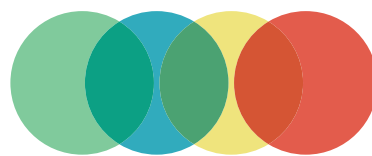**PMAC** PRINCE MAHIDOL AWARD CONFERENCE **2021**

CALL FOR ABSTRACTS

MAKING GLOBAL
MEGATRENDS WORK
FOR GLOBAL HEALTH

IN THE 21ST CENTURY

THE 2021 PMAC THEME "MAKING GLOBAL MEGATRENDS WORK FOR GLOBAL HEALTH IN THE 21ST CENTURY",

aims to take a long view, while also providing an overview, of four complex forces and the interplay between them, that are already reshaping our global health landscape; the relevance of changing geopolitics on global health, implications of key shifts in world population trends, the opportunity gains - and threats – of exponential technological change, and that most urgent of ticking clocks the imminent and evolving threats to global health and wellbeing posed by climate change.

It is not an exhaustive list. But these four trends are among those that have already generated seismic changes in recent years – in breadth and speed -- with implications for global health. Recognizing how the landscape might further evolve in decades to come, highlighting key challenges and likely consequences, will enable the global health community to explore how, where and with which partners to prepare alternatives for a global health vision that is ready for the future.

Climate change is described as the largest global health threat in the 21st century, endangering the last half-century's progress on health in the world. Air pollution prematurely kills approximately 7 million people a year. It is especially dangerous for children. According to the WHO, exposure to toxic air kills some 600,000 children under the age of 15 each year. What are critical elements of adaptation and mitigation that will impact global health and ecosystems?

Population ageing is projected to have a profound effect on societies, underscoring the fiscal and political pressures that health care, old-age pension and social protection systems of many countries are likely to face. By 2050, 80% of all older people will live in low- and middle-income countries. The share of the world's population residing in urban areas is projected to increase to nearly 70% by 2050 -- much of it in Africa and Asia. In the context of migration, unplanned and unsustainable patterns of urban development, how can a better and shared understanding be developed across the life cycle for how people's health and well-being are shaped in all settings, as we witness emerging health hazards, evolving disease burdens and the proportion of NCD-related deaths rising?

The disruptive nature of technology and the speed of technological change are seen as both game changer and spoiler. Even though investment in healthcare technology has doubled since 2015, the benefits remain – for

now – unevenly distributed. The ubiquity of future connectivity and the 'internet of medical things' is starting to allow us to combine big data and artificial intelligence to track and predict outbreaks for greater preparedness, mitigating the future risk of pandemics. However, issues of privacy, mental health, cyberbullying along with fundamental concerns around how fake news and internet trolls distort how individuals view their world, their governments, their electoral processes, their communities and themselves— all raise significant challenges for civil society and public discourse, including on health issues. What are some of the strategic and policy drivers for global health related to these rapid changes in technology?

Global health is inextricably linked with geopolitics in many dimensions. The global challenges facing humanity are transnational in nature and transinstitutional in solution. No single government or international organization or other form of institution acting alone can solve the problems described. The critical role of using global foresight to inform global-scale decision-making systems is vital for global governance to keep up with global interdependence. For instance, access to medical products including medicines, vaccines, and medical devices are affected by patent protection, Free Trade Agreements, where benefits of technology and RandD in advanced high-income countries aren't necessarily distributed for universal benefit. Countries with high economic and political power often play disproportionately critical roles in shaping the global health agenda, not always in the interests of all. This challenge requires the reform of global governance for health, and increased global health capacity in low- and middle-income countries so as to equitably participate in the global health architecture to shape global health directions.

PMAC 2021 aims to convene global thought leaders -- futurists, academics, policy makers and experts -- to take a long view and engage in constructive discussion on these megatrends, to identify solutions on how we can best cope with these common challenges.

