Global Health and Global Health Education

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- I have no disclosures

OBJECTIVES

- What is Global Health?
- Why is it important?
- Who are the major players?
- Where is it now?
- Where are we headed?

What is Global Health?

- Global Health
  - •Attempt to understand and reduce health disparities at home and abroad
  - •Working collaboratively with other communities and countries to improve community health locally and globally
  - •Learning about health issues that transcend geographic borders and commonly present a greater burden to disadvantaged populations

What is Global Health

- “Global Health” stresses “the global commonality of health issues that transcend national boarders, class, race, ethnicity, income or culture.”
- Disease patterns may vary geographically, but the factors that foster disease onset are too often the same across the world
- Rise in non-communicable diseases highlights our “sameness”

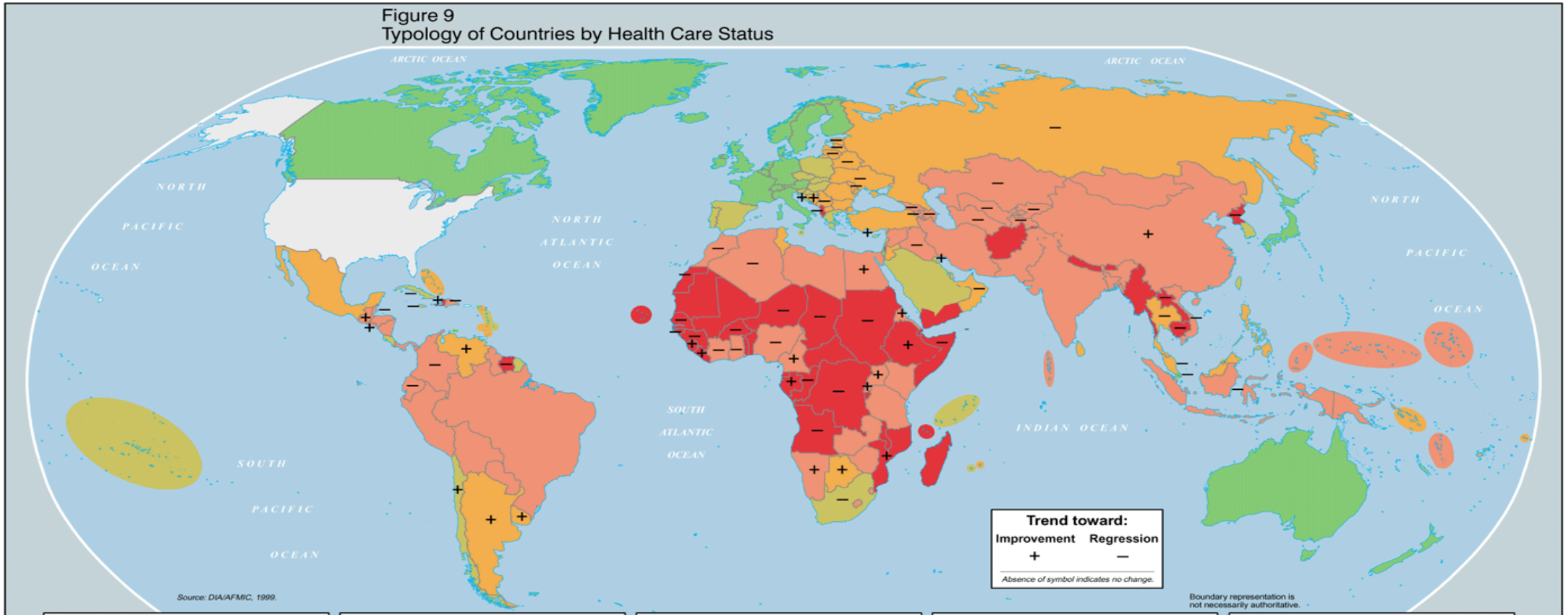
What is Global Health

- Director General Gro Brundtland of the WHO said
  - “in the past, desperate conditions on another continent might cynically be written out of one’s memory. The process of globalization has made such an option impossible. The separation between domestic and ‘global’ health problems is no longer useful”
    - Given April 19, 2001 in New York City
- “Global” emphasizes “sameness”
- “International” emphasizes “differences”

Why is Global Health Important?

