

COMMENTARY

## Accelerating the development of healthy and climate-smart hospitals in the Southeast Asian Region

Marian Fe Theresa C. Lomboy-Capino, Ramon D. San Pascual, Vivien Fe F. Fadrilan-Camacho, Rose Abigail E. Duarte, Crystal Amiel M. Estrada, Paul Michael R. Hernandez, Gayline F. Manalang Jr., Romeo R. Quizon, Adrian Paul M. Agravante, May B. Bas, Jhon Rey C. Bayatan, Hilda Antonia A. Nique, Chester C. Ramos, Geneva Carla C. Sichico, Victorio B. Molina\*

Department of Environmental and Occupational Health, College of Public Health, University of the Philippines Manila, SEAMEO TROPMED Regional Centre for Public Health, Hospital Administration, Environmental and Occupational Health, Manila, Philippines  
 Health Care Without Harm Southeast Asia

### ABSTRACT

The Sixth Environmental and Occupational Health Forum, conducted virtually on November 23 to 24, 2023, focused on "Accelerating the Development of Healthy and climate-smart Hospitals in the Southeast Asian Region." This forum, a collaborative effort of the University of the Philippines Manila and Health Care Without Harm Southeast Asia, aimed to explore and exchange strategies, challenges, and innovative practices for integrating environmental sustainability in healthcare settings across Southeast Asia. The event gathered healthcare professionals, policymakers, and environmental experts to discuss the transformation of hospitals into health and climate-smart institutions. Keynote speakers from various countries presented case studies and research findings, emphasizing the need for holistic approaches that include policy development, stakeholder engagement, and continuous education. Significant outcomes highlighted were the identification of effective policies for sustainable hospitals, understanding the impact of healthcare facilities on climate change, and the necessity for political acumen in promoting environmental stewardship in healthcare. The forum concluded with a consensus on the critical need for ongoing collaboration and innovation in environmental and occupational health, underscoring the importance of transforming healthcare facilities into entities that prioritize both patient care and planetary health.

### Background of the forum

In recent years, the environment has undergone significant changes, primarily driven by rapid industrialization and urbanization. These developments have led to increased public health risks, manifesting in various forms such as worsening air, water, and soil pollution, inadequate water supply and sanitation, food contamination, and more. Exacerbating these challenges is the phenomenon of climate change, which continues to hinder progress towards achieving the Sustainable Development Goal (SDG) targets related to environment and health [1].

The health sector, including hospitals and other healthcare facilities that are at the forefront of providing health services, is not immune to these environmental health issues. In fact, the sector contributes to environmental degradation through healthcare-associated wastes and greenhouse gas emissions. As the realities of climate change become increasingly pronounced, hospitals are facing the urgent need to adapt. Promoting the establishment of healthier facilities through sustainable initiatives is no longer an option but a necessity [2]. This adaptation is twofold: not only do healthcare facilities need to mitigate the impacts of climate change, but these also have a pivotal role in reducing their climate footprint. The health sector's energy consumption and emissions are key areas where significant reductions can have a positive impact on public health, curtailing the rise of air pollution-related illnesses such as asthma, respiratory diseases, and cardiovascular diseases [3].

The Sixth Environmental and Occupational Health Forum, co-offered by the Department of Environmental and Occupational Health of the College of Public Health, University of the Philippines Manila, and Health Care Without Harm Southeast Asia, aimed to be a catalyst for this transformation. By providing a platform for discussing strategies, challenges, and opportunities, the forum endeavors to accelerate the development of healthy and climate-smart hospitals across Southeast Asia. Gathering experts and key partners from healthcare facilities, government, and non-government organizations, the forum is set to highlight various initiatives promoting

healthier hospitals in the region, thereby contributing to a sustainable and resilient health sector.

