

ESG Section

Mission

- Children are among the most vulnerable groups to environmental pollution, and climate change poses a major health threat to them. Our mission is to achieve hospital net-zero carbon emissions by 2050, actively engage with the community, and create a happy and fulfilling workplace. Through these efforts, we aim to realize the goals of holistic health, hospital sustainability, and children's well-being.



Vision

- To collaborate with stakeholders—including the government, main hospital, employees, patients, and community residents—to become a benchmark children's hospital in Taiwan for environmental protection, social responsibility, and corporate governance.



Environmental

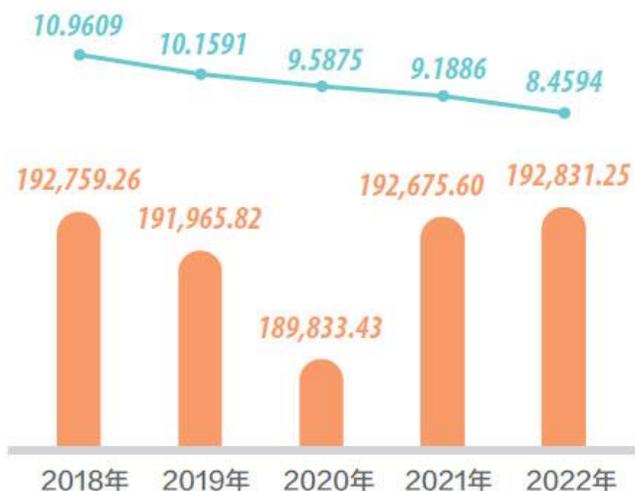
- Energy Management
- Water and Wastewater Management
- Waste and Hazardous Materials Management
- Ecological Impact

Energy Management



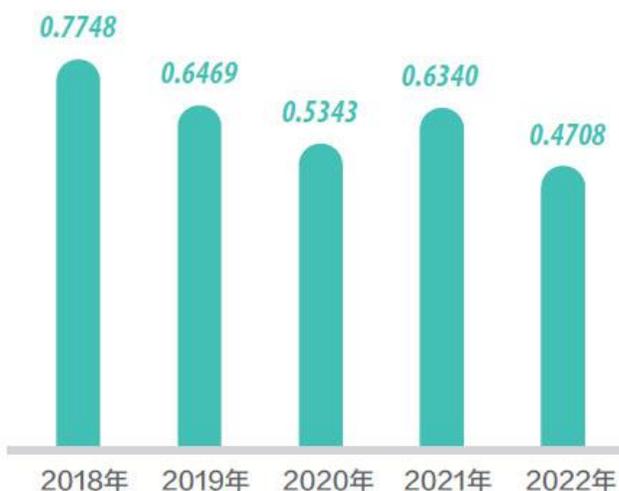
能源消耗總量及能源密集度

- 能源消耗總量 (單位: GJ)
- 能源消耗密集度 (單位: GJ per sales)



燃料消耗密集度

- 非再生燃料消耗密集度 (單位: GJ per sales)



電力消耗密集度

- 非再生電力消耗密集度 (單位: GJ per sales)
- 再生電力消耗密集度 (單位: GJ per sales)



China Medical University Hospital's energy consumption includes liquefied natural gas, diesel, and electricity. In 2022, the total energy consumption was 192,831.25 GJ, with electricity accounting for 94.4%. However, only 5,000 kWh of renewable energy certificates were purchased in 2022, resulting in a renewable energy usage percentage of less than 1%.

Enhancing Resource Efficiency

1. Continuously improve energy performance and energy management systems.
2. Ensure access to necessary resources and information to achieve targets and objectives.
3. Comply with applicable energy regulations and requirements related to energy use, consumption, and efficiency.
4. Support the procurement of energy-efficient products and services that impact energy performance.
5. Promote design activities that consider energy performance improvements.

Water and Wastewater Management



水資源管理概況（單位：百萬公升）

● 取水量



In 2022, the total wastewater discharge equaled the total water withdrawal. The total water withdrawal for the year was 432,061 million liters, all sourced from tap water. Due to the continuous implementation of water conservation measures, the water withdrawal decreased by 33,751 million liters (a 7.2% reduction) compared to 2021.

Water Resource Efficiency Policy

1. Regulatory Compliance & Stakeholder Engagement – Adhere to water resource management laws and meet the expectations of stakeholders.
2. Regular Review of Efficiency Goals – Periodically assess water efficiency targets to enhance overall resource utilization.
3. Promotion & Strengthening of Water Conservation – Ensure effective water-saving measures and continuous improvements in conservation efforts.
4. Sustainable Procurement – Prioritize purchasing water-saving certified products when installing or replacing equipment.
5. Ongoing Investment in Water Resource Improvement – Continuously seek opportunities to enhance water management and achieve performance targets annually.

Waste and Hazardous Materials Management

- In 2022, a total of 2,997.8 tons of waste was generated. Among them, 1,811.3 tons were general industrial waste, all classified as non-hazardous waste, including 1,032.0 tons of general waste and 779.3 tons of recyclable materials. Hazardous industrial waste consisted of 1,186.5 tons of biomedical waste, accounting for 39.6% of the total waste.
- Both general waste and biomedical waste were transported by professional waste management companies to incineration facilities (excluding energy recovery), while recyclable materials were collected and processed for reuse by specialized recycling companies.
- A review of the waste generation increase over the past two years indicates that the primary cause was infection control measures during the COVID-19 pandemic. As of the end of 2022, China Medical University Hospital did not use landfill disposal for any of its waste.

