой өвчтөнүүдийн дунд асцитын бактериологийн шинжилгээнд ОЭТН илэрсэн (ОЭТН+ бүлэг- n=4) болон ОЭТН илрээгүй (ОЭТН- бүлэг- n=40) бүлэг болгон хувааж үзэв. Илэрсэн 4 ОЭТН-н тохиолдол нь ESBL E. Coli, MRSA, Acinetobacter Baumannii complex, Coagulase negative Staphylococci байв. ОЭТН+ бүлгийн ор хоног болон зардал нь 6,5 ( $\pm 0.57$  өдөр) ба 726786 ( $\pm 559416$ ₮) тус тус байсан байна. ОЭТН- бүлгийн ор хоног болон зардал нь 6,9 ( $\pm 1.2$  өдөр) ба 1069174 ( $\pm 271589$ ₮) тус тус байсан байна. Эдгээр үзүүлэлтүүд нь хоёр бүлгийн хооронд үнэн магадлалтай ялгаа хэмжигдсэнгүй ( $p=0.55$  ба  $p=0.26$ ). Оношлогдсон ОЭТН-ийн халдварын тохиолдол дунд эхний асцитын шинжилгээнээс 48 цагийн дараа илэрсэн халдвар байсангүй.



Асцитын халдвар нь хоёр төрөл байдаг: аяндаа үүсэх болон ЭТҮХХ-тэй холбоотой. ЭТҮХХ нь ОЭТН-аар нөхцөлдөх магадлал өндөр. Манай тохиолдолд ЭТҮХХ бүртгэгдээгүй байгаа нь 2 шалтгаантай байж болно. 1-бүртгэл хангалтгүй байсных; 2-асцитаар, хэвлийн гуурсаар эмнэлгийн халдвар тархах зам бага ач холбогдолтой байдагт оршиж байж болно. ОЭТН-ийн халдвар цөөн ( $n=4$ ) илэрсэн нь хоёр дугаар хүчин зүйл үнэний магадлалтайг баталж байж болох юм. ОЭТН-ийн халдварын тархах илүү чухал зам нь төвийн венийн гуурсны (ТВГ) халдвар хамгаалал байж болох бөгөөд цаашид ТВГ-ны судалгааг хийх нь чухал гэж үзэж байна. Ор хоног болон зардлын хувьд ялгаа байхгүй байгаа нь эдгээр өвчнүүдийн явц хүн, тавилан муу байгааг илтгэж байна гэж дүгнэж болохоор байна.

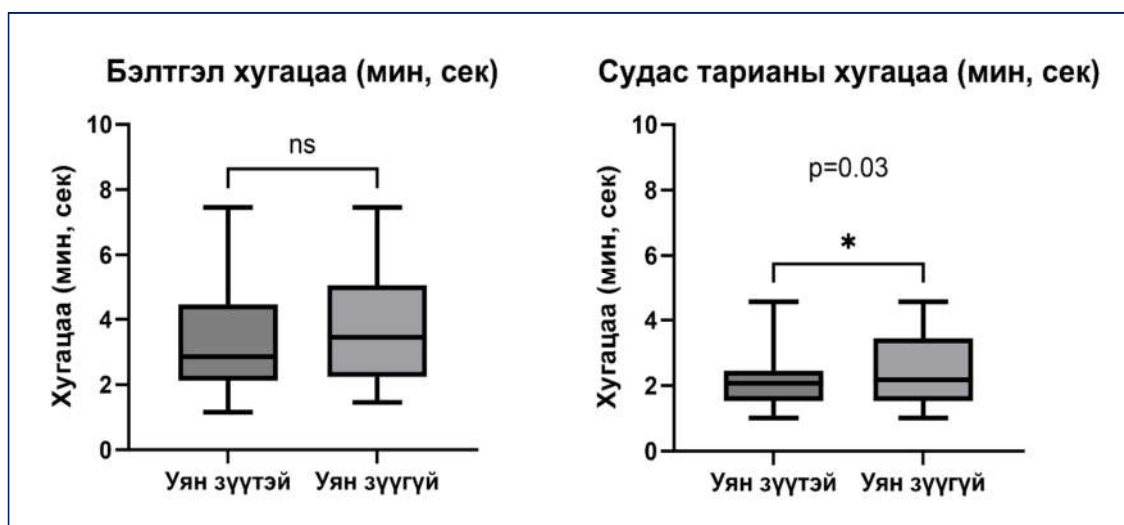
## УЯН ЗҮҮГ АШИГЛАХ НЬ СУДАС ТАРИАНЫ ХУГАЦААГ БОГИНОСГОЖ БАЙГААГ СУДАЛСАН НЬ

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**Түлхүүр үг:** уян зүү, судас тариа, ажил хөнгөвчлөх  
**Хураангуй:**

