ASIORNA 2026

Organized by:

PROGRAM & ABSTRACT BOOK

The 8th ASIORNA conference 2026 & 9th ASIAN perioperative nursing Leadership Forum

STRONGER TOGETHER: GLOBAL TRANSFORMATION AND INNOVATION IN PERIOPERATIVE NURSING

23-25 OCTOBER 2026

Intercontinental Hotel Bangkok, Thailand



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Welcome Message



Associate Professor Dr. Benjamaporn Butsripoom
President of the Asian Perioperative Nurses Association 2026-2027 and
President of the Thai Perioperative Nurses Association (TPNA)

Dear Delegates, Distinguished Guests, and Esteemed Colleagues,

On behalf of the Thai Perioperative Nurses Association and the Organizing Committee, it is my great pleasure and honor to welcome you to the **8th ASIORNA conference 2026 & 9th ASIAN Perioperative Nursing Leadership Forum**, which will be held in **Bangkok, Thailand on October 23-25, 2026**. It is a source of great pride for Thailand and the Thai Perioperative Nurses Association to serve as the host of this prestigious international conference.

The 8th ASIORNA conference 2026 & 9th ASIAN Perioperative Nursing Leadership Forum provides a valuable platform for perioperative nurses across the Asia–Pacific region and beyond to come together to exchange knowledge, share best practices, and strengthen professional collaboration.

This year's theme, **"Stronger Together: Global Transformation and Innovation in Perioperative Nursing"**, reflects our shared commitment to advancing perioperative nursing practices amid rapid changes in healthcare systems, technologies, and patient needs. This conference aims to promote evidence-based practices, patient safety, professional development, and leadership in perioperative nursing.

We are deeply honored to welcome distinguished speakers, experts, and delegates from many countries. Your presence and active participation will undoubtedly enrich discussions, contribute to meaningful learning experiences, and foster lasting professional networks and collaborations.

I would like to extend my sincere appreciation to ASIORNA, the organizing committees, speakers, partners, and sponsors for their support in making the 8th ASIORNA conference 2026 & 9th ASIAN Perioperative Nursing Leadership Forum possible. I am also truly grateful to all delegates for your commitment to advancing perioperative nursing and for joining us at this important gathering.

I hope that during your stay, you will not only find the conference academically rewarding, but also enjoy the warm hospitality, rich culture, and vibrant atmosphere of Thailand.

Thank you for being part of the 8th ASIORNA conference 2026 & 9th ASIAN Perioperative Nursing Leadership Forum, I wish you a successful, inspiring, and memorable conference.

Organizing Committee

Advisory Committee:
Mrs. Uraiwan Aseksakul
Assistant Professor Siriporn Phutharangsi
Mrs. Chawaltip Pitaknatee

Chairperson:
Associate Professor Dr. Benjamaporn Butsripoom

Scientific Committee:
Miss Paweena Naenna
Dr. Wanvimol Kongsuwan
Mrs. Manida Wasanasit
Associate Professor Dr. Pimsurang Taechaboonsermsak
Assistant Professor Dr. Rattima Sirihorachai
Dr. Sunisa Seephom
Lecturer Pinyo Jaroensuk
Miss Rattana Permpech *(Scientific Committee Secretary)*

Secretariat:
Miss Punyanuch Chulnoul
Mrs. Nongnuch Makjaroen

International Relations:
Mrs. Supajira Siriseth
Miss Punyanuch Chulnoul

Opening Ceremony and Cultural Night:
Mrs. Manida Wasanasit
Mrs. Lumpung Thiumwisai

Accommodation & Congress Facility:
Miss Benjawan Teeratherdtrakul
Miss Thanaphonpan Charoensri
Miss Peeraya Waraklang

Organizing Committee

Reception:
Mrs. Sataya Panthuen
Mrs. Sudthida Inprasit

Registration:
Miss Kanikanan Narintarakul Na Ayutaya
Miss Varunee Rermarunrong

Treasurer:
Mrs. Somruethai Manokuljit
Mrs. Kurima Chankaew

Public Relation and Information Technology:
Miss Narumol Nuanchawee
Mrs. Sataya Panthuen

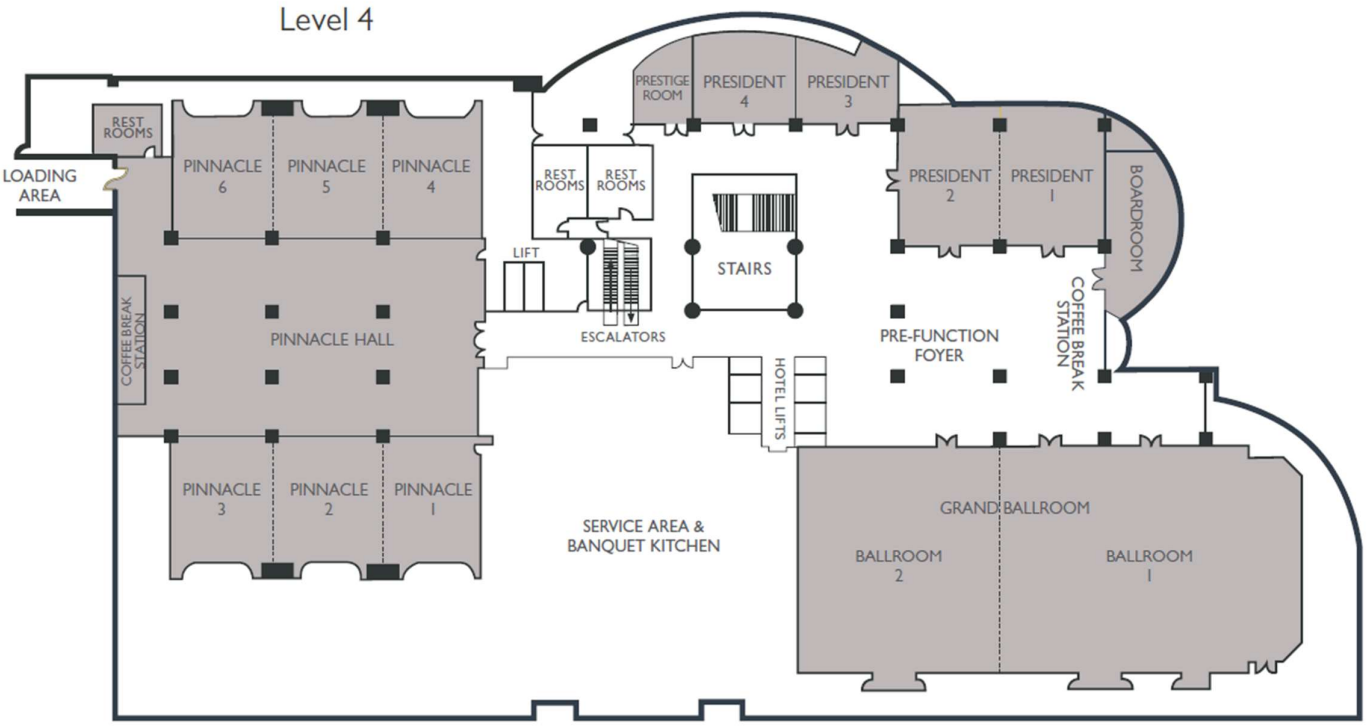
Fund Raising:
Miss Rattana Permpech

Coordination:
Mrs. Supajira Siriseth
Miss Rattana Permpech
Miss Narumol Nuanchawee
Mrs. Sataya Panthuen

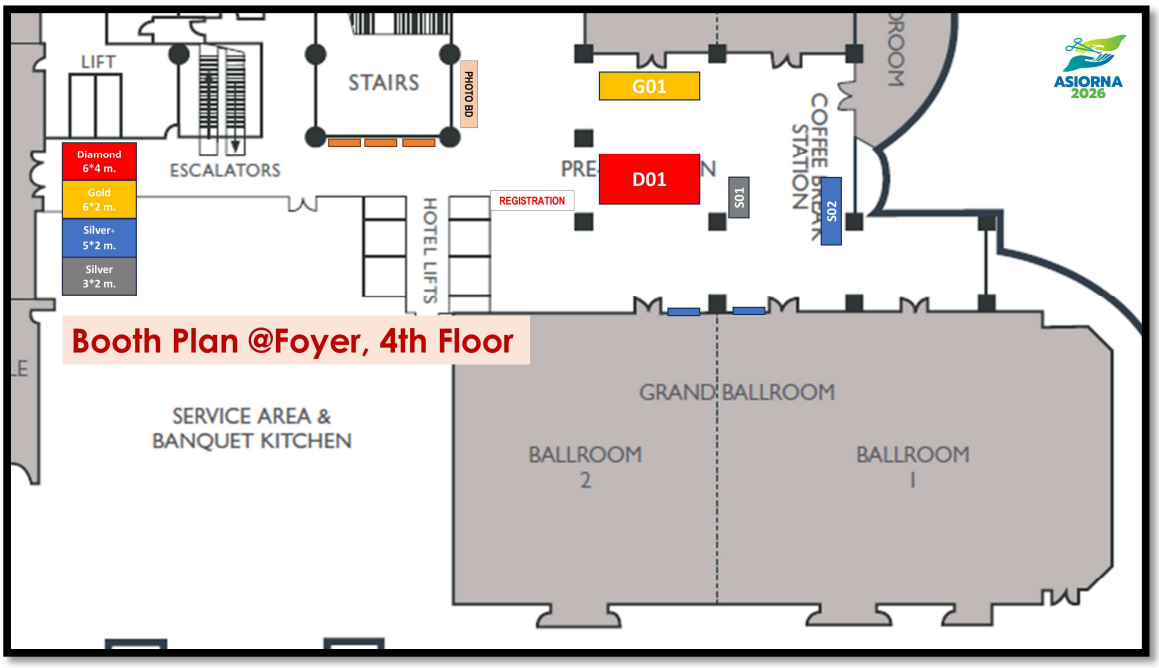
ASIORNA Board Member

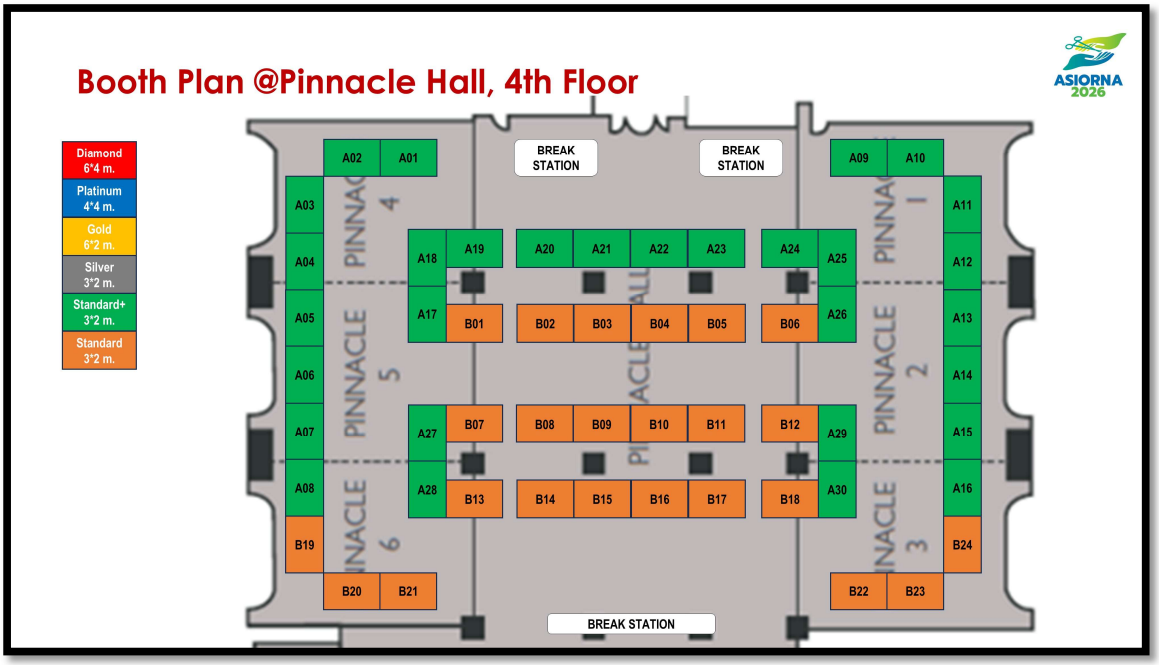
President	Benjamaporn Butsripoom *(Thailand)*
Vice president	Mihyeong Kim *(Korea)*
Advisor	Kesook Yoon *(Korea)*
Member Country	Tracy Ann Kerle *(Australia)* Li Guo *(China)* Xiaomin Chen *(China)* Alick Chiu *(Hong Kong S.A.R.)* Clara Leung Po Chun *(Hong Kong S.A.R.)* Mayumi Ishibashi *(Japan)* Shigeko Mills *(Japan)* Youn Ah Lee *(Korea)* Lucy Middleton *(New Zealand)* Susan Rolls *(New Zealand)* Ho Miew Ling *(Singapore)* Png Bee Hong *(Singapore)* Supajira Siriseth *(Thailand)*

Floor Plan


Level 4
REST ROOMS
LOADING AREA
PINNACLE 6
PINNACLE 5
PINNACLE 4
COFFEE BREAK STATION
PINNACLE HALL
PINNACLE 3
PINNACLE 2
PINNACLE 1
PRESTIGE ROOM
PRESIDENT 4
PRESIDENT 3
REST ROOMS
REST ROOMS
LIFT
ESCALATORS
STAIRS
PRESIDENT 2
PRESIDENT 1
BOARDROOM
PRE-FUNCTION FOYER
COFFEE BREAK STATION
HOTEL LIFTS
SERVICE AREA & BANQUET KITCHEN
GRAND BALLROOM
BALLROOM 2
BALLROOM 1

Booth Plan & Exhibitor





Booth Plan & Exhibitor

COMPANY	LEVEL	BOOTH NUMBER
บริษัท เมดโทรนิค (ประเทศไทย) จำกัด	Diamond+	D01
บริษัท บี.บราวน์ (ประเทศไทย) จำกัด	Gold	G01
บริษัท จอห์นสัน แอนด์ จอห์นสัน เมดเทค (ประเทศไทย) จำกัด	Siver+	S02
บริษัท ฟุคุโชว์ อินเตอร์เนชั่นแนล จำกัด	Silver	S01
บริษัท กู๊ด แอนด์ เกรท พลัส จำกัด	Standard Booth	B01
บริษัท ไทยฮอสพิทอล โปรดักส์ จำกัด	Standard Booth+	A01
บริษัท ซัมมิท เฮลธ์แคร์ จำกัด	Standard Booth+	A02
บริษัท แปซิฟิค เฮลธ์แคร์ (ไทยแลนด์) จำกัด	Standard Booth+	A03
บริษัท โพสเฮลท์แคร์ จำกัด	Standard Booth+	A04-A05
บริษัท โพส อินเทลลิเจ้นซ์ จำกัด	Standard Booth+	A06-A07
บริษัท โคเบส เฮลท์แคร์ (ไทยแลนด์) จำกัด	Standard Booth+	A08
บริษัท เมดไลน์ จำกัด (B.GRIMM PHARMA)	Standard Booth+	A09
บริษัท บี.เค. เมดิคอล เฮลท์แคร์ จำกัด	Standard Booth+	A10
บริษัท เบสท์ ไดเรคชั่น ซิสเต็ม จำกัด	Standard Booth+	A11
ห้างหุ้นส่วนจำกัด หมื่นเท่าพันทวี	Standard Booth+	A12
บริษัท ทรานส์เมดิค (ประเทศไทย) จำกัด	Standard Booth+	A13
บริษัท ฟิวเจอร์ เดคคอเรชั่น กรุ๊ป จำกัด	Standard Booth+	A14
บริษัท ไอดีเอส เมดิคอล ซิสเต็มส์ (ประเทศไทย) จำกัด	Standard Booth+	A15-A16
บริษัท เกท์ทิงเก (ไทยแลนด์) จำกัด	Standard Booth+	A17
บริษัท รัตนาแอ็พแพเร็ล แคร์ จำกัด	Standard Booth+	A18
บริษัท เมดีไทม์ จำกัด	Standard Booth+	A19
บริษัท ออมนิเมด จำกัด	Standard Booth+	A20-A21
บริษัท รีนอลพลัส จำกัด	Standard Booth+	A22-A23
บริษัท บางกอกยูนิเทรด จำกัด	Standard Booth+	A24
บริษัท เอ็มทีเจที (ไทยแลนด์) จำกัด	Standard Booth+	A25-A26
บริษัท บางกอก แอดวานซ์ เทคโนโลยี่ จำกัด	Standard Booth+	A27
บริษัท ไบโอคอททอน จำกัด	Standard Booth+	A28
บริษัท ซูพีเรียร์โซลูชั่น จำกัด	Standard Booth+	A29

COMPANY	LEVEL	BOOTH NUMBER
บริษัท ไทยปาร์คเกอร์ไรซิ่ง จำกัด	Standard Booth+	A30
บริษัท ฟิวเจอร์ เมดิคอล ซัพพลาย จำกัด	Standard Booth	B02-B03
บริษัท โซลเวนตัม (ประเทศไทศ) จำกัด	Standard Booth	B04-B05
บริษัท ไทย เมดิคอล เทรดดิ้ง จำกัด	Standard Booth	B06
บริษัท เฮลธ์เมดิค จำกัด	Standard Booth	B07
บริษัท ที อี คิว จำกัด	Standard Booth	B08-B09
บริษัท โคติส เฮลท์แคร์ จำกัด	Standard Booth	B10
บริษัท อี-ไซเมด จำกัด	Standard Booth	B11
บริษัท อินเตอร์เมดิคอล จำกัด	Standard Booth	B12
บริษัท เอ็นโดเลนส์ จำกัด	Standard Booth	B13
บริษัท ซี แอนด์ เค บิสสิเนส ดีเวลลอปเมนท์ จำกัด	Standard Booth	B14
บริษัท สไตรเกอร์ (ประเทศไทย) จำกัด	Standard Booth	B15
หจก. เอส.ที.เมดิคอล แอนด์เซอร์วิส	Standard Booth	B16
บริษัท เอ็มเมอรัลด์ นอนวูเว่น อินเตอร์เนชั่นแนล จำกัด	Standard Booth	B17
บริษัท ดีเบสท์ เทค จำกัด	Standard Booth	B18
บริษัท เจริญพลัส เฮลท์แคร์ จำกัด	Standard Booth	B20
บริษัท ท้อปไลน์ โพรดักส์ จำกัด	Standard Booth	B21
บริษัท สยาม ทรอลี่ โปรเกรสชั่น จำกัด	Standard Booth	B22
บริษัท เซอจิ-แคร์ จำกัด	Standard Booth	B23
The Crystal Galley	Table Booth	A29
เวชสำอาง DE FORMULA	Table Booth	A29
บริษัท ซี เค เฮลธ์ กรุ๊ป จก.	Table Booth	B24
FWD ประกันชีวิต	Table Booth	B19

The 8th ASIORNA Conference 2026 &
The 9th Asian Perioperative Nursing Leadership Forum 2026
"Stronger Together: Global Transformation and Innovation in Perioperative Nursing"