Ecological Impact

Waste Reuse: Creating a Food and Agriculture Ecological Education Park

We continuously innovate to repurpose hospital and community waste, enhancing urban farms and promoting sustainability. Initiatives include:

- **Recycled Construction Materials** – Using discarded building materials to create educational bulletin boards.
- **Composting** – Converting fallen leaves, kitchen food waste from hospital restaurants, and used coffee grounds into compost.
- **Upcycled Planting Containers** – Repurposing dialysis solution containers as planting pots.

Through urban farming design, we aim to build a "garden city," integrating bicycle paths and pedestrian walkways to revitalize the urban landscape.



堆肥示範區

社區長者參與食農植栽體驗



廢建材搭建教育公佈欄

Socialand

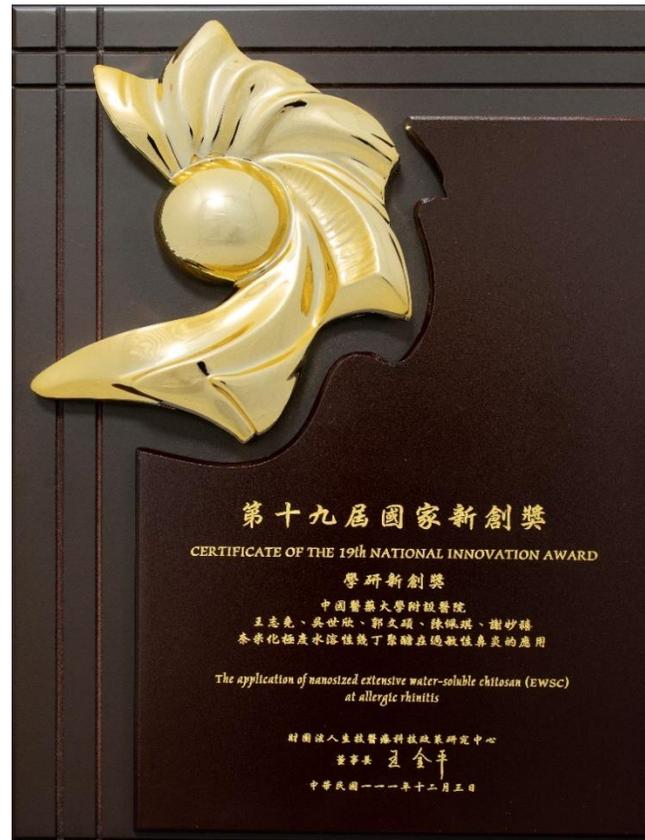
- Enhancing Healthcare Quality
- Community Engagement: Patient Support Groups
- Community Engagement: Public Health Talks
- Establishment of the Central Taiwan Child and Adolescent Protection Center
- Establishment of the National Pediatric Rare Medical Device Center

Enhancing Healthcare Quality

The Allergy, Immunology, and Microbiome Research Team has been honored with **two National Innovation Awards** from the Biotechnology and Pharmaceutical Industries Promotion Office and **two Future Tech Awards** from the National Science and Technology Council.

The 18th National Innovation Award in the 110th Year

Superintendent Jiu-Yao Wang, the Center for Allergy, Immunology, and Microbiota Research, and the research team at China Medical University have applied a fragment of human recombinant pulmonary surfactant protein D to identify the spike protein on the surface of the coronavirus, preventing the virus from infecting and invading host cells, thereby mitigating SARS-CoV2 coronavirus infection; a U.S. patent has been applied for.



The 19th National Innovation Award in the 111th Year Superintendent Jiu-Yao Wang and the Center for Allergy, Immunology, and Microbiota Research have been awarded for their application of nano-sized, highly water-soluble chitosan in the treatment of allergic rhinitis, following a rigorous three-stage review process.

Professor Kao-Pin Hwang has been awarded the 27th Medical Contribution Award by the Taiwan Society of Infectious Diseases.



Nation's First Successful Pediatric "Transcatheter Tricuspid Valve Replacement" Surgery



The advantage of "Transcatheter Tricuspid Valve Replacement" lies in the fact that patients do not need to undergo open-heart surgery again, thereby reducing surgical risks and pain. After Xiao Qi underwent the valve replacement procedure, the long-term high-pressure gradient in the right atrium was effectively alleviated, leading to a significant improvement in heart function. This surgery has broken through the previous limitations of the technique being applicable only to adults, marking the first successful case of its kind in a child in the country.

CMU Children's Hospital's Early Surgical Intervention Saves Two-Month-Old Baby's Liver Health



A two-week-old newborn, Xinxin (pseudonym), was brought to the hospital due to yellowish skin and pale stools. After examination by Dr. Liao Fangmin from the Pediatric Hepatology, Gastroenterology, and Nutrition Department, she was diagnosed with cholestasis. An abdominal ultrasound revealed an abnormally small gallbladder, confirming biliary atresia. Dr. Tseng Tsai-Yi, Director of Pediatric Surgery, performed a Kasai procedure, successfully resolving the biliary atresia.