- First and foremost, the Globalization of Disease
  - Expansion of rapid travel and trade has increased the transmission and spread of infectious diseases
- Physicians must understand
  - Global burden and epidemiology of disease
  - Disparities and inequities in global health systems

Figure 9
Typology of Countries by Health Care Status



Category 1: Countries with highly developed health care infrastructures*

- National system of epidemiological surveillance, response, and prevention capacity throughout the country.
- High-quality care available to 90-100 percent of the population.
- Modern primary, secondary, and tertiary health care delivery capability.
- Excellent pharmaceutical availability and production capability.
- Budgetary resources present and programmed effectively; high-income economies.
- Health care and public health education are higher national priorities.

Category 2: Countries with developed health care infrastructures*

- National system of epidemiological surveillance, response, and prevention capacity throughout most of the country.
- Medical care available to 70-90 percent of the population.
- Established primary, secondary, and tertiary health care capability.
- Pharmaceuticals generally available to population with adequate production capability.
- Budgetary resources available; upper-middle-income economies.
- Health care is a high national priority.

Category 3: Countries with developing health care infrastructures*

- System of epidemiological surveillance, response, and prevention in developed areas of the country.
- Medical care available to 50-70 percent of the population.
- Primary and secondary health care developing; tertiary care generally available.
- Pharmaceutical availability good in urban areas; limited production capabilities.
- Budgetary resources available; lower-middle-income economies.
- Health care is a national priority.

Category 4: Countries with less-developed health care infrastructures*

- Epidemiological surveillance, response, and prevention concentrated in capital; minimally present in most of the country.
- Medical care available to 40-50 percent of the population.
- Rudimentary primary and secondary health care; tertiary care minimally available.
- Pharmaceutical availability restricted to urban areas; minimally available in rural areas; limited production capabilities.
- Health expenditures dependent upon outside assistance; lower-income economies.
- Health care is a lower national priority.

Category 5: Countries with least-developed health care infrastructures*

- System of epidemiological surveillance, response, and prevention dependent on humanitarian organizations; no domestic capability.
- Medical care available to less than 40 percent of the population.
- Primary, secondary, and tertiary health care provided primarily by humanitarian organizations.
- Pharmaceutical availability dependent upon humanitarian organizations.
- Health expenditures heavily dependent upon outside assistance; lowest-income economies.
- Health care is an extremely low national priority.

***Individual countries within each category do not necessarily conform to all the criteria for that category.**

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Current Actors in Global Health

Millennium Development Goals/Sustainable Development Goals

Did the Millennium Development Goals Succeed?

Did we achieve the Millennium Development Goals (MDGs)?

Our World in Data

Summary of global progress of the United Nations' (UN) Millennium Development Goals (MDGs), which spanned the period 2000-2015. Shown are the Targets of the MDGs*, levels in the baseline year, the final target level and actual achieved level for each Target.

