WANS
World Academy of Nursing Science

Thailand Nursing and
Midwifery Council

Thai Nurses' Association
Of Thailand

The **2**nd **International Nursing Research Conference**
"Future Nursing Research and Innovation
for Sustainable Global Health"
to Commemorate the 125th Anniversary of the Birth of HRH Princess Srinagarindra

Jointly Organised by WANS, TNMC & NAT

Global Health, Global Health Challenges & Health System Strengthening

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What is GH and GH challenges ?

Global Health : Definition

"the area of **study, research, and practice** that places a *priority on improving health and achieving equity* in health for all people worldwide"

Lancet. 373 (9679): 1993–1995

Global Health Challenge

- Refers to a health issue that significantly affects populations across multiple countries or continents,

- Affected by widespread social, economic, and environmental impacts

- require international cooperation to prevent, manage, and resolve

- involve both communicable and non-communicable diseases, health inequities, or emerging threats

Why should health professional know about global health challenges?

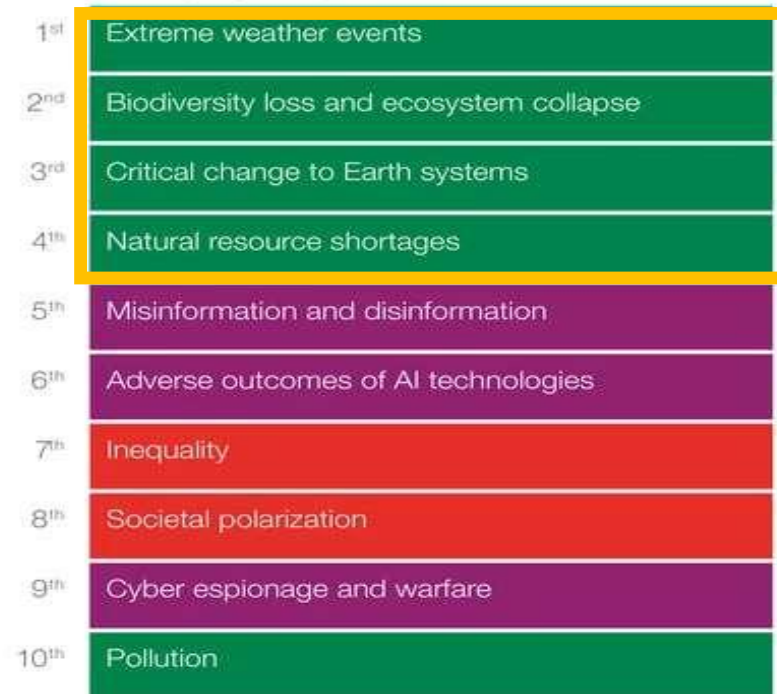**Global risks**

Global megatrend

Global risks ranked by severity

Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period.

Short term (2 years)

Rank	Risk
1st	Misinformation and disinformation
2nd	Extreme weather events
3rd	State-based armed conflict
4th	Societal polarization
5th	Cyber espionage and warfare
6th	Pollution
7th	Inequality
8th	Involuntary migration or displacement
9th	Geoeconomic confrontation
10th	Erosion of human rights and/or civic freedoms

Long term (10 years)

Rank	Risk
1st	Extreme weather events
2nd	Biodiversity loss and ecosystem collapse
3rd	Critical change to Earth systems
4th	Natural resource shortages
5th	Misinformation and disinformation
6th	Adverse outcomes of AI technologies
7th	Inequality
8th	Societal polarization
9th	Cyber espionage and warfare
10th	Pollution

Risk categories ● Economic ● Environmental ● Geopolitical ● Societal ● Technological

Source: World Economic Forum, Global Risks Perception Survey 2024-2025

List of 28 Global Risks (Grouped & Briefly Described)

SOCIAL RISKS

1. Demographic Shifts
2. Inequality and Social Division
3. Misinformation and Disinformation
4. Mental Health Crisis
5. Infectious Disease Outbreaks
6. Forced Displacement

TECHNOLOGICAL RISKS

7. Cybersecurity Failures
8. AI Misuse or Failure
9. Digital Exclusion
10. Critical Infrastructure Failure
11. Surveillance Overreach
12. Technology-Driven Unemployment