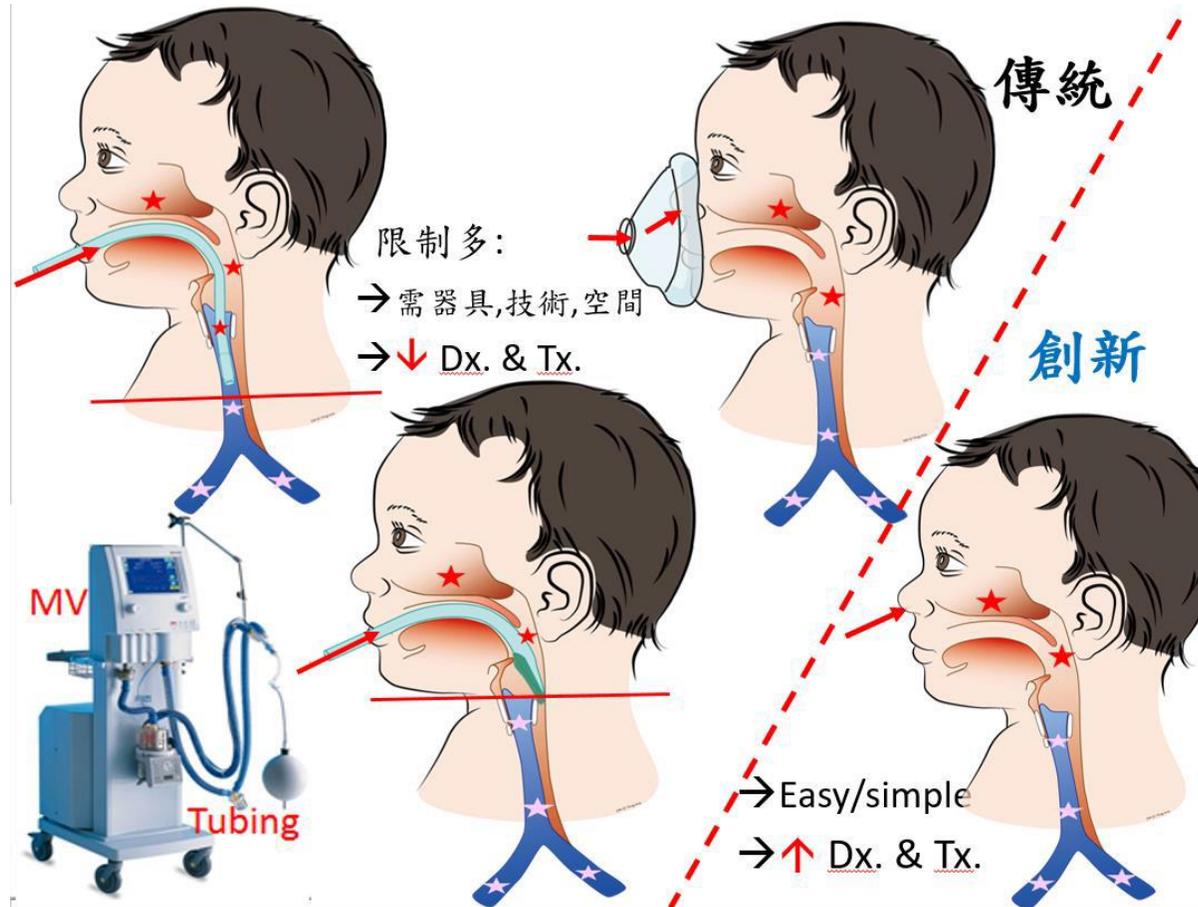
Artificial Intelligence~Bone Age Assessment Assistance System

Bone age assessment can predict future adult height.



Vice President Tsai and the artificial intelligence team have actively collaborated to reconfirm over 20,000 hand X-ray images and their corresponding bone age values as a database for AI learning. This data was used to build a neural network model, ultimately resulting in the development of a fully automated AI bone age assessment assistance system.

Pediatric Airway Diagnosis and Treatment - Innovative Tracheal Operation Techniques



Featuring the nation's only dedicated bronchoscopy examination room and pioneering pediatric flexible endoscopy examination and treatment techniques, this program was awarded the SNQ National Quality Mark for Specialty Healthcare Certification in 2022.

Community Engagement: Patient Support Groups

2017 Pediatric Allergy Care Seminar



2019 Pediatric Allergy Care Seminar



2024 Pediatric Allergy Care Seminar



Community Engagement: Public Health Talks

2022 Child and Adolescent Protection Campus Education Campaign

Organizer:

Central Region Child and Adolescent Protection Regional Medical Integration Center, Ministry of Health and Welfare
China Medical University Children's Hospital

Co-organizer:

Nantou Yanping Elementary School

Target Audience:

Elementary school teachers and students, totaling 300 participants.



2023 Child and Adolescent Protection Campus Education Promotion

Organizers:

Central Region Child and Adolescent Protection Regional Medical Integration
Center, Ministry of Health and Welfare
Children's Hospital of China Medical University

Target Audience:

Total Participants: 600 per session



2023 "Hand in Hand, Let's Heal Together" Parent-Child Group

Organizers:

Central Region Child and Adolescent Protection Regional Medical Integration Center, Ministry of Health and Welfare
Children's Hospital of China Medical University

Co-organizer:

Taiwan Association for the Promotion of Child and Adolescent Protection

Target Participants:

Parents who have participated in parental counseling sessions: 6 parents

Children and Adolescents: Each parent can bring at least 2 children/adolescents, totaling 12 children/adolescents.



2023 Campus Online Dating and Bullying Prevention

Organizers: Central Taiwan Regional Medical Integration Center for Child and Adolescent Protection, Ministry of Health and Welfare; China Medical University Children's Hospital

Co-organizer: Taiwan Association for the Promotion of Child and Adolescent Protection

Target Audience: A total of 80 elementary school teachers and students.



2024 Gender Education

Organizers: Central Taiwan Regional Medical Integration Center for Child and Adolescent Protection, Ministry of Health and Welfare; China Medical University Children's Hospital

Target Audience: A total of 30 teachers and students from child care centers.