### Highlights

Dr. Michael L. Tee, Chancellor of the University of the Philippines Manila, formally opened the forum by commending the College of Public Health in organizing the event. Drawing on his experience as a clinician, he reflected on the traditional healthcare principle of "primum non nocere" (first, do no harm), emphasizing the need to expand this perspective beyond the traditional patient-to-healthcare worker dynamic. He highlighted the influence of the environment on healthcare, acknowledging insights gained from collaborating with professionals in sanitary engineering and architecture. Dr. Tee also noted the ongoing World Antimicrobial Week, segueing into a discussion on his advocacy for a comprehensive examination of hospital design, addressing aspects such as comfort, infection control, and embodied energy. He posed questions about the delicate balance between infection risk and patient comfort, as well as waste management within healthcare facilities. He discussed the unique challenges faced in the Southeast Asian region, considering factors such as climate, tropical diseases, and regional differences, and underscored the need for additional facilities, introducing performance metrics like site planning, access to light and air, energy-responsive facade, and resource use.

Assuring active participation over the next two days, Chancellor Tee stated his commitment to use the information for better planning and collaboration with government agencies, particularly the Department of Health, the

#### Corresponding author's email address:

vbmolina@up.edu.ph

**Keywords:** Healthcare, Sustainability, Climate Change, Environmental Health, Southeast Asia, Occupational Health, Health Policy



Commission on Higher Education, and the Department of Science and Technology. He concluded by requesting the College of Public Health to create a compendium for sharing symposium outcomes with partner agencies and those unable to attend, emphasizing the importance of knowledge dissemination in the healthcare sector.

## Opening Lectures

### *Policies and plans for promoting healthy and climate-smart hospitals in the Philippines*

Dr. Beverly Lorraine C. Ho, Assistant Secretary of the Public Health Services Team, Department of Health (DOH), began with a highlighting of the national movement towards Universal Health Care (UHC) in the Philippines. According to her, the UHC extends beyond healthcare services to include providing healthy living, schooling, and working environments for all Filipinos. She outlined three policies to address the nexus of issues concerning the promotion of healthy and climate-smart hospitals:

1. **Health Impact Assessment (HIA):** The institutionalization of HIA within local- or province-wide health systems involves project proponents submitting applications for review by the DOH and its regional offices, with local health systems' committees assessing potential harms to the area. This initiative focuses more on projects in health-sensitive areas, such as those vulnerable to climate occurrences.
2. **Climate Resilience of Health Facilities:** Given the Philippines' susceptibility to disasters and challenges from climate change, there is a need for health facilities to be climate resilient and environmentally sustainable. The Health Facility Development Bureau (HFDB) of the DOH is developing operational guidelines on green, safe, and climate-resilient health facilities. The goal is for health facilities to be the last standing structures in disaster-hit areas.
3. **National Framework for Healthy Health Facilities:** Dr. Ho introduced a draft Administrative Order aiming to create a national framework for the harmonized recognition of healthy health facilities. This framework encompasses the safety of the hospital, its contribution to care through PhilHealth accreditation, compliance with health system standards, and support for employee wellness. The DOH is working to align existing programs and awards, eventually leading to a harmonized certification process for health facilities.

Dr. Ho also discussed the benefits of certification, including reputational benefits, motivation for improvement, eligibility for awards and incentives, and potential benefits for patients and employees. She emphasized that becoming a healthy health facility is an ongoing journey that requires continuous quality improvement. As she ended her talk, Dr. Ho recognized the importance of moving towards not only green, safe, and climate-resilient health facilities but ultimately achieving the status of a healthy health facility in the Philippines.

### *Key strategic initiatives in developing healthy and climate-smart hospitals in the Southeast Asian Region*

The Executive Director of the Healthcare Without Harm Southeast Asia, Mr. Ramon D. San Pascual, opened his talk by acknowledging the timeliness of the forum, especially in the context of the upcoming United Nations Climate Change Conference or Conference of Parties 28 (COP 28) climate summit in Dubai, which, for the first time, will include a dedicated health day. He emphasized the healthcare sector's role in combating climate change, particularly by moving away from fossil fuels, and then highlighted an open letter from the global medical community to the COP 28 presidency, advocating for a phased-out dependency on fossil fuels to improve future health prospects.