ECONOMIC RISKS

13. Debt Crises
14. Inflation and Price Instability
15. Supply Chain Disruptions
16. Energy Market Shocks
17. Global Recession Risk
18. Taxation Inequities

ENVIRONMENTAL RISKS

19. Climate Change Tipping Points
20. Biodiversity Loss
21. Extreme Weather Events
22. Water Scarcity
23. Pollution and Toxic Exposure
24. Food Insecurity

POLITICAL RISKS

25. Geopolitical Tensions
26. Erosion of Multilateralism
27. Political Instability and Governance Failure
28. Corruption and Rule of Law Erosion

UN GLOBAL RISK REPORT 2025–KEY INSIGHTS

UNDERSTANDING GLOBAL VULNERABILITIES & FUTURE SCENARIOS

Top three dominant threats in both the short and long term

- misinformation/disinformation,
- geopolitical tensions, and
- climate-related crises

highly interconnected global risk environment with growing systemic vulnerabilities, particularly in climate, technology, and governance

global megatrends and health impact

Five Megatrends by year 2050

- Population change
- Changing Demographics
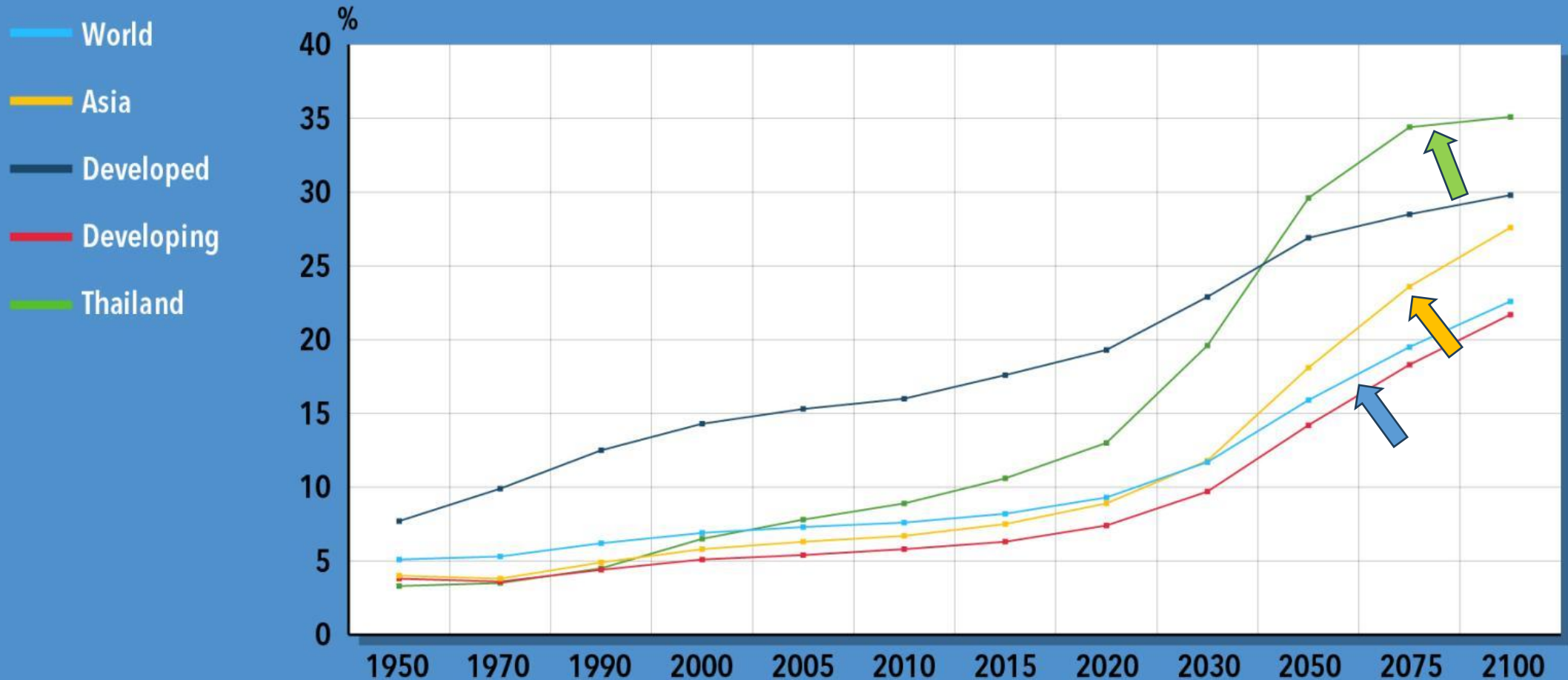- Urbanization
- Climate change
- AI and new technologies