Венийн судасны уян зүү нь хатгалтын тоог цөөлж, сувилагчийн ажлыг хурдасгаж, хатгалтын эрсдэлийг бууруулж, өвчтөний тав тухыг нэмэгдүүлдэг хэрэгсэл юм. Болзошгүй хүндрэл нь флебит байдаг учир халдвар хамгаалалтыг чандлан баримтлах хэрэгтэй. Энэхүү судалгаагаар уян зүүний хэрэглээ нь тарианд зарцуулах хугацааг багасгаж байгааг хэмжихийг зорив. Үүний тулд 2025.05.01-06.01-ний хооронд УНТЭ-ийн ГЭТ-д хэвтсэн өвчтөнүүдийн тарианд зарцуулж байгаа хугацааг хэмжиж статистикийн t-test аргаар харьцуулж, Prism GraphPad программаар дүрслэв. Нийт 206 тариа эмчилгээний тохиолдолыг Уян зүүтэй ( $n=136$ ) болон Уян зүүгүй ( $n=70$ ) бүлэгт хувааж тарианы бэлтгэл болон тариаг тарихад зарцуулж буй хугацааг минут, секундээр хэмжив.

Уян зүүтэй бүлэгт ( $n=136$ ) тарианы бэлтгэлд дунджаар 3 мин 24 сек (стандарт хазайлт  $\pm 1:55$ ) зарцуулж, 2 мин 10 секундийг ( $\pm 0:80$ ) тариаг тарихад зарцуулсан байна. Уян зүүгүй бүлэгт дээрх үзүүлэлтүүд 3:50 ( $\pm 1:52$ ) ба 2:37 ( $\pm 1:00$ ) байв. Тарианы бэлтгэлд зарцуулсан хугацаа 2 бүлгийн хооронд ялгаагүй ( $p=0.24$ ) байсан бол харин тариаг тарих хугацаа нь уян зүүтэй бүлэгт богино байсан ( $p=0.03$ ) гэж хэмжигдлээ. Уян зүүтэй тохиолдолд нэг өвчтөнд зарцуулах хугацааг багасгах боломж байгааг харуулж байна.



Хэрэв уян зүүний хэрэглээг шалгуурт нийцэх өвчтөн дунд дэлгэрүүлбэл хатгалтын тоо цөөрч өвчтөнд тухтай, хатгалтад өртөх таагүй явдал цөөрч, зүүгүй тариурын хэрэглээг нэвтрүүлбэл зардал буурч, сувилагчийн ажил илүү шуурхай болж болохоор байна гэж дүгнэлээ.