Recognizing the United Arab Emirates' role as the host for COP 28, Mr. San Pascual underscored the disparity between the medical sector's position and the UAE's stance on climate and health. He urged health leaders attending COP 28 to exert influence on the discussions and emphasized the pivotal role of a health ministerial declaration in shaping future health and climate policies.

Moving forward, Mr. San Pascual stressed the need for a dual approach—mitigation and adaptation—in healthcare. Mitigation involves reducing emissions, while adaptation refers to preparing for climate impacts.

Rapid mitigation was stressed as essential for establishing resilient systems, with Mr. San Pascual citing examples of hospital infrastructure failing due to climate impacts to illustrate the need for holistic climate action in healthcare. He also addressed the need for mitigation in the healthcare sector, despite its smaller contribution to global emissions, to reduce pressure on health systems and the cost of adaptation. He underscored that resilience should go beyond infrastructure, thus extending to individual and community health.

Lastly, Mr. San Pascual outlined strategic initiatives for developing climate-smart healthcare in Southeast Asia. These include assessing for vulnerability, exploring financing options for transformative agendas, advocating sector-wide policies, and educating the health sector to influence policy. His talk concluded with a call for transforming healthcare systems to be both climate-resilient and smart within the next five years.

### *Impacts and contributions of healthcare facilities to climate change adaptation/mitigation*

The last opening lecture was delivered by the Commissioner of the Climate Change Commission, Dr. Albert P. Dela Cruz, who emphasized the vital role of healthcare facilities, not only in safeguarding public health, but also in contributing to climate change-related impacts. Acknowledging the Philippines' high vulnerability to climate-related events like typhoons, floods, and droughts, he stressed the need for relocating coastal healthcare facilities to safer areas. Climate events, he explained, affect healthcare infrastructure, disrupt services, and increase health risks, particularly in coastal and low-lying areas.

Air pollution, exacerbated by climate change, was also identified as a significant concern, particularly for hospitals located near major roads. Dr. Dela Cruz suggested the implementation of service roads and buffer zones with trees around hospitals to mitigate these effects. He also spoke about the need for resilient hospital design, considering factors like strong winds and flooding. The importance of reengineering air flow patterns in hospitals to minimize infection risks was highlighted, especially in the context of the pandemic.

Dr. Dela Cruz then discussed the healthcare sector's contributions to climate change, including energy consumption, transportation, and waste generation. He mentioned ongoing efforts in the Philippines to use solar energy in hospitals and encourage the use of electric vehicles. He introduced innovative Filipino solutions in waste management, such as the thermolysis process for medical wastes and cited examples of facilities like the Philippine General Hospital, which have implemented disaster preparedness plans, sustainable building designs, and waste reduction programs.

The importance of healthcare facilities in addressing climate change-related challenges like malnutrition and clean water scarcity was also underlined, as well as the need for forward-thinking and sustainable planning in healthcare infrastructure through proactive policy advocacy and public education. Dr. Dela Cruz concluded his talk by stressing the crucial role of resilient healthcare facilities in enabling the nation to cope with and adapt to climate change and for a collective effort to ensure that healthcare facilities are equipped to handle the increasing challenges posed by climate change.

## Panel Discussions

### *The promotion of healthy hospitals in Thailand - Environment of Care*

A video presentation was delivered by Dr. Wiwat Chatwongwan, Deputy Director of the Maharat Nakhon Ratchasima Hospital in Thailand, who presented their hospital's approach to developing a healthy and sustainable healthcare environment. The hospital, a tertiary center in Thailand with extensive facilities and staff, focuses on three key areas: structural environment and safety, equipment and utility systems, and health promotion and environmental protection.

1. **Structural Environment and Safety:** The importance of safe building structures and facilities were discussed, particularly measures like the modified airborne infection isolation room and regular environmental risk assessments. The hospital conducts frequent inspections of its buildings and environments to ensure safety and cleanliness for patients, visitors, and staff.
2. **Equipment and Utility Systems:** The hospital's efforts in managing medical equipment and utility systems effectively were

highlighted. This includes calibration of medical equipment, maintenance of utilities like water and power, and training for staff in handling these systems. There was also a mention of the construction of a new electrical substation and the maintenance of a large water reserve.