Demographic shift and impact on health

- By 2050, over 1.5 billion people worldwide will be aged 65 and older (UN DESA, 2022). (Many high-income and middle-income countries)

- These shifts influence disease burden, healthcare workforce needs, and policy priorities.

Caption: Thailand is facing with the problem of rapidly aging population
Photo: © Source: UN 2019 World Population Prospects

Ageing and health consequences:

- Increased Chronic Diseases: higher rates of non-communicable diseases (NCDs) such as cardiovascular disease, diabetes, dementia, and cancer.

- Rising Healthcare Costs

- Workforce Shortages: particularly in geriatrics and home-based care.

- Social Determinants of Health: Loneliness, financial insecurity, and lack of family support can worsen mental and physical health outcome

Population change

Asia will shrink, African and India expand

Thailand begin to shrink 2050:   67 M   , end of 21 century   45 M

Aging society at year 2050:   1 in 3   is senior aged > 60 y

Median age at year 2050 :   50.7- y-old

Rapidly become a superaged society, Aging faster than others in region

Life expectancy longer

Shrinkage of supporter

From 6-7 caregivers to less than 2 by year 2050

- Dennis Carrol : Talk in Global Health in Nursing Trends & Challenges October 2024

Urbanization

- Y 2050, > 70% will be urbanized
- Higher risk of NCD; obesity in children, Life-style diseases
- Infectious diseases due to overcrowded; respiratory diseases
- Traffic accidents, occupational Hazards
- Stress & Mental Health Issues

- Dennis Carrol : Talk in Global Health in Nursing Trends & Challenges October 2024

Rising in Technology and Artificial Intelligence

- AI enhance human potential

- AR/VR (Augmented Reality/Virtual Reality)

- Disinformation and misinformation Warfare

- Big data

- Cybersecurity

Awareness and Usage of Specific Digital Health Tools

A study examining digital health literacy among older adults (aged 65-74yr) found the following: BMC Geriatrics, 2023

- **E-prescription: 90.2% awareness**

  86.4% usage

- **Online appointment booking:**

  77.1% awareness

  45.5% usage

- **Telemedicine:**

  39.6% awareness

  24.0% usage

- **Smart devices (e.g., smartwatches, pulse oximeters):**

  68.2% awareness

  17.4% usage

Geopolitics and Health

- health is shaped by geopolitical determinants

   (governments, geographies, policies, etc)

- Geopolitical determinants can drive the policy action to improve global health

   example: migration policy response

Refugee and Migration Crises

- Displaced populations often live in crowded, unsanitary conditions with limited access to health services