Friday, October 23 - Sunday, October 25, 2026

Intercontinental Hotel Bangkok

Friday, October 23, 2026
Pre-congress Leadership Forum

09.00-12.00	**ASIORNA Board Meeting** *at Boardroom, 4th floor*		
	Ballroom 1	**Ballroom 2**	**President 1-2**
12.00 - 12.55	**LUNCH SYMPOSIUM** *(Limited to 100 participants - RSVP required)* **A Elevating Surgical Outcomes: Making Evidence-Based Infection Prevention the Standard of Care** **Dr.Hyungjin Kim** *(Korea)*, **Dr.Esther Saguil** *(Philippines)*, **Professor Philip Russo** *(Australia)*, **Asst.Dr.Navamol Lekskul** *(Thailand)*		
13.00-13.05		**OPEN THE MEETING** **Associate Professor Dr.Benjamaporn Butsripoom**, RN, PhD, T-CNOR *President of TPNA & ASIORNA*	
13.05-14.30		**Perioperative Patient Safety Management Tools an Impact on Surgical Outcomes: Group Discussion from Many Countries** **Dr.Wanvimol Kongsuwan**, RN, PhD, T-CNOR *Head of Perioperative Nursing Division, Department of Nursing Siriraj Hospital, Faculty of Medicine, Mahidol University, Thailand* **Chiu Hak Fai Alick**, RN, FHKAN (Perioperative) *Founding President of the Hong Kong College of Perioperative Nursing* **Moderator: Assistant Professor Dr.Rattima Sirihorachai**, RN, PhD, *T-CNOR* *Faculty of Nursing, Mahidol University, Thailand*	**Surgical Site Infection Control Journey Hands-on Workshop** *(for Thai participants only)* **Dr.Omchai Rattananont**, M.D. *Central Chest Institute of Thailand* **Dr.Pannika Vorapaluk**, M.D. *King Chulalongkorn Memorial Hospital, Thailand*
15.00-16.30	**HOSPITAL VISIT** 1. King Chulalongkorn Memorial Hospital 2. Siriraj Hospital 3. Ramathibodi Hospital 4. Med Park Hospital		

Saturday, October 24, 2026

	Grand Ballroom
08.30-09.00	**OPENING CEREMONY**
09.00-09.30	**Leadership Dynamics in a Changing Global Landscape: Education and Training** **Associate Professor Dr.Tassana Boontong** *President of the Thailand Nursing and Midwifery Council, Thailand*
09.30-10.30	**Shaping the Future of Perioperative Nursing in Asia: From Vision to Leadership in Action** **Kesook Yoon**, RN, PhD, CNOR *Past President of ASIORNA* **Associate Professor Dr.Benjamaporn Butsripoom**, RN, PhD, T-CNOR *President of TPNA & ASIORNA*
10.30-11.00	**Morning Break & Exhibition Tour**
11.00-12.00	**Global transformation in perioperative standards toward 2030: Advancing infection prevention and surgical site outcomes** **Professor Philip Russo**, RN, PhD *Director of Research, Nursing and Midwifery, Monash University, Australia*
12.00-13.30	**Lunch & Exhibition Tour**
13.30-16.00	**Oral Presentation** *(Breakout Rooms)*
15.00-15.30	**Afternoon Break & Exhibition Tour**
15.30-16.00 **@Ballroom 1**	**Guardians of the OR: Aligning Technological Advances, Standard Practices, and Human Touch in MIS** **Warisara Tuvayanon**, CNOR *Nurse Supervisor, Perioperative Nursing Division, Faculty of Medicine Siriraj Hospital, Thailand*
15.30-16.30 **@Ballroom 2**	**Annual Meeting 2026 of the Thai Perioperative Nurses Association** **Associate Professor Dr.Benjamaporn Butsripoom**, RN, PhD, T-CNOR *President of TPNA & ASIORNA*
18.00-22.00	**CULTURAL NIGHT**

13.30-15.30	ORAL PRESENTATION			
	Ballroom 1	Ballroom 2	President 1	President 2
	Innovation Technology Sustainability	Leadership Management Cost-Effective Sustainability (Green OR) Patient Safety Quality Excellence Infection Control	Education and Training	Patient Safety Quality Excellence Infection Control
13.30-13.45	Streamlining Clinical Workflow and Boosting Operational Efficiency with an Electronic Implant Record System in Operating Theatre in Hong Kong **Tsang Wai Ling Janette**, *Hong Kong S.A.R.*	The Application of Nursing Intervention Plan Based on HFMEA in Patients Undergoing Daytime Surgery for Breast **Rongying Tang**, *China*	Virtual Simulation Training System for Nursing Assistance in Robot Assisted Surgery: A Randomized Controlled Trial **Ke Lin**, *China*	Stronger Together: Achieving Excellence in Normothermia and Infection Control via Multidisciplinary Protocols in ERAS Patients **Warisara Tuvayanon**, *Thailand*
13.45-14.00	The Effect of Preoperative Virtual Reality Hypnosis to Manage Preoperative Anxiety Before Colorectal Cancer Surgery **Kenneth Wong**, *Hong Kong S.A.R.*	Operating Room Noise Levels and Perioperative Nurses' Perceptions of Noise: A Cross-Sectional Study **Hyejung Kim**, *Korea*	Application Research of Stepwise Dual TCM Intervention Based on Traditional Chinese Medicine Emotional Theory in Perioperative Patients Undergoing Breast Reconstruction **Huan Zhang**, *China*	Reducing Surgical Site Infections After Colon Surgery Through a Perioperative Nursing Quality Improvement Bundle **Eunhye Gil**, *Korea*
14.00-14.15	Development and Preliminary Evaluation of a Microlearning-Based Discharge Education Intervention in Perioperative Ambulatory Surgery Setting **Sutthinee Thongthip**, *Thailand*	The Effects of Operating Room Nurses' Environmental Knowledge, Attitudes, and Practices on Eco-Friendly Surgical Nursing Orientation **Shin So Young**, *Korea*	Application of Family Participatory Pain Management Program Based on Health Behavior Interaction Model in Children Undergoing Day Surgery **Yang Chen**, *China*	Med Safe Smoke Filter: Transforming Safety in Laparoscopic Surgery Through High-Value and Cost-Effective Innovation **Nunnapat Ruangkhajorn**, *Thailand*
14.15-14.30	Factors Influencing Operating Room Nurses' Behavioral Intention to Use Emerging Technologies in Perioperative Nursing **Jiyoung Kim**, *Korea*	How to Reduce Medical Supply Costs and Medical Waste in the Operating Room **Min-Jin Choi**, *Korea*	Disaster countermeasures in the Japan periOperative Nursing Academy and future issues **Emiko Imai**, *Japan*	Full-Chain Evidence-Based Management of Post-Thirst after Day Surgery under General Anesthesia **Wang Yuying**, *China*
14.30-14.45	Efficacy and Safety of Patient-Controlled Intravenous Analgesia after Craniotomy: An Anesthesia Nurse-Led Follow-Up Project **Qing Li**, *China*	Investigation of the Duration of Wearing Elastic Stockings after Knee Joint Surgery **Misaki Hanabata**, *Japan*	Global Transformation and Nursing Innovation: A Meta-Analysis of PACU Nursing in Ambulatory Perioperative Care **Huang Zhifeng**, *China*	Beyond the Hospital Walls: Evidence Based Telehealth for Enhancing Surgical Outcome **Law Shuk Fan**, *Hong Kong S.A.R.*
14.45-15.00	Machine Learning-Based Estimation Model for Intraoperative Pressure Injury in Hypothermic Cardiopulmonary Bypass: A Prospective Cohort Study **Chaoran Qu**, *China*	Research Progress on Cancer-Related Fatigue in Cancer Patients **Shuting Zhang**, *China*	The Effect of Intraoperative Micro-Break Stretching Exercise on Reducing the Risk of Musculoskeletal Disorders (MSDS) in Perioperative Nurse **Melly Rahmayani**, *Indonesia*	Development of Innovation in Preparing Sterile Ice for Organ Storage: From "Smart Nurse Smart Bag" to "PEERAYA-Ice Crusher" at Khon Kaen Hospital **Peeraya Paonta**, *Thailand*
15.00-15.15	Perianesthesia Nursing for Patients Undergoing Endoscopic Submucosal Dissection in the Ambulatory Setting: Reconstruction of Nursing Procedure **Ran Wang**, *China*	Analysis of the Current Status and Influencing Factors of Cancer-Related Fatigue in Patients with Pancreatic Cancer Undergoing Chemotherapy **Shuting Zhang**, *China*	Training and Practice of Anesthesia Specialist Nurses in China **Lin Wang**, *China*	Prone Tucked-Arm Support for Cervicothoracic Spine Surgery **Pattharakorn Thapthimthong**, *Thailand*
15.15-15.30	Developing Artificial Intelligence Literacy Competencies in Perioperative Nursing: A Scoping Review **Su Youn Shin**, *Korea*		Transforming Clinical Practice Through Educational Support: A Report on the Japan periOperative Nursing Academy Support for Operating Room Nurses at the Japan Heart Medical Center in Cambodia **Chie Yamamoto**, *Japan*	

Sunday, October 25, 2026

	Grand Ballroom
08.30-09.30	**The Future of Digital Surgery: Using AI and Big Data to Predict Surgical Outcomes** **Professor Dr.Apichat Asavamongkolkul**, MD *Former Dean Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*
09.30-10.30	**Building with Purpose: Leadership, Mentorship, and the Future of Perioperative Nursing** **Dr.David Reinhart**, DNP, MBA, RN, CNOR, FAAN *President of AORN, USA*
10.30-11.00	**Morning Break & Exhibition Tour**
11.00-12.00	**Elevating Global Patient Safety in Perioperative Care** **Dr. Piyawan Limpanyalerd**, MD *Director of the Institute of Hospital Accreditation Thailand* *President of ASQua (Asian Society for Quality in Health Care), Board Members of ISQua* *Global Patient Safety Expert*
12.00-13.30	**Lunch & Exhibition Tour**
13.30-14.30	**Sharing Experience Crisis Management with Global Transformation** **Dr.Shigeko Mills** *President of Japan perioperative Nursing Association (JONA)* **Dr.Li Guo** *President of the Yan an Branch Peking University Third Hospital, Past President of ASIORNA* **Wilawan Chomthong** *Director of Nursing, Songklanagarind Hospital, Thailand* **Moderator: Png Bee Hong** *Chairperson, Operating Room Nurses Chapter (ORNC), Singapore Nurses Association (SNA), Singapore*
14.30-15.00	**Smart Operating Rooms: Integrating System and Robotics** **Professor Dr.Suthep Udomsawaengsup**, MD, FACS, FRCST *Department of Surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand*
15.00-15.15	**CLOSING CEREMONY** **Associate Professor Dr. Benjamaporn Butsripoom**, RN, PhD, T-CNOR *President of TPNA & ASIORNA*
15.15-15.30	**Afternoon Break & Exhibition Tour**

Oral Presentation

ORAL PRESENTATION

Room: Ballroom 1
October 24, 2026
Innovation Technology Sustainability

Time	Presenter	Abstract Title
13:30-13:45	**O-01** **Tsang Wai Ling Janette** *Tseung Kwan O Hospital, Hong Kong SAR*	Streamlining Clinical Workflow and Boosting Operational Efficiency with an Electronic Implant Record System in Operating Theatre in Hong Kong
13:45-14:00	**O-02** **Kenneth Wong** *Tseung Kwan O Hospital, Hong Kong SAR*	The Effect of Preoperative Virtual Reality Hypnosis to Manage Preoperative Anxiety Before Colorectal Cancer Surgery
14:00-14:15	**O-03** **Sutthinee Thorngthip** *Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*	Development and Preliminary Evaluation of a Microlearning-Based Discharge Education Intervention in Perioperative Ambulatory Surgery Setting
14:15-14:30	**O-04** **Jiyoung Kim** *Samsung Medical Center, Korea*	Factors Influencing Operating Room Nurses' Behavioral Intention to Use Emerging Technologies in Perioperative Nursing
14:30-14:45	**O-05** **Qing Li** *Xuanwu Hospital Capital Medical University, China*	Efficacy and Safety of Patient-Controlled Intravenous Analgesia after Craniotomy: An Anesthesia Nurse-Led Follow-Up Project
14:45-15:00	**O-06** **Chaoran Qu** *Shenzhen People's Hospital, China*	Machine Learning-Based Estimation Model for Intraoperative Pressure Injury in Hypothermic Cardiopulmonary Bypass: A Prospective Cohort Study
15:00-15:15	**O-07** **Ran Wang** *Xuanwu Hospital Capital Medical University, China*	Perianesthesia Nursing for Patients Undergoing Endoscopic Submucosal Dissection in the Ambulatory Setting: Reconstruction of Nursing Procedure
15:15-15:30	**O-08** **Suyoun Shin** *Severance Hospital, Korea*	Developing Artificial Intelligence Literacy Competencies in Perioperative Nursing: A Scoping Review

ORAL PRESENTATION

Room: Ballroom 2
October 24, 2026
Leadership management Cost-effective,
Sustainability (Green OR)
Patient safety Quality excellence Infection control

Time	Presenter	Abstract Title
13:30-13:45	**O-09** **Rongying Tang** *Chongqing University Cancer Hospital, China*	The Application of Nursing Intervention Plan Based on HFMEA in Patients Undergoing Daytime Surgery for Breast
13:45-14:00	**O-10** **Hyejung Kim** *Samsung Medical Center, Korea*	Operating Room Noise Levels and Perioperative Nurses' Perceptions of Noise: A Cross-Sectional Study
14:00-14:15	**O-11** **So Young Shin** *The Catholic University of Korea, Seoul ST. Mary's Hospital, Korea*	The Effects of Operating Room Nurses' Environmental Knowledge, Attitudes, and Practices on Eco-Friendly Surgical Nursing Orientation
14:15-14:30	**O-12** **Min-Jin Choi** *Kyung Hee University Hospital, Korea*	How to Reduce Medical Supply Costs and Medical Waste in the Operating Room
14:30-14:45	**O-13** **Misaki Hanabata** *Okayama Kyokuto Hospital, Japan*	Investigation of the Duration of Wearing Elastic Stockings after Knee Joint Surgery
14:45-15:00	**O-14** **Shuting Zhang** *The Second Affiliated Hospital of the Army Medical University, China*	Research Progress on Cancer-Related Fatigue in Cancer Patients
15:00-15:15	**O-15** **Shuting Zhang** *The Second Affiliated Hospital of the Army Medical University, China*	Analysis of the Current Status and Influencing Factors of Cancer-Related Fatigue in Patients with Pancreatic Cancer Undergoing Chemotherapy

ORAL PRESENTATION

Room: President 1
October 24, 2026
Education and training

Time	Presenter	Abstract Title
13:30-13:45	**O-16** **Ke Lin** *The Second Affiliated Hospital of Kunming Medical University, China*	Virtual Simulation Training System for Nursing Assistance in Robot-Assisted Surgery: A Randomized Controlled Trial
13:45-14:00	**O-17** **Huan Zhang** *Chongqing University Cancer Hospital, China*	Application Research of Stepwise Dual TCM Intervention Based on Traditional Chinese Medicine Emotional Theory in Perioperative Patients Undergoing Breast Reconstruction
14:00-14:15	**O-18** **Yang Chen** *Children's Hospital of Chongqing Medical University, China*	Application of Family Participatory Pain Management Program Based on Health Behavior Interaction Model in Children Undergoing Day Surgery
14:15-14:30	**O-19** **Emiko Imai** *Ehime Juzen School of Allied Medical Professions Hospital, Japan*	Disaster countermeasures in the Japan periOperative Nursing Academy and future issues
14:30-14:45	**O-20** **Huang Zhifeng** *Chongqing General Hospital,* *The Affiliated People's Hospital of Chongqing University, China*	Global Transformation and Nursing Innovation: A Meta-Analysis of PACU Nursing in Ambulatory Perioperative Care
14:45-15:00	**O-21** **Melly Rahmayani** *Hasan Sadikin Hospital, Indonesia*	The Effect of Intraoperative Micro-Break Stretching Exercise on Reducing the Risk of Musculoskeletal Disorders (MSDS) in Perioperative Nurse
15:00-15:15	**O-22** **Lin Wang** *Xuanwu Hospital Capital Medical University, China*	Training and Practice of Anesthesia Specialist Nurses in China
15:15-15:30	**O-23** **Chie Yamamoto** *NGO Japan Heart, Japan*	Transforming Clinical Practice Through Educational Support: A Report on the Japan periOperative Nursing Academy Support for Operating Room Nurses at the Japan Heart Medical Center in Cambodia

ORAL PRESENTATION

Room: President 2
October 24, 2026
Patient safety Quality excellence Infection control

Time	Presenter	Abstract Title
13:30-13:45	**O-24** **Warisara Tuvayanon** *Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*	Stronger Together: Achieving Excellence in Normothermia and Infection Control via Multidisciplinary Protocols in ERAS Patients
13:45-14:00	**O-25** **Eunhye Gil** *Seoul National University Bundang Hospital, Korea*	Reducing Surgical Site Infections After Colon Surgery Through a Perioperative Nursing Quality Improvement Bundle
14:00-14:15	**O-26** **Nunnapat Ruangkhajorn** *Songklanagarind Hospital, Faculty of Medicine, Prince of Songkla University, Thailand*	Med Safe Smoke Filter: Transforming Safety in Laparoscopic Surgery Through High-Value and Cost-Effective Innovation
14:15-14:30	**O-27** **Wang Yuying** *Chongqing University Three Gorges Hospital, China*	Full-Chain Evidence-Based Management of Post-Thirst after Day Surgery under General Anesthesia
14:30-14:45	**O-28** **Law Shuk Fan** *Tseung Kwan O Hospital, Hong Kong SAR*	Beyond the Hospital Walls: Evidence Based Telehealth for Enhancing Surgical Outcome
14:45-15:00	**O-29** **Peeraya Paonta** *Khon Kean Hospital, Thailand*	Development of Innovation in Preparing Sterile Ice for Organ Storage: From "Smart Nurse Smart Bag" to "PEERAYA-Ice Crusher" at Khon Kaen Hospital
15:00-15:15	**O-30** **Pattharakorn Thapthimthong** *Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand*	Prone Tucked-Arm Support for Cervicothoracic Spine Surgery

Streamlining Clinical Workflow and Boosting Operational Efficiency with an Electronic Implant Record System in Operating Theatre in Hong Kong

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Background: Historically, majority of hospitals under Hospital Authority relied on a paper-based orthopedic implant record system. This traditional documentation poses significant challenges in maintaining the continuity of care and safeguarding the legal interests of patients, healthcare personnel, and hospitals. Accurate and complete medical records, including implant records, are essential for effective healthcare delivery. However, the use of handwritten records raises issues related to legibility, completeness, and accuracy, as highlighted by Piscotty et al. (2015).

Objectives: This project aims to improve the accuracy, efficiency, and patient safety in the documentation of implants used in orthopedic surgeries by implementing an Electronic Implant Record System (EIRS) in the Operating Theatre, ultimately fostering better patient outcomes, improving implant tracking and tracing, and enhancing operational efficiency.

Methods: This pre- and post-intervention study evaluated the transition from a paper-based system to an EIRS in the Operating Theatre. Quantitative data were collected via a structured questionnaire administered to same group of staff before and after implementation. The questionnaire responses were analyzed using SPSS to identify statistically significant results. This was complemented by qualitative data from local performance audits and document analysis, which were examined using thematic analysis to contextualize the quantitative findings.