### **УНТЭ-ИЙН ЗҮРХНИЙ ТӨВД СУДСАН ДОТУУРХ АБЛЯЦИ ЭМЧИЛГЭЭ ХИЙЛГЭСЭН ЭМЧЛҮҮЛЭГЧДИЙН СЭТГЭЛ САНААНЫ БАЙДЛЫГ СУДЛАХ НЬ**

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**Зорилго:** Электрофизиологийн судалгаа, радио долгионы катетер абляци (RFCA) хийхээс өмнө болон дараа өвчтөний сэтгэл зүйн байдал, түүнд нөлөөлөх хүчин зүйлсийг судлах. **Зорилт:** Зүрхний төвд хэвтэн ажилбарт орох гэж байгаа эмчилүүлэгчид сувилагч эрүүл мэндийн боловсрол олгосоны дараа эмчилүүлэгчийн сэтгэл зүйн байдал нь ажилбарт орохын өмнө ямар байсан болон орсоны дараах сэтгэл санааны байдалд өөрчлөлт орсон талаарах судалгаа юм. Арга зүй: Бид 2023 он -2025 оны хооронд 2 жилийн дотор нийт 50 хүнээс асуумж авхад ажилбарт орохын өмнөх 24 цагт сэтгэл түгшилтийн байдал их байсан бол орсоны дараа нь сэтгэл санаа тайван болсон нь эрүүл мэндийн боловсролын хэрэгжилт юм. **Үр дүн:** Нийт 2023 он -2025 оны хооронд нийт авсан судалгаагаар эргэтэй хүмүүс дээр илэрсэн шинж тэмдэгээр сэтгэл түгшүүртэй байдал илүү давамгайл байгаад ажилбарын дараа сэтгэл санаа тайван болох мөн эмэгтэйчүүдэд сэтгэл санааны тогтворгүй байдал болон гутралын шинж тэмдгүүд илэрч байсан ба ажилбарын дараа 100% сэтгэл санаа тайван биш байсан ба энэ ажилбар хийлгэсэний дараа бүрэн эдгэсэн үү эсвэл дахин өвчлөх үү гэсэн сэтгэл зүйн тогтворгүй байдал ажиглагдсан. Энэхүү судалгаагаар өвчтөнүүд электрофизиологийн судалгаа болон абляци -ийн өмнө бага зэрэг түгшүүртэй, фобик түгшүүртэй байсан бөгөөд мэс засал хийлгэхээс өмнө илүү их сэтгэцийн шинж тэмдэг илэрсэн эмэгтэйчүүдэд онцгой анхаарал хандуулах хэрэгтэй. Процедурын явц, тодорхой эрсдэл зэрэг нарийвчилсан мэдээлэл нь сэтгэлзүйн шинж тэмдгүүдийн өсөлттэй холбохгүй. Өвчтөнүүд электрофизиологийн судалгаа болон Абляци буюу ажилбарт орхын өмнөх нарийвчилсан мэдээлэл авахыг санал болгов.

### **БӨӨРНИЙ ХАВДРЫГ НЭЭЛТТЭЙ БОЛОН ХЭВЛИЙН ДУРАНГААР ХЭСЭГЧЛЭН ТАЙРАХ МЭС ЗАСЛЫГ ОР ХОНОГ БОЛОН ӨВДӨЛТТЭЙ НЬ ХАРЬЦУУЛАН СУДЛАХ НЬ**

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УНТЭ-ийн Мэдээгүйжүүлэг хагалгааны нэгдсэн тасаг  
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#### **Үндэслэл:**

Бөөрний эсийн хавдар (renal cell carcinoma, RCC) нь насанд хүрэгчдийн бөөрний хорт хавдрын 85–90%-ийг эзэлдэг бөгөөд 2022 оны байдлаар дэлхий дахинд жил бүр 431,000 шинэ тохиолдол бүртгэгдэж байна [1]. Бөөрний хавдрын эмчилгээний үндсэн арга нь мэс засал бөгөөд хавдрын хэмжээ, байрлал, үе шат, өвчтөний ерөнхий биеийн байдлаас шалтгаалан бөөрийг хэсэгчлсэн тайрах(partial nephrectomy) мэс заслыг түлхүү сонгон хэрэглэж байна [2]. Сүүлийн арван жилийн хугацаанд бөөрний хавдарын хагалгаанд дурангийн болон робот-дурангийн аргаар мэс засал хийх тохиолдол нэмэгдсэн. Учир нь эдгээр аргууд нь: жижиг зүслэгтэй, цус алдалт багатай, эмнэлэгт хэвтэх хоног бага, эдгэрэлт хурдан байна. Дурангийн мэс засал нь өвдөлт бага учир нээлттэй мэс заслын аргаас илүү үр дүнтэй байж болохыг олон судалгаа харуулжээ [3,4].

Манай оронд бөөрний хавдрын дурангийн болон нээлттэй мэс заслын дараах өвдөлт болон ор хонгийг харьцуулсан судалгаа хомс байгаа нь энэхүү судалгааг хийх үндэслэл болов.[5]

УНТЭ-ийн УАТ-д 2024-2025 онд бөөрний хавдартай хэсгийг тайрах нээлттэй болон хэвлийн дурангийн мэс засал хийлгэсэн 50 үйлчлүүлэгч (нээлттэй-25, дурангаар-25)-ийг судалгаандаа харьцуулж мэс заслын дараах өвдөлт, ор хоногийг харьцуулан судалсан. Үр дүнг E health програм ашиглан боловсруулав. Өвдөлтийн хүчийг VAS оноогоор 0-2 бол сул, 3-4 бол дунд, 5-6 бол хүчтэй, 7-19 бол маш хүчтэй гэж үнэлсэн.

**Зорилго (Objective):** Бөөрний хавдрыг нээлттэй болон хэвлийн дурангаар хэсэгчлэн тайрах мэс заслын дараах өвдөлтийн хүч болон эмнэлэгт хэвтэх ор хоногийн тоог харьцуулан үнэлэх.