3. **Health Promotion and Environmental Protection:** The hospital focuses on health promotion and environmental protection, including efficient wastewater treatment and waste management systems. They also participate in the Thailand Medical Centers of Excellence (MEC) project, which aims to develop climate-smart, disaster-resilient, and sustainable hospitals.

Dr. Chatwongwan detailed the hospital's commitment to sustainability through actions like using renewable electricity; investing in zero-emissions infrastructure, sustainable travel, and food practices; and implementing circular healthcare waste management. He concluded by stating the hospital's goal to achieve net zero emissions by 2050, ensuring alignment with Thailand's national climate change policies and the global Race to Zero initiative.

#### *Green hospital implementation at the West Java Mental Hospital, Indonesia*

The Team Leader of Planning and Reports at West Java Hospital, Ms. Yuyun Yulianti, focused on green hospital best practices and their unique application in different settings, especially in government-owned hospitals in rural areas. The West Java Mental Hospital's location in a mountainous area near the Lembang fault imposes specific construction and land use challenges, including adherence to regulations that limit building coverage and mandate earthquake mitigation measures.

She mentioned that green practices are integrated into the hospital's strategic planning, including the revision of the hospital's master plan to comply with environmental regulations and joining the Global Green and Healthy Hospital (GGHH) Network, an international network of hospitals, health care facilities, health systems, and health organizations that aim to reduce their environmental footprint and promote public and environmental health [4]. Key initiatives involve sustainable health and procurement, a "Bring Your Own Tumbler" campaign, sustainable food studies, and participating in training for carbon emission calculation.

Innovatively, the hospital collaborates with local farmers in the Cai Walagri project, which combines sustainability with patient rehabilitation through farming. Despite challenges posed by the COVID-19 pandemic, Ms. Yulianti emphasized that the hospital continued to implement green building regulations and waste segregation.

Another focus area discussed by Ms. Yulianti was water management, with budgets set for drinking water management and plans for a water treatment system. The hospital optimizes waste segregation and is experimenting with composting. The use of the Climate Impact Check-up Tool has also been instrumental in calculating the hospital's carbon footprint, identifying key emission sources like electricity, and formulating targeted emission reduction actions.

Adapting to budget constraints, the hospital prioritizes compliance with green building requirements, food education, and waste management optimization. Ms. Yulianti ended her talk by emphasizing that climate change is a health problem, and each hospital, depending on its unique characteristics and resources, must identify its challenges and take action towards sustainability.

#### *Race-to-zero carbon emission in Yishun Health (YH) Campus, Singapore*

Mr. Richard Jang, representing the Facilities Management Team of the Khoo Teck Puat Hospital at Yishun Health Campus, offered a comprehensive presentation on the campus's green initiatives and journey towards zero carbon emissions. Comprising Khoo Teck Puat Hospital and Yishun Community Hospital, the Yishun Health Campus is integrated within a residential area, embracing a concept of being a "hospital within a garden." This design philosophy aims to provide patients and staff with a natural, healing environment.

He outlined key strategies for energy efficiency which include architectural design suited for the tropical climate, characterized with high ceilings and natural ventilation for most wards. The hospital also utilizes renewable

energy sources like solar power and recycles rainwater for irrigation. According to Mr. Jang, the hospital's initiatives for sustainability include:

1. **Use of Solar Energy:** The installation of solar panels across the campus, which has been effective in producing energy above guaranteed levels.
2. **Overall Waste Management:** Tracking general and recyclable waste, and experimenting with food waste composting to utilize in community gardens.
3. **Sustainable Practices:** Replacing paper towel dispensers with air blowers to reduce waste, implementation of recycling bins, educational talks, and promotion of green and sustainable products and equipment.
4. **Community and Environmental Events:** Participation in events like Earth Hour, World Water Day, and other green initiatives in collaboration with non-government organizations (NGOs) and service partners.
5. **Staff and Community Engagement:** Encouraging environmentally conscious behavior among staff and the community, including initiatives like meatless Mondays and promoting plant-based diets.