CONFERENCE SUB-THEMES
PMAC 2021 WILL HAVE FOUR SUB-THEMES:

1. **Geopolitical Change and Health Systems**
2. **Changes in Population**
3. **Change in Technology**
4. **Climate Change and Environment**
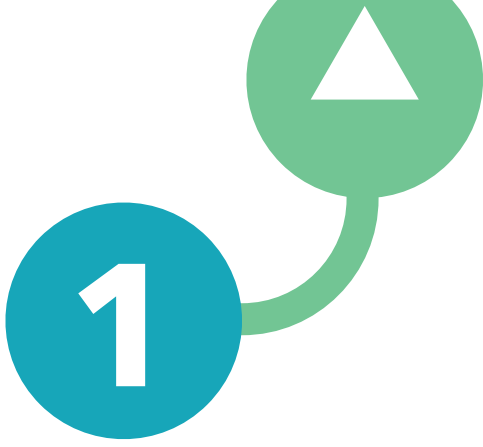
GEOPOLITICAL CHANGE AND HEALTH SYSTEMS

GEOPOLITICS DESCRIBES HOW GEOGRAPHY, ECONOMICS, AND DEMOGRAPHY INFLUENCE THE POLITICS AND FOREIGN POLICIES OF STATES.

The major geopolitical change in recent decades has been the shift from a largely bipolar world (dominated by the state-planned economies centred on the former USSR and its satellite nations, on the one hand, and the liberal market economies centred on the USA and Europe on the other) to a tripolar or multipolar world, with the notable rise of China and its 'belt and road initiative'. Russian influence has waned, while that of other newly industrialized nations or groups of nations (e.g. the BRICS, ASEAN) have increased. India is considered a potential fourth pole of influence.

These shifts in the distributions of political and economic powers amongst countries and regions relate to globalization processes that have been in place since at least the early 1980s. These processes, enabled by trade and investment liberalization agreements led by WTO, increased economic interdependencies

between countries and led to more open trade, the creation of global production chains, less regulated capital markets, and, at times, greater macroeconomic instability, such as with the 2008 global financial crisis and the disruptive austerity responses that followed. Concerns with rising government debt (partly consequent to the crisis) led to new rounds of widespread fiscal austerity replicating many of the requirements of earlier structural adjustment programs led by IMF which have had major negative impacts on health in many European countries, either as conditions on new loans to governments or undertaken voluntarily. Economic and wealth inequalities continue to worsen, alongside climate change and ecological 'overshoot' (where population demand on ecosystem resources exceeds the capacity for resource regeneration), creating critical and devastating impacts on many environmental systems on which human health and life depend. The two phenomena—wealth inequalities and ecological overshoot—are related, and considered drivers of a third major geopolitical phenomenon: unprecedented human migration and displacement, where large scale displacement is also largely due to political conflicts.

The on-again/off-again trade war between the USA and China is becoming a defining geopolitical feature with implications for the economic stability (or instability) of many of the world's countries, and how this might 'trickle down' to affect health, and health systems. Globally, high indebtedness (private and public) is again risking another global financial crisis which is likely to severely constrain health system financing. Although some countries have begun to increase taxation (measured as a proportion of GDP) that could support health and other social protection financing, countries' tax/transfer capacities remain constrained by the hypermobility of capital, continued international tax competition, and a growth in offshore financial centres.

The global scale and implications of recent geopolitical shifts require new partnership approaches to collective governance, at both national and global scales. The equity/sustainability challenges of recent geopolitical shifts are explicit. This requires new platforms for national level governance that are inter- and multi-sectoral on scope; and governance mechanisms at the global level that move beyond a state-centric focus. A key concern is the creation of more equitable governance partnerships, one in which wealth, historic power, and cartel of interests between industries and politics do not crowd out the influence of civil society through increased spaces for civic engagement in decision making and, especially, the voices and concerns of more marginalized populations. This poses new challenges, too, for civil society organizations.