**Зорилт (Objectives):** Нээлттэй болон дурангийн мэс заслын дараах өвдөлтийн оноог үнэлэх (VAS оноогоор).

Нээлттэй болон дурангийн мэс заслын дараа үйлчлүүлэгчдийн эмнэлэгт хэвтэх ор хоногийг дунджаар харьцуулах.

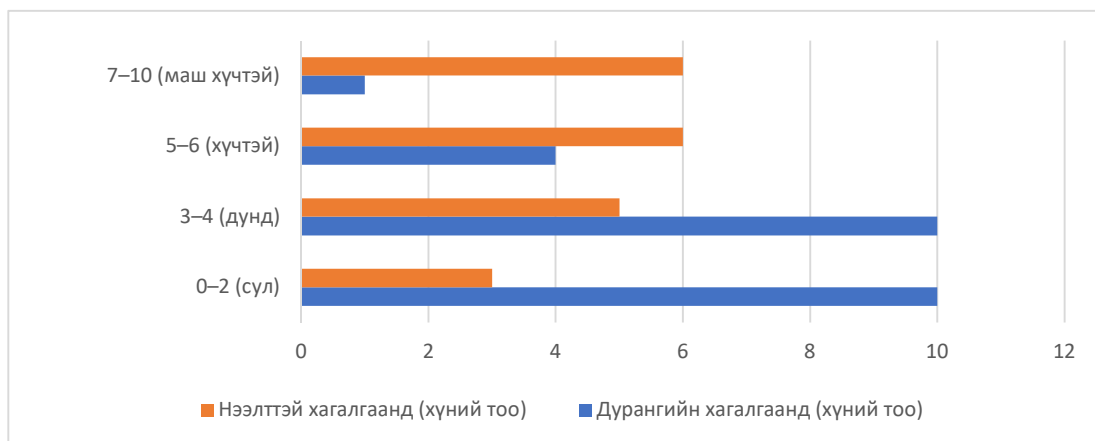
**Үзүүлэлтүүд:**

Өвдөлтийн оноо (VAS scale, 1–3 дахь хоногт)

Ор хоног (эмнэлэгт хэвтсэн нийт хоног)

**Үр дүн (Results):**

**Өвдөлтийн оноо (VAS):**



Нээлттэй мэс засал: дундаж 6.5 ( $\pm 1.2$ )

Дурангийн мэс засал: дундаж 3.8 ( $\pm 0.9$ )

$p < 0.01 \rightarrow$  статистикийн ач холбогдолтой ялгаа

| Өвдөлтийн хүчний ангилал | Дурангийн хагалгаанд (хүний тоо) | Нээлттэй хагалгаанд (хүний тоо) |
|--------------------------|----------------------------------|---------------------------------|
| 0–2 (сул)                | 10                               | 3                               |
| 3–4 (дунд)               | 10                               | 5                               |
| 5–6 (хүчтэй)             | 4                                | 6                               |
| 7–10 (маш хүчтэй)        | 1                                | 6                               |

“Нээлттэй хагалгаанд орсон өвчтөнүүдийн өвдөлтийн түвшинг нас, хүйсээр ангилан үзэхэд”

| Насны бүлэг | Хүйс | Өвдөлтийн дундаж хүч |
|-------------|------|----------------------|
| 20-40       | Эр   | 4.0%                 |
| 20-40       | Эм   | 4.0%                 |
| 50+         | Эр   | 3.88%                |
| 50+         | Эм   | 4.17%                |



Дурангийн хагалгаанд орсон өвчтөнүүдийн нас, хүйсээр ангилсан өвдөлтийн дундаж хүчний үзүүлэлт

| Насны бүлэг | Хүйс | Өвдөлтийн дундаж хүч |
|-------------|------|----------------------|
| 20-40       | Эр   | 2.75                 |
| 20-40       | Эм   | 2.67                 |
| 50+         | Эр   | 3.33                 |
| 50+         | Эм   | 3.17                 |

Энэ нь нас ахих тусам өвдөлтийн мэдрэмж нэмэгддэг болохыг илтгэж байгаа бөгөөд хүйсээр харьцуулахад насны ялгаа өвдөлтийн түвшинд илүү нөлөөтэй байгааг харуулж байна. Эрэгтэй, эмэгтэй хүмүүсийн өвдөлтийн дундаж хүч ойролцоо байгаа нь хүйсний нөлөө харьцангуй бага байгааг илэрхийлнэ.

