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The Case for a Global Healthcare Partnership

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Abstract: The COVID-19 pandemic has exposed inadequacies and fault lines in the healthcare ecosystem and the related regulations across the world. Countries are engaged in firefighting to save lives and to make available the essentials needed to meet the local demand. The virus that caused the pandemic has, however, shown the irrelevance of national boundaries and has necessitated a new global approach to adequately address the issues that have arisen since the breakout of the disease. Given this background, this discussion paper builds a case for a 'human-centred global healthcare partnership' based on the 'right to health' and 'health equity'. It then argues for global coordination on research and technology development, healthcare trade facilitation as well as on notifications relating to health and medical emergencies. Such a multi-disciplinary global framework would be crucial to counter the growing protectionism. In addition to helping in achieving the Sustainable Development Goals, it could also strengthen multilateralism and take forward globalisation in an equitable, inclusive and sustainable manner. This paper has included developments on the topic till early-June, 2020.

Keywords: COVID-19, Health Equity, healthcare trade, Right to Health, R&D, SDG, UN, WHO, WTO.

Introduction

The ongoing coronavirus disease (COVID-19) pandemic has placed the focus on public health systems, the related policies and their global interlinkages like never before.

The immediate concern across the world is to find ways to save lives by effectively containing the spread of the virus and ultimately taming it. However, it has become imperative to ensure that 'health' – as defined in the Constitution (1946) of the World Health Organization

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(WHO)[1] (UN, 2008) - is made a fundamental right in all the nations, and achieving 'health equity' is at the core of all national and international interventions.

In this regard, reforms of national and global healthcare systems and institutions through adoption of global best practices are essential, and they should be human-centred. Such policies will not only help people to lead their lives with dignity but also result in economic well-being.

Countries strive hard to ensure that they can draw upon financial and material resources within and outside their territorial jurisdiction to pursue their respective 'national health' objectives. The COVID-19 pandemic has exposed the inadequacies in even the most developed countries that have access to adequate material resources. However, the developed world has the safety net of their financial resources to deal with such challenges. This is a luxury the developing and least developed countries do not have, especially since their growing population is straining their resources that are already inadequate to support the needs of their people (UN, 2019).

This situation calls for international health policy harmonisation, which would require pursuance of health security for all. This universal objective would require the convergence of human resources, skills, material resources, finances and the medical wherewithal on a global scale to guarantee that no nation and no individual is deprived of essential resources and care.

In this regard, this study looks at possible crucial areas of global coordination in healthcare including norms related to notifications on health and medical emergencies, research and technology development and facilitation of healthcare goods and services trade.

With multilateralism facing a grave threat due to the rise in restrictions and barriers since the COVID-19 outbreak, a global framework with a focus on the above-mentioned areas - this paper argues - can go a long way in maintaining and even enhancing ties between nations to take forward the globalisation process in an equitable, inclusive and sustainable manner.

‘Right to Health’ and ‘Health Equity’

There is a growing level of ‘economic and regulatory interdependence between countries’ in today’s world due to globalisation (Jones and Zeitz, 2019). However, for several years now, there have been concerns of developing countries being over-reliant on the developed world’s market and government aid. There have also been apprehensions of the developed world being the main beneficiaries of globalisation. This had led to calls like the one made by South Africa in 1999 for “people-centred development and humane globalisation, characterized by improved living standards for all, which meant eradicating poverty, fulfilling people’s basic needs and actively promoting human rights” (UN, 1999).

Despite such pleas, there has been a general disconnect between ordinary people and the global governance institutions such as the UN, the WTO, the World Bank and the International Monetary Fund (IMF). Bunzl (2006) referred to this disconnect and said it was because people do not feel that these organisations are in their best interests. Bunzl’s work brought out ‘five essential attributes of governance’ : [“(i) ability to exercise binding constraints; (ii) ability to equitably share resources; (iii) ability to integrate trade, society and environment; (iv) ability of citizens to have a direct vote; (v) and citizens’ recognition that compliance is in own interests”] and showed that the above-mentioned global institutions and people largely fail to “display these attributes”. The only exception is the WTO and that too just on one of the five attributes - that is the “ability to exercise binding constraints”.

According to Bunzl: “We are automatically born as citizens who belong to communities of governance, but only up to the national level because there is no governing entity beyond the nation-state capable of defining us as citizens of the world. There is no global political entity to which we automatically belong and which exercises the five key attributes of governance. So, if we accept that having such an entity is in our own interests, we, ordinary people around the world, will have to create it.” Bunzl then proposed ‘people-centred global governance’ with a focus on ‘sustainability’ to ensure “the overall health of the biosphere”.

Such a 'people-centred global governance' system is crucial in the context of global health. In 2015, the WHO had brought out a (draft) 'global strategy on people-centred and integrated health services' for the period between 2016 and 2026. It was aimed at making people "participants as well as beneficiaries of trusted health systems that respond to their needs and preferences in humane and holistic ways."

It then suggested five interdependent strategic directions: "(i) empowering and engaging of people through providing the opportunity, skills and resources; (ii) strengthening governance and accountability by promoting transparency in decision-making and creating robust systems for the collective accountability; (iii) reorienting of the model of care (prioritising primary and community care services); (iv) coordinating services around the needs of people at every level of care; and (v) creation of an enabling environment that brings together the different stakeholders to undertake the transformational change needed" (WHO, 2015a). These were then adopted by the World Health Assembly in 2016 (IPCHS website).