2024 Self-Protection

Organizers: Central Taiwan Regional Medical Integration Center for Child and Adolescent Protection, Ministry of Health and Welfare; China Medical University Children's Hospital

Target Audience: A total of 240 students (Grades 3-6) and teachers.



Establishment of the Central
Taiwan Child and Adolescent
Protection Center

1. Establishing a Standard Operating Procedure (SOP) for Suspected Child Abuse Screening

- Develop a **Standard Operating Procedure (SOP)** for in-hospital screening of suspected child abuse cases.
- Enhance the ability of medical staff to identify and report suspected child abuse cases effectively.

2. Providing Child Protection Referral Services

- All suspected or confirmed child abuse cases within the hospital must be referred to the **Regional Medical Integration Center for Child Protection**.
- The center will conduct child abuse assessments and collect essential diagnostic information.
- A multidisciplinary team—including **pediatricians, specialist nurses, social workers, and psychologists**—will be involved in assessment, diagnosis, and follow-up counseling.

3. Setting Up a 24-Hour Service Window

- Establish a **24-hour service window** to handle emergency referrals related to severe child abuse cases in the emergency department or within the hospital.
- Ensure the proper and comprehensive management of child abuse cases.

4. Conducting Regular Case Discussion Meetings

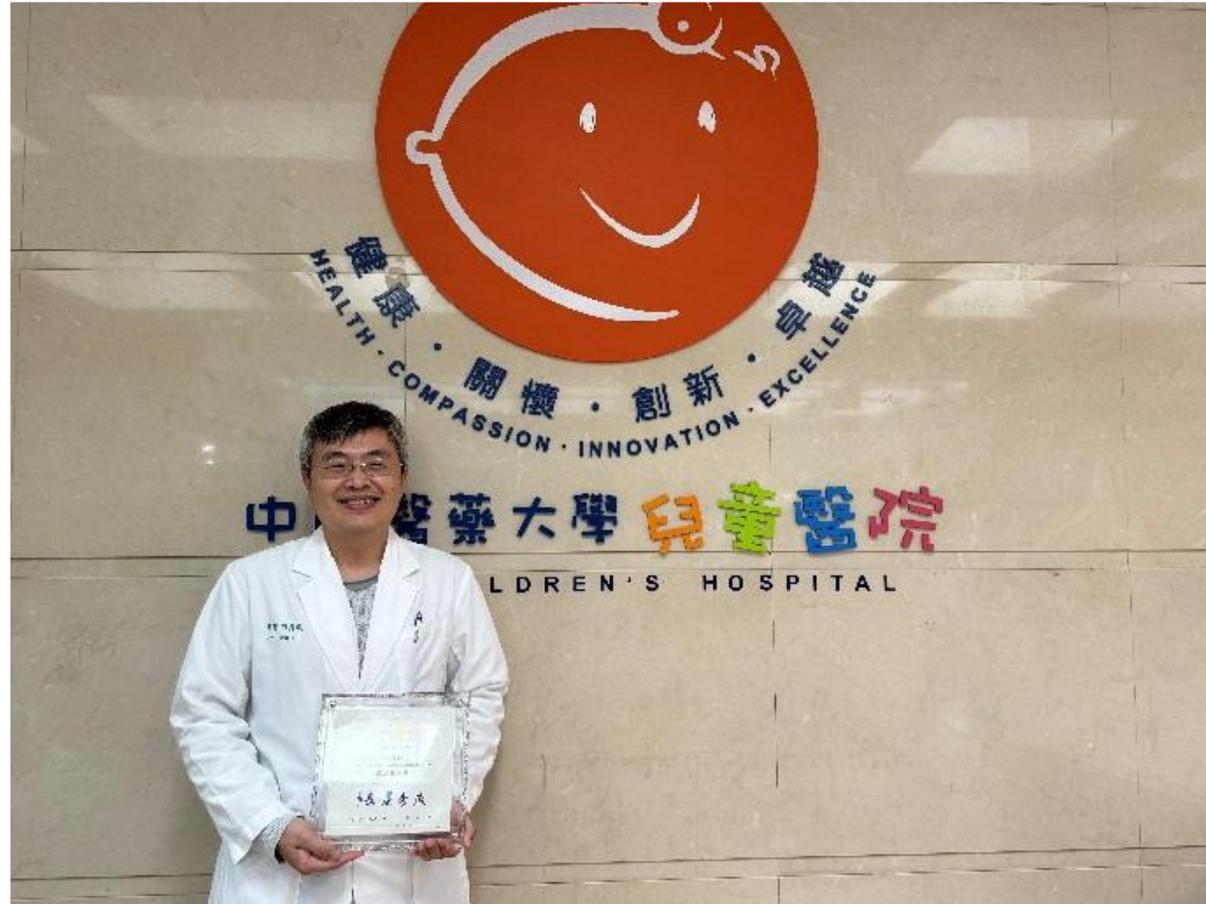
- Collaborate with the **domestic violence prevention network** to hold **regular case discussion meetings**.
- Facilitate opinion exchange among professionals and enhance team members' experience.

5. Creating a Promotion and Education Platform

- Promote child abuse screening procedures in medical institutions.
- Conduct **professional training** on child protection for physicians, nurses, and other medical personnel.

- 2016: Excellence Award for Quality Performance – Child Protection Team, Ministry of Health and Welfare.
- 2017: Outstanding Anti-Violence Group Award – Taichung City Award for Contributions to Domestic Violence and Sexual Assault Prevention.
- 2018: Recognition by the Ministry of Justice for Contributions to Crime Victim Protection.
- 2018: 5th Purple Ribbon Senior Excellence Award.
- 2020: 7th Purple Ribbon Special Contribution Award.

