The background of the slide is a surreal landscape. It features rolling, dry, brownish hills under a vast sky filled with soft, white clouds. A tall, dark, vertical ladder stands on the ground in the center-left of the frame, extending from the bottom to the top. The overall tone is contemplative and aspirational.

Global Health : Challenge, Progress and Path Forward

Fina Tams

Structure of the talk



The concept of Globalization and Global Health (GH)



Why Global Health Matters



Major Global challenges



Success Stories



Global Health Organization



Role of Technology

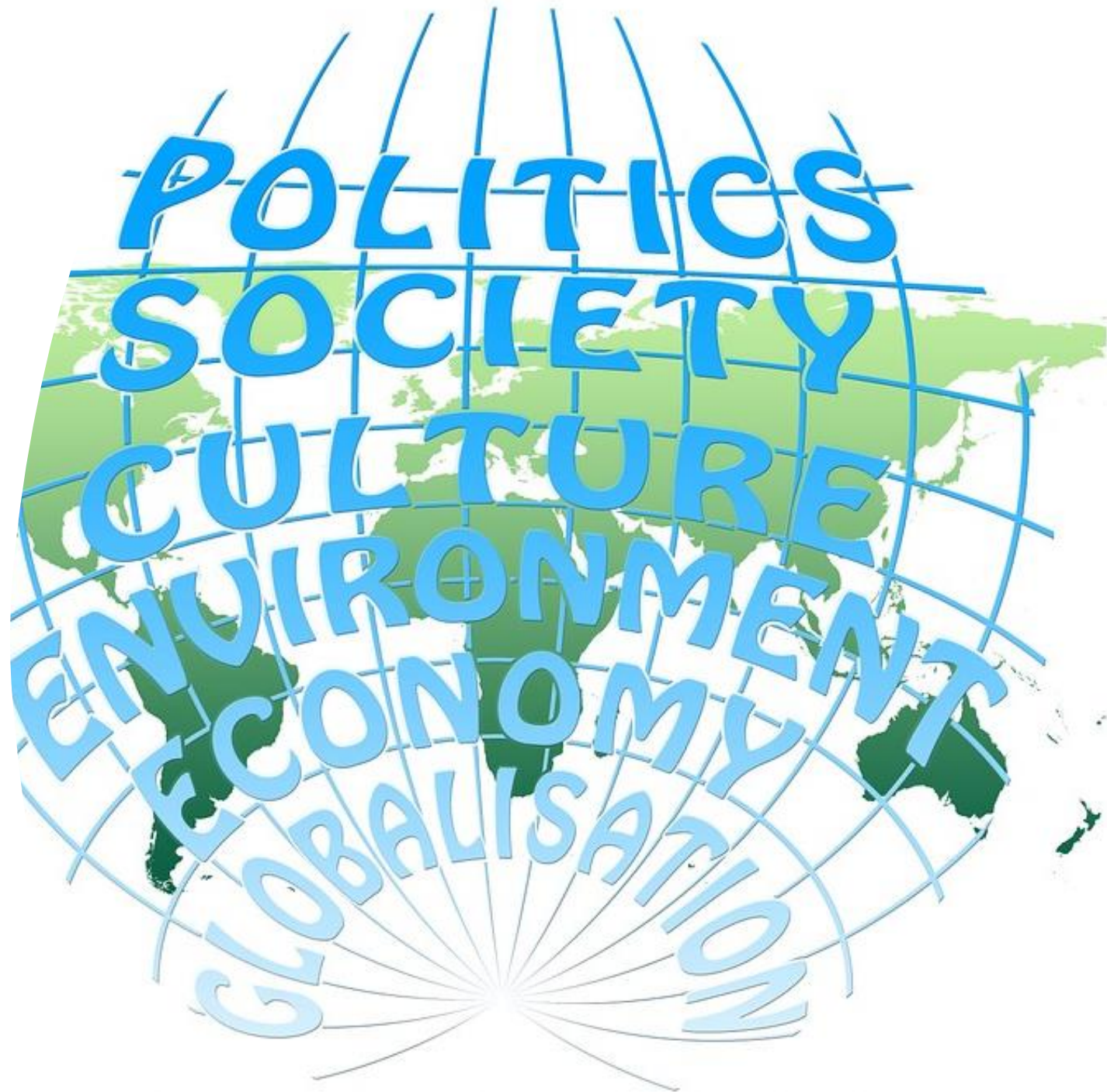


Global Health and Equity

Globalization

- Increased **interconnectedness and interdependence of people and countries**
- Opening of **international borders**
- **Changes** in the institution and policies to **facilitate or promote such flows**