The Tokyo Declaration on Universal Health Coverage (UHC) had also mentioned the importance of '*people-centred*' health services and that of "designing and delivering health services informed by the voices and needs of people." The Declaration referred to the 2017 UHC Global Monitoring Report, according to which: "At least half of the world's population still does not have access to quality essential services to protect and promote health; (and) 800 million people are spending at least 10 per cent of their household budget on out-of-pocket health care expenses, and nearly 100 million people are being pushed into extreme poverty each year due to health care costs." Expressing concern over the "slow" progress, the Declaration called for "greater commitment" to expediting efforts to achieve UHC (WHO, 2017).

The 2030 Agenda for Sustainable Development had taken note of 'global health threats' and had accorded priority to various aspects of health including access to quality healthcare, child health, mental health and sexual and reproductive health care services, ensuring a healthy

workforce and UHC as well as ways to minimise the adverse impacts of chemicals and wastes on human health (UN, 2015). Following this, the UN General Assembly had adopted several resolutions on health and related aspects (See Table 1).

Table 1: UN General Assembly Resolutions

74th Session

Resolution No.	Plenary or Cttee.	Agenda Item No.	Meeting Record/ Date/ Press Release/ Vote	Draft	Topic
A/ RES/74/274	Plen.	123	Adopted through silence procedure 20 April 2020	A/74/L.56 & Add.1	International cooperation to ensure global access to medicines, vaccines and medical equipment to face COVID-19
A/ RES/74/270	Plen.	123	Adopted through silence procedure 2 April 2020	A/74/L.52 & Add.1	Global solidarity to fight COVID-19
A/ RES/74/228	C.2	20 (a)	A/74/PV.52 19 December 2019 GA/12233 134-2-44	A/74/382/ Add.1	Role of the United Nations in promoting development in the context of globalization and interdependence
A/ RES/74/202	C.2	17 (b)	A/74/PV.52 19 December 2019 GA/12233 179-1-0	A/74/379/ Add.2	International financial system and development

Table 1 continued...

Table 1 continued...

A/ RES/74/201	C.2	17 (a)	A/74/PV.52 19 December 2019 GA/12233 176-2-0	A/74/379/ Add.1 DR II	International trade and development
A/ RES/74/200	C.2	17 (a)	A/74/PV.52 19 December 2019 GA/12233 122-2-51	A/74/379/ Add.1 DR I	Unilateral economic measures as a means of political and economic coercion against developing countries
A/ RES/74/118	Plen.	71 (a)	A/74/PV.49 16 December 2019 GA/12229 without a vote	A/74/L.34 & Add.1	Strengthening of the coordination of emergency humanitarian assistance of the United Nations
A/ RES/74/115	Plen.	71 (a)	A/74/PV.49 16 December 2019 GA/12229 without a vote	A/74/L.31 & Add.1	International cooperation on humanitarian assistance in the field of natural disasters, from relief to development
A/ RES/74/20	Plen.	126	A/74/PV.44 11 December 2019 GA/12225 without a vote	A/74/L.26 & Add.1	Global health and foreign policy: an inclusive approach to strengthening health systems
A/RES/74/2	Plen.	126	A/74/PV.14 10 October 2019 GA/12200 without a vote	A/74/L.4	Political Declaration of the High-level Meeting on Universal Health Coverage "Universal health coverage: moving together to build a healthier world"

Table 1 continued...

Table 1 continued...

73rd Session

A/RES/73/132	Plen.	129	A/73/PV.52 13 December 2018 GA/12105 157-2-1	A/73/L.62 & Add.1	Global health and foreign policy: a healthier world through better nutrition
A/RES/73/131	Plen.	129	A/73/PV.52 13 December 2018 GA/12105 without a vote	A/73/L.37	Scope, modalities, format and organization of the high-level meeting on universal health coverage

72nd Session

A/RES/72/139	Plen.	127	A/72/PV.72 12 December 2017 GA/11992 without a vote	A/72/L.28 & Add.1	Global health and foreign policy: addressing the health of the most vulnerable for an inclusive society
A/RES/72/138	Plen.	127	A/72/PV.72 12 December 2017 GA/11992 without a vote	A/72/L.27 & Add.1	International Universal Health Coverage Day

71st Session

A/RES/71/159	Plen.	127	A/71/PV.63 15 December 2016 GA/11877 without a vote	A/71/L.41 & Add.1	Global health and foreign policy: health employment and economic growth

Table 1 continued...

Table 1 continued...

70th Session

A/RES/70/183	Plen.	125	A/70/PV.80 17 December 2015 GA/11745 without a vote	A/70/L.32 & Add.1	Global health and foreign policy: strengthening the management of international health crises
A/RES/70/1	Plen.	15 & 16	A/70/PV.4 25 September 2015 GA/11688 without a vote	A/70/L.1	Transforming our world: the 2030 Agenda for Sustainable Development

Source: Authors' compilation from the UN website on General Assembly Resolutions. The Resolutions mentioned here were selected from the year 2015 onwards after the adoption of the Resolution on the 2030 Agenda for Sustainable Development and on the basis of relevance to the topic.

However, Brolan *et al*. (2017) had shown that "human rights (and the right to health in particular) risks exclusion from the frame of SDG monitoring" due to the "marginalisation" of human rights "from the language and content of the goals and targets".

Under the aegis of WHO, several successful public health measures were taken at the global level including: (i) eradication of smallpox through a WHO-led "12-year global vaccination campaign" (1979); (ii) Global Polio Eradication Initiative 1988; and (iii) the Global Fund to fight AIDS, Tuberculosis and Malaria (2001). Other initiatives include on responsible use of antibiotics, reducing the number of tuberculosis cases, bringing down child mortality, controlling non-communicable diseases including control heart disease, cancer, chronic lung disease and diabetes and responding to the Ebola virus outbreak in West Africa (UN website on health). Besides, the WHO has 'collaborations and partnerships' with the UN and its member states as well as with non-state actors (WHO website on collaborations and partnerships) and 'country cooperation strategies' (WHO website on work with countries).