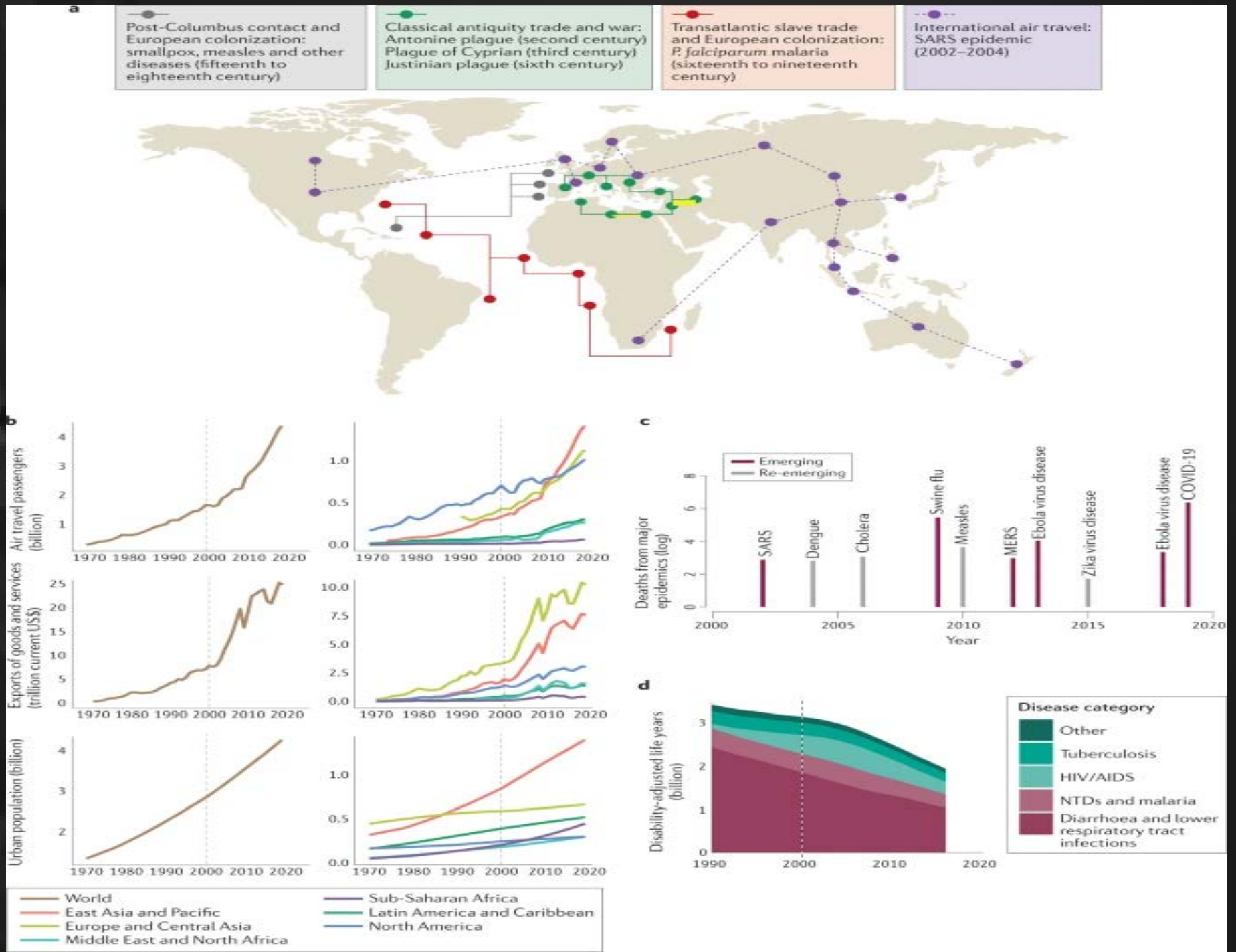
– Achieved Targets are marked in **green**;
– Missed Targets are marked in **red**.