Results: With the implementation of EIRS, a marked improvement in the efficiency of the documentation process was noted. Specifically, the average time for documenting reprocessing items decreased by 31.9%, and for sterile package items, the time reduced by 43.6%. Document analysis post-implementation revealed compliance rates of 100% for completeness, 100% for legibility, and 93% for accuracy for both item types. Results showed overwhelmingly positive perceptions towards EIRS, with all survey items significantly exceeding the scale midpoint ($p<0.001$). While perceptions were generally consistent across experience levels, trends suggested less positive views on interface usability among the most experienced staff. The majority of the respondents agreed that the EIRS has improved the quality and efficiency of documentation, reduced operating costs, decreased clinical errors, and enhanced patient safety.

Conclusion: The implementation of the EIRS has proven to be highly effective intervention modernizing a critical aspect of surgical documentation. This project has established a more reliable, safer, and robust framework for implant management.

Keywords: Electronic Implant Record System; Smart OR; Smart documentation

The Effect of Preoperative Virtual Reality Hypnosis to Manage Preoperative Anxiety Before Colorectal Cancer Surgery

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Background: Colorectal cancer is one of the three most common cancers in Hong Kong. The stress and anxiety that arise in patients cannot be neglected, especially concerning surgery. Preoperative anxiety is correlated with increased stress hormone levels and haemodynamic stress, which can ultimately lead to undesirable postoperative complications. Currently, the dominant intervention involves a pharmacological approach using anxiolytics; however, these can cause significant side effects, such as postoperative nausea and delirium. To address the preoperative anxiety while avoiding the side effects of anxiolytics, preoperative virtual reality hypnosis has been proposed.

Objectives:

1. To evaluate the effectiveness of preoperative virtual reality hypnosis in reducing preoperative anxiety
2. To improve the quality of care and clinical outcomes
3. To apply innovative technology into preoperative care

Methods: The immersive virtual reality device, HypnoVR, was used to deliver a 30-minute preoperative hypnosis session to patients immediately before their surgeries. The device features various natural environments, such as forests and beaches, alongside guided breathing exercises. State-Trait Anxiety Inventory-State (STAI-S) scores and physiological parameters (blood pressure and heart rate) were collected before and after the intervention for comparison.

Results: Thirty-two patients were recruited between August 2024 and March 2025. Following the intervention, a significant reduction in anxiety was observed, with the mean STAI-S score decreasing from 39.75 to 33.41 (MD=6.344; $p<0.001$). Heart rate also decreased significantly from 74.59 bpm to 66.69 bpm (MD=7.906 bpm; $p<0.001$). Additionally, the mean systolic blood pressure reduced from 132.09 mmHg to 126.34 mmHg (MD=5.750 mmHg; $p=0.016$), and the mean diastolic blood pressure reduced from 73.31 mmHg to 70.97 mmHg (MD=2.344 mmHg; $p=0.019$). These changes remained within safe clinical ranges. These findings suggest the intervention is clinically effective in alleviating preoperative anxiety, while preserving stable haemodynamic status.

Conclusion: Preoperative virtual reality hypnosis demonstrates significant effectiveness in managing preoperative anxiety. This innovative method provides a feasible alternative to conventional pharmacological interventions, potentially enhancing clinical outcomes.

Keywords: virtual reality

Development and Preliminary Evaluation of a Microlearning-Based Discharge Education Intervention in Perioperative Ambulatory Surgery Setting

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Background: Discharge education is a critical component of ambulatory surgery, where patients must transition quickly to self-management at home. However, this process is often limited by time and high patient turnover in perioperative settings. Additionally, discharge instructions are frequently delivered when patients are still recovering from anesthesia, potentially impairing attention, comprehension, and retention. Therefore, traditional approaches may result in inadequate understanding and increased postoperative uncertainty. Innovative, patient-centered strategies are needed to enhance the effectiveness of discharge education. Microlearning-based education, which delivers concise, focused educational content through a technology-based approach, offers a promising approach to support comprehension, reinforce learning beyond the immediate perioperative period, and ultimately improve postoperative outcomes.
Objectives: To develop and pilot test a microlearning-based discharge education for ambulatory surgery patients, including examining its effects on knowledge retention, self-efficacy, quality of postoperative recovery, patient lived experiences, and implementation outcomes within perioperative nursing practice.
Methods: Phase I involved developing microlearning-based discharge education modules, informed by qualitative interviews with 10 stakeholders. Phase II used one-group pre–post evaluation and qualitative design (N=5) to pilot-test the intervention's effects. Quantitative measures included knowledge tests, the Self-Care Self-Efficacy Scale, the Post-Discharge Surgical Recovery Scale, and implementation outcomes. Qualitative data were analyzed using a descriptive phenomenology approach.
Results: Phase I identified 6 themes: need for patient education, postoperative self-care instructions, current patient education practices, perceptions of microlearning-based education, barriers, and facilitators. These findings informed module development. In phase II, positive trends were observed in knowledge retention and self-efficacy. Participants reported high levels of postoperative recovery and minimal clarification calls (mean 0.8 per participant), with zero readmissions or ER visits. Qualitative findings of patient lived experience revealed three themes: (1) experiencing microlearning as a revisit-able and clarifying source of guidance during recovery, (2) experiencing education as accessible, engaging, and easy to use, and (3) experiencing greater certainty and self-directedness in recovery. Implementation outcomes demonstrated high acceptability, feasibility, appropriateness, fidelity, and satisfaction.
Conclusion: Microlearning-based discharge education is a feasible and acceptable strategy in perioperative nursing for ambulatory surgery patients. It strengthens discharge teaching, supports patient self-management, and enhances recovery experiences. Larger, multi-site studies are needed to confirm effectiveness and evaluate long-term outcomes.

Keywords: Perioperative Discharge Education, Microlearning-based Education, Ambulatory Surgery, Patient Self-Management

Factors Influencing Operating Room Nurses' Behavioral Intention to Use Emerging Technologies in Perioperative Nursing

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Background: Emerging technologies such as artificial intelligence (AI), augmented reality/virtual reality (AR/VR), and Internet of Things (IoT) are rapidly being integrated into perioperative nursing practice. Operating rooms are highly technology-intensive environments where nurses play a critical role in the safe utilization of these technologies. However, studies examining operating room nurses' acceptance of emerging technologies remain limited.

Objectives: This study aimed to identify factors influencing operating room nurses' behavioral intention toward AI, AR/VR, and IoT in perioperative practice, based on the UTAUT-PR model, an extended Unified Theory of Acceptance and Use of Technology model incorporating perceived risk.

Methods: A descriptive cross-sectional study was conducted among 167 operating room nurses at a tertiary hospital in South Korea. A self-administered questionnaire measured effort expectancy, performance expectancy, social influence, facilitating conditions, perceived risk, and behavioral intention for each technology. Data were analyzed using descriptive statistics, t-tests, ANOVA, Pearson correlations, and hierarchical multiple regression.

Results: Behavioral intention scores exceeded the midpoint of the scale for all technologies (AI: 3.81, IoT: 3.68, AR/VR: 3.40). Nurses with experience using Fourth Industrial Revolution technologies in daily life demonstrated significantly higher behavioral intention across technologies ($p<.05$), as well as higher levels of performance expectancy, social influence, and facilitating conditions. Performance expectancy and facilitating conditions were significant positive predictors of behavioral intention across technologies. Social influence was also a significant predictor for AR/VR and IoT, whereas perceived risk was a significant negative predictor only for AR/VR.

Conclusion: Predictors of behavioral intention differed by technology type, suggesting the need for technology-specific implementation strategies. Performance expectancy and facilitating conditions were consistent predictors across technologies, highlighting the importance of enhancing perceptions of clinical utility and strengthening organizational support. For technologies such as AR/VR, where perceived risk was a significant negative predictor, safety validation and risk management protocols should be established to support safe implementation in perioperative practice. These findings may help guide educational and organizational strategies to support nurses' acceptance of emerging technologies in perioperative nursing.

Keywords: Perioperative Nursing; Behavioral Intention; Perceived Risk; Artificial Intelligence; Augmented Reality/Virtual Reality; Internet of Things

Efficacy and Safety of Patient-Controlled Intravenous Analgesia after Craniotomy: An Anesthesia Nurse-Led Follow-Up Project

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Background: Treatment of craniotomy pain remains a challenge postoperatively. Intracranial procedures were once thought to be less painful than other surgeries. However, subsequent studies have refuted this finding. As many as 80 % of patients report moderate to severe pain up to 48 h after intracranial surgery, which is often inadequately treated.

Objectives: This study focused on the analysis of the incidence of poor postoperative analgesia and adverse effects of patients with different types of craniotomies after standardized perioperative pain management, which can provide reference for improving the quality of postoperative acute pain management.

Methods: We reviewed and analysed intracranial surgery cases at Xuanwu hospital Capital Medical University (National Centre for Neurological Disorder) from September 2024 to March 2025. 2624 patients were included in this study. Based on the unique postoperative pain and clinical characteristics of different types of intracranial surgery, different PCA formulas were used for specialised postoperative analgesia, and PCA parameters were adjusted according to the patient's age, weight, etc. After the surgery, the patient was sent to PACU and connected to the analgesia pump. Anesthesia nurses conducted two postoperative rounds for patients approximately 6h and 24h after surgery. The contents of the ward round include pain assessment, adverse effects inspection, the PCA pump operation, on site treatment and records. One designated anesthesiologist on that day was on call 24h a day to deal with the possible pain emergencies and accidents of patients. All poor postoperative analgesia events and adverse effects were collected and documented in electronic record.

Results: The average intravenous PCA administration rate among patients with intracranial surgery was 80.93 %. The total proportion of patients with poor analgesia (NRS>3) approximately 48h after surgery was 0.50%. The overall incidence of adverse effects was 19.9%. The main types of adverse effects are PONV, abdominal distension and dizziness. Among all the adverse effects, PONV accounted for 85.9%.

Conclusion: Based on 7 months of practice and 2624 clinical cases, the result from this study has shown that PCA may be helpful to continuously improve the efficacy of postoperative analgesia management among patients after intracranial surgery in a real-world setting.

Keywords: patient-controlled intravenous analgesia, craniotomy, anesthesia nurse-led,
follow-up

Machine Learning-Based Estimation Model for Intraoperative Pressure Injury in Hypothermic Cardiopulmonary Bypass: A Prospective Cohort Study

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Background: Intraoperative pressure injury (PI) is a significant dermatological complication, with the highest incidence observed during hypothermic cardiopulmonary bypass (CPB) procedures. Such injuries pose a major challenge in perioperative care. The emergence of machine learning algorithms offers promising avenues to enhance the accuracy of PI risk assessment by leveraging complex, high-dimensional clinical data.

Objectives: This study aimed to develop and evaluate machine learning models for the estimation of intraoperative pressure injury in patients undergoing hypothermic CPB, identify key risk factors, and assess the clinical utility of these predictive models.

Methods: A prospective cohort study was conducted, including a total of 535 patients undergoing hypothermic cardiopulmonary bypass. Machine learning algorithms, including SVM, DT, RF, NB, ANN, and LR, were employed to build estimation models. Hyperparameter tuning was performed for each model using grid search and cross-validation techniques to optimize performance. Model performance was evaluated based on Accuracy, Precision, Recall, F1 Score, and ROC AUC.

Results: Among the six machine learning algorithms evaluated—Random Forest (RF), Support Vector Machines (SVM), Decision Trees (DT), Naïve Bayes (NB), Logistic Regression (LR), and Artificial Neural Networks (ANN)—the RF model demonstrated the highest overall performance with an accuracy of 85.05%, precision of 74.29%, recall of 78.79%, F1 score of 76.47%, and AUC of 0.957. SVM and LR also showed strong performance with AUC values of 0.940 and 0.946, respectively. Key predictive factors included total cardiopulmonary bypass (CPB) time, total myocardial ischemia time, overall surgery duration, intraoperative minimum rectal temperature, fasting plasma glucose, serum albumin, and intraoperative lactate levels. The ANN model achieved the highest recall (84.38%) but had the lowest AUC (0.546), suggesting limited overall discriminative ability. These results highlight RF as the most robust model for estimating intraoperative pressure injury risk in hypothermic CPB patients.

Conclusion: The Random Forest algorithm effectively estimate intraoperative pressure injuries in patients undergoing hypothermic cardiopulmonary bypass. These models offer significant clinical potential by enabling timely and personalized interventions, thereby improving patient outcomes. The study confirmed the critical role of optimized hyperparameters in enhancing model performance, thereby improving the reliability of intraoperative pressure injury estimates.

Keywords: Machine Learning; Hyperparameter Training; Deep Learning; Pressure Injury; Intraoperative Pressure Injury; Cardiopulmonary Bypass.

Perianesthesia Nursing for Patients Undergoing Endoscopic Submucosal Dissection in the Ambulatory Setting: Reconstruction of Nursing Procedure

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Background: Recent Western studies have evaluate the safety and feasibility of same-day discharge endoscopic submucosal dissection (ESD). We reconstructed the perianesthesia nursing procudure to optimize resource utilization and enhance patient safety in the ambulatory setting.

Objectives: The aim of this study was to evaluate the safety and feasibility of new nursing procedure and factors associated with admission.

Methods: The evidence-based perianesthesia nursing procedure for patients undergoing endoscopic submucosal dissection in the ambulatory setting included five sections: conducting a thorough anesthetist-led, perianesthesia nurse-delivered pre-anesthetic assessment, inserting peripheral intravenous catheter with ultrasound-guided , providing continuous physical status monitoring at pre-anesthesia prepare room, providing a thorough post-anesthesia monitoring and nursing care and taking place a tailored education with continuous physical status monitoring at pre-discharge room. This was a post hoc analysis of a single-center, prospective cohort of patients undergoing ESD at one tertiary hospital in Beijing between April and December 2023. The primary end points were safety of ambulatory center and factors associated with post-ESD admission.

Results: Of 147 patients (median age 57 years) undergoing 147 ESDs (17 performed in the esophagus, 39 in the stomach, and 91 in the colorectum; median lesion size, 39 mm), 80 (54%) were in the ambulatory center versus 67 admissions. There was no delayed bleeding, perforation and non-planed admission in the ambulatory setting. Patients were more likely to select ambulatory center and had higher satisfactions.

Conclusion: Perianesthesia nursing procedure may enhance patient safety among patients undergong ESD in the ambulatory setting.

Keywords: Perianesthesia nursing, ambulatory setting, endoscopic submucosal dissection

Developing Artificial Intelligence Literacy Competencies in Perioperative Nursing: A Scoping Review

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Background: The rapid integration of artificial intelligence (AI) into clinical settings is transforming nursing roles. Despite growing recognition of AI literacy as an essential competency, evidence specific to perioperative nursing remains fragmented, and no consensus framework guides competency development in this specialty.

Objectives: This scoping review aimed to systematically map existing evidence on AI literacy and related competencies among clinical nurses, and to reclassify the identified competencies within the five domains of an established perioperative nursing competency framework, establishing a foundation for a future AI literacy framework targeting perioperative nurses.

Methods: The review followed JBI methodology for scoping reviews and was reported by the PRISMA-ScR guidelines. Searches were performed across MEDLINE (PubMed), CINAHL, Embase, Cochrane Library, RISS, and KISS, with no restrictions on study design or geographic context. Two independent reviewers screened titles, abstracts, and full texts against predefined criteria. Data were extracted using a standardized charting tool and synthesized through deductive framework mapping, with the five domains of the European Operating Room Nurses Association (EORNA) perioperative nursing competency framework as the analytical matrix.

Results: Eight studies met the inclusion criteria (three qualitative, two cross-sectional, one mixed-methods, one Q-methodology, one case study), conducted in Turkey (n=3), the United States (n=4), and South Korea (n=1), published between 2022 and 2026, with 1,397 total participants. Competencies mapped to all five domains, but coverage was uneven. Domains 1 (Professional, Legal, and Ethical Practice) and 2 (Nursing Care and Perioperative Practice) were each represented in six studies (75%); Domains 4 (Organizational, Management, and Leadership) and 5 (Education and Professional Development) in four studies (50%); and Domain 3 (Interpersonal Relationships and Communication) in only three (37.5%). Overall, nurses demonstrated moderate AI literacy with minimal applied AI use.

Conclusion: Although AI literacy competencies span all five domains, the evidence is uneven and concentrated in professional and ethical practice as well as perioperative practice. Gaps persist in the leadership and communication domains. These findings suggest a need to shift from generalized education toward targeted, domain-specific programs prioritizing practical skills. Priority areas include critical appraisal of AI-assisted handoff communication, and organizational advocacy for safe, nurse-led AI integration.

Keywords: Perioperative nursing, AI literacy, competency

The Application of Nursing Intervention Plan Based on HFMEA in Patients Undergoing Daytime Surgery for Breast

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Background: The breast day surgery model improves medical resource utilization, reduces preoperative waits and postoperative stays, and helps alleviate current resource shortages. Studies report that high bed turnover and short hospital stays demand greater staff coordination, making nursing risk events prominent and risk management essential. HFMEA effectively identifies and improves potential failure modes in day surgery workflows, thereby enhancing nursing quality.

Objectives: This study aims to analyze the effectiveness of applying the Healthcare Failure Mode and Effect Analysis (HFMEA) management model in breast day surgery.

Methods: Using a random number table method, 80 patients with breast fibroadenoma undergoing day surgery from January to June 2025 were selected as the control group, receiving conventional day surgery management. Another 80 patients with breast fibroadenoma undergoing day surgery from July to December 2025 were selected as the observation group, in which the workflow of the day surgery ward was optimized under the guidance of the Healthcare Failure Mode and Effect Analysis (HFMEA) model, aiming to identify key failure modes and their causes. The two groups were compared in terms of nursing quality, patient satisfaction, and incidence of adverse events.

Results: The study identified six major steps in the day surgery workflow for breast fibroadenoma and pinpointed six high-risk failure modes requiring optimization. After implementing the HFMEA model, the reduction ratios in Risk Priority Number (RPN) for failure modes such as inadequate postoperative complication observation, incomplete preoperative preparation, and non-strict patient selection were 66.05%, 65.49%, and 65.45%, respectively. The total nursing quality score in the observation group was significantly higher than that in the control group ($P < 0.05$). Patient satisfaction scores in the observation group were also markedly higher than those in the control group ($P < 0.05$). Furthermore, the overall incidence of nursing-related adverse events in the observation group was significantly lower than that in the control group ($P < 0.05$).

Conclusion: When the HFMEA method is applied to patients undergoing day surgery for breast fibroadenoma, it can improve the quality of nursing care in the day surgery setting, enhance patient satisfaction with nursing services, facilitate smooth patient recovery, and demonstrates value for clinical promotion and application.

Keywords: Daytime treatment; HFMEA; Daytime surgery; Nursing risk management; Nursing quality; Nursing intervention plan

Noise Levels and Nurses' Perception and Response in Operating Rooms: A Descriptive Study

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Background: Operating rooms (ORs) are complex clinical environments where effective communication and sustained concentration are essential for patient safety. However, ORs contain multiple noise sources, including surgical equipment, alarms, and staff communication, which can generate elevated noise levels and potentially affect healthcare workers' performance and well-being.