However, in 2015, a WHO report had referred to a warning by the IHR review committee - constituted by it to assess the response to the

2009 influenza pandemic - that "the world is ill-prepared to respond to any severe, sustained, and threatening public health emergency." The report then cited the then WHO Director General's statement that the Ebola outbreak had "proved that this assessment remains completely accurate" (WHO, 2015).

The COVID-19 pandemic showed that lessons on preparation for pandemics were not learnt by the international community and the global healthcare system, even after the Ebola episode (For a brief timeline of major pandemics and epidemics see Table 2.)

The current situation is in spite of the setting up of major frameworks such as the Global Influenza Surveillance Network (GISN) (1952) – now known as Global Influenza Surveillance and Response System (GISRS; Gavi, the Vaccine Alliance (for greater access to "new and underused vaccines to children in the poorest countries), in 2000; the Global Outbreak Alert and Response Framework (for technical collaboration through existing institutions and networks 'for the rapid identification, confirmation and response to outbreaks of international importance'); and the Pandemic Influenza Preparedness (PIP) Framework (for 'bringing together the WHO, its member states and stakeholders to implement a global approach to pandemic influenza preparedness and response) in 2011.

There are challenges in ensuring effective implementation of the PIP Framework. This is due to certain incidents of non-compliance of the Framework's "obligation on certain national and WHO designated laboratories to share pandemic viruses with fellow laboratories" (Kwan, 2018).

The WHO had warned of more frequent epidemic and pandemic threats that could impact global health security. It had said that the contributory factors to such threats include: '*changes in the environment, biodiversity and human behaviours, growing urbanisation, increased population density, and mass gatherings, military conflicts, displaced populations, weak health systems with inadequate infection prevention*

and control practices and increased antimicrobial resistance (AMR)'.[2] What adds to the complications are factors including "changing contacts between animal species and humans" as well as "globalisation: increasing travel, trade in food and other products, and the increasing ability of infections to move from country to country." Owing to these complexities, the WHO had called for greater *"international collaboration to detect, prevent and control new and recurring epidemics and pandemics"* (WHO, 2015b).

Table 2: Major Pandemics and Epidemics – a brief timeline.

Year	Name	Deaths	Costs (in USD billion)
1334	The Plague	150 million	n/a
1816-1826	Cholera pandemic	>100,000	n/a
1829-1851	Cholera pandemic	>100,000	n/a
1847-1848	Typhus epidemic	>20,000	n/a
1852-1860	Cholera pandemic	1 million	n/a
1881-1896	Cholera pandemic	>9,000	n/a
1889-1890	Flue pandemic	1 million	n/a
1899-1923	Cholera pandemic	>800,000	n/a
1918	"Spanish influenza" A(H1N1)	50–100 million	Less than 5
1957	"Asian influenza" A(H2N2)	1-4 million	8-9
1968	"Hong Kong influenza" A(H3N2)	1 million	n/a
1974	Small pox epidemic of India	15,000	n/a
1976 - ongoing	Ebola	15,230	53 (only for 2014-16) (economic and social impact)
Early 1980s - ongoing	HIV/AIDS	40 million	n/a

Table 2 continued...

Table 2 continued...

2003	SARS-CoV	774	40 (loss in productivity)
2003	H5N1/ avian influenza	455	40
2009	A(H1N1) / Swine flu / influenza	200,000-400,000	45-55
2012	MERS-CoV	858	10
2015	Zika	N/A	18 (estimated)
2019	COVID-19	>400,000	5800-8800 (estimated)

Source: Authors' compilation from WHO, 2015b; Huremović,2019; NHS (UK) website; WHO website on MERS-CoV; Board, 2019; WHO website on influenza; WHO website on Ebola; WHO Ebola situation report; UNDP,2017; Schwarzburg, 2020; Nahal and Ma, 2014; WHO website on COVID-19 situation reports; ADB, 2020.

On health equity, the WHO has issued three information products:'(i) the Health Equity Assessment Toolkit Plus, a software application for countries use their own data to assess inequalities within their territory; (ii) National health inequality monitoring manual designed to help countries find out inequalities by analysing their household survey data with the help of health inequality monitoring tools embedded in their health information systems; and (iii) AccessMod tool for modelling physical accessibility to healthcare and geographical coverage'. According to the WHO, as of February 2018, data for 111 countries has been made available through its Health Equity Monitor (WHO website for 72nd World Health Assembly).

In addition to the existing mechanisms to ensure health equity, there is a proposal for a global healthcare treaty – the Framework Convention on Global Health (FCGH) - with an aim to "achieve global health with justice". According to it, the WHO should lead the global healthcare governance efforts to put concepts such as the 'right to health' and 'health equity' at the heart of global health policy making (Gostin *et al*., 2013; WFPHA website). However, the difficulties include obtaining the required political buy-in and achieving a global consensus for it in a win-win manner for all the stakeholders. Such a global framework could

also meet with opposition from groups promoting alcohol, tobacco and food items as stringent heath regulations could hamper their operations (Gostin *et al*., 2013).

Notwithstanding these issues, a new global healthcare framework that takes into account the dynamics following the COVID-19 outbreak will be crucial to address the hurdles in attaining Sustainable Development Goal 3 on "ensuring healthy lives and promoting well-being for all at all ages" and the targets therein, especially 3.8 as well as 3.9 b, c and d (WTO, 2019a; WHO website) (See Table 3).

Table 3: SDG 3: Ensure Healthy Lives and Promote Well-being for All

Relevant targets	Details
3.8	Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
3.9b	Support R&D of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, providing access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the TRIPS Agreement regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.
3.9c	Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.
3.9d	Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

Source: WHO and WTO.