OBJECTIVES

This sub-theme at PMAC 2021 will address some of the critical geopolitical issues that are already (and likely to increasingly) affect population health, health policies, and health equity, with both direct and indirect implications for health systems. The general objective of this sub-theme will be to develop and discuss current evidence on the distribution of key social, commercial, and environmental determinants of health and health equity (e.g. wealth/income distribution, ecological/environmental degradation or pollution, and migratory flows), their structural causes, and their impacts on health equity and global health systems. The sub-theme will have the following specific objectives:

1. Explore how changes in the political and economic power or influence of certain actors (e.g. countries, corporations, individuals, civil society organizations, intergovernmental forums) are affecting health and health equity outcomes, within a context of weakening multilateralism and rising bilateralism and regionalism.

2. Discuss policy options at national, regional, and global scales to enhance positive health outcomes or to prevent or mitigate health harms arising from geopolitical changes via changes in key social, commercial, and environmental health determinants. The focus will be on LMICs and their capacities to prevent or mitigate these changes.

3. Identify effective innovative approaches through regulation and taxation measures at national and global scales that will improve sufficient and equitable financing for social, health, and environmental protection.

4. Review the role of global social movements in influencing health-positive developments through improved linkages between national/sub-national policy agenda-setting and global (intergovernmental, governance) decision-making.

5. Identify and discuss alternatives to the 'growth' imperative that dictates the global economy and that is failing to redistribute resources by need or to ensure environmental sustainability.

2

CHANGES IN POPULATION

ALONG WITH CHANGING POLITICAL, ECONOMIC, AND ENVIRONMENTAL EXTERNALITIES, NEW POPULATION-RELATED ISSUES HAVE EMERGED. THIS BACKGROUND PAPER GIVES AN OVERVIEW OF CURRENT POPULATION-RELATED ISSUES OF DISPARITY IN FERTILITY ACROSS THE WORLD, POPULATION AGEING, MIGRATION, AND URBANIZATION.

EFFECT OF EMERGING POPULATION ISSUES TO GLOBAL HEALTH

The world population has drastically increased from 5.7 billion in 1994 to an estimated 7.7 billion in 2019. According to the 2017 World Population Prospects, the number is expected to reach 11.2 billion in 2100, with the growth being attributed to declining mortality, high fertility rates in some parts of the world and demographic momentum. The world population is currently subjected to mega-trends with a larger, older, more mobile and concentrated population. Notably, these mega-trends place additional pressure on health-care delivery and facilities, as well as on the implementation of the Programme of Action.

FERTILITY DECLINE AND POPULATION AGEING

Characterized by a gradual shift in the age distribution towards older ages, an ageing population arises from this decreasing fertility trend and increased life expectancy. Since the adoption of the Programme of Action, life expectancy at birth has risen from 64.9 years in 1994 to 72.3 in 2019, and it is projected to further rise to 74.3 in 2030.

A result of declining fertility and increased longevity is the so-called global population ageing. The number of older persons (defined as over the age of 60) is expected to increase by 229% in Africa, followed by Latin America and the Caribbean (161%) and Asia (132%) between 2017 and 2050. Today, 125 million people are aged 80 years or older globally. By 2050, there will be almost 120 million living in China alone, and 434 million in this age group worldwide. By 2050, 80% of all older people will live in low- and middle-income countries. An ageing population gives rise to associated challenges: the need to address increased risk of illness and disability, and meet increasing demands for enabling, age-friendly environments. Based on existing, agreed-on global mandates, a collective response requires a life-course approach, as well as a strong primary health care approach for promoting health and preventing disease at all ages, and ensuring the inclusion of health services within Universal Health Care (UHC) – including long-term care at home, in communities and when needed, within institutions – without financial burden.