2023: Anti-Violence Expert Award – Taichung City Award for Contributions to Domestic Violence and Sexual Assault Prevention.



2023: 9th Purple Ribbon Award – Winner in the Healthcare and Medical Field.



Establishment of the National Pediatric Rare Medical Device Center

- To address the shortage of essential medications and medical devices needed to sustain the lives of premature infants, critically ill children, and other pediatric patients with life-threatening medical conditions, the Ministry of Health and Welfare has commissioned our hospital to establish an **Information System for Pediatric Essential Medicines and Medical Devices**.
- This system allows medical institutions to **submit online reports on demand surveys, request allocations, and suggest new items**. The **Pediatric Essential Medicines and Medical Devices Allocation Center** will manage these operations to ensure that clinically necessary but difficult-to-obtain medications and medical devices are properly distributed.

兒童困難取得之臨床必要藥品及醫材機制與成果

流程
機制



- 困難取得之兒童臨床藥品及醫材管理品項清單**共57項**、藥品35項、醫材22項納入管理。需求品項可提供採購之達成率為**藥品69%**、**醫材57%**。
- 每年調查2次全國各醫院需求，113年已完成**19項藥品**、**15項醫療器材**之聯合招標，協助完成**7項藥品**、**3項醫材**之專案許可，並有**8項藥品**及**6項醫療器材**，以資訊媒合方式協助醫療院所取得項目。

來源:兒童醫療健康資訊平台

(<https://healthforkids.mohw.gov.tw/CarePlan/info?planId=37dfbcc4352c4c3d8845ddf208dc9ee7>)

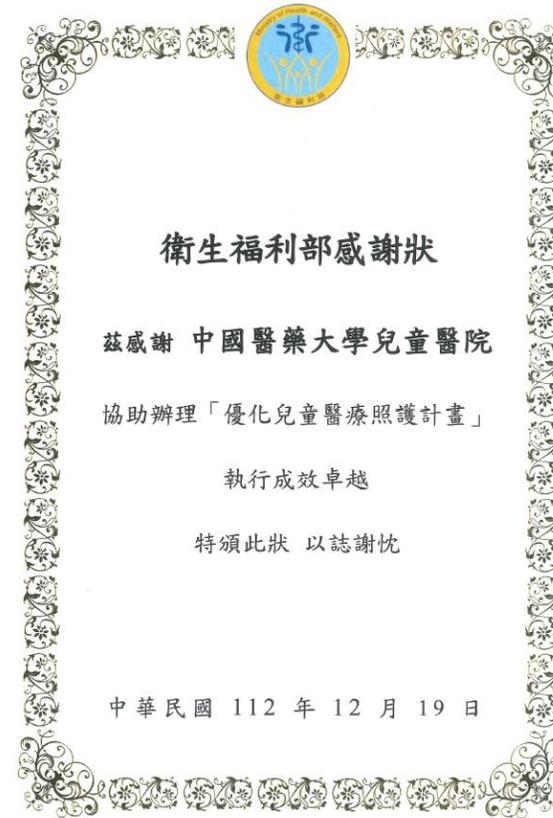
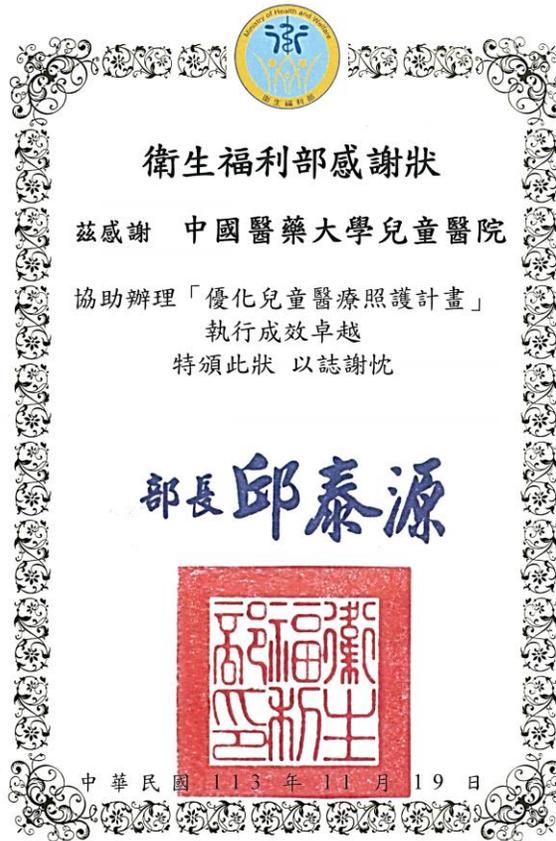
2023 Pediatric Healthcare Optimization Program