In terms of carbon emission reduction, Yishun Health is actively exploring and implementing measures like using LED lights, using air conditioning units less frequently, and installing electric vehicle charging stations. They also plan to install floating solar panels and adopt smart water flushing systems. Mr. Jang concluded his talk with an emphasis on the significant strides Yishun Health Campus is making towards reducing carbon emissions and promoting sustainability, setting goals across the three following areas: waste reduction, building sustainability, and community engagement.

#### *Practices towards the promotion of green, clean, and beautiful hospitals in Vietnam*

Ms. To Thi Lien, Coordinator at the Center for Health Environment Research and Development (CHERAD) began her presentation with an overview of the healthcare situation in Vietnam in 2016 where a Ministry of Health survey uncovered a significant level of patient dissatisfaction, primarily due to unsanitary conditions in hospitals, particularly in the toilets. These findings triggered a nationwide focus on improving Water, Sanitation, and Hygiene (WASH) standards in healthcare facilities. The unhygienic conditions in hospitals received extensive media coverage, notably the state of hospital toilets, which became a symbol of the overall quality of healthcare infrastructure. This negative publicity spurred the Ministry of Health into action. In a landmark statement in 2018, the Ministry underscored the need for clean, efficient, and sustainable hospital environments. This period marked the genesis of the Green, Clean, and Beautiful (GCB) initiative in Vietnam.

On the establishment of a framework for GCB hospitals, Ms. Lien shared that the Ministry of Health rolled out a national action plan and subsequent guidelines for implementing the GCB hospital model. Over the next few years, a set of criteria for GCB hospitals was developed and refined, eventually forming into a robust framework. These criteria encompassed 32 points across three categories: Green (10 points), Clean (80 points), and Beauty (10 points), and, moreover, not only defined the standards but also served as a classification tool for hospitals. She elaborated on the broader national policy context, highlighting laws on environmental protection and healthcare waste management. These policies formed the backbone of the national strategy for green growth, which was pivotal in steering the healthcare sector towards sustainability. The engagement of various stakeholders, including international organizations and the Ministry of Health, was underlined as a key strategy of the GCB initiative, specifically in the aspects of training, policy-making, communication, and monitoring. In a significant move, the criteria for GCB hospitals were made mandatory, compelling hospitals to prioritize these standards for classification and annual inspections.

The directive on Plastic Waste Reduction and the national action plan for waste incident response, which were critical in mitigating the environmental impact of healthcare facilities, were a significant part of the presentation, particularly in the context of discussing the circular economy model in medical plastic waste management. Supported by USAID and other partners, CHERAD is spearheading initiatives to reduce and manage medical plastic waste sustainably. The project aims to increase the recycling rate of medical plastic waste and incorporates a collective impact approach, engaging a wide range of stakeholders. The current initiatives include comprehensive waste segregation and recycling models, with surveys conducted at various



hospitals to assess waste generation. The goal is to develop a shared treatment approach for hazardous waste, ensuring safe recycling processes. Ms. Lien also mentioned the development of training curricula for healthcare staff and the inclusion of circular economy concepts to influence future generations.

The presentation concluded with Ms. Lien emphasizing the critical role of collaborative efforts among different ministries and sectors. She shared examples of ongoing projects and plans, including the introduction of initiatives to high-level government officials. This collaboration, she asserted, is vital for the success of the green, clean, and beautiful hospital initiative in Vietnam and beyond.