- Example: Rohingya crisis and the health challenges in Bangladesh refugee camps

- Mae Tao Clinic (MTC), founded and directed by Dr. Cynthia Maung, provides free health care for refugees, migrant workers, and other individuals who cross the border from Burma to Thailand.
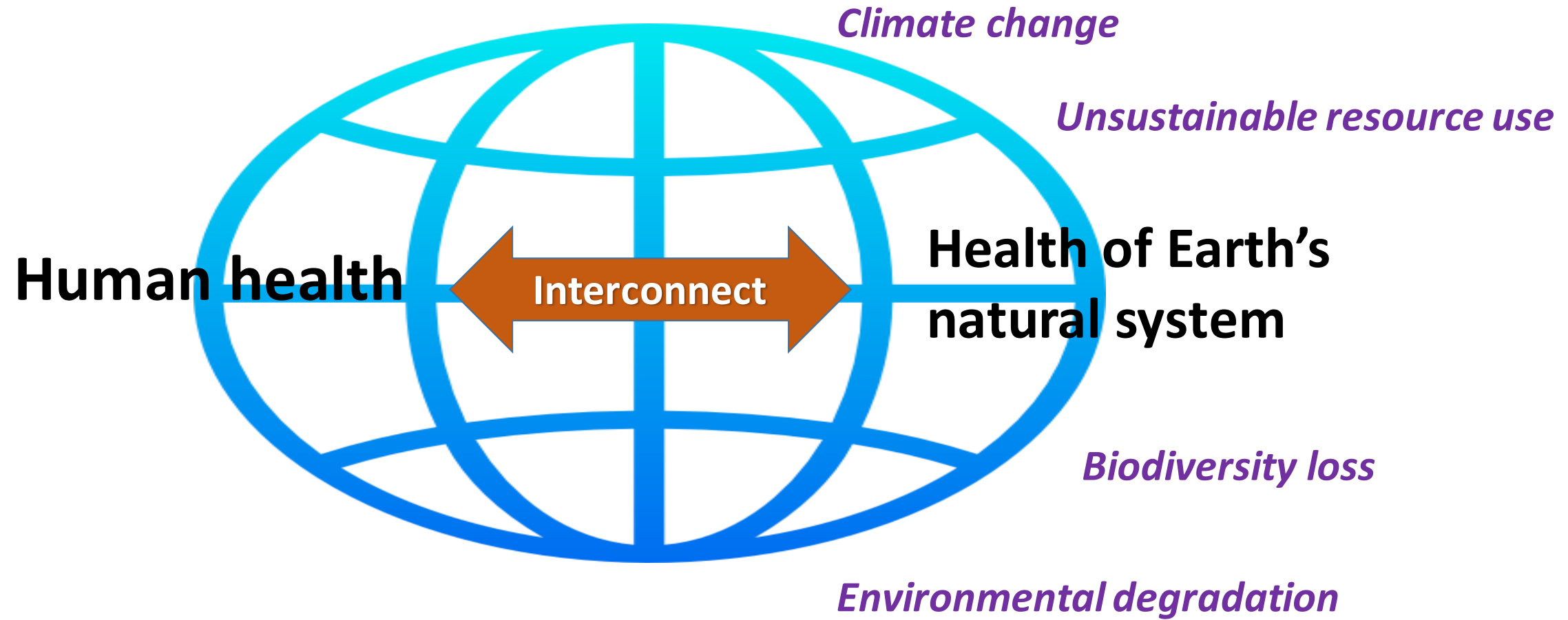
How "Health system" is affected?

1. Destruction of Health Infrastructure

2. Healthcare Worker Shortages

3. Disrupted Supply Chains

4. Interrupted Health Services

5. Loss of Health Data and Coordination

Planetary Health

" a scientific concept that describes how human health depends on the health of Earth's ecosystems "

Climate change

Unsustainable resource use

Human health ⟷ Interconnect ⟷ **Health of Earth's natural system**

Biodiversity loss

Environmental degradation

Main Keywords of Planetary Health

Environmental Determinants of Health

- Climate change
- Pollution
- Biodiversity loss
- Deforestation and land use change
- Plastic use

Civilization and Urbanization

- Urban planning
- Green spaces
- Overcrowding

Sustainability and Resource Use

- Food systems
- Water resources
- Energy

Health Outcomes and Risks

- Infectious diseases
- NCD
- Mental

Climate Change and Human Health

Climate change has been widely known associated with human health

- Direct: heat-related mortality, heat stroke

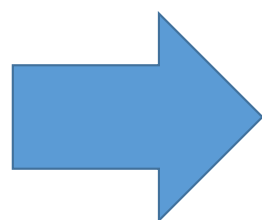- Indirect: infectious diseases, emerging diseases, mental health,flooding, lack of food resource, flood migration

Key Facts

- Climate change contributes to humanitarian emergencies from heatwaves, wildfires, floods, tropical storms and hurricanes, and they are increasing in scale, frequency and intensity.

- Research shows that 3.6 billion people already live in areas highly susceptible to climate change.

- Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from undernutrition, malaria, diarrhea and heat stress alone.