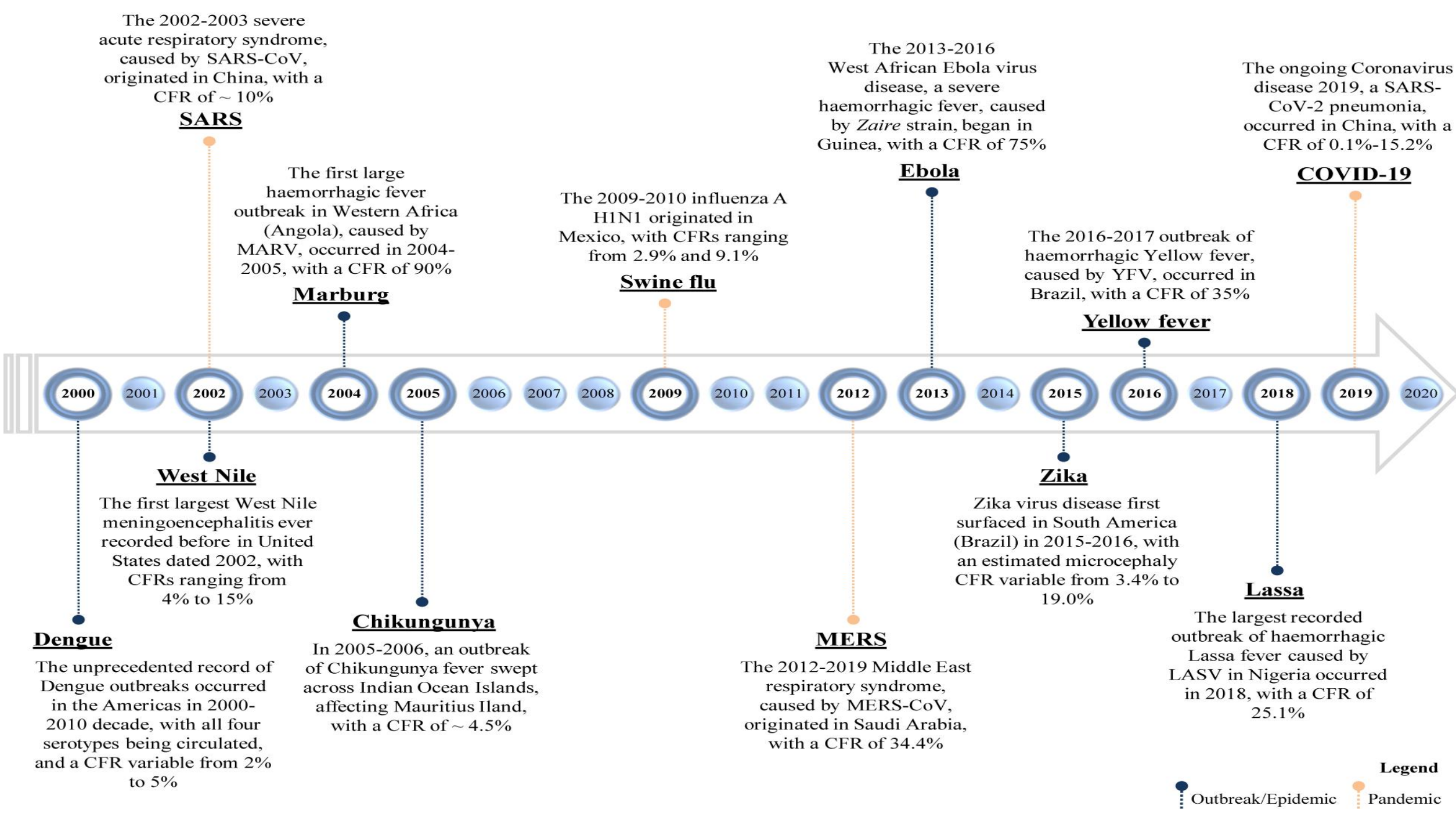
Millennium Development Goal (MDG) Target	Baseline level	Target level	Achieved final level
MDG1.A: halve share of people living in extreme poverty (<$1.25 per day)	47% in developing regions	Reduce to 23.5%	Fell to 14%
MDG1.B: achieve full and productive employment, as well as decent work for all, including young people and women	62% global working-age population in employment	Full (100%)	Fell to 60%
MDG1.C: halve the proportion of individuals suffering from hunger	23.3% in developing regions	Reduce to 11.5%	Fell to 12.9%
MDG2.A: ensure that children universally – including both boys and girls – will be able to complete a full course of primary education	83% in developing regions	Universal (100%)	Increased to 91%
MDG3.A: eliminate gender disparity at all education levels	Developing regions: 0.87 in primary 0.77 in secondary 0.71 in tertiary	Gender parity index (GPI) between 0.97-1.03	Developing regions: 0.98 in primary 0.98 in secondary 1.01 in tertiary
MDG4.A: reduce the under-five mortality rate by two-thirds	90 per 1,000 live births	Reduce to 30 per 1,000	Fell to 43 per 1,000
MDG5.A: reduce the maternal mortality ratio by 75 percent	380 per 100,000 births	Reduce to 95 per 100,000	Fell to 210 per 100,000
MDG5.B: achieve universal access to reproductive health. *Pregnant women receiving adequate antenatal care visits*	35% in developing regions	Universal (100%)	Increased to 52%
MDG5.B: achieve universal access to reproductive health. *Women aged 15 – 49 in marriage/union, using contraceptives*	55% in developing regions	Universal (100%)	Increased to 64%
MDG6.A: halt and have started to reverse the spread of HIV/AIDS	3.5M new cases per year	0 new cases	2.1M new cases per year
MDG6.B: achieve global access to treatment for HIV/AIDS for those who need it by 2010	3% of people with HIV	100% of people with HIV	23% of people with HIV (2010) 45% of people with HIV (2015)
MDG6.C: ceased & started reversal of incidence of malaria & TB. *Incidence of malaria*	158 new cases per 1,000 at risk	Fewer than 158 new cases per 1,000 at risk	Fell to 94 new cases per 1,000 at risk
MDG6.C: ceased & started reversal of incidence of malaria & TB. *Incidence of tuberculosis (TB)*	172 new cases per 100,000 people	Fewer than 172 new cases per 100,000 people	Fell to 142 new cases per 100,000 people
MDG7.A: integrate principles of sustainable development into country policies & reverse loss of environmental resources			Multiple metrics (nearly all deteriorating)
MDG7.B: reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss			Red List Index shows continued biodiversity loss
MDG7.C: halve the proportion of the population without sustainable access to *safe drinking water*	24% without access to improved water source	Reduce to 12% without access	Fell to 9% without access
MDG7.C: halve the proportion of the population without sustainable access to *sanitation*	46% without access to improved sanitation	Reduce to 23% without access	Fell to 32% without access