#### *Policy challenges and opportunities in promoting healthy and climate-smart hospitals in the Southeast Asian Region*

Dr. Nasir Hassan, Regional Advisor for the Air Pollution, Environmental and Occupational Health and Chemical Safety at the World Health Organization, Southeast Asian Regional Office, discussed the severe and complex challenges posed by climate change, particularly its unprecedented and potentially irreversible impact as highlighted in the Intergovernmental Panel on Climate Change (IPCC's) Sixth Assessment Report. In his recorded presentation, he emphasized how critical this global crisis has been, which has led to record high temperatures and sea level rise, with significant impacts particularly in Asia and Southeast Asia. Dr. Hassan stressed the disruption that climate change causes to healthcare facilities, exacerbating current challenges and affecting the health workforce's ability to adapt to extreme weather events.

The presentation underscored the importance of local data in assessing the vulnerability of healthcare facilities to climate-related risks. Dr. Hassan cited examples from the Philippines and Fiji where specific healthcare facilities were identified as being particularly susceptible to climate impacts like storm surges, landslides, and floods. This local data enables targeted interventions and supports early warning systems for climate-related diseases like dengue.

Dr. Hassan then outlined two critical roles for healthcare facilities in the context of climate change: contributing to carbon reduction through technology adoption and enhancing community adaptation to prevent harm from climate change. He pointed out the importance of building resilient healthcare systems that can maintain essential functions even in extreme weather events. This resilience involves adapting to and learning from such events to ensure continuous operation. The development of climate-resilient and environmentally sustainable healthcare facilities was also highlighted, focusing on four main areas: health workforce, infrastructure, energy systems, and technology. Dr. Hassan emphasized the need for a skilled and informed health workforce, capable of identifying climate-related health threats and participating in community programs related to climate risks. For infrastructure, Dr. Hassan stressed the importance of ensuring basic facilities like water, sanitation, and healthcare waste management to be resilient to climate impacts. He advocated for moving away from incineration-based waste management to more environmentally friendly systems. In terms of energy, he called for an assessment of healthcare facilities' access to renewable energy sources and the adoption of energy-efficient technologies.

The presentation concluded with a call to action for healthcare facilities to adopt greener practices, including green procurement, environmentally conscious facility operations, and integrating environmental considerations into project design and delivery. Dr. Hassan emphasized that moving towards environmentally sustainable healthcare facilities is imperative for future generations, marking a departure from traditional practices to a more sustainable and resilient approach in healthcare.

#### *Barriers and opportunities to the promotion of healthy and climate-smart hospitals: The Philippine General Hospital experience*

The Deputy Director for Administration of the Philippine General Hospital (PGH), Dr. Maria Teresa Julieta U. Benedicto, detailed the initiatives and challenges faced by the PGH in its pursuit of environmental sustainability and healthcare excellence. As a leading government hospital in the Philippines, PGH serves as a tertiary referral hospital and plays a critical role as a COVID-19 referral center. Dr. Benedicto highlighted that despite serving a vast number of patients and facing budget constraints, PGH has been actively implementing innovative strategies for creating a healthier environment.

PGH, with its 116-year history, recognized the need for infrastructure renovation and expansion to fulfill its healthcare mandate. A key initiative was the updating of the master plan which laid out a 25-year blueprint for future developments. This plan includes eco-friendly, energy-efficient buildings, showcasing PGH's commitment to green construction. The new multi-specialty building and the planned Cancer Center exemplify this approach, integrating modern amenities while preserving historical value. Highlighting their commitment to creating a greener, more efficient, and environmentally responsible healthcare environment, Dr. Benedicto outlined the various environmental sustainability initiatives currently being undertaken at PGH:

1. **Preservation of green spaces:** Efforts to preserve green spaces within the hospital premises and beautify the campus include improving landscaping, planting flowering species, and maintaining overgrown trees. These efforts are complemented by continuous staff training and maintenance contract updates to ensure cleanliness and a proper setting.
2. **Energy efficiency and sustainability:** PGH's initiatives also address energy efficiency and sustainability. Due to aging infrastructure, the hospital faces challenges with its electrical and water systems. Collaborations with private sector partners like Meralco have been crucial in planning and executing electrical upgrades to ensure redundancy and reliability in energy supply.
3. **Waste management strategies:** Waste management is another critical area of focus for PGH. The hospital has established a Healthcare Waste Management Committee, which enforces waste management policies across the hospital. Through continuous education and training, PGH promotes compliance with waste segregation and reduces plastic use. Efforts include placement of color-coded trash bins, prohibition of plastics and styrofoam, and implementation of recycling initiatives.
4. **Water conservation efforts:** Water conservation, on the other hand, is addressed through partnerships with water concessionaires, helping PGH upgrade its extensive and outdated water line system. The hospital has also installed rainwater collector systems and cisterns to meet urgent water needs and manage emergency water supply effectively.
5. **Flood mitigation and drainage management:** Addressing the challenge of flooding in surrounding areas, PGH has undertaken regular de-clogging of sewer lines in collaboration with local government units and agencies. This coordination is vital for effective flood mitigation and drainage management.
6. **Biomedical maintenance challenges:** PGH faces the challenge of keeping up with advancing technology and ensuring that medical equipment is up-to-date and functional. Because of this, the hospital has sought technical expertise from external service providers and established collaborations with other healthcare facilities for optimal utilization of resources.
7. **Ventilation and air quality improvements:** The hospital's approach to ventilation and air quality focuses on revitalizing exhaust systems and ensuring regular maintenance, despite budget and workload constraints. PGH's commitment to improving its environment is evident in its infrastructure renovations, which include enhanced ventilation, natural lighting, and energy-efficient equipment.

Dr. Benedicto then highlighted the role of various office committees in ensuring adherence to policies and fostering a culture of continuous improvement. These committees are pivotal in coordinating with all hospital areas to maintain standards and compliance. According to her, PGH's dedication to promoting healthy hospitals is a complex task requiring a multifaceted approach. This includes continuous training, regular protocol reviews, and a collaborative effort with government agencies, private donors, and society at large. Despite numerous challenges, PGH's commitment to sustainable practices and environmental stewardship has been recognized through the award of its Environmental Compliance Certificate issued by the Department of Environment and Natural Resources.

## **Concluding lecture**

### *The Future of the Hospital in the Era of the Climate Crisis and Planetary Health*

The last presentation was delivered through a recording by the Associate Professor of Global Public Health and Inaugural Director of the Planetary and Global Health Program at the St. Luke's Medical Center, Dr. Ramon Lorenzo

Luis R. Guinto. It offered a profound perspective on the evolving role of hospitals in the face of global environmental challenges, as well as the interdependence of human health and the planet's well-being. He presented the concept of the Anthropocene, an epoch marked by significant human impact on Earth's geology and ecosystems, highlighting how human activities have led to various ecological damages, including climate change, biodiversity loss, and pollution. He pointed out that these environmental changes have profound implications for every disease category, from infectious diseases to mental health. Dr. Guinto stressed the urgent need to consider both the health of people and the planet in the 21st century, effectively making them dual patients of the healthcare system.

Focusing on the health sector's ecological footprint, Dr. Guinto illustrated how it contributes to environmental issues, such as greenhouse gas emissions and pollution. He presented data on the health sector's share in national emissions in Europe and the various sources of emissions within healthcare facilities, emphasizing the need for targeted strategies to reduce these emissions. The presentation also underscored the health sector's lack of preparedness for climate change impacts, referencing the Lancet Countdown report. He argues that hospitals and the health sector in general are not equipped to handle the health consequences of climate change, and are also contributing to the problem through pollution.

Dr. Guinto then shifted focus to the concept of regenerative healthcare, where hospitals not only sustain life and health but also repair and restore environmental damage. He cited examples of green initiatives in healthcare facilities, such as solar power use in Philippine hospitals and sustainable diet programs in Taiwan. Delving on climate-smart healthcare, Dr. Guinto noted the dual approach of sustainability and resilience. He mentioned the significant contribution of hospitals to carbon emissions and presented strategies for reducing this footprint and stressed the importance of hospitals adapting to the impacts of climate change to maintain functionality during extreme weather events and other climate-related challenges.