The COVID-19 epidemic has brought to the forefront the problems of the poor - including even those who had some form of basic health insurance - due to their difficulties in meeting healthcare-related out-of-pocket expenditure. Compounding their health problems are the difficulties the poor have to face due to the loss of their livelihood. A combination of these factors can worsen the health inequity in various regions (Wang and Tang, 2020). Even before the ongoing pandemic broke out, regions like Africa – owing to low income and sub-standard performance in the (UN) Human Development Index – were experiencing health inequity-related problems such as low level of life-expectancy and high under-five mortality rate (Boutayeb, 2020).

Given these challenges, only a 'multi-disciplinary' effort can help address 'health equity' (Liburd *et al*., 2020), since it is a "shared responsibility, requiring the engagement of all sectors of government and all segments of society" (Brown *et al.*,2013).

Such an effort should also take into account the role that traditional medicine plays in meeting the health requirements of the developing world (that face greater challenges on account of health inequity issues vis-à-vis the developed world); especially since a significant number of people in developing countries rely on traditional medicine for their 'primary healthcare needs' (Bodeker and Graz, 2020; Dare *et al.*, 2019; Ayati *et al.*, 2019; Pattnayak *et al.*, 2020).

In addition, there is also a need to evolve new financing mechanisms that take into account the needs of the low-income countries and countries with a sizeable population of poor people (See Box 1).

Notifications on Health and Medical Emergencies

Various global norms including those related to the WHO's International Health Regulations, or IHR (2005), the World Trade Organization (WTO) and the global tax regulation framework have notification and reporting requirements for countries who are party to such pacts. Notwithstanding the costs in complying with these requirements, they lead to greater transparency and accountability. They also help in improved surveillance

Box 1: Financing Mechanisms

Economically weak sections of the society as well as countries with huge population, several informal sectors and inadequate healthcare infrastructure including poor epidemic control systems are the ones that will be affected the most during any global health crisis such as the ongoing COVID-19 pandemic (Delivorias & Scholz,2020; UN, 2020; Al-Fadhli *et al.*, 2018; WHO website on the 73rd World Health Assembly). Therefore, there is a need for mechanisms to ensure that such countries have easy access to emergency financing mechanisms (such as the UN Central Emergency Response Fund or UN CERF that has been in operation since 2006 and has provided 'critical healthcare to 13 million people'; total fund allocations have been around USD 5.5 billion and 104 countries/territories have benefited) (UN CERF website).

Noting that "44 per cent of least developed and other low-income developing countries are at high risk or in debt distress", a UN report has called for prioritising debt restructuring for such countries and debt cancellation for fragile and conflict-affected nations. Recommending additional concessional financing, the report said besides efforts such as the IMF Catastrophe Containment and Relief Trust, there is a need for reducing the cost of remittances (as developing countries rely heavily on such remittances) and greater financial support from developed countries (UN, 2020; Bisong *et al.*, 2020).

According to a 2019 WHO-World Bank report: "Although G7, G20, G77 and regional intergovernmental organization leaders have made a number of commitments to health and preparedness in recent years, follow-through is lacking." Highlighting that "international financing to poorest countries is insufficient, and available funds are not well-utilized," the report suggested that in order to "mitigate the severe economic impacts of a national or regional epidemic and/or a global pandemic", "funding replenishments of the World Bank's next Systematic Country Diagnostics for International Development Association (IDA) credits and grants, Global Fund to Fight AIDS, TB and Malaria (Global Fund) and Gavi should include explicit commitments regarding preparedness." It also recommended that: "Donors, international financing institutions, global funds and philanthropies must increase funding for the poorest and most vulnerable countries through development assistance for health and greater/earlier access to the UN CERF to close financing gaps for their national actions plans for health security as a joint responsibility and a global public good." In addition, there is also a need to strengthen the WHO Contingency Fund for Emergencies and the World Bank Pandemic Emergency Financing Facility (Board, 2019).

that can, in turn, lead to timely multilateral and national risk mitigation measures. However, it is important for countries to increase their spending on improving their digital infrastructure as well as data and information collecting mechanisms (WHO website on IHR; WTO website; OECD website).

Many developing and least developed countries find it difficult to comply with WTO notification requirements because they do not have enough financial resources and adequate number of well-trained officials and resource persons with the needed technical expertise. Even developed countries do not have a 100 per cent compliance rate. This scenario calls for substantial technical and financial help for the developing world to ensure that they comply with such international notification requirements (Kwa and Lunenborg, 2019).

The WTO has also observed that "the lack of compliance with notification obligations across WTO bodies is problematic, as it undermines individual agreements and, more generally, the operation of the multilateral trading system." According to the WTO, the absence of capacity to comply with notification obligations was an important reason for the low level of compliance (WTO, 2019b).

In the context of WHO, requirements under the IHR, 2005 include notification of 'public health emergency events of international concern' as well as providing response to verification of information regarding such events. These requirements were brought into effect because it was found that during the severe acute respiratory syndrome epidemic in China in 2002, "there was delayed notification and under reporting of cases from the national to international level" which, in turn, "may have contributed to preventable transmission of the virus" The common interest of countries to "ensure transparency and timeliness of communication during disease epidemics" led to the revision of IHR in 2005[3] (Suthar *et al.*, 2018).

A WHO report in 2015 had noted that while the IHR are "meant to help countries act more quickly when epidemic threats occur and to

show countries that they need global coordination, with WHO at the centre," many countries "lack the capacity to implement them and remain vulnerable as a result" (WHO, 2015b).