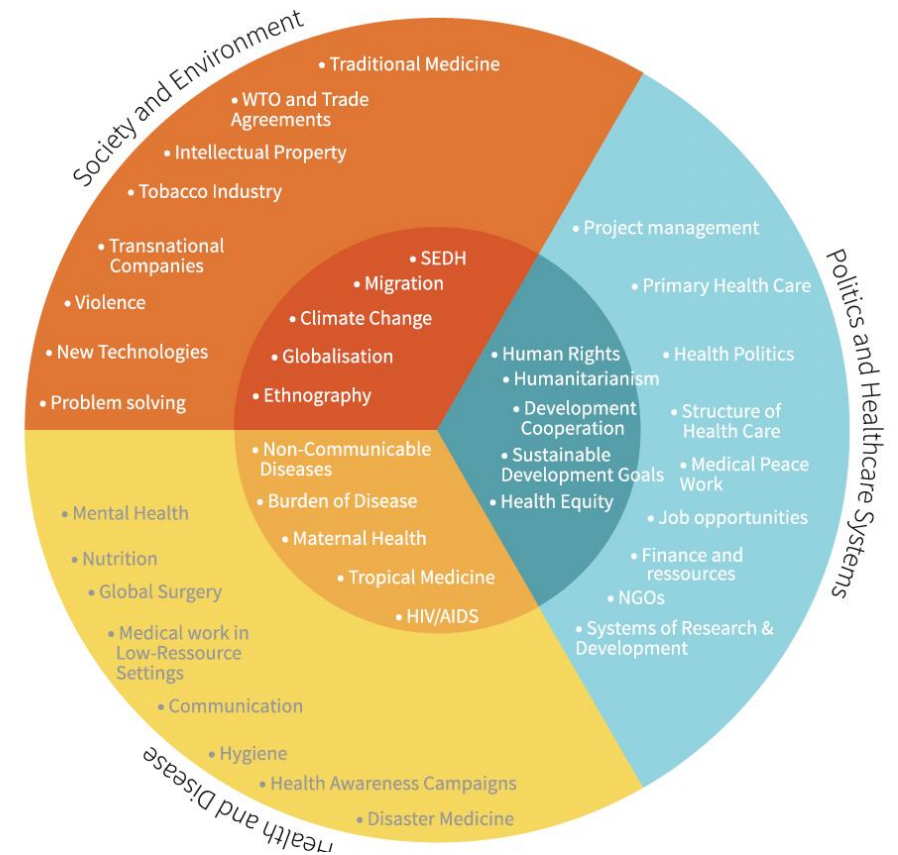
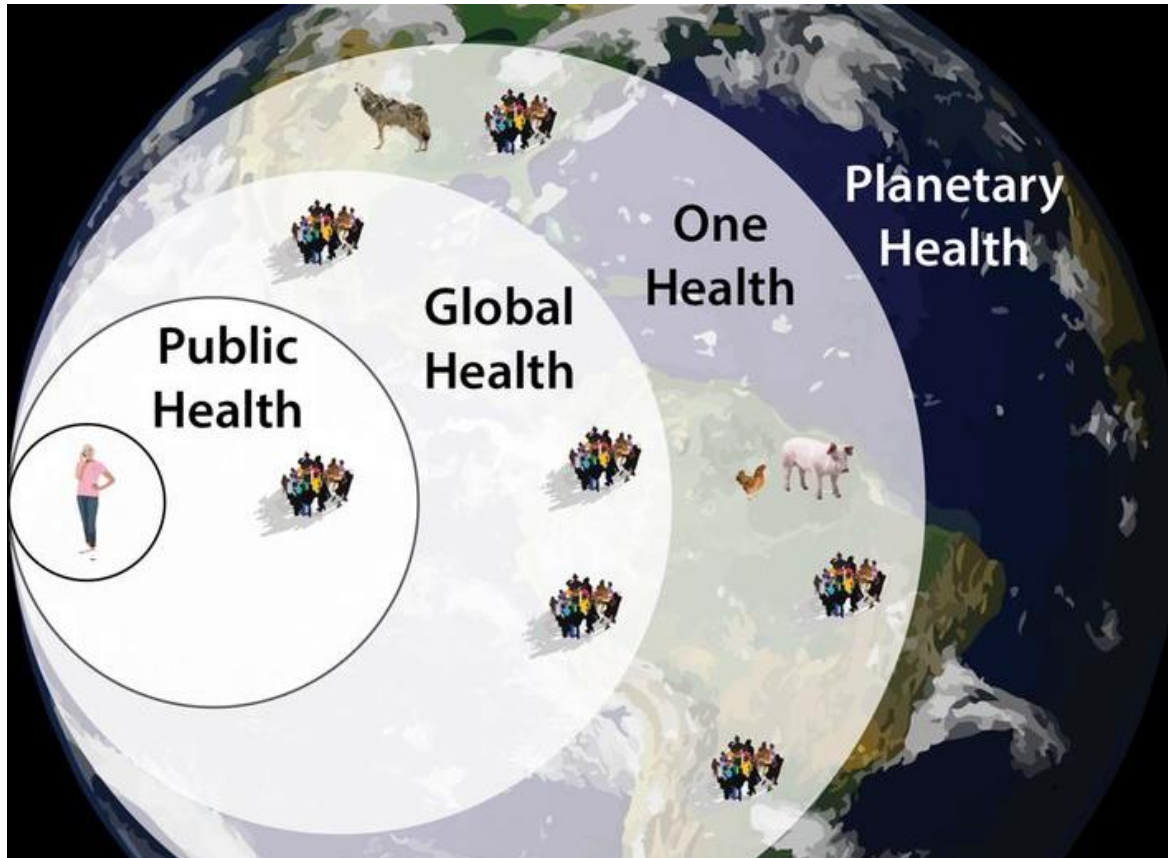
(WHO)