2024 Pediatric Healthcare Optimization Program



Award Recognition Pediatric Healthcare Optimization Program



Governance

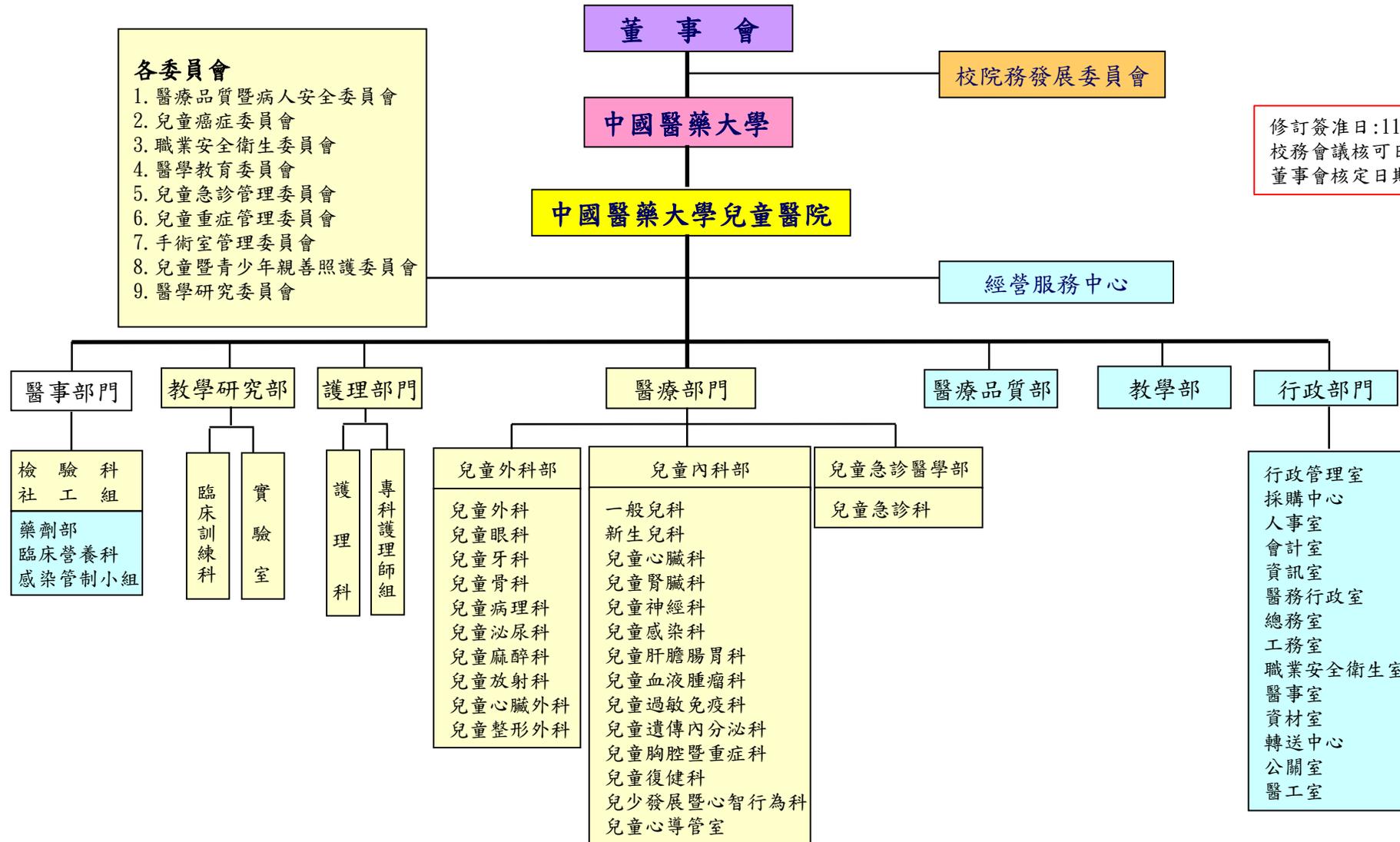
- 1. Transparency in Governance and Information**
- 2. Enhancing Working Conditions and Compensation for Nurses**
- 3. Comprehensive Care for Resident Physicians**
- 4. Enriching Medical Students' Learning Experience**

Transparency in Governance and Information

- Governance and Management

類別	會議名稱	召集人	與會人員
監督會議	董事會議	董事長	董事、監察人、中醫大校長 / 副校長、中醫大體系醫院院長 / 副院長
	校院務發展委員會	董事長	執行長、副執行長、中醫大校長 / 副校長 / 主任秘書、中醫大體系醫院院長 / 副院長 / 主任秘書
	校院主管共識營	執行長	副執行長、中醫大體系機構一、二級主管
經營會議	院務會議	院長	副院長、醫療、護理、醫技、行政等單位主管
	主管晨會	院長	副院長、醫療、護理、醫技、行政等單位主管
	目標管理會議	院長	副院長、醫療單位主管、經營服務中心人員
	行政、醫技暨護理主管會議	行政副院長	行政、醫技、護理單位主管
	48 個各類委員會	由主任秘書層級以上擔任主任委員	各委員會委員、幹事