Significantly, the Global Health Security (GHS) Index (*a* 'project of the Nuclear Threat Initiative and the Johns Hopkins Center for Health Security, and developed with The Economist Intelligence Unit), which is the "first comprehensive assessment and benchmarking of health security and related capabilities across the 195 countries party to the IHR, 2005" has found that: "*(i)* National health security is fundamentally weak around the world. No country is fully prepared for epidemics or pandemics, and every country has important gaps to address; (ii) Countries are not prepared for a globally catastrophic biological event; (iii) There is little evidence that most countries have tested important health security capacities or shown that they would be functional in a crisis; (iv) Most countries have not allocated funding from national budgets to fill identified preparedness gaps; (v) More than half of countries face major political and security risks that could undermine national capability to counter biological threats; (vi) Most countries lack foundational health systems capacities vital for epidemic and pandemic response; (vii) Coordination and training are inadequate among veterinary, wildlife, and public health professionals and policymakers; and (viii) Improving country compliance with international health and security norms is essential" (GHS Index website / 2019 GHS Index).

There have been 'widespread non-compliance' of IHR norms and delays in countries complying with requirements such as 'developing and maintaining core capacities' for preventing and containing outbreaks at their very source. What was not helping was the fact that the WHO does not have any teeth to ensure compliance and that the IHR itself has little incentives for countries to comply with the norms. These inadequacies have necessitated urgent political commitment for global healthcare governance reforms through: (i) development of a health dispute settlement mechanism (or using the WTO dispute settlement mechanism for healthcare disputes as well); (ii) a new global healthcare financing

mechanism; (iii) harmonisation of various assessment mechanisms; and (iv) greater collaboration with other international organizations such as Food and Agricultural Organization of the UN (FAO), the World Organization for Animal Health (OIE) and the WTO (Gostin and Katz, 2016).

There are also allegations about countries "breaking" IHR norms. Referring to Article 43 of the IHR (2005) (on the obligation of a State Party imposing 'additional health measures' significantly interfering with international traffic, to inform the WHO within 48 hours about the same; and regarding its WHO review), a Shanghai Institute for International Studies (SIIS) report alleged "in practice, many countries broke the rules and imposed travel restrictions on China without informing the WHO during the current corona virus outbreak." The report also alleged that "in addition, without an evidence-based risk assessment, three cruise ships were delayed port clearance or denied entry to ports, which is a violation of the principle of *free pratique*[4] for ships and the principle of proper care for all travellers" (SIIS, 2020).

Referring to the 'travel restrictions' imposed by countries against China during COVID-19 'in violation' of IHR, another study by 16 global health scholars concluded that such curbs violated the IHR as they were not backed by scientific principles/evidence or WHO. The study (which cited WHO's recommendation against travel and trade restrictions) also found that a majority of these countries imposing curbs further violated IHR by not reporting their 'additional health measures' to WHO – thereby frustrating "WHO's ability to coordinate the world's response to public health emergencies" and preventing "countries from holding each other accountable for their obligations under the IHR". According to the study, there were imperfections in IHR as the norms "governs countries, not corporations and other non-governmental actors" (This meant that "some countries are finding themselves with de-facto travel restrictions when airlines stop flying to places affected by COVID-19"). Also, the study found that the IHR "does not have robust accountability mechanisms for compliance, enforcement, oversight, and transparency" (Habibi *et al*.,

2020). These factors will have to be considered when efforts are made to revise or frame new global health regulations as well as during discussion of measures to monitor and evaluate their compliance.

Research and Technology Development

In today's world, risks and threats emanating from incidents such as climate action failures, natural and man-made disasters, terrorist and cyber-attacks, inter-state conflicts, global governance failures, financial and fiscal crises, commodity shocks, involuntary migration as well as health, water and food crises can potentially spread across the world (WEF, 2020). This calls for a rapid increase in global collaborations in research and technology development to find out common solutions, address these concerns through coordinated policy actions, mitigate risks and ensure greater international security. However, this will require greater mobility of researchers across borders as well as pooling of financial, technological and natural resources (Boekholt *et al.*, 2009).

In this regard, the 11 principles developed by KFPE (or the Swiss Commission for Research Partnership with Developing Countries) in 1998 on transboundary research partnerships can be considered. These include: (i) Decide on the objectives together; (ii) Build up mutual trust; (iii) Share information; develop networks; (iv) Share responsibility; (v) Create transparency; (vi) Monitor and evaluate the collaboration; (vii) Disseminate the results; (viii) Apply the results; (ix) Share profits equitably; (x) Increase research capacity; and (xi) Build on the achievements (KFPE, 1998).

These were then updated in 2012 and have since evolved into: (i) Set agenda together; (ii) Interact with stakeholders; (iii) Clarify responsibilities; (iv) Account to beneficiaries; (v) Promote mutual learning; (vi) Enhance capacities; (vii) Share data and networks; (viii) Disseminate results; (ix) Pool profit and merits; (x) Apply results; and (xi) Secure outcomes (Swiss Academy of Sciences, 2018).

The KFPE Principles were aimed at boosting North-South research collaborations. In the current context of an increase in risks that have the

potent to impact the entire global community, such initiatives can be taken up at the international level for further discussions to develop principles for global research and technology development partnerships. However, the disparity between the developed and developing countries on research spending will have to be taken into account in any collaborative exercise.

Practical experience showed that seven key problem areas (or questions) can crop up during the implementation of the 11 principles. These questions and responses to them (in brackets) are as follows: (i) the reasons to work in partnership (because partnerships 'add value, result in win-win outcomes and is a necessity due to the global nature of issues); (ii) ways to ensure cohesion (by identifying factors that hamper cohesion including divergent agendas and formulating strategies to address them); (iii) the types of collaboration (through projects, networks, programmes and alliances); (iv) areas of focus and priorities ('research', 'impact' and 'capacity building'); (v) the kind of stakeholders to involve (beneficiaries, donors, intermediaries and peers); (vi) ensuring relevance (through knowledge creation and 'social embedment' of new technologies and solutions); and (vii) making sure that outputs are consolidated into outcomes and that they lead to institutional consolidation as well as greater capacities through rightly timed interdisciplinary interactions on outputs (KFPE, 2017; 11principles.org website; Swiss Academy of Sciences, 2018).