*MDG8 (Global Partnership) does not have easily quantifiable targets and is therefore not included.

Source: United Nations (UN), the MDG Report (2015) & MDG Monitor.

The data visualization is available at OurWorldinData.org. There you will find further data on this topic.


a
Post-Columbus contact and European colonization: smallpox, measles and other diseases (fifteenth to eighteenth century)
Classical antiquity trade and war: Antonine plague (second century) Plague of Cyprian (third century) Justinian plague (sixth century)
Transatlantic slave trade and European colonization: P. falciparum malaria (sixteenth to nineteenth century)
International air travel: SARS epidemic (2002–2004)
b
Air travel passengers (billion)
Exports of goods and services (trillion current US$)
Urban population (billion)
1970 1980 1990 2000 2010 2020
World
East Asia and Pacific
Europe and Central Asia
Middle East and North Africa
Sub-Saharan Africa
Latin America and Caribbean
North America
c
Emerging
Re-emerging
Deaths from major epidemics (log)
SARS
Dengue
Cholera
Swine flu
Measles
MERS
Ebola virus disease
Zika virus disease
Ebola virus disease
COVID-19
2000 2005 2010 2015 2020
Year
d
Disability-adjusted life years (billion)
1990 2000 2010 2020
Disease category
Other
Tuberculosis
HIV/AIDS
NTDs and malaria
Diarrhoea and lower respiratory tract infections

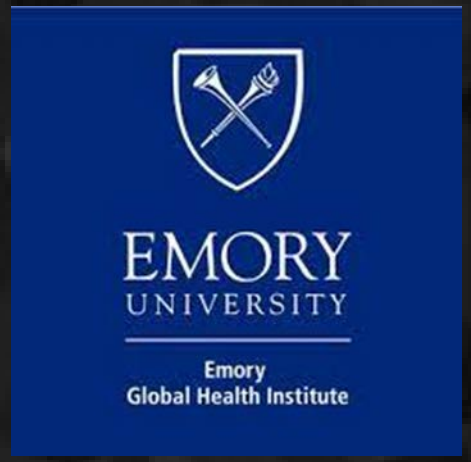

The 2002-2003 severe acute respiratory syndrome, caused by SARS-CoV, originated in China, with a CFR of ~ 10%
SARS
The first large haemorrhagic fever outbreak in Western Africa (Angola), caused by MARV, occurred in 2004-2005, with a CFR of 90%
Marburg
The 2009-2010 influenza A H1N1 originated in Mexico, with CFRs ranging from 2.9% and 9.1%
Swine flu
The 2013-2016 West African Ebola virus disease, a severe haemorrhagic fever, caused by Zaire strain, began in Guinea, with a CFR of 75%
Ebola
The ongoing Coronavirus disease 2019, a SARS-CoV-2 pneumonia, occurred in China, with a CFR of 0.1%-15.2%
COVID-19
The 2016-2017 outbreak of haemorrhagic Yellow fever, caused by YFV, occurred in Brazil, with a CFR of 35%
Yellow fever
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
West Nile
The first largest West Nile meningoencephalitis ever recorded before in United States dated 2002, with CFRs ranging from 4% to 15%
Dengue
The unprecedented record of Dengue outbreaks occurred in the Americas in 2000-2010 decade, with all four serotypes being circulated, and a CFR variable from 2% to 5%
Chikungunya
In 2005-2006, an outbreak of Chikungunya fever swept across Indian Ocean Islands, affecting Mauritius Iland, with a CFR of ~ 4.5%
MERS
The 2012-2019 Middle East respiratory syndrome, caused by MERS-CoV, originated in Saudi Arabia, with a CFR of 34.4%
Zika
Zika virus disease first surfaced in South America (Brazil) in 2015-2016, with an estimated microcephaly CFR variable from 3.4% to 19.0%
Lassa
The largest recorded outbreak of haemorrhagic Lassa fever caused by LASV in Nigeria occurred in 2018, with a CFR of 25.1%
Legend
Outbreak/Epidemic
Pandemic