Positive and Negative Impact of Globalization



Global Health



Global Health



INFECTIOUS DISEASE



NON-
COMMUNICABLE
DISEASE



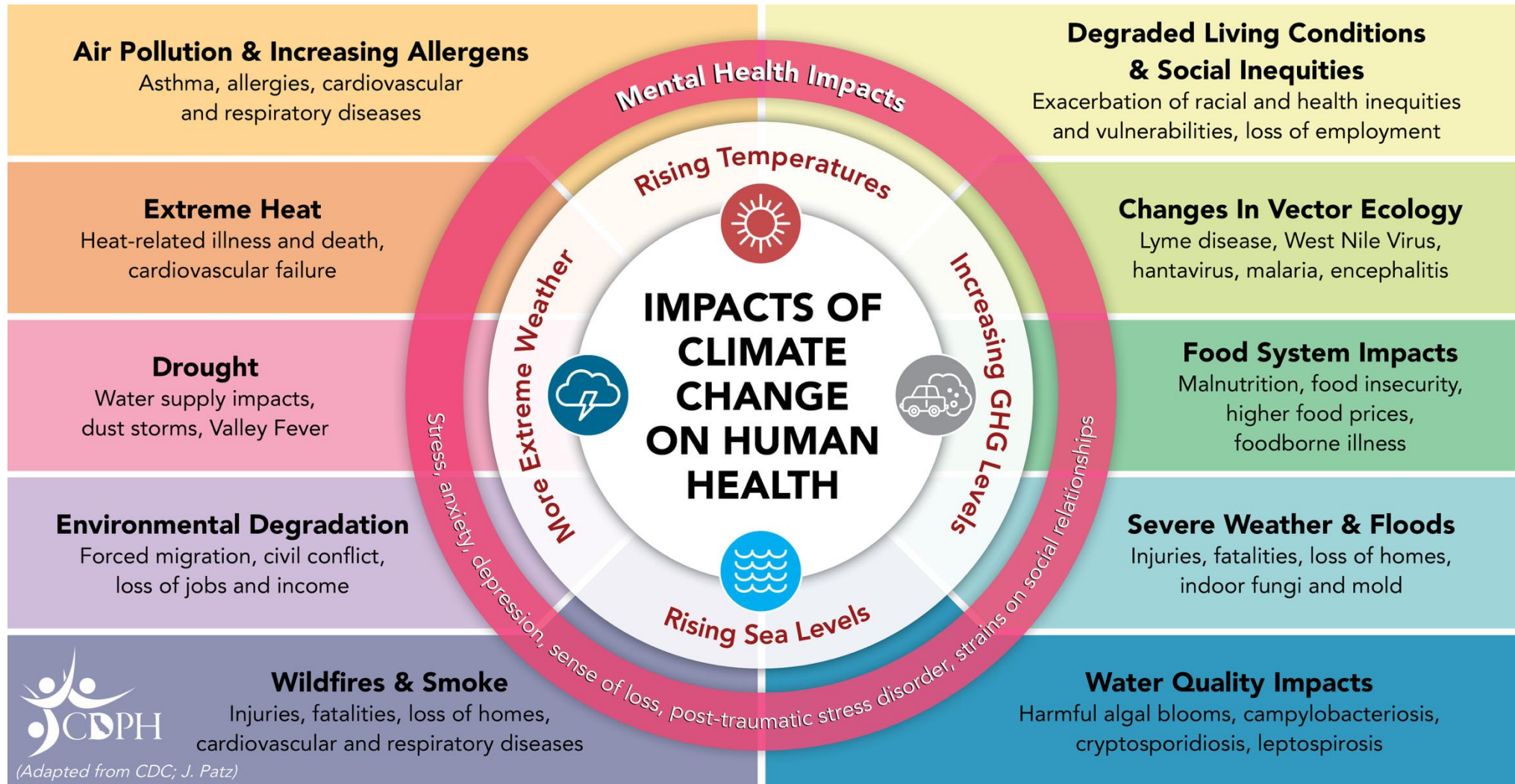
HEALTH SYSTEM



HEALTH EQUITY



ENVIRONMENTAL
HEALTH



Why Global Health Matters



Diseases know no borders (e.g., COVID-19, Ebola)



Humanitarian and ethical responsibility



Economic impact
(healthy populations =
stronger economies)



Promotes peace and
stability



Key Global Health Indicators