LIFE-CYCLE/COURSE AND HUMAN CAPITAL

A life-cycle/course approach recognizes the importance of timing and circumstances in understanding causal links between exposures to risk factors and health outcomes across a person's life. Yet there is a need for a better, shared understanding of how people's health and well-being are shaped by multiple factors, and how resilience and risk accumulate across stages of life and generations. The predominant focus on treating single diseases or planning for specific age groups within health systems, rather than addressing person-centered health throughout people's lives, remains an obstacle to operationalizing a comprehensive life course approach and prevents informing policies and interventions on what can be done in each stage of life. Practical rights-based approaches to connect the first and second halves of life-course require an integrated and comprehensive understanding of the broader determinants of health towards optimizing people's capabilities, eliminating discrimination, and improving health equity at all ages and places.

URBANIZATION

Urbanization is a process of global-scale changes in the social and environmental landscape experienced all over the world. Urbanization is a result of population migration from rural areas in addition to natural urban demographic growth. In 2007, the world's population living in towns and cities surpassed 50% for the first time in history and this proportion is still growing. The share of the world's population residing in urban areas is projected to increase from 56% in 2019 to around 68% by 2050. Much of this urbanization will unfold in Africa and Asia, bringing significant social, economic and environmental transformations. The incurred shift in the spatial distribution of the world population must be carefully planned, as a lack of adequate infrastructure poses risks relating to health, economy, and environmental issues, as well as human rights and well-being of populations.
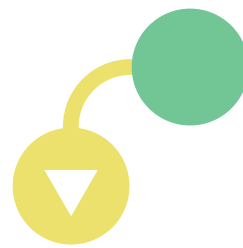
OBJECTIVES

1. To explore solutions to operationalize national commitment to address population change from a rights-based approach

2. To identify life-cycle/course approaches with concrete, evidence-based policy and program implications for different sets of countries

3. To address certain challenges of population dynamics including increased urbanization, aging society and massive migration, and identify practical health system responses

3

CHANGE IN TECHNOLOGY

THE HEALTH SECTOR HAS BEEN STUBBORNLY SLOW TO ADOPT NEW TECHNOLOGY AND CURRENTLY SEES A 10-YEAR TIME LAG COMPARED TO OTHER INDUSTRIES.

In this sub-theme, we'll focus on how changes in technology will impact the achievement of the SDG goals by 2030. We'll look at the opportunities that technology offers which might help us reach these objectives but also the challenges we need to overcome for this to happen.

The evidence on how technology improves health and how it can be practically implemented is limited. Five key factors we'll draw on in this sub-theme which are specific to healthcare and attributed to the low impact and slow adoption are (1) heavy or inefficient sector regulation, (2) risk aversion to trialing new technologies due to safety, (3) payment structures geared to quantity rather than quality of care, (4) fears that new technology will slow clinicians and care delivery down, (5) concerns that it will remove the personal patient element of care.

We will explore public fears and the subsequent regulation over patient data confidentiality and how the potential for commercial exploitation has inhibited adoption in certain countries. Although healthcare organisations lag behind peers in the adoption of new technologies this has had less of an impact on adoption by healthcare consumers - which we will also focus on in both the plenary and parallel sessions. In developed economies, between 50-70% now go online as the first point of health information access but the quality of content is highly variable. Social media is also playing an increasing role in how people gather health information with 60% in HICs and 53% in LMICs engaging with at least one platform.

Investment in healthcare technology is now catching up and has doubled since 2015 to reach $220bn globally per year. Virtually all this investment has been in HICs but it is believed LLMICs provide some of the greatest potential for the impact of technology on health and we propose looking at this in relation to achieving the 2030 SDG goals.

Some of the key factors which provide good opportunities for the use of technology in LLMICs are (1) large populations spread over rural and geographically remote areas (2) a high prevalence of communicable diseases and an increasing prevalence of non-communicable diseases (3) increasing evidence that it can be easier for technology to disrupt and improve healthcare where there is less entrenched or limited infrastructure.

Despite the optimism around the potential impact of technologies to improve health outcomes, most are (and will remain) too expensive and/or not cost-effective for LLMICs. Rather than treatment it is health promotion and prevention, with a particular focus on NCDs, which is seen as a much more viable opportunity for large-scale technology implementation in LLMICs.