**Ор хоног:**

Нээлттэй мэс засал: дундаж 6-15хоног

Дурангийн мэс засал: дундаж 4-10хоног

$p < 0.01 \rightarrow$  статистикийн ач холбогдолтой ялгаа

| Мэс заслын төрөл            | Ор хоног     | Ор хоногийн дундаж |
|-----------------------------|--------------|--------------------|
| Нээлттэй мэс засал          | 6 – 15 хоног | 8 хоног            |
| Хэвлийн дурангийн мэс засал | 4 – 10 хоног | 5 хоног            |

Энэхүү ялгаа нь мэс заслын төрлөөс шалтгаалан өвчтөнүүдийн эмнэлэгт хэвтэх хугацаа өөр байгааг илтгэж байгаа бөгөөд статистикийн судалгаагаар энэ ялгаа нь ач холбогдолтой гэж дүгнэж болох юм.

**Дүгнэлт (Conclusion):** Хэвлийн дурангаар бөөрний хавдартай хэсгийг тайрах мэс засал нь өвдөлтийн хувьд хөнгөн, эмнэлэгт хэвтэх хугацаа богино байгааг харуулж байна. Иймд мэс заслын дараах сэргээн засах хугацааг богиносгох, өвчтөний тав тухыг хангах үүднээс дурангийн арга илүү давуу талтай байж болохыг судалгаа харуулж байна. 2021 онд JAMA Surgery сэтгүүлд нийтлэгдсэн Тап нарын судалгаанд нээлттэй мэс заслын дараах өвдөлтийн оноо 6.1, дурангийн бүлгийнх 4.0 байсныг дурдсан [1]. Мөн нэгэн мета-анализд дурангийн мэс засал нь эмнэлэгт хэвтсэн хоногийг 2.5 хоногоор багасгадаг гэсэн байна [2]. Эдгээр үр дүнтэй манай судалгааны үр дүн ойролцоо гарч байна.



## **IT CLINICAL CENTRAL LABORATORY**

The "IT" Clinical Central Laboratory of NRB LLC was established in 2015 with the goal of providing high-quality medical laboratory services in a safe and hygienic environment. Equipped with the latest advanced technologies and modern diagnostic equipment, the laboratory delivers services at a professional level.

The "IT" Clinical Central Laboratory currently employs 4 medical doctors, 6 biomedical researchers, and 5 laboratory technicians. More than half of the staff are professionals with 10 to 20 years of experience in the medical laboratory field.

Our operations are driven by a commitment to quality, providing accurate and reliable test results, ensuring diagnostic value, and offering a wide range of essential tests in one place.

To achieve this, we have fully implemented the MNS ISO 15189:2024 quality management system across all operations and have been accredited by the National Accreditation Center of Mongolia, holding Certificate No. ML 38.

Our laboratory provides a full range of medical laboratory services, including over 250 types of diagnostic tests in the fields of hematology, biochemistry, immunology, clinical chemistry, hemostasis, molecular biology, and microbiology. All tests are performed using fully automated equipment from world-leading manufacturers.

As part of our commitment to integrating cutting-edge technologies, we utilize the following state-of-the-art diagnostic systems:

- XN-550 Fully Automated Hematology Analyzer and CA-600 Coagulation Analyzer by Sysmex Corporation, Japan
- Response 940 Fully Automated Biochemistry Analyzer by Diasys Diagnostics, Germany
- Maglumi X3 Fully Automated Immunoassay Analyzers by Snibe Diagnostics, China
- i800, i1000 Fully Automated Immunoassay Analyzer by Maccora Biotechnology, China
- H100 Urine Strip Analyzer by Dirui Industrial LLC, China
- DTLITE/DT PRIME Fully Automated PCR Amplification System by DNA Technology, Russia

By employing these advanced diagnostic tools and high-quality reagents, we ensure accurate, reliable, and efficient laboratory services to meet the needs of our patients and healthcare partners.

We are committed to continuously introducing new technologies and high-impact diagnostic tests that are tailored to the needs of our clients. In alignment with this objective, we are proud to be the first in Mongolia to offer blood lead and cadmium level testing, a significant advancement in clinical diagnostics.

It is our goal to ensure that every client who visits our laboratory receives the necessary diagnostic services in a comprehensive, safe, and risk-free environment all in one place allowing for timely diagnosis and treatment.

IT Clinical Central Laboratory

Contact number: 7505-3333

*“Past, present and the future” of the FCHM -100<sup>th</sup> Anniversary scientific conference*