Objectives: This study aimed to examine noise levels across different surgical specialties and to explore perioperative nurses' perceptions and responses to noise exposure in operating room settings.

Methods: This descriptive observational study was conducted in 12 operating rooms at a tertiary hospital in Seoul, South Korea. Noise levels were continuously monitored during routine eight-hour day shifts using a calibrated sound level meter, recording equivalent continuous sound levels (LAeq) and peak sound pressure levels (Lpeak). Simultaneously, 177 perioperative nurses completed structured questionnaires assessing perceived noise exposure and related physiological and emotional responses. Data were analyzed using descriptive statistics.

Results: The mean eight-hour equivalent noise level (LAeq) across operating rooms was 64.63 dB(A), with values ranging from 61.20 to 68.27 dB(A). Peak sound pressure levels reached up to 105.40 dB(A). Most noise exposure occurred within the 50–70 dB(A) range, although intermittent peaks above 80–90 dB(A) were observed across several surgical specialties. Nurses identified powered surgical instruments, suction devices, and alarms as major noise sources. Physiological responses such as ear discomfort, fatigue, and headache were reported occasionally, whereas emotional responses—including communication difficulties, decreased concentration, irritation, and tension—were reported more frequently.

Conclusion: Operating room noise levels were consistently elevated and were perceived by perioperative nurses as a source of occupational strain, particularly affecting communication and cognitive performance. These findings highlight the need for strategies to manage noise levels and improve the acoustic environment in perioperative settings to support safe and effective clinical practice.

Keywords: Operating room noise; Perioperative nurses; Noise perception; Noise response; Occupational noise exposure

The Effects of Operating Room Nurses' Environmental Knowledge, Attitudes, and Practices on Eco-Friendly Surgical Nursing Orientation

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Background: Amid the escalating global climate crisis, the healthcare industry unexpectedly accounts for 4.4% of global greenhouse gas emissions, with operating rooms (ORs) serving as a major epicenter of this environmental burden due to strict sterilization and massive consumable usage. Although transitioning to eco-friendly surgical nursing is crucial to aligning with green growth policies, existing literature focuses heavily on macroscopic climate issues, leaving a significant gap regarding the micro-level attributes of OR personnel. Given that OR nurses play a critical role in minimizing environmental impact through resource management, research investigating how their environmental knowledge, attitudes, and practices shape their eco-friendly nursing orientation is urgently needed but remains highly limited.

Objectives: The purpose of this study was to examine the influence of operating room (OR) nurses' environmental knowledge, attitudes, and practices on their eco-friendly surgical nursing orientation.

Methods: The subjects were 136 OR nurses recruited from 4 hospitals. Data were collected using a structured self-report questionnaire measuring environmental knowledge, attitudes, and practices, as well as eco-friendly surgical nursing orientation. Data analysis was conducted using the SPSS/WIN 27.0 program.

Results: Factors showing significant differences in eco-friendly surgical nursing orientation included the OR nurses' level of concern for environmental issues ($F=13.406$, $p<.001$). Statistically significant positive correlations were found between eco-friendly surgical nursing orientation and its sub-domains: subjective environmental knowledge ($r=.20$, $p=.020$), environmental attitude ($r=.45$, $p<.001$), and environmental practice behavior ($r=.38$, $p<.001$). Factors significantly influencing OR nurses' eco-friendly surgical nursing orientation were moderate ($\beta=.28$, $p=.039$) or high ($\beta=.35$, $p=.018$) concern for environmental issues, high environmental attitude ($\beta=.31$, $p=.001$), and environmental practices ($\beta=.19$, $p=.028$).

Conclusion: Higher levels of concern for environmental issues, pro-environmental attitudes, and pro-environmental practices were associated with a higher level of eco-friendly surgical nursing orientation. The most significant determinant was interest in environmental issues. Therefore, to enhance the eco-friendly surgical nursing orientation of OR nurses, it is necessary to develop and implement eco-friendly surgical nursing programs that can increase clinical interest in environmental issues.

Keywords: Eco-friendly; Environment; Medical waste; Operating room nursing

How to Reduce Medical Supply Costs and Medical Waste in the Operating Room

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Background: In the operating room (OR), medical supplies must usually be thrown away after just one use. Among these supplies, "free-charging items"—which are items that hospitals cannot bill to insurance or patients—take up a very large part of total hospital expenses. Furthermore, because the OR nurses and staffs do not separate waste properly during busy surgeries, the total volume of medical waste increases, and the cost of throwing away this waste remains too high.

Objectives: Using too many free-charging items and poor waste sorting habits create a large amount of unnecessary spending for the hospital. Therefore, we need to educate our OR nurses and staffs and change their daily habits in the workplace.

Objectives (Compared to last year):

1. Cut the total billed cost of free-charging supplies by 20%.
2. Reduce both medical waste volume and its disposal costs by 20%.
3. Raise OR staff awareness about correct waste sorting by 10%.

Methods:

1. Stock Control: We checked the CCDS BAG and reset the required stock levels for non-billable medical supplies. This activity stopped staff from using expensive items carelessly.
2. New Bins: We placed general business waste bins inside every single operating room. This allowed the surgical teams to separate medical waste from regular waste quickly and easily.
3. Staff Education: We measured the baseline awareness level of our OR members using a 5-point score. Then, we created simple educational posters and guidelines, trained the team, and placed these materials where everyone could see them.

Results: The total billed cost of free-charging medical supplies dropped by about 25% in 2024 compared to 2023. The actual disposal costs for medical waste decreased by about 29.5%. The overall awareness level and knowledge of OR members regarding waste sorting and supply management increased by 25% after our educational program.

Conclusion: In 2024, our OR team successfully reduced both supply costs and waste expenses through these simple changes. To maintain these excellent results, we will continue to check supply usage every month and update the CCDS BAG stock levels regularly. We will also keep the educational guides visible in the OR and monitor our waste sorting activities every quarter.

Keywords: Operating Room, Cost Reduction, Medical Waste, Quality Improvement (QI), ESG Healthcare

Investigation of the Duration of Wearing Elastic Stockings After Knee Joint Surgery

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Background: At our hospital, patients are required to wear elastic stockings for six weeks after knee joint surgery to prevent deep vein thrombosis. However, a six-week wearing period places a significant burden on patients and increases the risk of skin complications. Therefore, we questioned whether this continuous duration is appropriate.

Objectives: The objective of this study is to investigate whether the duration of wearing elastic stockings after knee joint surgery can be shortened, balancing patient burden reduction with safety.

Methods: This study included patients who underwent knee joint surgery. On postoperative day 10, D-dimer and soluble fibrin monomer complex (FMC) levels were measured. High-resolution venous ultrasonography was performed for patients with elevated levels. The patients were then divided into two groups based on the presence of venous thromboembolism (VTE): the VTE-positive group and the VTE-negative group. Finally, D-dimer and FMC levels on postoperative days 10 and 14 were compared between the two groups.

Results: No clear correlation was observed between the absolute values of D-dimer or FMC and the presence of VTE. However, regarding the change from postoperative day 10 to day 14, a decreasing trend was observed in the VTE-positive group. In particular, FMC levels around postoperative day 14 showed results suggesting a decrease in coagulation activity.

Conclusion: These findings suggest that when determining the timing to remove elastic stockings, evaluating the chronological trend of coagulation markers is more important than their absolute values. Continuing the use of stockings for VTE prevention appears appropriate until around postoperative day 14. Regarding the removal timing after day 14, further re-evaluation is required, taking into account factors such as skin complications and patient adherence.

Keywords: Knee joint surgery, Elastic stockings, Venous thromboembolism (VTE), D-dimer, Soluble fibrin monomer complex (FMC)

Research Progress on Cancer-Related Fatigue in Cancer Patients

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Background: Cancer-related fatigue (CRF) is a prevalent and intractable core symptom among cancer patients, with a prevalence of 60%–90%. It cannot be relieved by conventional rest, seriously impairing patients' physical, emotional and cognitive function, reducing treatment adherence and quality of life, and even causing treatment interruption. At present, the pathogenesis of CRF remains unclear, and its assessment tools, influencing factors and intervention schemes lack unified norms.

Objectives: To systematically summarize the definition, diagnostic criteria, pathogenesis, assessment tools, influencing factors and intervention strategies of CRF, so as to provide theoretical and evidence-based references for clinical standardized management and precise intervention of CRF.

Methods: Relevant literatures, guidelines and systematic reviews on CRF in recent years were retrieved from Chinese and foreign databases, and comprehensively sorted, analyzed and summarized.

Results: There is no globally unified definition of CRF, and the ICD-10 diagnostic criteria are widely accepted internationally. Its pathogenesis involves the interaction of multiple pathways such as inflammatory factor imbalance, hypothalamic-pituitary-adrenal axis dysfunction, neuroendocrine disorder, skeletal muscle injury and psychological stress. Clinical assessment tools are divided into three categories: unidimensional scales, multidimensional scales and risk prediction models, with differences in application scope and evaluation focus. CRF is jointly affected by multi-dimensional factors including demographic characteristics, comorbidities, sleep quality, nutritional status, pain, psychological emotion, anti-tumor treatment, disease pathological characteristics and physiological and biochemical indicators. Existing interventions mainly include non-pharmacological approaches such as exercise intervention, nutritional support, psychosocial intervention and traditional Chinese medicine characteristic intervention, which can alleviate fatigue symptoms to varying degrees. However, there are still problems such as inconsistent intervention protocols, lack of standardized implementation criteria, and insufficient evidence for hierarchical precise intervention.

Conclusion: CRF is affected by multiple factors with complex mechanisms. It is necessary to formulate unified assessment and intervention standards, implement whole-course standardized management and risk-stratified precise intervention, so as to relieve CRF and improve patients' quality of life.

Keywords: cancer patients; cancer-related fatigue; pathogenesis; assessment tools; influencing factors; intervention strategies

Analysis of the Current Status and Influencing Factors of Cancer-Related Fatigue in Patients with Pancreatic Cancer Undergoing Chemotherapy

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Background: Pancreatic cancer is a highly malignant gastrointestinal tumor with poor prognosis. Most patients are diagnosed at advanced stages and mainly treated with chemotherapy. Cancer-related fatigue (CRF) is the most common and intractable core symptom during chemotherapy, which seriously impairs physical and mental health, reduces treatment adherence and quality of life. At present, there are few targeted studies on CRF in pancreatic cancer patients, and its influencing factors remain unclear.

Objectives: To investigate the current status of CRF and its influencing factors in pancreatic cancer patients undergoing chemotherapy, so as to provide evidence for formulating individualized clinical nursing intervention strategies.

Methods: A total of 102 pancreatic cancer patients receiving chemotherapy were enrolled. General information questionnaire, CFS, MSPSS, PSQI, SDS, SAS and NRS were adopted for investigation. t-test, ANOVA, correlation analysis and multiple linear regression were used for statistical analysis.

Results: The incidence of CRF was 100%, dominated by severe fatigue. CRF score was positively correlated with MSPSS, PSQI, SDS and SAS ($P < 0.01$). Age, BMI, education, income, marital status, smoking, drinking, medical insurance, sleep quality, depression and anxiety were significant influencing factors. Obesity, sleep latency, multiple dimensions of depression and anxiety were independent risk factors.

Conclusion: Pancreatic cancer patients under chemotherapy suffer from severe CRF. Clinical staff should implement targeted intervention focusing on weight management, sleep improvement and psychological regulation to alleviate fatigue and improve patients' quality of life.

Keywords: pancreatic cancer; chemotherapy; cancer-related fatigue

Virtual Simulation Training System for Nursing Assistance in Robot-Assisted Surgery: A Randomized Controlled Trial

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Background: Robot-assisted surgery (RAS) requires specialized perioperative nursing skills. Conventional training provides limited hands-on practice and may compromise patient safety when novices operate on actual patients. Virtual simulation offers immersive, risk-free repetition, but its effectiveness for RAS nursing cooperation remains unknown.

Objectives: To develop a virtual simulation training system for RAS nursing cooperation and evaluate its effects on nurses' knowledge, skill performance, operative errors, and surgeon satisfaction.

Methods: A training protocol was developed through surveys, semi-structured interviews, and expert meetings, which was then used to build a virtual simulation system. Fifty-four operating room nurses with no prior RAS experience were randomly assigned to a control group (conventional training) or an experimental group (conventional training plus virtual simulation). Outcomes included theoretical knowledge score, simulated skill performance (score and duration), case analysis score, number of intraoperative cooperation errors (13 types), and surgeon satisfaction (5-item Likert scale).

Results: The experimental group significantly outperformed the control group on theoretical knowledge (87.56±4.33 vs. 85.00±4.17, P=0.032), scrub nurse skills (84.37±5.05 vs. 81.74±3.10, P=0.025), circulating nurse skills (89.30±4.21 vs. 87.19±2.77, P=0.034), operation duration (23.22±3.14 vs. 25.00±2.04 min, P=0.018), and case analysis score (85.52±3.67 vs. 83.52±3.02, P=0.033). The experimental group committed significantly fewer errors in 9 of the 13 error categories (all P<0.05). Overall surgeon satisfaction was higher in the experimental group (20.89±1.01 vs. 18.74±1.38, P<0.001), as were four of the five individual domains (all P<0.05); communication efficiency did not differ significantly between groups (P=0.835).

Conclusion: This scalable, evidence-based virtual simulation training system improves RAS nursing knowledge, skill performance, and surgeon satisfaction. It addresses a critical gap in perioperative nursing education for robotic surgery and offers a practical model for competency-based training.

Keywords: Operation room nurses; Robot-assisted surgery; Nursing cooperation; Virtual simulation; Training

Application Research of Stepwise Dual TCM Intervention Based on Traditional Chinese Medicine Emotional Theory in Perioperative Patients Undergoing Breast Reconstruction

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Background: Breast cancer is a prevalent malignant tumor in women. Breast reconstruction improves patients' body appearance, but surgical stress and body image changes easily cause perioperative anxiety, depression and sleep disorders, affecting postoperative recovery. This study aimed to explore the efficacy of standardized stepwise TCM intervention for such patients.

Objectives: To evaluate the clinical effect of stepwise auricular point pressing combined with TCM foot bath based on TCM emotional theory on relieving negative emotions, improving sleep quality and alleviating postoperative pain in breast reconstruction patients, and to provide evidence for optimizing ERAS nursing.

Methods: From January to May 2026, 86 patients undergoing breast reconstruction in a tertiary cancer hospital in Chongqing were randomly assigned to the control group and the observation group, with 43 cases in each group. The control group received routine perioperative nursing and health education, whereas the observation group adopted additional stepwise TCM intervention including preoperative and postoperative auricular point pressing and calming foot bath based on TCM emotional and mind-calming theories. Patients' perioperative negative emotions and sleep quality were assessed via SAS, SDS and PSQI, while postoperative pain and hospital stay were compared between the two groups.

Results: Baseline SAS, SDS, PSQI and NRS scores showed no significant differences between the two groups ($P>0.05$). After intervention, the observation group had significantly lower SAS (42.36±5.12), SDS (41.52±4.86), PSQI (7.25±2.03) and NRS (2.18±0.76) scores than the control group (51.68±6.35, 50.28±5.32, 11.42±2.86, 3.65±0.92). Meanwhile, the hospital stay of the observation group (7.12±1.25) d was significantly shorter than that of the control group (9.36±1.58) d ($P<0.05$).

Conclusion: Stepwise TCM intervention based on TCM emotional theory can effectively relieve perioperative anxiety and depression, improve sleep quality, reduce postoperative pain and shorten hospital stay of breast reconstruction patients. This non-invasive, convenient intervention conforms to ERAS concept and is worthy of clinical promotion.

Keywords: traditional Chinese medicine emotional theory; auricular point pressing; traditional Chinese medicine foot bath; stepwise intervention; breast reconstruction; perioperative period; sleep quality; negative emotions

Application of Family Participatory Pain Management Program Based on Health Behavior Interaction Model in Children Undergoing Day Surgery

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Background: Ambulatory surgery is being vigorously promoted for its ability to shorten hospital stays and improve medical efficiency, with children being an advantageous population for its implementation. However, inadequate postoperative pain management has become a major reason for delayed discharge and unplanned hospital readmission among pediatric patients, with pain incidence rates reaching as high as 30% to 69%. Current pediatric pain management is predominantly led by hospital medical staff, which fails to meet the needs of children undergoing ambulatory surgery—such as short hospital stays and home-based recovery—resulting in insufficient involvement of parents, who are the core caregivers in the pain management process. Therefore, it is of great significance to explore effective family-participatory perioperative pain management strategies to improve children's pain experience and postoperative recovery quality.

Objectives: To develop a family-participatory pain management protocol for pediatric day surgery based on the Interaction Model of Client Health Behavior(IMCHB) and evaluate its efficacy.

Methods: A family-participatory pain management protocol based on IMCHB was formulated through semi-structured interviews, literature review, and expert panel meetings. Study subjects included pediatric day surgery patients and their parents from a tertiary Grade A hospital in Chongqing from August to October 2025. Participants were divided into a control group(n=53)and an intervention group(n=52) according to admission sequence. The control group received routine care, while the intervention group implemented the protocol. Differences in perioperative pain levels, parental-reported pain levels, and parental pain management cognition-attitude-behavior scores were compared between the two groups.

Results: After intervention, the intervention group showed statistically significant lower preoperative/postoperative pain levels, parental-reported pain levels, and negative attitudes toward analgesic use compared to the control group ($P<0.05$). The intervention group also demonstrated significantly higher scores in parental pain management cognition, general attitudes, and pain relief behaviors ($P<0.05$).

Conclusion: The family-participatory pain management protocol for pediatric day surgery based on IMCHB is scientifically evidence-based and clinically practical, providing a reference for optimizing perioperative pain management in pediatric day surgery.

Keywords: Day surgery; Children; Family involvement; Pain management

Disaster Countermeasures in the Japan Perioperative Nursing Academy and Future Issues

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Background: The Great East Japan Earthquake in 2011 was the only major earthquake that occurred during operating hours in operating rooms, and it served as an opportunity to recognize the importance of disaster preparedness once again. The Japan periOperative Nursing Academy (JONA) has been working to build a JONA disaster information system and create disaster countermeasure standards to strengthen disaster response. In recent years, we have started simulation training on disasters.

Objectives: This study aims to review JONA's disaster countermeasure activities and clarify future issues as an academic society.

Methods: To enable rapid information sharing and collaboration among members both within and outside affected areas during large-scale disasters, JONA launched the Disaster Information System in 2020. Members can exchange information regarding facility's disaster status using this system, and JONA provides an annual system operation drill once a year for members. In 2023, the "Revised Standards for Disaster Countermeasures in the Operating Room" was released, clearly outlining response actions by disaster phase at the behavioral level, with flowcharts and action cards as reference materials. In 2025, simulation training on initial disaster response using action cards was started.

Results: The number of facilities participating in JONA disaster drills is 417 in 2023 and 1,011 in 2025, and there is a high trend of interest in disaster response. The rapid input of information from facilities in the affected areas during earthquakes, such as the 2024 Noto Peninsula earthquake, can be said to be the result of the annual drill. Thirty-three facilities participated in the simulation training, and the questionnaire results (N=44) showed a high rating of 93.3% for "satisfaction" and 100% for "it can be used for nursing practice or operational activities".