Of 174 member countries as part of WHO analysis, 90 (52%) do not have a health technology policy - though this was less (35%) in HICs. With all countries facing limited budgets, escalating healthcare needs and difficult choices between competing technologies it urged Member States to establish national systems of health intervention and technology assessment (HTA) to achieve UHC.

It is important to recognize the impact technology in other sectors has on morbidity and mortality, from seat belts reducing road traffic to bioengineering in farming delivering improved nutrition, but for the purposes of exploring this subtheme effectively we will focus on technology specifically applied in the healthcare setting.
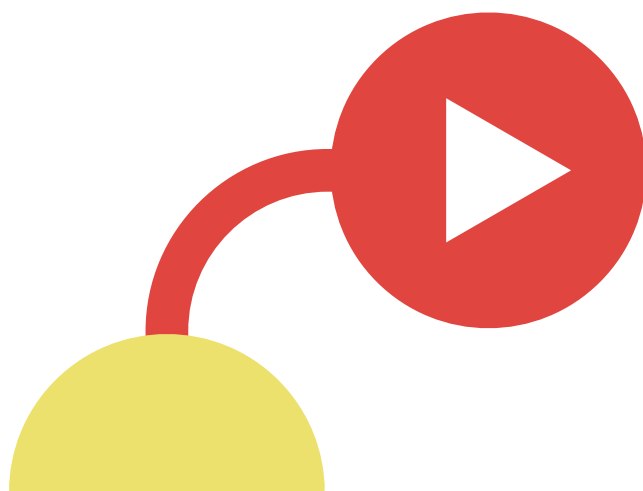
OBJECTIVES

This sub-theme attempts to outline the key changes in technology likely to impact the attainment of the SDG health goals by 2030. There were four areas the working group identified for focus -

1. Addressing the challenges of governments and global health donors in how to lead and empower technological change - including how to approach funding the diffusion of high priority technologies

2. How to ensure the balance of using technology to increase access to health information and interoperability against the need for privacy, security and patient safety

3. Assessing the risk of technology leading to a greater healthcare divide between countries and also within populations

4. How to encourage spread of technology, particularly frugal healthcare ideas, where they won't be driven by market/commercial drivers

5. It is important to note that the focus of discussion will be on the strategic and policy drivers related to the change in technology rather than analysis of specific technologies themselves.

4

CLIMATE CHANGE AND ENVIRONMENT

HEAT WAVES, FLOODING AND DROUGHTS WITH ASSOCIATED WATER SHORTAGES AND CROP FAILURES WILL BECOME MORE FREQUENT AND INTENSE WITH CLIMATE CHANGE AND TROPICAL STORMS MORE SEVERE.

Extreme weather events directly and indirectly affect people's health and well-being, in particular more vulnerable populations, and create both acute challenges for the public health system and the need for long-term adaptation measures within society at large.

Examples of direct effects on health are cardiovascular, respiratory and cerebrovascular mortality and morbidity from heat and injuries and deaths in connection with disaster events. Indirect effects are for example outbreaks of water-, food-, vector-, and rodent-borne diseases in the aftermath of flooding and storms, changes in seasonality and distribution of vector and water-borne diseases, and stress-related mental disorders among people living in disaster prone areas. The role of health systems in relation to climate change and the impact of environment is fundamental.

Preventive as well as treatment strategies must be employed both concerning climate mitigation and adaptation. Current changes in climate impact food security that in turn impacts human life and vitality of health systems that can disrupt core public health infrastructure and health services, where vulnerable groups are the most at risk.