The presentation also touched on the role of climate services in healthcare, focusing on using climate data for improved decision-making and training future health professionals in climate-smart healthcare practices. Dr. Guinto shared insights on investment requirements for environmentally sustainable healthcare infrastructure and the necessity of being political savvy in navigating the complexities of hospital governance in the context of environmental sustainability.

Dr. Guinto concluded his talk with a call for a collaborative effort to create future hospitals that advance both human health and planetary well-being. He advocates for integrating environmental sustainability into the core of hospital operations and planning, preparing the healthcare sector to effectively respond to the challenges posed by the climate crisis. Faced with the dual challenges of climate change and planetary health, hospitals and health systems must undergo a significant transformation. This transformation requires a holistic approach, encompassing everything from environmental sustainability to political savvy, as we strive to create healthcare institutions that are not only healers of people but also stewards of the planet.

## Conclusion

The Sixth Environmental and Occupational Health Forum drew to a close with a clear affirmation of the health sector's critical role in confronting the intertwined challenges of environmental health and climate change. This forum, a converging point for diverse expertise, ignited crucial discussions on reimagining the hospitals as a stronghold of environmental sustainability and climate resilience. Participants, including experts from various healthcare and environmental backgrounds, collectively emphasized the urgency of integrating proactive environmental stewardship within healthcare practices, especially in the face of breached planetary boundaries.

The insights and strategies shared during the forum are poised to help reduce the environmental footprint of healthcare institutions. The event also acknowledged the significant contributions from a spectrum of global health organizations and healthcare facilities throughout Southeast Asia. A key outcome of the forum was the shared recognition of the need for hospitals to transcend from their traditional roles. This paradigm shift involves embracing a holistic health approach, prioritizing the reduction of carbon emissions, limiting single-use products, and incorporating renewable energy sources.

As the forum concluded, it illuminated the pivotal role of hospitals in reframing the climate crisis as a health crisis, offering actionable guidance for future endeavors. The discussions and resolutions from this forum are expected to have a lasting impact on upcoming fora and the broader journey towards an integrated approach to health and healing. This event has set a precedent for ongoing collaboration and advancement in embedding environmental stewardship within healthcare, thereby contributing to the development of healthier hospitals and communities across the Southeast Asian region.

## Recommendations

The 6th EOH Forum emphasized a transformative role for hospitals and advocated for a holistic approach to health that extends beyond conventional treatment centers. This perspective positions hospitals as integral components of a broader societal ecosystem, contributing to healing both people and the planet. The shift involves minimizing carbon emissions, avoiding the use of single-use products, and integrating renewable energy sources in healthcare institutions. Urgency in addressing environmental challenges, viewing the climate crisis as a health crisis, and providing guidance for future actions were underscored. Anticipation was expressed for the evolution of discussions in future fora to reinforce commitment in advancing healthcare and environmental stewardship through collaborative efforts. With these sentiments, the critical role of the health sector, particularly hospitals, in addressing environmental health issues amid climate change was highlighted. Stressing the urgency of environmental protection, consequences of failing to mitigate the effects of climate change were emphasized. The conference provided a platform for discussing strategies, challenges, and opportunities in transforming hospitals into environmentally sustainable and climate-smart institutions.

## References

1. Tong S, Bambrick H, Beggs P, Chen L, Hu Y, Ma W, Steffen W, Tan J. Current and future threats to human health in the Anthropocene, *Environment International*, Volume 158, 106892, ISSN 0160-4120. <https://doi.org/10.1016/j.envint.2021.106892>.
2. Choi A. (2022) The environmental impact of healthcare, *Health and Wellbeing*. <https://pursuit.unimelb.edu.au/articles/the-environmental-impact-of-healthcare>.
3. Jennings N, Fecht D, De Matteis S. (2020) Mapping the co-benefits of climate action to issues of public concern in the UK: a narrative review, *The Lancet Planetary Health*. [https://doi.org/10.1016/S2542-5196\(20\)30167-4](https://doi.org/10.1016/S2542-5196(20)30167-4).
4. Global Green and Healthy Hospitals, About GGHH. (2024) <https://greenhospitals.org/about>.