Conclusion: The future challenge is to raise awareness of disasters among operating room staff through continuous disaster drills and training, and to develop human resources who can promote disaster preparedness at each facility. Through these efforts, JONA is expected to the establishment of practical and widely applicable disaster preparedness measures across operating rooms.

Keywords: importance of disaster preparedness,disaster information system.simulation training on disasters

Global Transformation and Nursing Innovation: A Meta-Analysis of PACU Nursing in Ambulatory Perioperative Care

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Background: Ambulatory surgery has become a cornerstone of global healthcare, yet Post-Anesthesia Care Unit (PACU) nursing faces significant geographic disparities in education, staffing, and standardized protocols, impacting recovery efficiency, complication rates, and patient safety. Non-clinical delays further hinder PACU throughput and resource utilization worldwide.

Objectives: This meta-analysis aimed to synthesize global evidence on PACU nursing practices in ambulatory perioperative care, evaluate their impact on patient outcomes, and identify gaps to inform standardized, innovative care frameworks aligned with the conference theme "Stronger Together: Global Transformation and Innovation in Perioperative Nursing."

Methods: A systematic search of PubMed, Cochrane Library, Web of Science, and Embase was conducted (inception to May 2026) for studies comparing standardized PACU nursing (including ERAS integration, fast-track protocols) with traditional care in ambulatory settings. Ten eligible studies were analyzed using RevMan 5.4, with random/fixed-effect models applied based on heterogeneity.

Results: Standardized PACU nursing significantly reduced PACU stay duration (MD = -24.06 min, $p < 0.01$) and complication rates (OR = 0.42, $p < 0.05$). Non-clinical factors (transport shortages, bed shortages, handover delays) accounted for 65.8% of discharge delays. Only 27% of participating countries offer formal PACU specialty education, with staffing ratios varying from 1:1 to 1:4. ERAS-integrated PACU care improved patient satisfaction to 98.46% and reduced healthcare costs by 18.8%.

Conclusion: Standardized, ERAS-aligned PACU nursing drives superior ambulatory perioperative outcomes. Global harmonization of education, staffing, and protocols, alongside targeted solutions for non-clinical delays, is critical for advancing safe, efficient, and equitable PACU care worldwide.

Keywords: PACU nursing, Ambulatory perioperative care, Enhanced Recovery After Surgery, Nursing innovation, Global perioperative nursing, Meta-analysis, Patient safety

The Effect of Intraoperative Micro-Break Stretching Exercise on Reducing the Risk of Musculoskeletal Disorders (MSDS) in Perioperative Nurse

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Background: Perioperative nurses with a specific role as Scrub Nurses carry an exceptionally high occupational risk for experiencing Musculoskeletal Disorders (MSDs). This condition is triggered by the accumulation of physical load resulting from the inecessity to maintain static, non-ergonomic body postures, as well as prolonged standing while facilitating surgical procedures. One preventive modality that can be integrated is an active intermission program in the form of intraoperative micro-break stretching exercises.

Objectives: This study aims to analyze the effect of intraoperative micro-break stretching exercise interventions on reducing the risk of MSDs, pain levels, and physical fatigue among perioperative nurses.

Methods: This research utilized a quasi-experimental design with a pre-posttest with control group approach. A total sample of 60, divided into an intervention group (n = 30) and a control group (n = 30). The intervention group was given a structured stretching exercise program lasting 1–2 minutes every 30–60 minutes during intervals between surgical procedures, implemented for 30 full days. Measurement instruments included the Nordic Musculoskeletal Questionnaire (NMQ), Numerical Rating Scale (NRS), IFRC occupational fatigue scale, and REBA kinetic observation sheets. Data analysis was conducted non-parametrically using the Wilcoxon Signed Rank Test and the Mann-Whitney U Test.

Results: Following the routine 30-day intervention, the intervention group experienced highly significant postural improvements and reductions in ergonomic risk, as indicated by a plunge in the median REBA score from a high-risk level to a low-risk level with a p-value < 0.001. The control group remained constant at a high-risk level with a median REBA score of 8.0 (p = 0.414). The intervention group demonstrated reduction in the median pain scale from 5.0 to 2.0 (mild pain) (p < 0.001), as well as a decrease in the occupational fatigue score (IFRC) to half of its initial value, falling from a median of 6.0 to 3.0 (p < 0.001). The NMQ questionnaire results also revealed a very pronounced decline in the prevalence of musculoskeletal complaints (p < 0.05), focusing focally on the lower back, neck, and shoulder areas.

Conclusion: The intraoperative micro-break stretching exercise intervention significantly reduced ergonomic risks, pain scores, physical fatigue, and subjective complaints of MSDs in perioperative nurses

Keywords: Micro-break stretching, Musculoskeletal Disorders (MSDs), Perioperative nurses

Training and Practice of Anesthesia Specialist Nurses in China

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Background: The scope of specialized nursing practice has been expended into multiple subspecialties including pre-anesthesia assessment, anesthesia induction, basic patient monitoring during general anesthesia, post-anesthesia care, anesthesia intensive care, perioperative pain management and analgesia follow-up, anesthetic drug management, anesthetic supplies management and anesthetic equipment management. To meet the needs of patients, China has set up professional nursing committees for anesthesia nursing and organized the training of specialist nurses since 2019.

Objectives: This paper aims to describe the status of training, practice and management of anesthesia specialist nurses in China.

Methods: Data on the training and practice of anesthesia specialist nurses in Mainland China were collected through literature review and a web-based survey. Survey was designed mainly based on previous anesthesia nurse working statues surveys and consisted of four parts: general information on hospital and personal, roles of anesthesia specialist nurses, occupational level management and training channels of specialist nurses. The survey was distributed to members of the professional nursing committee and was designed to be completed by anesthesia specialist nurses. Literature review was generated by document retrieval mainly based on Chinese databases.

Results: The survey was completed by 1002 anesthesia specialist nurses from 28 provinces in Mainland China. The training channels of anesthesia specialist nurses consist of training courses organized by local or national nursing associations, or foreign academic organizations in cooperation with local medical institutions. Specialist nurses play an important role in education, clinical practice, and scientific research. 56.59% of participants have an overall job satisfaction rate of very satisfied or satisfied. The main factors affecting their clinical role include excessive clinical workload, unclear job responsibilities, insufficient support policies and unclear role positioning. 81.24% of participants believe that there is a need for anesthesia specialized nurse retraining, with a focus on specialized knowledge, clinical practice skills and research methods. The training system is developing rapidly, but lacks a unified access standard, standardized curriculum, and assessment system.

Conclusion: Anesthesia specialist nurses play an important role in anesthesia nursing. However, their job management, training and certification work need to be further improved, and retraining programs need to be further explored.

Keywords: Anesthesia nursing; specialist nurses; working status; cross-sectional study

Transforming Clinical Practice Through Educational Support: A Report on the Japan periOperative Nursing Academy Support for Operating Room Nurses at the Japan Heart Medical Center in Cambodia

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Background: In accordance with its mission to promote the development of nurses specializing in perioperative nursing, The Japan periOperative Nursing Academy (JONA) launched the Japan Heart Collaborative Project in 2024 as part of its international contribution activities. This project provides educational support aimed at capacity building. The 2025 project team is composed of seven members from JONA and three members from the NGO Japan Heart.

Objectives: The purpose of this project is to provide academic and educational support in perioperative nursing for Operating Room (OR) nurses at the Japan Heart Medical Center in Cambodia.

Methods: In May 2023, we conducted a hospital site visit in Cambodia to assess the current status of OR nurses and identify key challenges. Following the initial seminar, we provided mainly online seminars based on their needs.

Results: In 2025, the third seminar focused on surgical positioning. In the fourth seminar, participants presented on the practices they had implemented following the third seminar, thereby deepening their understanding through reflective learning. In addition, project members visited the Japan Heart Medical Center in Cambodia and conducted on-the-job training (OJT) with a focus on surgical positioning. During positioning fixation simulations, a pressure measurement device was used to visualize pressure on areas prone to pressure injuries, and participants examined appropriate pressure redistribution methods to enhance understanding of patient safety and comfort. Additionally, patient safety issues identified through direct observation of surgical procedures were shared, and practical and targeted educational support was provided.

Conclusion: Following participation in the seminars, OR nurses in Cambodia demonstrated notable changes, including increased initiative in clinical decision-making and greater engagement in evidence-based nursing practice. These findings suggest that the international contribution activities of JONA have yielded positive educational outcomes.

Keywords: Educational Support, perioperative nursing, international contribution activities

Stronger Together: Achieving Excellence in Normothermia and Infection Control via Multidisciplinary Protocols in ERAS Patients

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Background: Inadvertent perioperative hypothermia is a critical patient safety risk that exacerbates surgical site infections (SSIs) and hinders Enhanced Recovery After Surgery (ERAS) outcomes. Baseline data (2024) revealed only 65.1% of ERAS patients maintained intraoperative normothermia, while open surgery SSI rates ranged from 3.0% (Liver surgery) to 11.2% (Pancreaticobiliary surgery). Recognizing that safety requires comprehensive risk management, a multidisciplinary collaboration across perioperative phases was established, aligning with the "Stronger Together" initiative to drive quality excellence and infection control.

Objectives: To enhance patient safety by decreasing intraoperative hypothermia and eliminating SSIs in ERAS patients through a data-driven pre-warming protocol and a nurse-led intraoperative SSI bundle.

Methods: A Quality Improvement project utilizing the Plan-Do-Check-Act cycle was conducted from January 2025 to March 2026. Initially, the "PeriWarm ERAS" protocol mandated active pre-warming for ≥20 minutes before OR transfer, tracked via Google Sheets for seamless data continuity. In Phase 3 (Jan-Mar 2026), OR nurses expanded their leadership by introducing an SSI bundle for open surgeries. Nurses proactively prepared equipment and successfully persuaded surgeons to utilize wound protectors, separate closure instrument sets, glove and drape changes, and dilute betadine irrigation (10% povidone-iodine 20 ml in 500 ml normal saline) prior to wound closure.

Results: Performance results showed significant improvement. By Phase 3 (n=82), pre-warming compliance reached 91.5%. Consequently, the rate of patients maintaining intraoperative normothermia (≥36°C) increased from the 65.1% baseline to 81.7%, surpassing the 80% target. Crucially, combining normothermia maintenance with the nurse-driven SSI bundle yielded outstanding infection control outcomes; the open surgery SSI rate plummeted from 3.0-11.2% (in 2025) to 0% (Jan-Mar 2026).

Conclusion: This project demonstrates that OR nurses are vital catalysts for quality excellence. By integrating a data-driven pre-warming innovation and a proactive SSI bundle, perioperative nurses collaborating "Stronger Together" with surgeons effectively eliminated hypothermia risks and SSIs. This multidisciplinary model provides a practical application for sustainably transforming global OR safety standards.

Keywords: Intraoperative Normothermia, Surgical Site Infection, Enhanced Recovery After Surgery, Multidisciplinary Collaboration, Patient Safety

Reducing Surgical Site Infections after Colon Surgery Through a Perioperative Nursing Quality Improvement Bundle

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Background: Colorectal surgery is associated with a relatively high risk of surgical site infection because of bacterial contamination from the bowel and complex intraoperative procedures. In our hospital, the surgical site infection rate after regular colon surgery in 2023 was 9.6% (30 infections among 318 cases), which was higher than the national reference level. Surgical site infections can lead to prolonged hospitalization, readmission, reoperation, increased medical costs, and reduced patient experience. Therefore, a structured perioperative nursing quality improvement strategy was required to reduce preventable infection risks.

Objectives: This quality improvement project aimed to reduce the surgical site infection rate after elective colon surgery to 7.7% or lower through a standardized perioperative nursing infection prevention bundle.

Methods: A multidisciplinary quality improvement project was conducted for elective colon surgery, excluding emergency and robotic cases. Root cause analysis identified key infection risks, including intraoperative hypothermia, drape contamination, variation in preparation when surgery was performed outside the designated colorectal operating room, contamination during extracorporeal anastomosis, inconsistent stapler cleaning and disinfection, contamination during wound closure, and insufficient staff awareness. The improvement bundle included perioperative warming, reinforced skin preparation and draping, standardized support for non-designated operating rooms, stapler cleaning and disinfection protocols, abdominal field protection during mini-open procedures, glove change before closure, use of a dedicated suture set, replacement of saline for wound irrigation, triclosan-coated sutures, additional abdominal disinfection before dressing, and staff education using feedback and visual reminders.

Results: After implementation, the surgical site infection rate decreased from 9.6% in 2023 to 3.75% among patients who underwent colon surgery from February to April 2025 (3/80 cases), exceeding the target of 7.7%. For the same February-to-April period, the infection rate was 10.0% in 2023 and 7.9% in 2024. The project also improved staff awareness of infection prevention and supported standardization of perioperative nursing practice.

Conclusion: A structured perioperative nursing bundle focusing on warming, aseptic field management, contamination control during anastomosis and closure, standardized preparation, and team education was associated with a meaningful reduction in surgical site infections after colon surgery. Continuous monitoring and quarterly feedback will be maintained to sustain improvement and strengthen evidence-based perioperative nursing practice.

Keywords: Surgical site infection; Colorectal surgery; Perioperative nursing; Quality improvement; Infection prevention bundle

Med Safe Smoke Filter: Transforming Safety in Laparoscopic Surgery Through High-Value and Cost-Effective Innovation

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Background: The COVID-19 pandemic increased awareness of airborne contamination and surgical smoke exposure in operating rooms. During laparoscopic surgery, electrosurgical smoke may contain toxic chemicals, fine particulate matter (PM2.5), microorganisms, and viral particles affecting patients and perioperative personnel. Smoke accumulation also reduces visibility and disrupts surgical workflow. Although commercial smoke evacuation systems are effective, their high cost limits implementation in resource-limited settings. Through multidisciplinary collaboration and the concept of "Stronger Together," the operating room team at Faculty of Medicine, Prince of Songkla University developed "Med Safe Smoke Filter," a cost-effective smoke evacuation device created from repurposed, locally available materials.

Objectives: To develop and evaluate a cost-effective smoke evacuation device that reduces smoke exposure, improves laparoscopic visibility, enhances perioperative safety, supports sustainable care, and decreases hospital costs.

Methods: The innovation was developed using the ADDIE model integrated with the PDCA process and passive smoke evacuation principles. Root cause analysis identified factors contributing to smoke accumulation during laparoscopic surgery. The prototype was assembled from repurposed materials, including saline bottle caps, PVC tubing, and HEPA filters. The device underwent simulation, real-case testing, and iterative refinement. Outcomes included image clarity, smoke odor intensity, personnel symptoms, manual smoke release frequency, camera lens cleaning frequency, user satisfaction, and cost reduction.

Results: The Med Safe Smoke Filter significantly improved perioperative safety and workflow. Mean image clarity scores increased from 2.6 to 4.6 out of 5, while smoke odor scores decreased from 4.3 to 0.5. Symptoms of dizziness and fatigue among personnel decreased by 91.9%, from 37 reported instances to 3. Manual smoke release decreased from 4–6 to 1–2 times per hour, while camera lens cleaning frequency decreased from every 10–15 minutes to every 30–45 minutes. User satisfaction increased from 1.1 to 4.8 out of 5. Device cost decreased from 3,500 THB to 116 THB per set, representing a 96.7% reduction.

Conclusion: The Med Safe Smoke Filter is an effective and sustainable innovation for laparoscopic surgery. The device improves surgical visibility, reduces hazardous smoke exposure, enhances perioperative nursing safety, and lowers healthcare costs. This innovation demonstrates how working "Stronger Together" can create accessible, high-value, cost-effective solutions that strengthen patient safety and sustainable perioperative care.

Keywords: Surgical Smoke Evacuation; Perioperative Nursing; Patient Safety; High-Value and Cost-Effective Innovation; Sustainable Operating Room

Full-Chain Evidence-Based Management of Post-Thirst After Day Surgery Under General Anesthesia

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Background: Day surgery requires rapid turnover, with patients expected to meet discharge criteria within 4–6 hours postoperatively. Thirst after general anesthesia occurs in up to 76.8% of patients and is one of the most distressing symptoms during emergence. However, a critical gap exists between traditional postoperative fasting practices and the goals of enhanced recovery, and no standardized management protocol is currently available.

Objectives: To develop and implement a full-chain evidence-based thirst management protocol (preoperative to post-discharge) and evaluate its effects on thirst intensity, time to first oral intake, and adherence to evidence-based nursing practices.

Methods: A four-stage evidence-based continuous quality improvement model was adopted.

1. Evidence acquisition: Systematic searches were performed in JBI, PubMed, CNKI, and other databases. Two guidelines, two evidence summaries, and one systematic review were included. Evidence was appraised using the JBI Evidence Pre-grading System and the FAME (Feasibility, Appropriateness, Meaningfulness, Effectiveness) framework.
2. Baseline audit: A pre-implementation survey identified adherence gaps ranging from 0% to 100% across seven audit criteria.
3. Evidence implementation: A multidisciplinary team developed a graded intervention protocol, including a four-level thirst classification, the Watian swallowing test, a five-step progressive drinking method, and traditional Chinese medicine acupoint pressure.
4. Outcome evaluation: A pre-post design was used to compare nursing staff's knowledge, attitude, and practice levels and patient outcomes.

Results:

1. Patient outcomes: The mean Numeric Rating Scale score for thirst decreased from 6.52±1.23 at baseline to 3.84±0.95 post-intervention ($P<0.01$). The proportion of moderate-to-severe thirst decreased from 76.8% to 36.27% (relative reduction of 40.53%). Time to first oral intake was shortened from 4.5±0.8 hour
2. Practice adherence: The pass rate for nurses' thirst management skills improved by 98.5%. Patient self-management rate at home reached 95.67%, and overall protocol adherence was 92.34%.

Conclusion: This single-center evidence-based full-chain thirst management protocol significantly alleviates postoperative thirst, accelerates recovery, and improves the standardization of nursing practice. It is low-cost, easy to implement, and well accepted by patients, providing a reproducible model for comfort-oriented perioperative care in day surgery settings.

Keywords: Ambulatory surgery; General anesthesia; Postoperative thirst; Evidence-based nursing; Quality improvement

Beyond the Hospital Walls: Evidence Based Telehealth for Enhancing Surgical Outcome

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Background: Tele-health technology has significantly transformed healthcare, particularly in peri-operative care, by enhancing wound monitoring and early complication identification. Traditionally, nurses conduct phone follow-ups the day after surgery, which limits the ability to assess wound conditions and detect non-verbal cues. Tseung Kwan O Hospital introduced tele-health services to improve patient safety during recovery.

Objectives: This study aims to assess the efficacy of tele-health services compared to traditional phone follow-ups in the recovery phase of day surgery patients. The PICO framework focused on: - Population: post-operative day-discharge patients - Intervention: tele-health consultations - Comparison: phone follow-ups - Outcome: early detection of complications, AED admissions within 14 days, and readmissions within 30 days

Methods: The service was implemented in 2024, 105 post-operative patients from gynecological and dental specialties were recruited. 43 patients received tele-health services, while 62 received phone followups. Data were analyzed using SPSS version 27, with independent T-tests and Chi-square tests for baseline comparisons. Relative Risk (RR) and Number Needed to Treat (NNT) were used to assess group differences.