Life
expectancy

Infant and
maternal
mortality

Access to
clean water
and sanitation

Immunization
rates

Burden of
disease
(DALYs, YLLs)

Major Global Health Challenges

Infectious Diseases:
HIV/AIDS, TB, malaria,
COVID-19 variants

Non-Communicable Diseases: Diabetes,
heart disease, cancer,
and stroke

Mental Health Crisis:
Depression, anxiety,
access to care

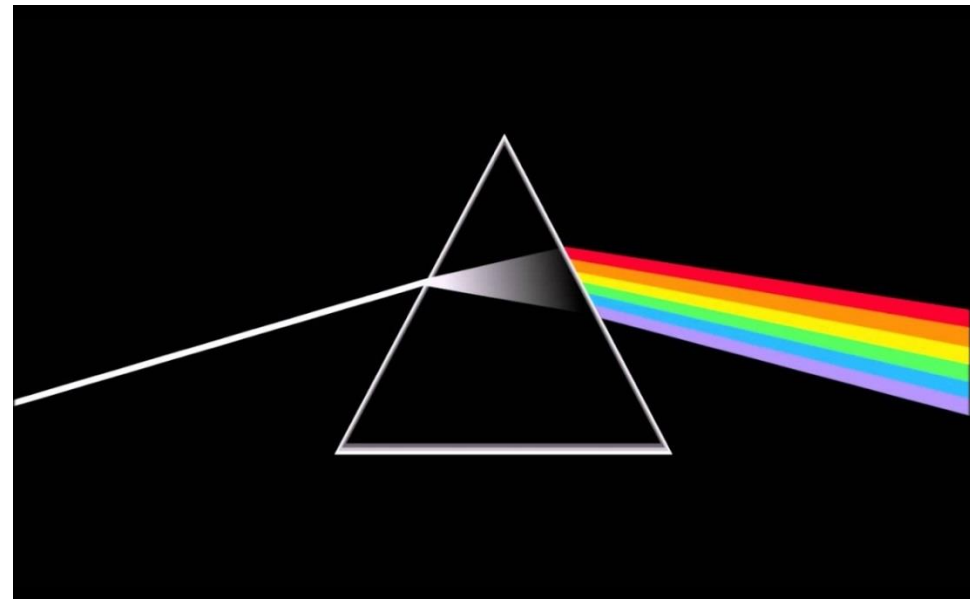
Climate Change & Health: Heatwaves, air
quality, water-borne
illnesses