There is also an initiative by the European Union to promote 'Responsible Research and Innovation (RRI) in academia, research and research performing organisations (RPO)' through six pillars: (i) Ethics; (ii) Gender equality; (iii) Open access and data; (iv) Science education; (v) Public engagement; and (vi) Governance (RRING website).

The WHO, on its part, has a global strategy and preparedness plan called the R&D Blueprint that "allows the rapid activation of research and development activities during epidemics." The Blueprint was developed following the Ebola epidemic. Armed with a list of identified priority diseases, the Blueprint creates an 'R&D roadmap' and 'target product profiles' and uses them "to guide the response to outbreaks

in both urgent action and in developing ways to improve the global response for future epidemics". The partners of this initiative include the Coalition for Epidemic Preparedness Innovations (CEPI) and the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R - an 'international network of research funding organizations'). There is also a focus on 'quick activation' of financing sources, expanding the scope of R&D (to 'better understand' the disease and animal models and to improve Personal Protective Equipment) in addition to "expediting vaccine clinical trials, drug testing and data sharing" and developing 'community engagement plans' right at the initial stage itself. The Blueprint was tested during the Zika virus outbreak (WHO website on R&D Blueprint). The Blueprint then 'built on the response' to SARS-CoV (Severe Acute Respiratory Syndrome-Coronavirus) as well as MERS-CoV (Middle East Respiratory Syndrome-Coronavirus), and "facilitated a coordinated and accelerated response to COVID-19, including an unprecedented program to develop a vaccine, research into potential pharmaceutical treatments and strengthened channels for information sharing between countries" (WHO website on R&D Blueprint and COVID-19).

It is also important to facilitate greater investments into collaborative efforts on dynamic disease surveillance as well as monitoring of epidemic readiness of countries.

What can be looked into in this regard are initiatives such as: (i) Program for Monitoring Emerging Diseases (or ProMED - a program of the International Society for Infectious Diseases – that was the "first to report on numerous major and minor disease outbreaks including SARS, MERS, Ebola, the early spread of Zika and many others") and its HealthMap (disease surveillance); (ii) Global Health Security Agenda (effort of international organisations, NGOs and private sector companies and 67 countries for "facilitating multisectoral collaboration on health security capacity building and IHR 2005 implementation"); (iii) the WHO Joint External Evaluation Alliance (looking into epidemic readiness); and (iv) the Global Health Security (GHS) Index (Bloom *et al.*, 2018; websites of ProMED, HealthMap, alliancehsc, GHSA and GHSIndex).

As part of efforts to "promote research availability and transparency", there is a WHO International Clinical Trials Registry Platform(ICTRP) that facilitates the "prospective registration of the WHO Trial Registration Data Set on all clinical trials, and the public accessibility of that information". The ICTRP's mission to "ensure that a complete view of research is accessible to all those involved in health care decision making." The number of registered clinical trials per year has gone up from 2190 to 60,690. Overall, there are around 600,000 records of clinical trials. The number of COVID-19 trials have also seen a surge from 27 on February 3, 2020 to 2369 on May 11, 2020 (WHO website on ICTRP; Karam and Ross, 2020).

Another important WHO initiative is the Global Observatory on Health R&D for providing "centralised and comprehensive information and analyses on global health R&D activities for human diseases". It has crucial information on 'gaps and inequalities'. For instance, "in Singapore, there are an estimated 1140 health research workers per million inhabitants, compared to just 0.2 in Zimbabwe." Also, the number of health researchers in high-income countries are 73 times more than that in low-income countries. Another striking finding is that regarding the under-representation of women health researchers in low income countries. "While the average number of female researchers in high income countries is approximately 51 per cent, this drops to just 27 per cent in low income countries," according to the Observatory. It also found that only a minuscule "1 per cent of all funding for health R&D is allocated to diseases such as malaria and tuberculosis, despite these diseases accounting for more than 12.5 per cent of the global burden of disease" (WHO website on Global Observatory on Health R&D).

In the private sector, there are examples of companies trying novel initiatives such as 'open collaboration' models with external partners for their research and development programmes (Idelchik and Kogan, 2012). Learnings from such initiatives should also be incorporated in global efforts to develop principles for collaborations on research and technology development.

Given the importance accorded to traditional medicine system in developing countries, it is important to consider international research collaborations in this area.

The factors helping bring momentum in this regard are: (i) the WHO 'general guidelines for methodologies on research and evaluation of traditional medicine' (WHO, 2000); (ii) the WHO Collaborating Centres for Traditional Medicine in the US, Europe, South-East Asia and Western Pacific regions (WHO website on Collaborating Centres for Traditional Medicine); (iii) and the International Regulatory Cooperation for Herbal Medicines (IRCH) 'becoming a WHO network' (WHO website on traditional, complementary and integrative medicine).

The role played by traditional medicine during the severe acute respiratory syndrome (SARS) episode in China and HIV treatment in Africa should also be looked at in this regard, including from the perspective of the challenges such as those related to ethics (Tilburt and Kaptchuk, 2008).