- The direct damage costs to health is estimated to be between US$ 2–4 billion per year by 2030.

- Areas with weak health infrastructure – mostly in developing countries – will be the least able to cope without assistance to prepare and respond.
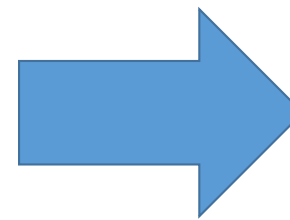
Climate change

Other factors

→ **Flooding** →

Diseases

Health system disrupted

Global Pollution and Human Health

- Air pollution (mainly from burning fossil fuels), PM 2.5

- Water pollution (by industrial chemicals, pharmaceutical wastes, plastics, heavy metals, pesticides)

  Unsafe water causes diseases, such as diarrhea, cholera, dysentery, typhoid, and polio, killing an estimated 485,000 people annually. (UNICEF)

- Soil pollution (e.g., as a result of the disposal of hazardous wastes)

Pollution: PM2.5

Lung cancer, PM2.5 deaths surge in the North

PM2.5, or particulate matter with a diameter of 2.5 micrometers or smaller, is a significant environmental health concern in northern Thailand.

Elevated PM2.5 levels due to seasonal agricultural burning (January to April), forest fires, and urban-industrial pollution.

PM2.5 particles often contain toxic substances such as polycyclic aromatic hydrocarbons (PAHs), heavy metals, and other carcinogens leading to chronic respiratory diseases and lung cancer.

The burden may be amplified in northern Thailand due to high baseline pollution levels, prolonged exposure during burning seasons, and limited access to air purification measures in rural areas.

Plastic Usage: Real World Data

-

Single-Use Plastics: Around the world, one million plastic drinking bottles are purchased every minute

500 billion single-use plastic bags are used annually.

Plastic usage and diseases : These chemicals are associated with

Hormonal disorders: EDC

Obesity and metabolic disease

Infertility and reproductive problems

Diabetes

Early puberty

Cancers (e.g., breast or prostate)

Neurodevelopmental issues in children

What should we do ?

Global risk and trend → Health and Healthcare → Health professional / What should we do?

What should health professional know about global health?

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Understanding global health challenges : communicable diseases and vaccinations, nutritional challenges, environmental health

Cultivate mindset in all personnel level

Curriculum development

Global health initiatives and partnerships

Advocacy and policy implementation

Role of nurses in facing with Global Health Challenges

1. **Frontline surveillance and early detection**

   - Nurses are often the first to see early signs of epidemics

   - identify unusual symptoms and report promptly

2. **Providing High-Quality and Equitable Care**

   - Global health challenges often worsen inequalities

   - Care for vulnerable populations (elderly, migrants, low-income groups)

   - Advocate for fair access to services

Role of nurses in facing with Global Health Challenges

3. Health Education & Behavior Change

   - Prevention is the most cost-effective strategy

   - Teach communities about " prevention " (NCDs, hygiene, mental health)

   - Promote vaccination and chronic disease self-management

4. Leadership in Emergency & Disaster Response

   - lesson learn from Covid-19 pandemic

   - Natural disasters and health emergencies are increasing worldwide.

Role of nurses in facing with Global Health Challenges

5. Supporting Continuity of Care for NCDs and elderly

    - NCDs remain the largest global health burden

    - Manage chronic illnesses through follow-up, telehealth, home visits

    - Monitor adherence to medication and lifestyle changes

6. Using Digital Health & Health Information Systems

    - Strong health systems rely on strong data

    - Use EMR, telehealth, mobile health apps for patient care

Role of nurses in facing with Global Health Challenges

7. Continue Professional Development

   - Participate in research or quality-improvement projects

   - Engage in simulation training for outbreaks and disasters

8. Strengthen Leadership & Teamwork Ability

   - Practice leading interdisciplinary teams

   - Learn resource management and decision-making under pressure

   - Manage stress and prevent burnout

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"Filling gaps and building bridges for health equity"

Vision
Leverage the global platform to strengthen cooperation in shaping health sustainability and to groom the future generation to find innovative solution for global health challenges

- SGH at a Glance
- Your Opportunities
- Scientific Advisory Committee
- Our Programs

Thank you