Health Inequity:
Disparities by income,
geography, gender

Changing landscape of
Global health: Shifting
geopolitics, Reserving
multilateralism, the US
funding cut

Peering into the Future: *Five Mega-Trends Thru 2100*

- Population Change
- Changing Demographics
- Urbanization
- Climate Change
- Transformative Technologies



Source: Carroll, Dennis. *Global Health and Emerging Trends*. 2025. Presented during the Prince Mahidol Award Conference 2025

Success Stories



**ERADICATION OF
SMALLPOX**



**GLOBAL POLIO
ERADICATION
INITIATIVE**



**ACCESS TO
ANTIRETROVIRALS
(ARVS)**



**MRNA VACCINE
TECHNOLOGY
(COVID-19)**

Global Health Organizations

WHO – Global health leadership & emergency response

UNICEF – Child and maternal health

CDC & ECDC – Surveillance and disease control

GAVI, The Vaccine Alliance

MSF (Doctors Without Borders)
– Emergency humanitarian aid

Global Fund for AIDS, TB and Malaria (GF-ATM)

NCD Alliance

The Role of Technology – Digital health



TELEMEDICINE



AI AND HEALTH
DATA MODELING



DRONES FOR
MEDICAL
DELIVERY

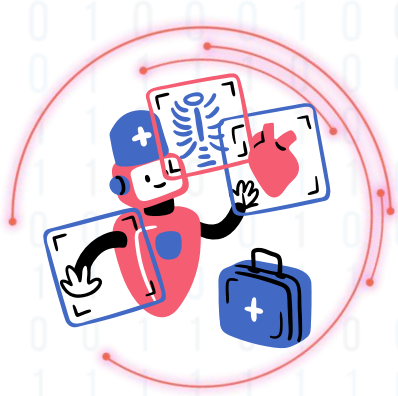


MOBILE HEALTH
(MHEALTH)



GENOMIC
SURVEILLANCE

AI in Healthcare



Machine Learning:
*Neural Networks
and Deep Learning*

Example:

- Precision medicine
- Outcome prediction



Natural Language Processing (NLP)

Example:

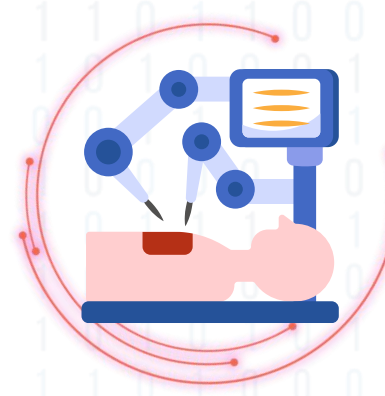
- Diagnosis accuracy



Rule-Based Expert Systems

Example:

- Clinical Decision Support System



Physical Robotic

Example:

- Robotic surgery



Robotic Process Automation (RPA)

Example:

- Patient administrative, billing, scheduling, etc.

Global Health & Equity



**SOCIAL DETERMINANTS OF
HEALTH:** EDUCATION, INCOME,
ENVIRONMENT



CASE STUDY: VACCINE
INEQUITY DURING COVID-19



FOCUS: DECOLONIZING
GLOBAL HEALTH, LOCAL
LEADERSHIP

Every 10 seconds
vaccination saves a life.

Immunization for all is Humanly Possible

- Vaccination has saved 154 millions lives globally in just 50 years
- Working together, we can:
 - Eradicate Polio
 - Eliminate Measles and Rubella
 - Eliminate Hepatitis B and the liver disease it causes
 - Eliminate Cervical Cancer



IMMUNIZATION FOR ALL IMMUNIZATION FOR ALL IMMUNIZATION FOR ALL IMMUNIZATION FOR ALL IMMUNIZATION FOR ALL IMMUNIZATION FOR ALL

HUMANLY POSSIBLE



Looking Ahead – The Future of Global Health

Pandemic
preparedness

Universal
Health
Coverage (UHC)