Results: Tele-health services identified 11 post-operative complications, compared to 2 in the phone follow-up group. The RR of 7.93 indicates that tele-health is 7.9 times more likely to detect complications. The NNT of 4.473 means 1 complication would have been missed for every 4 phone follow-ups. Furthermore, 3 tele-health patients required AED admission within 14 days, compared to 8 in the control group, reflecting a 46% lower risk. Additionally, no tele-health patients were readmitted within 28 days, compared to 4 in the control group, showing an 84.1% reduction in readmission risk.

Conclusion: Tele-health service is clinically significant in early complication detection and reducing unnecessary hospital visits compared to phone follow-ups. On the way forward, a larger sample size will be necessary to strengthen the results.

Keywords: Tele-health, Enhance post-operative outcome, Smart hospital, Day surgery

Development of Innovation in Preparing Sterile Ice for Organ Storage: from "Smart Nurse Smart Bag" to "PEERAYA-Ice Crusher" at Khon Kaen Hospital.

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Background: Organ transplantation faces resource limitations in Thailand, where sterile ice is vital to minimize organ injury and infection risks. To establish missing standardized guidelines, researchers developed a problem-based clinical practice guideline and the "Smart Nurse Smart Bag" using thermoplastic polyurethane. While it successfully prevented organ injury and reduced contamination, manual preparation caused staff fatigue and time constraints. Consequently, the researchers developed the electric "Peeraya I-crusher" to alleviate workloads and enhance sterile ice preparation efficiency, making the surgical process more convenient, rapid, and effective.

Objectives: To develop and evaluate sterile ice preparation innovations within the operating room nursing care unit at Khon Kaen Hospital, Thailand.

Methods: This action research applied a three-cycle P-A-O-R framework (Kemmis & McTaggart, 1988), consisting of planning, action, observation, and reflection/re-planning. The sample included sterile ice, transplant organs, and 60 operating room nurses responsible for ice preparation. Data were analyzed using descriptive statistics, frequency, percentage, mean (X-Bar), and standard deviation (S.D.).

Results: Innovation Outcomes: For the thermoplastic polyurethane (TPU) "Smart Nurse Smart Bag," 100% of organs suffered no injury from foreign objects, and 100% of the ice was free of macro- (>1 mm) and micro-contaminants (<1 mm). For the electric "Peeraya I-crusher" (undergoing ethical review; tested on 10 control samples), 100% of the ice samples were also free of both macro- and micro-contaminants. The transition to the electric crusher achieved 100% safety, ready for clinical use post-IRB approval. Personnel Satisfaction: Following guideline implementation, nurses reported the highest level of overall satisfaction (X-Bar = 4.6$, S.D. = 0.56). Specific attributes like user-friendliness, durability, cleanliness, time efficiency, and lightweight design received the highest satisfaction, while cold conductivity, affordability, and portability were rated at a high level.

Conclusion: The developed innovations are highly effective in maintaining organ safety and cleanliness, achieving 100% safety with zero contamination. They significantly reduce preparation time and organ injury risks while boosting nursing staff satisfaction. Furthermore, these innovations align with Thailand's 20-Year National Strategic Plan for Public Health by enhancing multidisciplinary teamwork, boosting local healthcare capacity, and elevating regional organ transplantation nursing standards.

Keywords: Organ transplantation, Sterile ice preparation, Thermoplastic polyurethane (TPU), Electric ice crusher, Nursing innovation

Prone Tucked-Arm Support for Cervicothoracic Spine Surgery

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Background: In cervicothoracic spine surgery with the patient prone on a Jackson spinal table, the arms are usually adducted alongside the body and secured with linen and adhesive tape. while this prevents displacement, tight wraping can hinder IV access, slow preoperative setup, and create pressure point. Before incision, the team must confirm safe positioning, working Iv lines, and absence of pressure risks, that it takes time. if an IV kinks or leaks intraoperatively, tight wraps make wrist or forearm access difficult for anesthesia to correct promptly.

Objectives: To enhance safety and efficiency by replacing tight strapping with a dedicated arm support that keeps the arms tucked while preserving clear IV access and reducing seting time.
Methods: The Prone Tucked-Arm Support for Cervicothoracic Spine Surgery was developed iteratively. An initial prototype was tested with staff for fit and stability. A second version lengthened the support surface to improve load distribution. The final model used stronger materials and an extended cradle, designed for comfort, stability, and compatibility with the Jackson spinal table.

Results: The support reliably maintains the prone, adducted-arm position without constrictive wrapping, enabling consistent IV fluid and blood component admistration and allowing quick line adjustment at the wrist or forearm during surgery. Teams reported faster positioning and easier line management. The wider, cushioned contact area helps reduce focal pressure, which may lower the risk of pressure injuries compared with tight strapping.

Conclusion: The Prone Tucked-Arm Support for Cervicothoracic Spine Surgery improves IV accessibility, streamlines preoperative positioning, and may reduce pressure-related complications in prone cervicothoracic procedures. It offers a practical tool for surgical teams aiming to deliver safer, more efficient care on the Jackson spinal table.

Keywords: prone arm support, cervicothoracic spine surgery, positioning devices innovation

Poster Presentation

POSTER PRESENTATION

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P-02	**Cheung Siu Lo** *Tseung Kwan O Hospital, Hong Kong SAR*	Unique and Tailor-Made Communication System – Operating Theatre Control Centre at the Department of Anaesthesia & Operating Theatre Services in Tseung Kwan O Hospital
P-03	**Pawita Patmanee** *KCMH, Thailand*	Chula Quick Setup ECMO Set
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Development of a Care Model for Patients Undergoing Endoscopy and One Day Surgery under Local Anesthesia Using Telehealth and Stress-Relief Ball Squeezing

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Background: One Day Surgery (ODS) has been increasing both nationally and internationally. Data from Phumisiri Building, 5A (General Surgery Operating Unit), reflect a similar upward trend in patients undergoing endoscopy and ODS under local anesthesia. Patients are required to prepare in advance at home and perform appropriate self-care to comply with pre- and post-procedure instructions. Proper preparation improves patient safety and helps prevent delays or cancellations. However, a retrospective review from 2021-2023 found that an average of 15 patients per year (2.15%) experienced same day delays, mainly due to failure to fast and elevated blood pressure related to fear and anxiety. Additionally, postponement rates ranged from 4.65% to 5.45% due to in adequate preparation, poor physical or mental readiness, healthcare coverage issues, no-show, personal obligations, or inability to contact patients.

Objectives: This project aimed to: (1) develop a patient care model for endoscopy and ODS under local anesthesia across perioperative phases, (2) reduce postponement and cancellation rates related to inadequate preparation, and (3) reduce patient's fear and anxiety during preoperative and intraoperative periods.

Methods: The study included 110 patients who underwent endoscopy and ODS under local anesthesia between June and September 2024. The care model was developed based on Orem's Self-Care Theory combined with ODS nursing concepts. Care was structured across three phases. In the preoperative phase, telehealth was used to prepare patients and provide follow-up after surgery. In the intraoperative phase, stress-relief ball squeezing was introduced to reduce fear and anxiety.

Results: A clear and practical care model was established, including preoperative telephone follow-ups, use of stress-relief balls during waiting and procedures, and a discharge assessment form. Implementation reached 83.87%, meeting evaluation criteria. No postponements or cancellations occurred during the study period. Patients reported reduced anxiety and high satisfaction, particularly with the stress-relief tool and continuous care.

Conclusion: The project successfully developed a standardized and effective care model that improved patient preparedness, reduced anxiety, and eliminated procedure delays, with potential for adaptation to other procedures.

Keywords: Development of a care model, Endoscopy, ODS, Telehealth, Stress-relief ball

Unique and Tailor-made Communication System – Operating Theatre Control Centre at the Department of Anaesthesia & Operating Theatre Services in Tseung Kwan O Hospital

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Background: Communication is an indispensable component throughout the whole perioperative journey. An enhanced communication smart system - Operating Theatre Control Centre (OTCC) was first developed and implemented in the Department of Anaesthesiology and Operating Theatre Services in Tseung Kwan O Hospital in 2022. It enables point-to-multipoint communication instead of point-to-point phone calls for daily operation. Meanwhile, OTCC allows real-time interchange of clinical information and operational status among the perioperative units, including Ambulatory Surgery Services Units, Operating Theatre nurse station, Operating Rooms, Postanaesthesia Care Unit and Integrated Disinfection & Sterilization Unit.

Objectives: The objective of the project is to centralize monitoring, control and command for daily operations by reducing phone calls and shortening communication time.

Methods: A task force was set up and the task force members worked closely with vendor to develop the system. A concise and structural dashboard was designed to facilitate the communication within the department. Training sessions were provided to over 90% of nursing staff. During the 6-month trial period, the team continue working with the vendor closely and OTCC was launched formally in Tseung Kwan O Hospital in January 2023.

Results: From August 2022 to January 2023, there were 840 operations tried out the system. Daily reviews were performed by task force members. 5580 phone calls for daily operation are reduced by OTCC, equivalent to 80% reduction of telephone load achieved. In addition, when compared with point-to-point phone calls, OTCC saved up 78% of the time in routine premedication workflow and 70% of the time in postoperative workflow. Evaluations showed that 95% of staff agreed that OTCC was useful for providing real-time progress of perioperative journeys. 85% of staff agreed that it was able to centralize monitoring, control and command of daily operation within the department. 90% of staff were satisfied with OTCC since it shortened communication time.

Conclusion: OTCC is an effective communication system for perioperative information sharing. Following the pilot phase, Surgeons and Anaesthetists are also able to access the system and view the operation progress. In view of the increasing demand and diversity of perioperative service, OTCC is necessary to standardize work practice and improve coordination within department.

Keywords: point-to-multipoint communication, real-time system, interchange of clinical information

Chula Quick Setup ECMO Set

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Background: Extracorporeal Membrane Oxygenation (ECMO) is a life-saving procedure requiring extreme speed and precision. At King Chulalongkorn Memorial Hospital (KCMH), these procedures are performed in various locations, including the Thoracic Surgery OR, multiple ICUs, and the Emergency Room. While specialized ECMO boxes containing essential items like angio needles and guidewires were already in use, delays persisted because surgical gowns, drapes, sutures, and blades still had to be gathered separately. To eliminate these preparation steps and improve responsiveness, the Chula Quick Setup ECMO Set was developed.

Objectives:

1. To reduce equipment preparation time for off-site ECMO to ≤ 15 minutes.
2. To reduce the time from receiving the surgical set request to the start of the procedure to ≤ 30 minutes.
3. To achieve a staff satisfaction rate of over 80% regarding the use of the Chula Quick Setup ECMO Set.

Methods: The project utilized Lean management tools, including Work Flow Process Charts, DOWNTIME waste analysis, SIPOC modeling, and a 9-step A3 action plan. The strategy involved Value Stream Mapping (VSM), Root Cause Analysis (Fishbone Diagram), and the application of Cell Concepts, Kanban systems, Visual Management, and Digitalization to streamline the process.

Results: Since the implementation on July 1, 2024, all objectives have been met, aligning with the KCMH Safety Goals for Safe Surgery:

1. Preparation Efficiency: Preparation time decreased from 17 minutes to 9 minutes.
2. Clinical Timeliness: Procedure start time decreased from 42 minutes to 24 minutes.
3. Survival Rates: Patient survival rates averaged 50–70%.
4. Resource Optimization: Equipment transport was streamlined from five carts to four compact carts, improving mobility.
5. Satisfaction: Staff satisfaction reached 95% due to better organization and reduced physical movement.

Conclusion: The Chula Quick Setup ECMO Set successfully applied Lean techniques to ensure timely, standardized, and safe ECMO cannulation. By optimizing logistics, the project has enhanced patient survival rates and significantly improved workflow efficiency for medical personnel.

Keywords: ECMO (Extracorporeal Membrane Oxygenation)

Development Video QR Codes to Enhance Health Literacy and Reduce Complications in Blepharoplasty Patients

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Background: Significance and Problem Origin Drooping eyelids significantly impact both visual fields and patient self-confidence. Blepharoplasty is common procedure at the Bhumisiri Mangalanusorn Building 6A; however, statistical data from 2021-2023 revealed that most patients possessed only "Level 1" (basic) health literacy. This insufficiency led to post-operative complications, specifically hematoma and wound dehiscence, due to incorrect self-care. Traditional paper based in infographics have proven limited in demonstrating complex physical care steps. To address this, the video was developed to bridge the digital literacy gap, utilizing video-based learning via QR code to provide 24/7 access to precise, expert-led guidance.

Objectives:

1. To develop an innovative system using QR codes to deliver comprehensive pre and post operative video instructions.
2. To improve patients health literacy and self-care comprehension through immersive multimedia.
3. To eliminate preventable post-operative complications through standardized digital education.

Methods: This study utilized a Research and Development framework. The innovation features module-based video content, including "Pre-op Calibration" and "Post-op Optimization" (e.g., proper cold compress techniques and wound cleansing). These videos were integrated into a QR code system accessible via smartphones at the point of care. Effectiveness was evaluated using pre and post-test knowledge assessments and clinical observation of post- operative complications during 7 day follow-ups.

Results: Performance results empirical data demonstrated significant system efficiency

- Health literacy: Average knowledge scores increased from "basic" to "excellent", with an average post-test score improvement of 86.67%.
- Clinical outcome: The incidence of preventable hematoma and wound dehiscence was reduced to 0% among participants.
- Satisfaction: 93.33% of patients and families reported "excellent" satisfaction, citing that the video format reduced anxiety and provided clearer procedural guidance than traditional media.

Conclusion: Summary and perioperative nursing application: The transition to the system represent a milestone in perioperative nursing digitalization. By providing standardized, consistent, and easily accessible information, it minimizes communication errors and empowers patient self-management. This model serves as a benchmark for "Smart Nursing" practices, ensuring maximum patient safety and high-quality surgical outcomes in the digital era.

Keywords: Video QR codes, Reduce complications, Blepharoplasty

Congenital Mini Snugger for Pediatric Cardiac Surgery

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Background: The Division of Cardiothoracic Surgery at Siriraj Hospital has seen a steady increase in pediatric open-heart surgeries. In infants weighing under 10 kg, limited surgical space makes standard adult wire snuggers unsuitable during cannulation, as they obscure the surgeon's view. Furthermore, smaller alternative wires are costly and prone to breaking upon reuse.

To address these challenges, the "Congenital Mini Snugger" was developed. Replacing the conventional metal wire, this innovation utilizes a silk thread looped through a small rubber tube. The pre-assembled device is steam-sterilized to ensure immediate surgical readiness.
This innovation securely stabilizes catheters without blocking the operative field, effectively resolving issues of high cost and material fatigue. Ultimately, it enhances surgical efficiency, helping medical teams safely accommodate the growing volume of pediatric patients with congenital heart defects

Objectives:

1. To create a size-appropriate snugger for small pediatric patients, optimizing limited operative space and improving surgical safety.
2. To reduce the cost of using expensive ready-made snugger for young children while offering superior performance.
3. To provide a readily available congenital mini snugger for use in the increasing number of pediatric cardiac surgeries.

Methods: The "Congenital Mini Snugger" was developed to provide secure vessel occlusion and cannula fixation in limited pediatric surgical spaces. The device was constructed by cutting a 10 Fr rubber catheter to an 8 cm length. A No. 2 silk suture was threaded through the catheter using a small wire guide (<1.5 mm), creating a 2 cm functional loop at the distal end. The fully assembled devices then underwent standard steam sterilization to ensure immediate clinical readiness.

Results: Following three CQI rounds, the Congenital Mini Snugger achieved 100% pediatric surgical coverage. It reduced per-surgery costs by approximately 75% (from 700 to 170 THB) and completely eliminated vascular ruptures (0%). Additionally, user satisfaction reached 98–100%, highlighting its exceptional convenience, safety, and cost-effectiveness.

Conclusion: The Congenital Mini Snugger is an essential, cost-effective tool for infant cardiac surgery. It safely maximizes limited space, prevents vascular tears, and ensures high surgeon satisfaction

Keywords: congenital mini snugger, pediatric heart surgery, congenital heart surgery, cannulation

A Perioperative Nursing Innovation: Laser Holder-Assisted Cleavage to Improve Laser Fiber Preparation in Endourologic Surgery

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Background: Holmium laser lithotripsy is widely used in endourologic surgery for urinary tract stone management. Proper preparation of the laser fiber tip is essential for effective energy delivery, consistent laser performance, and procedural safety. In routine practice, laser fiber cleavage is often performed manually using ceramic scissors or a pen knife. However, unstable hand positioning, operator variation, and difficulty maintaining the fiber in a fixed position during cutting may cause irregular fiber tips and inconsistent light dispersion. These problems can lead to repeated fiber preparation, interrupt intraoperative workflow, and reduce the efficiency of laser application during surgery.

Objectives: To develop and evaluate a Laser Holder designed to stabilize holmium laser fiber during cleavage and improve the quality and consistency of laser fiber preparation for endourologic surgery.

Methods: An experimental study was conducted using reusable 272-μm holmium laser fibers. Laser fiber cleavage was performed using two commonly used techniques: ceramic scissors and a pen knife, both with and without the Laser Holder. The Laser Holder was designed to secure the fiber in a stable position during cleavage and reduce variation caused by manual handling. The outcomes included light dispersion patterns, laser power output, and microscopic appearance of the fiber tip after cleavage. Results were compared between cleavage techniques to determine whether Laser Holder-assisted cleavage improved the quality of fiber preparation.

Results: Laser Holder-assisted cleavage produced more consistent light dispersion patterns, with circular or ovoid profiles closer to the standard pattern than non-holder techniques. The improvement in light dispersion quality was statistically significant. Laser power output after cleavage was not significantly different between techniques, indicating that the Laser Holder improved cleavage consistency without reducing laser performance. Microscopic examination also showed smoother and more regular fiber tip appearances when the Laser Holder was used.

Conclusion: The Laser Holder is a practical perioperative nursing innovation that may improve the consistency and quality of laser fiber preparation in endourologic surgery. This innovation supports standardization of intraoperative laser management, promotes procedural safety, reduces practice variation, and demonstrates the important role of perioperative nurses in surgical technology management, workflow improvement, and quality improvement.

Keywords: Laser Holder; Laser fiber cleavage; Holmium laser; Endourologic surgery; Perioperative nursing; Patient safety

Streamlining Surgical Supply Cart Management: A System Redesign for Efficiency, Cost Reduction, and Sustainability in the Operating Room

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Background: Rising medical supply costs, increasing item variety, and growing complexity of surgical material management have placed significant burdens on operating room (OR) staff and contracted vendors. Our hospital's nursing department identified supply cart optimization and traceability system utilization as priority improvement areas. Carts were previously configured at the departmental level, stocked to cover a range of procedures within each surgical specialty, leading to inefficient preparation, increased risk of incorrect material selection, and excess consumption.

Objectives: To evaluate and compare the operational efficiency, material costs, and staff satisfaction between department-level multi-procedure surgical supply carts and procedure-specific carts, and to examine whether procedure-specific standardization offers measurable improvements in perioperative material management.

Methods: Existing departmental cart configurations were analyzed and restructured into procedure-specific carts, each tailored precisely to a single surgery type. Materials within each cart were further classified into two tray categories: standardized procedure-essential items and high-probability supplementary items. Outcome measures included surgical supply cart preparation time, post-operative cost calculation time, material item counts and costs per procedure type, and staff satisfaction via questionnaire.