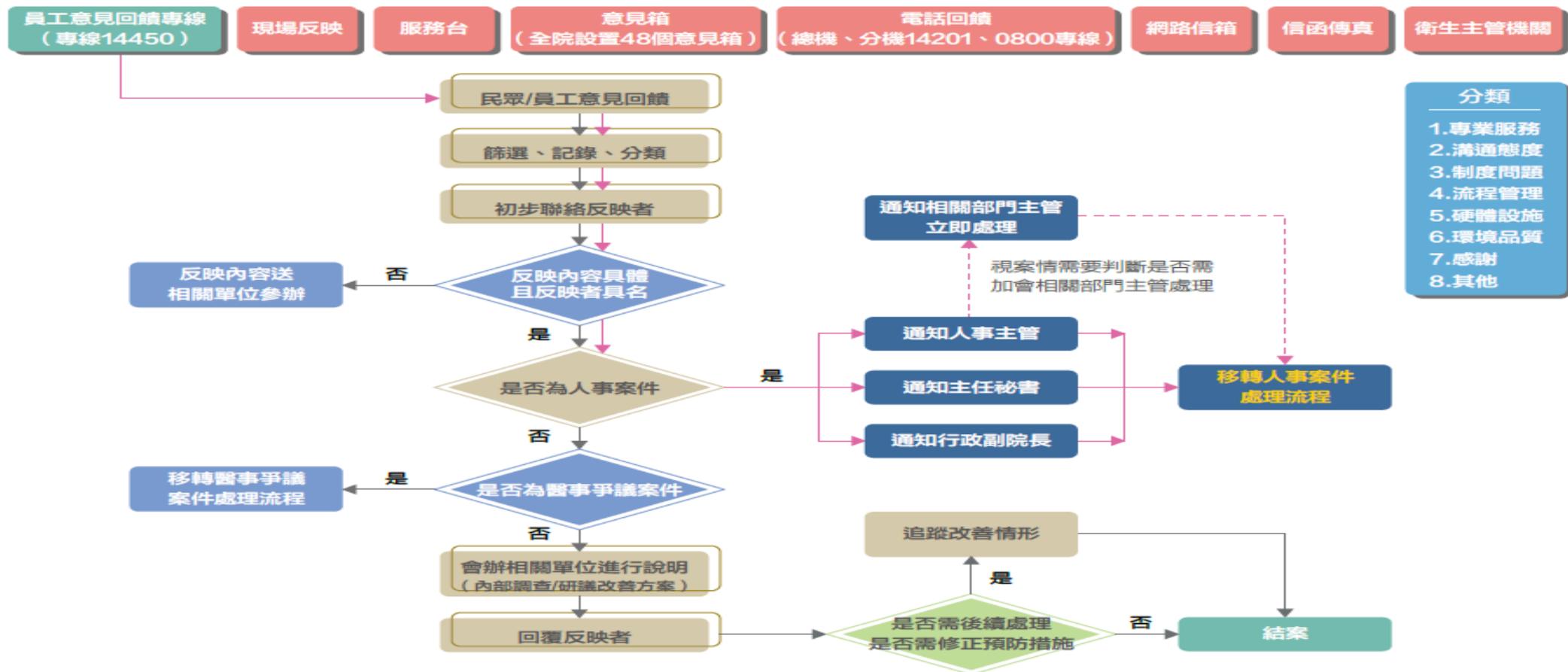
Organizational Structure



修訂簽准日:113年1月31日
校務會議核可日期:113年5月15日
董事會核定日期:113年5月26日

Supervision and Feedback Mechanism

意見回饋處理流程圖



Internal Control and Auditing

2022 年稽核專案項目	受稽核單位	稽核緣由
衛材驗收與資訊設備報廢稽核作業	資材室 資訊室	依衛材驗收風險評估與查核程序，及資訊設備報廢風險評估與查核程序，選定稽核範圍包含：寄賣品、請購品、庫備品及資訊設備報廢檢視維修程序
工務維修/修繕作業稽核作業	工務室	依工務室八大系統相關維修/修繕作業，及整體環境缺水、節電議題，選定稽核範圍
研究單位環境作業是否符合職業安全衛生規範	各實驗室	2021 年發生2 起實驗室安全事件，故進行稽核作業
主管機關查檢 /申報項目是否落實執行	各申報單位	2022 年共約有154 項須提報主管機關（各單位每月、每季例行作業），未如期提報將受主管機關裁罰

Enhancing Working Conditions and Compensation for Nurses

Listening to Our Frontline Heroes – A Conversation Between Superintendent Wang and Nurses



Honoring Our Healthcare Heroes – Happy Nurses' Day!



In celebration of **Nurses' Day**, **Superintendent Jiu-Yao Wang** personally visited outpatient, emergency, inpatient, and health education units to **express gratitude and encouragement** to all hardworking nursing professionals.

Comprehensive Care for Resident Physicians

Salary Protection and Working Conditions



薪資

最少180萬/年



休假

特休7+7
絕對休得到



產兒友善

孕婦值班至晚間10點
第三孕期不值班
產後一年值班至晚間10點



12 次專科

兒童心臟科 兒童胸腔科
兒童血液腫瘤科 兒童腎臟科
兒童肝膽腸胃科 兒童感染科
兒童急診科 兒童過敏免疫風濕科
兒童重症科 兒童遺傳及內分泌科
兒童神經科 新生兒科



兒專考照率 近五年100%

每月安排住院醫師讀書會



次專科

隨你選
兒腎=內腎
兒感=內感
兒血專=內血專
兒CV=內CV
通吃

Vice Superintendent Chou's Gathering with Attending and Resident Physicians



Superintendent Wang's Dinner with General Resident Physicians



Enriching Medical Students' Learning Experience

Mentor and Medical Students' Gathering – A Moment Captured



Future Plans and Vision for Sustainable Healthcare

1. Establishing a Dedicated Organization for Zero Carbon Initiatives

- Forming a specialized team to implement and oversee zero-carbon emission strategies across the hospital.

2. Enhancing Energy Efficiency and Green Energy Adoption

- Aligning with the main hospital's energy efficiency optimization efforts.
- Expanding the installation of renewable energy infrastructure and increasing the procurement of green energy certificates.

3. Strengthening Climate Resilience in Healthcare

- Continuously improving emergency response systems to address health risks associated with climate change.
- Developing a climate-resilient hospital model to ensure patient and staff safety during extreme weather events.

4. Implementing Green Pediatric Surgery Practices

- Planning eco-friendly pediatric surgeries to minimize the environmental impact.
- Reducing anesthetic gas emissions, which contribute to greenhouse gas accumulation.