However

- There are major differences in the number of allopathic global health institutes vs the number of osteopathic institutes

OSU-CHS Trips

Allopathic Universities with Global Health Institutes

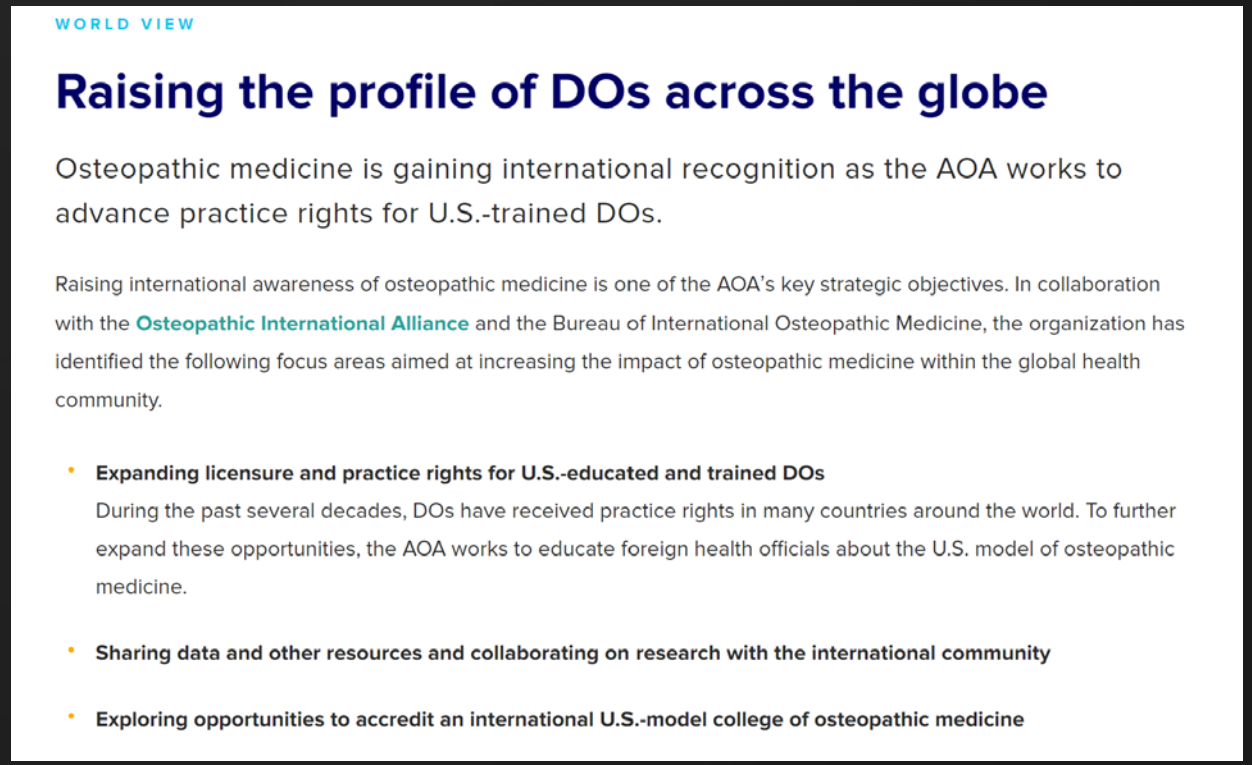


Osteopathic Global Health Institutes

Where do we go from here?

- Implementing more robust global medical educational opportunities will help fulfill OSU's mission of producing quality primary care physicians to serve in rural and underserved communities.

- AOA goals in Global Health



WORLD VIEW

Raising the profile of DOs across the globe

Osteopathic medicine is gaining international recognition as the AOA works to advance practice rights for U.S.-trained DOs.