More than one third of the world's population is considered malnourished. The United Nations Millennium Development Goals contributed to a fall in the percentage of undernourished people from 23.3 % in 1990–1992 to 12.9 % in 2014–2016, but >820 million people are still undernourished. Changing dietary patterns that cause micronutrient deficiencies and contribute to overweight and obesity with associated risks of non-communicable diseases are an increasing concern also in low- and middle-income countries. The UN Sustainable Development Goals (SDGs) and the UN Decade of Action on Nutrition 2016–2025 call on all countries and stakeholders to act together to end hunger and prevent all forms of malnutrition by 2030 – a progress that is being jointly monitored by FAO, IFAD, UNICEF, WFP and WHO since 2017 (FAO et al. 2017). Another concern is how to tackle the huge prevailing food waste; smart solutions need to be implemented.

Reduced actions to cause climate change will directly benefit human health and ecosystems. The Paris Agreement, signed in 2016 has set the goal to limit temperature rise to well below 2 degrees across the globe. However, at present, there has been no country that performs well enough in implementing climate change policy to reach the Climate Change Performance Index (CCPI). Yet, there is a glimpse at the end of tunnel, some countries such as India has adopted the National Plan to reduce CO_2 emission and increase use of renewable energy. Some countries have shown signs of promise such as China, though the target is still far away.
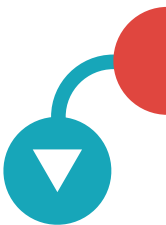
OBJECTIVES

1. To analyze the impacts of climate change on human health and humanity.

2. To unpack the drivers of climate change impacts such as ineffective international instruments e.g. UNFCCC, poor national governance with limited implementation capacities, poor multi-sectoral actions and economic interest.

3. To propose effective health sector and multi-sectoral responses in tackling climate change and negative environmental effects, which encompass technological solutions, good governance and accountability, effective international instruments, behavioural changes and financing mechanisms and monitoring processes and progresses to hold partners accountable, aiming at preserving and promoting healthy lives.

ABSTRACT
GUIDELINES
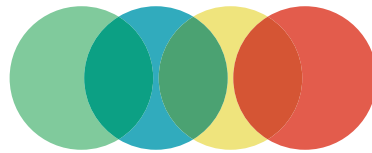
**THE CLOSING DATE
FOR SUBMISSION OF ABSTRACTS IS**

31 MARCH 2020
at 4:00 pm Thailand local time (GMT+7).

All abstracts must be submitted electronically
at the Conference website:

pmaconference.mahidol.ac.th

Please follow the instructions indicated in the online submission system.

The abstract should contain no more than **300 words** that illustrate original research, or experience from the field on the subjects which have never been presented at any international conference.

WE ARE LOOKING FOR ABSTRACTS THAT SHOW:

1) Scientific and technical rigour with sound methodology;

2) Utility in terms of policy relevance and further application;

and 3) strong contribution to the theme and sub-themes.

THE FOUR SUB-THEMES ARE:

1. Geopolitical Change and Health Systems

2. Changes in Population

3. Change in Technology

4. Climate change and environment
Please also state any sub-theme objectives which your abstract specifically addresses.

FUNDING OPPORTUNITY

Funding support for travel and accommodation for presenters, whose abstract is accepted, is available in limited number based on criteria. Priority for funding is given to authors whose abstract has been selected for presentation in the main conference sessions, especially those from government, academics and NGOs of developing countries. The authors who have been granted sponsorship must be able to stay for the whole period of the main conference that is 29 – 31 January 2021. Please indicate in your submission, if you would like to be considered for the available scholarships.

All submitted abstracts will be reviewed by an independent International Scientific Committee. The authors of the accepted abstracts will be invited to participate in the 2021 Conference during 26 - 31 January 2021, either as presenters in the main conference sessions or poster presentations. If accepted to present in the main conference sessions, the author may be required to adjust the scope of their presentation to fit with the session objectives and format.

SUCCESSFUL ABSTRACTS FOR PRESENTATION
Successful abstracts for presentation in the main conference sessions are required to submit a 2,000-word short paper of the selected abstract to be included in the conference documents. The deadline for the submission of the short paper is 1 December 2020.