Climate-
resilient health
systems

Strengthening
local healthcare
infrastructure

Cross-border
collaboration

Call to Action



SUPPORT GLOBAL
HEALTH INITIATIVES



STAY INFORMED AND
ADVOCATE



VOLUNTEER OR
DONATE



PURSUE CAREERS OR
RESEARCH IN
GLOBAL HEALTH



Thank you

Leading Causes of Global Mortality Mortality

2022-2050

B

Leading causes 2022	Leading causes 2050	Mean percentage change in number of deaths	Mean percentage change in all-age death rate	Mean percentage change in age-standardised death rate
1 Ischaemic heart disease	1 Ischaemic heart disease	20.6 (-12.7 to 64)	2.69 (-27 to 44.4)	-44.8 (-64.3 to -15.4)
2 Stroke	2 Stroke	28.5 (7.89 to 51.1)	9.27 (-7.5 to 30.9)	-41.3 (-53.4 to -25.9)
3 COPD	3 COPD	102 (66.1 to 141)	71.8 (40.1 to 113)	-13.7 (-34.3 to 15.6)
4 Lower respiratory infections	4 Alzheimer's disease	173 (124 to 222)	132 (95 to 168)	-3.48 (-5.38 to -1.07)
5 COVID-19	5 Chronic kidney disease	182 (126 to 245)	140 (90.5 to 202)	33.1 (-0.751 to 79)
6 Lung cancer	6 Lower respiratory infections	56.7 (42.3 to 69.5)	33.3 (20.1 to 46.5)	-26.6 (-36.8 to -13.3)
7 Alzheimer's disease	7 Hypertensive heart disease	165 (105 to 232)	126 (74.3 to 192)	17.1 (-16.5 to 61)
8 Neonatal disorders	8 Lung cancer	68.1 (24.5 to 117)	42.7 (8.87 to 80.4)	-17 (-31.9 to 0.776)
9 Diabetes	9 Diabetes	76.2 (43.2 to 115)	49.9 (18.6 to 89.6)	-13.9 (-33.8 to 14.9)
10 Chronic kidney disease	10 Cirrhosis liver	50.7 (34.5 to 67)	28.2 (12.6 to 45.3)	-9.06 (-20.9 to 6.14)
11 Cirrhosis liver	11 Colorectal cancer	103 (41.1 to 177)	72.1 (23.7 to 131)	-3.02 (-24.8 to 23.1)
12 Hypertensive heart disease	12 Falls	113 (82.1 to 146)	81.3 (58.4 to 107)	-5.34 (-10.6 to -0.215)
13 Road injuries	13 Diarrhoeal diseases	30.9 (-0.247 to 68.6)	11.4 (-16.5 to 47.9)	-34 (-54.1 to 0.13)
14 Tuberculosis	14 Road injuries	9.8 (-24.3 to 61.4)	-6.52 (-36.1 to 41.6)	-18.1 (-46.7 to 28.6)
15 Diarrhoeal diseases	15 Pancreatic cancer	140 (72.1 to 219)	104 (50.3 to 169)	18.1 (-6.89 to 46.9)
16 Colorectal cancer	16 Breast cancer	81.8 (36.1 to 137)	54.4 (17.9 to 96.1)	1.42 (-18.9 to 24.8)
17 Stomach cancer	17 Stomach cancer	24.7 (12.6 to 37)	5.99 (-3.94 to 16.1)	-38.1 (-41.6 to -34.4)
18 Falls	18 Atrial fibrillation	229 (177 to 278)	179 (143 to 216)	17.3 (11.9 to 22.5)
19 Self-harm	19 Urinary diseases	203 (176 to 225)	158 (133 to 182)	33.5 (11.4 to 60)
20 Malaria	20 Prostate cancer	145 (86 to 209)	108 (60.6 to 158)	5.51 (-8.93 to 23)
22 Breast cancer	24 Neonatal disorders			
25 Pancreatic cancer	25 Tuberculosis			
27 Prostate cancer	26 Self-harm			
32 Urinary diseases	30 Malaria			
34 Atrial fibrillation	137 COVID-19			

■ Communicable, maternal, neonatal, and nut
■ Non-communicable diseases
■ Injuries



**SCHOOL OF
GLOBAL HEALTH**
 Faculty of Medicine
 Chulalongkorn University