Raising international awareness of osteopathic medicine is one of the AOA's key strategic objectives. In collaboration with the **Osteopathic International Alliance** and the Bureau of International Osteopathic Medicine, the organization has identified the following focus areas aimed at increasing the impact of osteopathic medicine within the global health community.

- **Expanding licensure and practice rights for U.S.-educated and trained DOs**
  During the past several decades, DOs have received practice rights in many countries around the world. To further expand these opportunities, the AOA works to educate foreign health officials about the U.S. model of osteopathic medicine.
- **Sharing data and other resources and collaborating on research with the international community**
- **Exploring opportunities to accredit an international U.S.-model college of osteopathic medicine**

Majority of Medical Students/Residents Seek Global Health Experiences

- Nearly 80 percent of incoming medical students would like to pursue global learning opportunities during medical school.
- The number of residents looking for global learning opportunities is nearly 66 percent.
- The number of U.S. medical graduates who participated in global health experiences increased from 6 percent in 1984 to 31 percent in 2011.
- Students who have international health experiences report being more culturally competent and are more likely to enter primary care or public service.
- 74% of students who participated in an 8 week international fellowship picked primary care specialties versus 43% of students who did not

Puts Physicians back in underserved America & Oklahoma

- In a survey of residents who participated in international rotations, 100% expressed an ongoing dedication to underserved populations domestically.
- Of students who have completed a global health track:
  - 83% said the experience changed their world view
  - 80% planned to primarily practice in the US and spend some time overseas.

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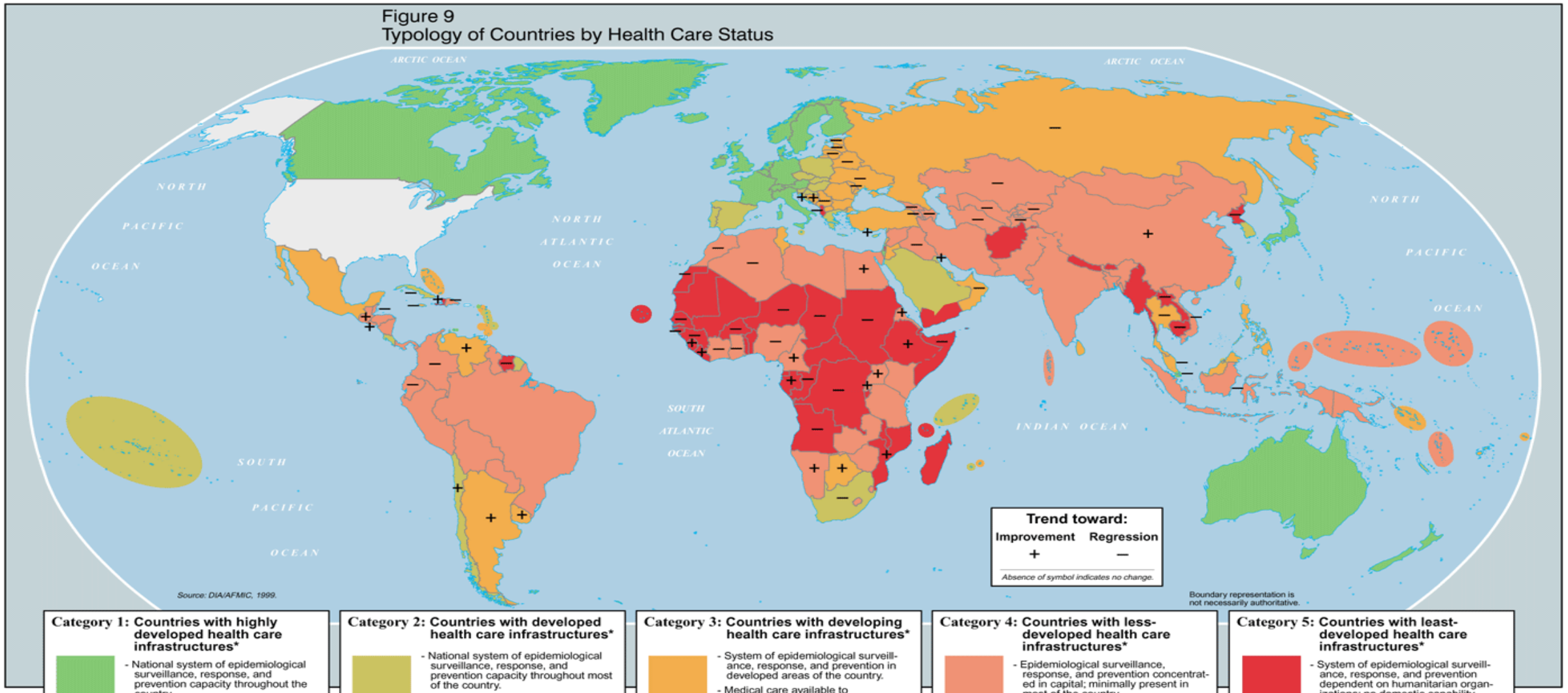