Post the outbreak of the COVID-19 pandemic, the UN General Assembly approved a resolution to "*encourage Member States to work in partnership with all relevant stakeholders to increase research and development funding for vaccines and medicines, leverage digital technologies, and strengthen scientific international cooperation necessary to combat COVID-19 and to bolster coordination, including with the private sector, towards rapid development, manufacturing and distribution of diagnostics, antiviral medicines, personal protective equipment and vaccines, adhering to the objectives of efficacy, safety, equity, accessibility, and affordability*" (UNGA, 2020; Health Policy Watch, 2020).

Reflecting the growing interest in the scientific community to think beyond their national tags to take on global problems, there is now evidence to show that scientific international collaborations have been increasing and that the scientific system is being globalised.

Scientific research papers with international co-authors have grown from just 10.7 per cent (or 136,483 papers) of the total scientific output in 2000 to 21.3 per cent (or 418,866 papers) in 2015. There are also more countries in this network as the number of countries has grown from 174 in 2000 to 200 in 2015. The leading countries from where researchers are forming links with their counterparts in other countries are the US, England, Germany and China (Ribeiro *et al.*, 2018; Chawla, 2018).

However, it is important to ensure smooth mobility of researchers to strengthen such collaborations (Chinchilla-Rodríguez *et al*., 2018) and in this regard grants and framework programmes that are global in nature can help. Such arrangements also need to be democratised to ensure equitable treatment so that developing countries are not forced to play second fiddle to developed nations with financial resources.

Parker and Kingori (2016) identified crucial factors that researchers consider while taking decisions on international collaborations. They include: "(i) Active involvement in cutting-edge, interesting science; (ii) Effective Leadership; (iii) Competence in and commitment to good scientific practice; (iv) Capacity building; (v) Respect for the needs, interests and agendas of all partners; (vi) Opportunities for discussion and disagreement; (vii) Trust and confidence; and (viii) Justice and fairness in collaboration." The factors influencing their decision on whether to join international research collaboration include "access to technologies, expertise, and sources of funding". The concerns of health researchers entering into such collaborations were "scientific, social, political and ethical" in nature. When one or more of these factors are not addressed, researchers from developing countries, on several occasions, have decided against collaborations with their counterparts in the developed world. An increase in such decisions against international collaborations will not help in addressing risks that are global in nature because international collaborations will need researchers with ground-level knowledge and expertise. Therefore, all the above-mentioned factors should also be taken into account while codifying global principles on 'multi-sectoral and interdisciplinary' international/cross-border research and technology development collaborations aimed at addressing global risks.

Access to Healthcare Products and Services

In the backdrop of the ongoing COVID-19 pandemic, several countries are ramping up production of essentials including medicines and medical items as well as their intermediaries to meet local demand.

A list compiled by the World Trade Organization (WTO) on 'trade and trade-related measures' taken by its member countries in the wake of COVID-19 crisis has revealed that many countries have imposed temporary export curbs and/or bans to ensure that there is no domestic shortage of such products.

The countries that are in need of such items - owing to their inadequate production capacity and insufficient resources - have for the time being eliminated import tariffs, removed import licensing conditions and/or suspended anti-dumping duties. They have also temporarily waived internal taxes like VAT and sales tax and/or extended deadlines to pay import duties, among other measures, the WTO list compiled from official sources showed.

The WTO norms give sufficient elbow room for its member countries to bring out these measures, provided that they are temporary in nature, aimed at addressing 'critical shortages' of 'essential items', and/or are meant to safeguard public health and welfare as well as to protect national security. The countries should also ensure that such measures do not discriminate between WTO members and are not taken in a veiled manner to curb international trade.

The stakes are high given that the overall medical products trade (exports and imports) are worth a whopping USD 2 trillion, according to the WTO, which also has pointed out that "trade of products described as critical and in severe shortage in COVID-19 crisis totalled about USD 597 billion." The main concern is the average tariff of 11.5 per cent (and around 27 per cent in some countries) on protective supplies used to combat COVID-19 (WTO, 2020).

On the services side, though there is a "rapid" increase in the growth of health services trade (at 11 per cent annually since 2005), the sector

still accounts for a minuscule share (at just 0.4 per cent in 2017) of the overall global services trade (both exports and imports), the WTO data has shown. In value terms, health services trade in 2017 were around USD 54 billion.

While developed countries are currently the major health service traders (accounting for over 72 per cent of the trade), developing economies are looking to improve their share by providing specialised services such as dentistry and cosmetic treatments at competitive prices. The future could see advances in telemedicine - or medical diagnostics and treatments done remotely using technologies such as robotics, Artificial Intelligence, Big Data and 5G (WTO, 2019a). However, without a harmonised regulatory framework, including on standards and licensing, such advances in technology may not become accessible to many.

Pandemic presents opportunities for health-related sub-sectors including pharmaceuticals and healthcare, Personal and Protective Equipment (PPE), clinical sanitation and life sciences and diagnostic tools (Nahal and Ma, 2014). However, it also leads reduced productivity due to production disruption, labour mobility impairment, traffic / travel restrictions, lower investment and lesser consumption; as well as higher trade costs and lesser trade (ADB, 2020).

Given the positive and negative effects of international trade on public health, there are already WTO agreements in this regard (See Table 4). These pacts ensure that trade in general as well as in healthcare goods and services is in compliance with the WTO principles that prevent discrimination. These principles include the 'Most Favoured Nation' (MFN) treatment to make sure that countries do not discriminate between their trading partners; and 'national treatment' on ensuring equal treatment of national and foreign products within the territory of Member countries.