Results: Following implementation, surgical supply cart preparation time decreased by 27% and post-operative cost calculation time was reduced by 56%. Material item counts and costs decreased across the majority of procedure types. However, laparoscopic gastrectomy in the esophagogastric surgery department showed increases in both item count and cost, suggesting insufficient procedure-specific precision requiring further review. Over 70% of staff reported improved preparation efficiency and utility of the new cart system, though some intraoperative material shortages were identified.

Conclusion: Procedure-specific cart standardization effectively reduced operational burden, costs, and material waste, supporting sustainable OR resource management. Continuous evaluation, physician-inclusive standardization, and real-time data integration remain essential to further refinement and long-term success.

Keywords: Surgical materials management, Perioperative care, Operating room efficiency, Hospital cost reduction, Workflow standardization

Development of a Nursing Service System for Cardiac Patients Undergoing Emergency Surgery During Off-Hours in the Operating Room, Udon Thani Hospital

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Background: Emergency cardiac surgery during off-hours presents significant challenges, including limited resources, delayed response times, and increased risks of complications and mortality. At Udonthani Hospital, the number of patients requiring emergency cardiac surgery has steadily increased, accompanied by rising rates of complications, prolonged hospital stays, and higher mortality. These issues reflect systemic problems in nursing service delivery, including structure, process, and outcomes. Therefore, developing an effective nursing service system is essential to improve care quality, reduce delays, and enhance patient safety.

Objectives: This study aimed to develop and evaluate a nursing service system for patients undergoing emergency cardiac surgery during off-hours in the operating room at Udonthani Hospital and to compare outcomes before and after the implementation of the system.

Methods: This research and development study utilized a descriptive design, quasi-experimental approach, and qualitative methods. The study population included 23 operating room nurses, 110 cardiac patients undergoing emergency surgery, and 55 relatives, selected using purposive sampling. The intervention consisted of a nursing service system developed based on the Donabedian Model, including policy support, multidisciplinary teamwork, on-call system improvement, emergency equipment preparation, communication systems, clinical pathways, nursing protocols, fast-track services, and surgical safety checklists. Data collection tools included questionnaires, knowledge tests, preparation time records, clinical outcome forms, and satisfaction assessments. Data were analyzed using descriptive statistics, Wilcoxon matched pairs signed rank test, independent t-test, pearson's chi-square test, and content analysis.

Results: The findings revealed that nurses' knowledge significantly improved after implementation ($p < .001$), and the average preparation time significantly decreased from 46.69 to 23.95 minutes ($p < .001$). Clinical outcomes showed significant reductions in length of hospital stay, arrhythmia, and unplanned reoperation ($p < .001$). Although mortality and thromboembolism rates decreased, they were not statistically significant. Satisfaction among nurses, patients, and relatives was at the highest level.

Conclusion: The developed nursing service system effectively enhanced care processes, reduced delays, improved clinical outcomes, and increased satisfaction. This model can be adapted for similar healthcare settings to improve the quality and safety of emergency cardiac surgical care.

Keywords: Nursing Service System , Cardiac Patients , Emergency Surgery , Operating Room

MBTI Personality Type, Job Stress and Job Satisfaction of Nurses at a Tertiary Hospital

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Background: Nurses are essential healthcare professionals who provide direct patient care and contribute to hospital efficiency and service quality. Since nursing is a highly stressful profession involving continuous interpersonal interaction, nurses' personality traits are closely related to their work performance, job stress, and job satisfaction. Understanding these factors is important for improving nursing services and organizational productivity. Among various personality assessment tools, the Myers-Briggs Type Indicator (MBTI) is widely used to better understand individual personality types.

Objectives: Previous studies have examined nurses' job stress and satisfaction, but few have simultaneously investigated their relationship with MBTI personality types. Most related studies also focused on nurses from specific departments or other occupational groups. Therefore, this study aims to identify differences in job stress and satisfaction according to MBTI personality types among ward, ICU, and operating room nurses. The findings may provide foundational data for effective nursing management and department-specific job strategies.

Methods: This study included 200 nurses working in wards, intensive care units, and operating rooms at S University Hospital in Gyeonggi-do, South Korea. Data were collected from January to February, 2024. MBTI personality type was used as the main variable, while general characteristics were considered confounding variables. Relationships with job stress and satisfaction were analyzed using SPSS Statistics version 27.0.

Results: Job stress was higher among nurses with Introversion (I) and Feeling (F) personality types, while job satisfaction was higher among those with Extraversion (E). A significant negative correlation was found between job stress and satisfaction. Extraversion (E) was more common in wards and ICUs, whereas Introversion (I) was more common in operating rooms. Judging (J) types were more frequent in wards and ICUs, while Perceiving (P) types were more common in operating rooms. And Sensing (S) types were more common in wards and operating rooms, whereas Intuition (N) types were more prevalent in ICUs.

Conclusion: These findings suggest that regular management of job stress is important for improving nurses' job satisfaction, especially among Introversion (I) and Feeling (F) types who are more vulnerable to stress. Department-specific personality differences may also help guide nurse placement, interpersonal understanding, collaboration, and the quality of healthcare services.

Keywords: Nurse, MBTI personality types, job stress, job satisfaction

Green OPD Dashboard: Waste, Carbon, Value

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Background: Global solid waste generation has reached 2.56 billion tons annually and is projected to increase to 3.8 billion tons by 2050, imposing significant environmental and economic burdens. In Thailand, municipal waste has shown a continuous upward trend, with only 38% being managed appropriately. Hospitals contribute substantially to overall waste generation, particularly infectious waste. At Siriraj Hospital, the volume of waste generated has consistently increased each year. In 2025, total waste generation reached as high as 7,264,535.92 kilograms, requiring costly disposal processes. As a leading healthcare institution, Siriraj Hospital has implemented green hospital policies to promote sustainable waste management. However, within outpatient perioperative settings, ineffective waste segregation continues to increase infection risks and environmental impact, highlighting the need for targeted interventions.

Objectives:

1. To ensure that personnel properly collect, separate, and dispose of waste in the hospital.
2. To increase the separation of recyclable waste in the outpatient care department- perioperative of Siriraj Hospital.
3. To raise awareness personnel about the importance of waste management in the hospital.

Methods: A quality improvement project, "Minor Go Green," was conducted in a minor surgery unit. The initiative applied a Green Operating Room (Green OR) model emphasizing source segregation of general, infectious, and recyclable waste. Interventions included staff education, clearly labeled waste bins, workflow redesign, and integration with a hospital Waste Bank system for recycling management. A dashboard system was used to monitor performance indicators, including segregation accuracy, recyclable waste volume, carbon emission reduction, and financial returns.

Results: Post-implementation, correct waste segregation among nursing personnel reached 100%. The project increased recyclable waste collection to 1,492.6 kg, resulting in a reduction of carbon dioxide emissions by 861.96 kg CO_2. Additionally, the initiative generated revenue of 3,403.6 THB, which was reinvested into patient care services. The findings demonstrate improved environmental performance alongside enhanced infection control practices in perioperative care.

Conclusion: The Green OR initiative effectively improved waste management practices in outpatient perioperative nursing care, demonstrating measurable environmental, economic, and clinical benefits. This model can be adapted to other surgical units to support sustainable healthcare systems while maintaining patient safety and infection prevention standards.

Keywords: Waste management, Dashboard, Green OR

Improvement of the Operating Room Waste Segregation Process

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Background: Medical waste is designated waste under the Waste Management Act and requires strict control. Bundang Seoul National University Hospital generates approximately 2,400 tons of medical waste annually and operates Korea's first and largest in-hospital sterilization and shredding facility, which enables self-disposal of about 46% of hospital-wide waste. However, all operating room waste had previously been outsourced.

Objectives: We aimed to establish an operating room waste segregation and disposal system to reduce medical waste, lower disposal costs, protect the environment, and strengthen ESG-based sustainability.

Methods: We analyzed waste generation patterns and operating room layouts, then installed customized waste containers and differentiated transport carts according to each area's conditions. A detailed segregation guideline was developed, staff education and promotion were conducted, and the surgical nursing team monitored implementation with ongoing feedback. Segregated waste, including general medical waste, blood-contaminated waste, pathological waste, and sharps, was processed in the in-hospital sterilization and shredding facility and converted to general waste.

Results: The proportion of outsourced medical waste from the operating room decreased from 100% to 49.9%. Annual disposal cost savings are expected to be approximately KRW 120 million. The new process also improved compliance with waste management regulations and infection control standards, while reducing staff workload and inconvenience.

Conclusion: Introducing a self-disposal-based waste segregation system in the operating room provided an effective model for medical waste reduction and sustainable management. Continued collaboration between the General Affairs Team and the Surgical Department, along with regular monitoring and feedback, will support further improvement of this system.

Keywords: Operating room waste segregation, Medical waste management, Sustainable waste treatment

Perceptions of Operating Room Nurses' Eco-Friendly Practices: Focusing on Medical Waste Management for Carbon Neutrality

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Background: Climate change has emerged as a major global public health issue, and carbon-neutral practices in the healthcare sector have become an important priority. Operating rooms are regarded as key units for carbon-neutral practice, as they generate a large proportion of medical waste within hospitals. However, previous studies have addressed clinical nurses' eco-friendly awareness and practices only to a limited extent, and in-depth exploratory research focusing on OR nurses remains insufficient.

Objectives: This study aimed to explore OR nurses' perceptions of eco-friendly practices centered on medical waste management for carbon neutrality, identify factors influencing these practices, and derive effective strategies and required resources to promote sustainable behaviors.

Methods: Focus group interviews were conducted with fifteen OR nurses working at a tertiary-level hospital in the metropolitan area. Interview data were analyzed using the Theory of Planned Behavior—attitude, subjective norms, perceived behavioral control, and behavioral intention—as the analytic framework. Research rigor was ensured by applying the four criteria of trustworthiness in qualitative research and the COREQ checklist.

Results: The findings showed that participants recognized the necessity of eco-friendly practices; however, they experienced difficulties in practice due to an infection-prevention-oriented culture, hierarchical organizational structure, heavy workload, and physical environmental constraints in the OR. In addition, insufficient background knowledge, lack of education, and inadequate institutional and incentive systems limited eco-friendly practices to the level of individual intention. Nevertheless, participants expressed willingness to sustain eco-friendly practices if organizational support—such as education, adequate space for waste segregation, and incentive systems—were provided. They also suggested actionable strategies, including reducing material use, appropriate utilization of consumables, strengthened waste segregation, energy-saving measures related to ventilation, and collaboration with manufacturers.

Conclusion: Based on these findings, the promotion of eco-friendly practices among OR nurses may be effective through the establishment of environmentally supportive OR infrastructure, enhanced education for all staff, incentive systems, and organizational culture improvement.

Although this study is limited by its focus on a single institution, it's meaningful in that it provides an in-depth exploration of eco-friendly practices within the OR setting. Future studies including diverse institutions and professional groups are recommended.

Keywords: operating room nurse, eco-friendly practices, carbon neutrality, medical waste management, qualitative research, focus group interview, COREQ checklist, The Theory of Planned Behavior

Development of Pillar-Phase Educational Framework for Perioperative Nurses in South Korea Based on Clinical Educational Needs: A Mixed-Methods Study

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Background: Perioperative nursing in South Korea requires high-level expertise due to the complex nature of surgical environments and the critical importance of patient safety. However, existing education systems often face structural limitations, such as reliance on inconsistent preceptorship and a lack of standardized curricula. Establishing a job-based, systematic framework is essential to bridge the gap between theory and practice and to ensure professional competency in the evolving Korean medical environment.

Objectives: This study aimed to develop a comprehensive "Pillar-Phase" educational framework for perioperative nurses that reflects career development stages and clinical needs, thereby enhancing the quality and consistency of perioperative nursing education.

Methods: A mixed-methods approach was utilized. A nationwide survey of 431 perioperative nurses was analyzed using Borich Needs Analysis and the Locus for Focus Model. These analyses provided insights into the importance, difficulty, and performance level of key nursing tasks. Based on these findings, four core pillars were designed to address the specific educational needs identified. Additionally, Focus Group Discussions (FGD) were conducted with novice, experienced, and charge nurses to capture diverse clinical perspectives. The framework was finalized through expert validation to ensure logical alignment between the curriculum and clinical delegation.

Results: Based on the integrated analysis, four core pillars were established: (1) Safety & Aseptic Excellence, (2) Perioperative Nursing Operations, (3) Communication & Teamwork, and (4) Professionalism, Quality, & Growth. This 'Pillar-Phase' framework organizes professional development across four stages: Phase 1 (observation and direct supervision for foundational knowledge acquisition), Phase 2 (indirect supervision for standardized procedural performance), Phase 3 (independent performance in complex clinical situations), and Phase 4 (leadership and educator roles at the expert level). Furthermore, EPA trust levels are gradually increased with each phase. Validation by clinical and educational experts confirmed the structural integrity of the framework, the appropriateness of the content, and the validity of the teaching and assessment methods, ensuring high clinical applicability.

Conclusion: This integrated framework provides a competency-based structure that visualizes professional growth for perioperative nurses in South Korea. By aligning educational content with actual clinical tasks, it enhances clinical excellence and professional adaptability, serving as a standardized model to improve patient safety across healthcare settings.

Keywords: Perioperative Nursing, Competency-Based Education, Clinical Competence, Curriculum, Needs Assessment, Patient Safety

Development of a Mentoring System for Quality Improvement and Perioperative Nursing Staff Professional Growth

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Background: In operating rooms, nursing personnel often face challenges in academic progression and quality improvement (QI) initiatives. A survey at the Obstetrics and Gynecology Operating Room unit revealed that while 100% of staff recognized the importance of QI, 85.2% had never led a project, and 88.8% felt their understanding was only at a moderate to low level. Key barriers included high routine workloads, lack of clear timelines, and a shortage of experienced mentors to provide systematic guidance.

Objectives: This project aimed to: 1) Increase the number of QI projects (CQI, Kaizen, Academic articles, VDO clips) led by target staff to at least 2 projects/year. 2) Support at least one nurse and one practical nurse per year in achieving higher professional levels. 3) Achieve a system efficiency rate where over 75% of staff can complete projects independently. 4) Maintain participant satisfaction above 90%.

Methods: This project utilized the PDSA cycle from June 2024 to March 2026. Root Cause Analysis was performed using Fishbone diagrams and STEEEP criteria. A structured mentoring system was developed, involving mentor training, clear "Work Flow" timelines, and tailored technical support. Individual developmental plans were implemented to match each staff member's competency, ensuring systematic tracking and personalized guidance throughout the process to enhance both quality improvement and academic progression.

Results: Following implementation, QI output increased significantly from 0 to 10 projects (3 Kaizen, 2 CQI, 3 Academic Articles, 2 VDO Clip). Currently, three personnel members have successfully completed and submitted their professional advancement and four personnel are actively progressing through the development phase under the mentoring system, meeting 100% of the target. The system efficiency and the satisfaction rate was 100%. Feedback highlighted that systematic tracking significantly reduced staff anxiety and fostered a more collaborative culture.

Conclusion: The structured mentoring system is a tool for bridging the gap between clinical practice and academic achievement in perioperative nursing. By providing systematic coaching and clear timelines, the system not only improves the quality of patient care through increased QI initiatives but also fosters professional growth and organizational sustainability. This model can be further expanded to other nursing units to promote a continuous culture of improvement.

Keywords: Mentoring system, Perioperative nursing, Quality improvement

Improving Surgical Sign-Out Compliance to Strengthen Patient Safety in the Operating Room

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Background: Surgical sign-out is a final verbal safety check before a patient leaves the operating room. It confirms the procedure performed, instrument and sponge counts, specimen labeling, and equipment issues requiring follow-up. Although sign-out prevents specimen loss, count discrepancies, and communication failures, compliance may be overlooked during emergency cases, rapid turnover, staff changes, and workload pressure.

Objectives: This quality improvement project aimed to increase the surgical sign-out completion rate to at least 95% and strengthen a consistent patient safety culture among perioperative nurses, surgeons, and anesthesiologists.

Methods: This project was conducted in the operating room, post-anesthesia care unit, and department of anesthesiology and pain medicine at Chung-Ang University Hospital, Seoul, Republic of Korea. The target population included all surgical patients undergoing general, regional, or local anesthesia. The key indicator was the sign-out completion rate, calculated as completed sign-outs divided by total daily surgical cases. Baseline compliance in March 2023 was compared with follow-up data in September 2023. The sign-out process was standardized by establishing a structured checklist and step-by-step scenario to guide team communication before patient transfer. Improvement strategies included reminder fan boards, promotional posters, video-based staff education, recognition and rewards for high-performing staff, and feedback to departments with low compliance.

Results: The average sign-out completion rate increased from 70.61% in March 2023 to 95.00% in September 2023, achieving the predefined target and showing a 24.39 percentage-point improvement. Department-level performance generally improved. The largest increases were observed in plastic and reconstructive surgery, from 29.41% to 100.00%; neurosurgery, from 42.11% to 85.71%; and orthopedic surgery, from 54.55% to 97.52%.

Conclusion: A multidisciplinary, visible, and structured quality improvement intervention improved surgical sign-out compliance and helped embed sign-out as a routine perioperative safety practice. Standardized sign-out can support accurate counts, specimen safety, communication of equipment problems, and safer patient transfer from the operating room. Continued education and focused support for lower-performing departments are needed to sustain compliance.

Keywords: Patient safety; Sign-out; Operating room; Quality improvement; Perioperative nursing; Team communication

The Competency of Nurses Pertaining to Specified Medical Acts to Provide Care During the Peri-Anesthetic Period

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Background: In Japan, the "Training System for Nurses Pertaining to Specified Medical Acts" (hereafter, specified medical act nurses) was launched in 2015, marking the start of efforts to train specified medical act nurses in techniques such as artificial respiration management—procedures traditionally performed by physicians. In 2018, the "Intraoperative Anesthesia Management Package" training program began, promoting the training of specified medical act nurses for the perioperative period. To effectively utilize specified medical act nurses in the perioperative period, it is necessary to clarify their competencies and reinforce the specific behavioral characteristics that enable them to achieve high levels of performance and outcomes.

Objectives: The purpose of this study is to clarify the competencies of specified medical act nurses working in the perioperative setting.

Methods: A qualitative study design was adopted. Semi-structured interviews were conducted with seven specialized medical act nurses and practicing designated procedures in the operating room. All interview data were transcribed verbatim and analyzed using thematic analysis to identify key themes.

Results: The competencies of specified medical act nurses who provide care during the peri-anesthetic period were summarized into seven themes: [practical skills supported by knowledge and techniques that are necessary for safe performance of specified medical acts under the instructions of physicians], [assessment ability to comprehensively examine patients and to use clinical reasoning to accurately understand their general conditions], [ability to build interpersonal relationships that are necessary for improving teamwork by bridging between nurses and physicians and by facilitating smooth communication with other medical professionals involved during the peri-anesthetic period], [ability to train nurses involved during the peri-operative period based on the knowledge and experience acquired by performing specified medical acts], [ability to control their emotions, to remain calm, and to endure stress], [sense of mission to fulfill roles associated with peri-operative medical care as expected by the organization], and [passion and aspiration for the tasks of specified medical act nurses].

Conclusion: The findings suggest that organizational support to ensure learning opportunities and time is necessary to promote the activities of specified medical act nurses during the perioperative period.