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Current Actions

- OSUMC Emergency Medicine Residency Partnership with Brazilian Emergency Medicine Residency
  - Beginning in the new academic year, July 2023
    - Potential expansion to include internal medicine, family medicine, pediatrics, general surgery, and others

Current Actions

- Expanding opportunities for global health experiences for both years 1/2, and rotations for years 3/4 at OSU-CHS and OSU-CN.

Future Actions

- Create a network of institutional partnerships to increase global health opportunities in research, clinical rotations, and infrastructure building


ANY
QUESTIONS
?

Resources

1. Theodore M. Brown PhD and Marcos Cueto, P. a. (2006). The World Health Organization and the Transition From "International" to "Global" Public Health. *American Journal of Public Health*, 62-72.
2. Allen H. Ramsey, M. (2004). Career Influence of an International Health Experience During Medical School. *Family Medicine*, 412-416.
3. Jaymie A. Henry, M. (2012). The Benefits of International Rotations to Resource-Limited Settings for US Surgery Residents. *Surgery*, 445-454.
4. Jessica Jeffrey, M. (2011). Effects of International Health Electives on Medical Student Learning and Career Choice. *Family Medicine*, 21-28.
5. Paul K. Drain, M. (2009). Global Health Training and International Clinical Rotations During Residency: Current Status, Needs, and Oppotunities. *Academic Medicine*, 320-325.
6. AAMC. (2013, July 15). *AAMC Launches New Global Health Education Initiative to Enhance Opportunities for Medical Students and Faculty Worldwide*. Retrieved from AAMC: https://www.aamc.org/newsroom/newsreleases/349278/071513.html
7. Reece, J., Dionne, C. and Kuprika, T., 2020. Can global health opportunities lead to an increase in primary care physicians?. Journal of Global Health, [online] 10(2). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7688187/#:~:text=Global%20health%20opportunities%20remain%20popular,during%20their%20training%20%5B1%5D.> [Accessed 24 August 2022].
8. Route, B. a. (1994). The Educational Effect of Clinical Rotations in Nonindustrialized Countries. *Family Medicine*.
9. al, E. e. (2001). An International Health/Tropical Medicine Elective . *Academic Medicine*.
10. Jack Chase, M. a. (2011). *Global Health Training in Graduate Medical Education.* San Francisco: Global Health Education Consortium.
11. Culjat, S. a. (1990). An International Health Fellowhsip in Primary Care in the Developing World. *Academic Medicine*.
12. Michael Godkin, P. (2001). The Effect of a Global Multiculturalism Track on Cultural Competence of Preclinical Medical Students. *Family Medicine*, 178-186.
13. Cynthia Haq, M. (2000). New World Views: Preparing Physicians in Training for Global Health Work. *Family Medicine*, 566-572.
14. Bhakti Hansoti, M. a. (2013). Guidelines for Safety of Trainees Rotating Abroad: Consensus Recommendations from the Global Emergency Medicine Academy of the Society for Academic Emergency Medicine, Council of Emergency Medicine Residency Directors, and the EM Residents' Association. *Academic Emergency Medicine*, 413-420.
15. Shannon Galvin, M. (2012). Injuries Occurring in Medical Students During International Medical Rotations. *Family Medicine*, 404-407.
16. https://www.mdgmonitor.org/millennium-development-goals/
17. https://www.imf.org/en/Topics/SDG
18. https://www.frontiersin.org/articles/10.3389/fimmu.2020.02130/full
19. https://www.nature.com/articles/s41579-021-00639-z