5. Optimizing Clinical Operations for Sustainability

- Automating high-energy-consuming processes to reduce electricity consumption.
- Digitizing administrative and clinical workflows to minimize paper usage.

6. Reducing Plastic and Waste in Hospital Operations

- Eliminating bottled water in all meetings and encouraging the use of sustainable alternatives.
- Reducing unnecessary antibiotic prescriptions to lower antibiotic residue in wastewater.

7. Promoting Low-Carbon Commuting for Staff

- Introducing incentives for employees to commute using low-carbon transportation methods such as biking, public transit, and carpooling.

8. Comprehensive Carbon-Neutral Education and Training

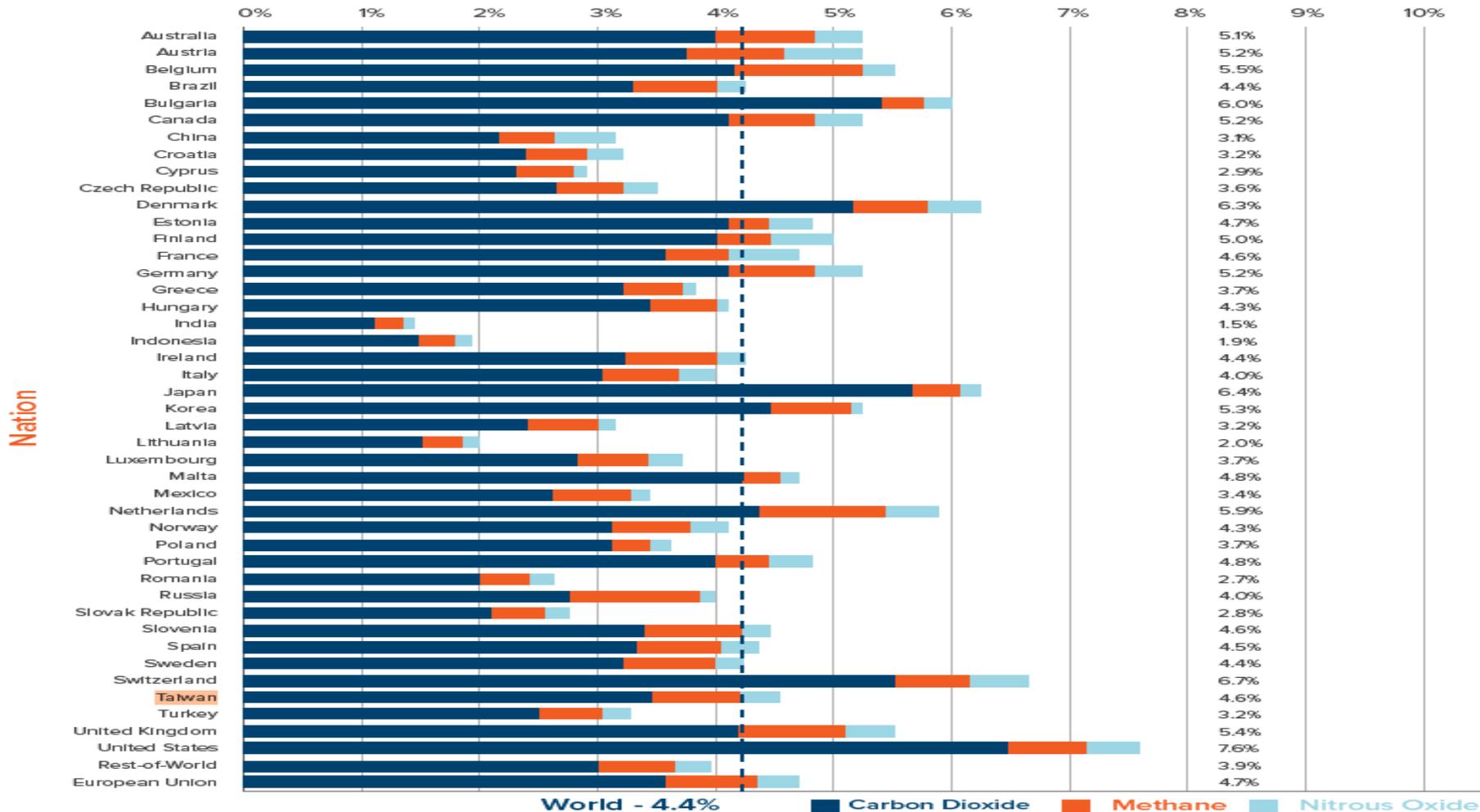
- Conducting hospital-wide training to raise awareness about the importance and practical strategies for achieving a zero-carbon lifestyle.

9. Engaging in Environmental Activities and NGO Partnerships

- Collaborating with non-governmental organizations (NGOs) to promote sustainability initiatives.
- Encouraging employee participation in environmental conservation efforts.

Current Status of Global Greenhouse Gas Emissions

Health care footprint as % of national footprint



據American Society of Anesthesiologists 估計，台灣醫療業溫室氣體排放占全國4.6%。

Following the **American Society of Anesthesiologists' 2023 Inhaled Anesthetic Challenge** to cut anesthesia-related carbon emissions by **50%**.

- Utilize low fresh gas flows
- Avoid high impact inhaled anesthetics: desflurane, nitrous oxide
- Consider intravenous and regional techniques
- Decommission/avoid installing nitrous oxide centralized piping, and substitute portable tanks that remain closed between use
- Consider investing in WAG trapping (for volatiles only) or WAG destroying (all inhaled anesthetics, including nitrous oxide) technology, only after all aforementioned interventions are maximized and institution cost/benefit analyses performed