Keywords: competencies, specified medical act nurses, perioperative setting

Importance-Performance Analysis of Work Performance Competency among Operating Room Nurses: A Multicenter Study

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Background: Operating room nurses play specialized roles in maintaining patient safety, coordinating perioperative care, and managing complex surgical environments. Rapid advances in surgical technology and increasing demands for high-risk procedures have increased the need for systematic competency development, but educational priorities remain insufficiently clarified.

Objectives: This study examined operating room nurses' perceived importance and performance of work performance competency, compared competency gaps between two hospitals, and identified priority areas for improvement using Importance-Performance Analysis.

Methods: A descriptive survey was conducted among operating room nurses working at two hospitals in Korea. Data were collected via online questionnaire from October 30 to November 10, 2024. A total of 100 responses were analyzed. The instrument included 44 competency items across four domains: professional value, surgical nursing service, education and research, and cooperation and leadership. Data were analyzed using descriptive statistics, paired t-tests, one-way analysis of variance, and Importance-Performance Analysis with SPSS 21.0.

Results: The overall mean importance score was 3.86, and the overall mean performance score was 3.63, indicating that perceived importance was significantly higher than performance. Surgical nursing service showed the highest importance and performance scores, whereas education and research showed the lowest performance score. At Hospital C, significant importance-performance gaps were found in professional value, surgical nursing service, and cooperation and leadership, while no significant gap was observed in education and research. At Hospital K, significant gaps were found in professional value and cooperation and leadership, while surgical nursing service and education and research showed no significant differences. In the item-level Importance-Performance Analysis, 21 items were classified as "keep up the good work," 22 as "low priority," one as "concentrate here," and none as "possible overkill.

Conclusion: Operating room nurses recognized work performance competency as important; however, their performance levels were lower than their perceived importance. Hospital-specific differences suggest the need for tailored competency-based education and organizational support. In particular, professional value, cooperation, and leadership should be strengthened to improve perioperative nursing practice and patient safety.

Keywords: Operating room nurses; Work performance competency; Importance-Performance Analysis; Perioperative nursing; Nursing education

Optimizing Surgical Hand Hygiene: A Comparative Study of Three Handwashing Techniques in Perioperative Nursing

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Background: Surgical hand hygiene is a fundamental practice to prevent surgical site infections (SSIs). Inconsistent practices and unclear standardization, particularly regarding brush use, duration, and technique, may compromise effectiveness. At a tertiary hospital in Thailand, compliance with effective surgical handwashing among perioperative nurses was below target, highlighting the need for evidence-based improvement.

Objectives: To compare the effectiveness of three surgical handwashing techniques and develop an evidence-based guideline to improve perioperative hand hygiene practices.

Methods: A comparative study was conducted among 90 perioperative nurses, randomly assigned into three groups (n=30 per group). Participants applied fluorescent "magic cream" to both hands and performed surgical handwashing using one of three techniques:
(1) Two brushes, three cycles (6–9 minutes)
(2) One brush, two cycles (3 minutes)
(3) No brush (3 minutes 20 seconds)

Hand cleanliness was evaluated using black light detection across 52 predefined areas. Residual fluorescence indicated incomplete cleaning. Data were analyzed using the Kolmogorov–Smirnov test to compare effectiveness among groups.

Results: Techniques using brushes demonstrated significantly higher effectiveness than the non-brush technique. No significant difference was found between the two-brush and one-brush methods ($p > .05$), while both were significantly more effective than the no-brush method ($p < .01$). Complete cleanliness (no residual fluorescence) was achieved in 53.3% of participants in the two-brush group and 43.3% in the one-brush group, compared to 0% in the no-brush group. The one-brush technique reduced procedure time and decreased supply costs by approximately 50% compared to the two-brush method.

Conclusion: The one-brush surgical handwashing technique provides comparable effectiveness to the traditional two-brush method while improving efficiency and reducing costs. Implementing a standardized, evidence-based hand hygiene protocol can enhance compliance, reduce variability in practice, and potentially lower the risk of SSIs in perioperative settings.

Keywords: surgical handwashing, scrub nurse, surgical site infections

A Nurse-Led Operating Room Readiness Protocol for Ruptured Abdominal Aortic Aneurysm: A Multidisciplinary Quality Improvement Initiative

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Background: Ruptured abdominal aortic aneurysm (RAAA) is a life-threatening surgical emergency with high perioperative mortality. Successful outcomes depend on rapid, coordinated perioperative management. Prior to protocol implementation, our unit identified recurrent barriers including communication gaps during patient handover, delayed anesthesia number (AN) issuance, late antibiotic administration, and errors in massive transfusion protocol (MTP) requests — all contributing to suboptimal outcomes in emergency RAAA surgery.

Objectives: To develop and implement a standardized, nurse-led operating room (OR) readiness protocol for perioperative nurses managing emergency RAAA surgery, aiming to improve workflow efficiency, interdepartmental communication, and patient safety.

Methods: A multidisciplinary, evidence-informed protocol was developed through systematic literature review, workflow redesign, and iterative team feedback. The protocol consolidated patient information transfer, OR setup, equipment readiness, and interdepartmental coordination into a single-page workflow tool. Key performance indicators (KPIs) included: OR readiness within 30 minutes, completeness of patient data transfer, AN issuance within 30 minutes, antibiotic administration within 60 minutes before incision, and zero incidence of MTP errors or equipment-related delays. Outcomes were evaluated in a pre–post design: pre-protocol (n = 10 cases) versus post-protocol (n = 34 cases).

Results: Implementation of the protocol significantly improved all KPIs. OR readiness within 30 minutes increased from 70% to 100%. Completeness of patient data transfer improved to 98%. Timely AN issuance (≤30 minutes) increased from 50% to 100%. Antibiotic administration within 60 minutes before incision reached 100% compliance. MTP-related errors and equipment misplacement delays were both eliminated (from 1 incident each to 0). The one-page workflow tool reduced cognitive load and enhanced multidisciplinary coordination in high-pressure, time-critical situations.

Conclusion: A nurse-led OR readiness protocol effectively standardized emergency surgical workflows, eliminated critical delays, and improved patient safety outcomes in RAAA management. This model demonstrates the pivotal role of perioperative nurses as drivers of system-level quality improvement, and may be adapted for other time-sensitive surgical emergencies.

Keywords: ruptured abdominal aortic aneurysm; perioperative nursing; emergency surgery; operating room readiness; workflow; patient safety; quality improvement

Cost-Effectiveness of a Surgical Instrument Traceability System: A Comparative Analysis Before and After Full Implementation

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Background: Effective traceability and management of surgical instruments are critical for ensuring patient safety and controlling healthcare costs. In response to the U.S. Food and Drug Administration's Unique Device Identification (UDI) regulation introduced in 2013, our institution implemented a surgical instrument traceability system, which became fully operational in 2018. Despite growing adoption of such systems, evidence quantifying their cost-effectiveness in real-world perioperative settings remains limited.

Objectives: This study aimed to evaluate the cost-effectiveness of a UDI-based surgical instrument traceability system and its impact on instrument turnaround time (TAT) over a four-year post-implementation period at a high-volume academic medical center in Japan.

Methods: A retrospective cross-sectional comparative study incorporating cost-effectiveness analysis was conducted by comparing two consecutive 2-year phases: an early phase (January 2019–December 2020) with a later phase (January 2021–December 2022). The primary outcome was cost reduction resulting from improved inventory tracking and optimized utilization of surgical instruments. The secondary outcome was instrument TAT, defined as the time required for cleaning, sterilization, and packing/inspection.

Results: Approximately 40,000 surgeries were performed across the two study periods, with no significant difference in surgical volume ($P = 0.187$). The number of decommissioned instruments approximately doubled in the later phase (mean ± SD: 6.6±6.8 vs. 13.2±19.8), although this difference did not reach statistical significance. The twofold increase in the later phase, while not statistically significant, reflects meaningful variation across departments, with high-volume specialties contributing disproportionately to rationalization activity. In contrast, instrument TAT was significantly shorter in the later phase ($P < 0.001$), leading to a substantial reduction in staff labor hours and associated personnel costs.

Conclusion: The observed cost-effectiveness appears to stem from the system's ability to continuously visualize instrument utilization and facilitate adaptive inventory optimization in response to evolving surgical practices. The significant reduction in instrument TAT suggests decreased staff workload and enhanced operational efficiency through streamlined instrument processing. For perioperative nurses, active engagement with traceability data provides a foundation for evidence-based instrument management and proactive participation in cost-containment initiatives within the surgical team. These findings support surgical instrument traceability systems as a practical and sustainable strategy for optimizing resource management in perioperative care.

Keywords: Unique Device Identification (UDI); surgical instruments; ; sterilization; cost-effectiveness, turnaround time (TAT); operating room management; inventory optimization; lean healthcare; environmental sustainability

Smart Neuro Operating Room : Enhancing Patient Safety and Nursing Efficiency in Prolonged Neurosurgery Using Artificial Intelligence Assistant at Maharat Nakhon Ratchasima Hospital

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Background: Maharat NakhonRatchasima Hospital, a super-tertiary referral center, frequently performs complex neurosurgeries, such as skull base procedures, exceeding 6–12 hours. These prolonged operations significantly increase risks of preventable complications, particularly intraoperative pressure injuries (IPI) and hypothermia. Additionally, surgical nurses face high cognitive loads and fatigue, which can impair clinical decision-making and handover accuracy during shift transitions. This study explored integrating Artificial Intelligence (AI) to mitigate these risks.

Objectives: To achieve zero incidence of IPI and hypothermia in neurosurgical cases exceeding 6 hours, develop an AI-summarized SBAR handover system with 100% accuracy, and reduce nursing documentation time and cognitive load.

Methods: This quality improvement project integrated Generative AI (Google Gemini) as a "Second Brain" for perioperative nursing. The intervention followed three phases: 1) Pre-operative planning for proactive risk prevention; 2) Intra-operative support for real-time risk surveillance and image-based IPI staging; and 3) Post-operative summary for automated nursing notes. AI capabilities provided predictive warnings and structured SBAR reporting, transitioning care from routine monitoring to personalized risk management.

Results: From October 2025 to March 2026, 95 prolonged neurosurgical cases were evaluated. The incidence of IPI (Stage 1 or higher) was 0%, even in a 12-hour procedure. Mean body temperature was consistently maintained at 36.5–36.8°C through AI-optimized warming plans. Nursing documentation achieved 100% completion, with AI reducing charting time by 15–20 minutes per case. Furthermore, 92% of nurses reported high satisfaction, citing a significant reduction in mental fatigue and handover errors.

Conclusion: Integrating an AI Assistant into neurosurgical nursing effectively eliminates preventable complications and optimizes workflow efficiency. The system enhances patient safety through proactive surveillance and standardized communication. Future recommendations include establishing dedicated AI workstations and providing prompt engineering training to maximize AI potential in complex surgical environments.

Keywords: Artificial Intelligence (AI), Neurosurgery, Patient Safety, Smart Operating Room

A Development of the Information Receiving among Caregivers of Patients with Brain Tumor in Preoperative Phase Model

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Background: Brain tumor is an abnormal growth of cell in brain that threatens life. Brain surgery is a main treatment for brain tumors. It directly impacts to patients with brain tumor and caregivers, especially mental comfort. In term of mental comfort of caregivers, it influences readiness to provide caring for patients after brain surgery. Previous literatures had found that information receiving of caregivers can boost their confidence and capability for caring for patients. Additionally, satisfaction of caregivers is increased by information receiving regarding health conditions and treatments of patients. Thus, an information receiving among caregivers of patients with brain tumor in the preoperative phase model was created to enhance nursing practice and service quality, using a conceptual framework derived from the Commonsense Model of Illness Representation.

Objectives: Aims of this model were as follows: 1) To develop an information receiving among caregivers of patients with brain tumor in preoperative phase model which was used for nursing service in neurosurgery operating room of King Chulalongkorn Memorial Hospital in Thailand. 2) To increase mental comfort scores in caregivers of patients with brain tumor in the preoperative phase.

Methods: This study was a pilot study. Ten caregivers of patients with brain tumor were recruited from in-patients in a neurosurgical ward of King Chulalongkorn Memorial Hospital. Data was collected, using the comfort questionnaire for caregivers of patients with brain tumor in Thai version and the performance checklist of information giving for caregivers of patients with brain tumor. The one-group pretest-posttest design and a percentage were used to analyze the data.

Results: The results of this study were as follows: 1) A mean of the comfort questionnaire for caregivers of patients with brain tumor score before receiving information was 16 points and a mean of the comfort questionnaire for caregivers of patients with brain tumor score after receiving information was 44.8 points. 2) Percentages of the performance checklist of information giving for caregivers of patients with brain tumor score were more than 80% in each item.

Conclusion: The findings of this study could be helping to improve both nursing care and service quality. It can develop into a credible research study in the future.

Keywords: Information receiving, Comfort, Caregivers, Brain tumor, Preoperative phase

Reducing Surgical Site Infections in Orthopedic Spine Surgery: A Quality Improvement Project

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Background: Surgical site infection (SSI) is the second most common healthcare-associated infection and is associated with increased morbidity, prolonged hospitalization, and higher healthcare costs. In orthopedic spine surgery, SSI has remained a persistent concern. This project was initiated after the incidence of SSI in orthopedic spine fixation surgery doubled in 2023 compared with 2022 at our institution. Infection control audits revealed poor compliance with infection prevention practices, environmental limitations in the operating room, insufficient staff awareness, and inadequate patient participation as major contributing factors.

Objectives: To develop and implement an SSI prevention bundle for orthopedic spine surgery patients to reduce SSI incidence and improve patient safety.

Methods: Root cause analysis identified insufficient knowledge and awareness of infection prevention among healthcare providers, non-compliance with infection control guidelines, use of medications associated with an increased risk of hyperglycemia, environmental constraints in the operating room, and patient non-compliance with infection control guidelines as the contributing factors. A PDCA-based quality improvement (QI) project was conducted, and an expanded SSI prevention bundle covering the perioperative period was implemented. Major interventions included reinforcement of hand hygiene, compliance with surgical hand antisepsis, operating room environmental management, protection of the sterile field during intraoperative X-ray imaging, proper management of implants and autologous bone grafts, and standardization of hair removal using clippers. In collaboration with inpatient wards, preoperative chlorhexidine showering, nasal decolonization, and medication review for glycemic control in diabetic patients were implemented. Compliance with infection prevention practices was further improved through staff and patient education, promotion of a speak-up culture, continuous monitoring, and feedback.

Results: Following the intervention, the SSI incidence decreased by approximately 85% in 2024 compared with 2023 and has remained below the pre-intervention baseline level throughout the follow-up period. Hand hygiene compliance and the adequacy of surgical hand antisepsis exceeded target levels, while compliance with infection prevention checklists improved to over 90%. In addition, staff awareness regarding infection prevention improved, and interdepartmental collaboration was strengthened.

Conclusion: The implementation of a tailored SSI prevention bundle for orthopedic spine surgery patients effectively reduced SSI incidence and improved patient safety. Continuous monitoring and education are essential to sustain these outcomes in perioperative care.

Keywords: surgical site infection, orthopedic spine surgery, quality improvement, infection prevention, patient safety

The Around-Alert-Awareness Perioperative Nursing Model for Safe Percutaneous Transluminal Angioplasty in Vascular Surgery Under Local Anesthesia.

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Background: In 2025, a total of 677 patients underwent Percutaneous Transluminal Angioplasty (PTA) procedures. Most patients undergo surgery under local anesthesia due to a shortage of nurse anesthetists and In 2024, during a Re-Percutaneous Transluminal Angioplasty of left central vein, an adverse event involving intraoperative patient deterioration was identified. The developed guideline for perioperative assessment, intraoperative monitoring, and emergency management in patients receiving local anesthesia, supporting the 3P Safety Policy and strengthening patient safety culture in the operating room. The guideline was developed based on the Around–Alert–Awareness (A-A-A) concept to promote systematic patient assessment, continuous monitoring, early recognition of clinical deterioration, and timely intervention during surgery.

Objectives:

1. To enhance the efficiency of perioperative care for patients undergoing Percutaneous Transluminal Angioplasty (PTA) under local anesthesia.
2. To develop a clinical practice guideline, including assessment and management guidelines for patients undergoing surgery under local anesthesia who experience intraoperative deterioration.

Methods: The Deming Cycle (Plan–Do–Check–Act).

Plan

1. Analyze situations involving.
2. Establish a team to develop a care model.
3. Plan and implement corrective actions after identifying the root causes.
4. Analyze root causes using a Fishbone Diagram and categorize contributing factors into People, Processes, Machine, and Management.
5. Plan the implementation of the Around–Alert–Awareness (A-A-A) concept.

Do

1. Training of Relevant Personnel.
2. The intervention will be piloted over a period of 1 month.
3. Data will be recorded throughout the implementation period for outcome analysis.

Check

1. Compare outcomes with targets.
2. Evaluate implementation effectiveness.
3. Use statistical data from surgical patients.
4. Analyze errors for corrective actions and improvement.

Act

The developed care guidelines for patients under local anesthesia will be implemented in other surgical departments.

Results: Nurse competency increased from 90% at 3 months to 100% at 5 months. Among 385 patients undergoing surgery under local anesthesia, all patients with intraoperative clinical deterioration received assessment and intervention within 1 minute, achieving 100% compliance at both 3 and 5 months.

Conclusion: All nurses in the Operating Unit (100%) were able to safely provide nursing care for patients undergoing surgery under local anesthesia. Additionally, all patients who experienced intraoperative clinical deterioration received appropriate management within 1 minute of symptom onset.

Keywords: Around-Alert-Awareness guideline, surgery under local anesthesia, Perioperative Nursing Model.

Assessing the Cleanliness of Reprocessing of Complex-Design Orthopedic Loaned Surgical Instruments

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Background: Loaned surgical instruments are widely used in orthopedic and specialized surgeries. Because these instruments are supplied non-sterile and have complex structures, thorough reprocessing is essential to prevent contamination and ensure patient safety.

Objectives: Introducing surgical instruments and implants through loaner systems is a worldwide practice. The complex and specific surgical instruments acquired from loaner companies are provided non-sterile and must be reprocessed before each use. In this study, we evaluated the contamination level of loaned surgical instruments (LSIs) and the effectiveness of the cleaning procedure.

Methods: From March 4 to August 30, 2024, loaner surgical instrument sets, including medullary reamers, component assembly impactor, keel punch, ps box guide, and instrument tray that arrived at the decontamination room in the central sterile supply department of one general hospital were selected conveniently. For each of the two cleaning processes, 50 selected LSIs were sampled with test swabs before and after cleaning for inspection, and the Relative Light Unit (RLU) value was measured using Adenosine Triphosphate Bioluminescence (ATP) test equipment.

Results: The average cleanliness before cleaning was 1486.47 RLU, and the qualified rate was 7(0.07%). After the cleaning process, the cleanliness was significantly higher in automatic machine washing than in manual cleaning (t=3.0, p=004).

Conclusion: The handling and using loaner instrumentation is complex but increasingly common in healthcare settings. There is a need to standardize requirements and improve process verification in loaner SI reprocessing and management, and regular monitoring will be required.

Keywords: Adenosine triphosphate; Cleaning; Decontamination; Surgical site infection

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