Table 4: WTO Agreements relating to health

Name of the WTO Agreement	Objective (to be read in the context of healthcare trade)
Agreement on the Application of Sanitary and Phytosanitary Measures (SPS)	To take measures to restrict trade for ensuring food safety as well as animal and plant health.
Agreement on Technical Barriers to Trade (TBT)	To bring out measures to protect public health, environment and security but in a manner that do not unnecessarily hamper international trade.
Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)	To ensure effective access to essential and life-saving medicines at affordable prices including through measures such as grant of compulsory licences during times of public health crises and national emergency.
General Agreement on Tariffs and Trade (GATT)	For tariff reductions including on healthcare items.
General Agreement on Trade in Services (GATS)	Commitments from the WTO members including from the developing world on healthcare services such as nursing and midwifery, hospital-related, dental and medical and a few 'other' services
Trade Facilitation Agreement	For easing the 'movement, release and clearance of goods including the items in transit'.
Agreement on Agriculture	Various measures to support domestic farm sector to ensure food sovereignty. These include price support, subsidies, quotas and import controls.
Agreement on Subsidies and Countervailing Duties (SCM)	To enable countries to charge countervailing duty on subsidised imports found to be harming local producers
Anti-Dumping Agreement (Implementation of Article VI of the GATT)	For protection from dumping

Table 4 continued...

Table 4 continued...

Agreement on Safeguards (Article XIX of GATT)	Emergency actions that can be taken against an import surge that caused or threatens to cause serious injury to local producers
Agreement on Trade-Related Investment Measures (TRIMs)	To maintain balance of payments, countries can temporarily impose curbs on the items that the foreign investor is looking to import in connection with manufacturing.
Plurilateral Government Procurement Agreement (GPA)	Opens up public procurement market including those related to healthcare to foreign suppliers.
Plurilateral sectoral Agreement on Pharmaceutical Products ("Pharma Agreement")	Liberalisation of global medical products trade
Expansion of the Information Technology Agreement	Since the pact covers technology-intensive medical equipment as well, it would further open up of trade in those items and bring down their costs.

Source: Authors' compilation from WTO and Labonte & Sanger(2006a and b.*)*

An important initiative in the WTO in 1994 was a sectoral agreement among some members to eliminate tariffs on Pharmaceutical Products at the time of the Uruguay Round of negotiations at the WTO. The benefits were shared on an MFN basis. (WTO, 1994; Durkin and Calder, 2020).

A few WTO member countries had, in 2006, proposed reduction or elimination of tariffs and non-tariff barriers on several health-related items[5].The proposal on 'open access to enhanced healthcare', made in connection with the Doha Round talks on industrial goods (non-agricultural market access or NAMA), is still on the discussion table at the WTO(CRS, 2020; WTO, 2020).

The WTO has described health services as "one of the least-committed sectors". Health and social services, as per the WTO, "is the only major sector where no negotiating proposal and no collective request have been tabled" since the services negotiations started in January 2000 (WTO website on health and social services).

Outside of the WTO too there are various regulations and agreements on global health (See Table 5).

A study by Hoffman and Røttingen (2015) on global health treaties, including the WTO's SPS agreement, found that these pacts "consistently succeed in shaping economic matters and consistently fail in achieving social progress (including improved health status)." The study then recommended the designing of new global health treaties for achieving positive outcomes.

Table 5: Global Health Treaties

Name	Year(s)
International Sanitary Conventions	1892, 1893, 1894, 1897, 1903, 1912, 1926, 1938, 1944, 1944, 1946
Brussels Agreement for Free Treatment of Venereal Disease in Merchant Seamen	1924
International Convention for Mutual Protection Against Dengue Fever	1934
International Sanitary Convention for Aerial Navigation	1933, 1934
Constitution of the World Health Organization	1946
International Sanitary Regulations	1951
International Health Regulations	1969
Biological Weapons Convention	1972
Basel Convention on Transboundary Movements of Hazardous Wastes and Their Disposal	1989
Chemical Weapons Convention	1993
World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures	1994
Convention on the Prohibition of Anti-Personnel Mines and Their Destruction	1997
Rotterdam Convention on Hazardous Chemicals and Pesticides in International Trade	1998
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2000

Table 5 continued...

Table 5 continued...

Stockholm Convention on Persistent Organic Pollutants	2001
World Health Organization Framework Convention on Tobacco Control	2003
International Health Regulations	2005
Minamata Convention on Mercury	2013

Source: Hoffman and Røttingen, 2015.

Delany *et al*. (2018) had found that "treaty processes, content, and contexts" in the extant international law frameworks on 'trade and economic development' needs to be changed substantially to effectively meet public health goals including those related to the UN SDGs. The study also showed that the prevailing trade and investment agreements have "adverse health implications". In this regard, there was a need to firm up 'model treaties' to achieve better outcomes, the study said.

To prevent a rerun of the current chaos due to the absence of a well-regulated, transparent, harmonised and efficient global healthcare network, all countries need to find gaps in their healthcare ecosystem - including in production and supply of goods, and delivery of services - and fix them at a national and global level.

This will first require a coordinated approach nationally as various aspects of healthcare fall under the jurisdiction of different ministries and departments including health and family welfare, commerce and industry, finance, home and national security.

Internationally, similarly there has to be a renewed coordination between various agencies such as the WHO, the FAO, the OIE, the WTO, the UN, the World Customs Organization, the World Intellectual Property Organization and International Telecommunication Union. This can then ensure a smooth flow of healthcare products and services, and with minimum disruptions, including during the time of an international public health emergency like this.

An important point to be noted is the low share of developing countries and least developed countries in the overall global trade in health-related products and services. These countries accounted for

only a fifth of the exports in such products and 30 per cent of imports. However, 85 per cent of the global population lives in these countries (WTO website on medical technologies).

Developing economies need to spend more on skill development in the healthcare-related manufacturing and services. Only such a strategy can help them reap the benefits. In this regard, they should look at the example of gains they have made in the nursing profession. Many skilled nursing professionals, especially women, from developing countries moved to the developed economies to offer their services due to the shortage of such workers there. Such gains can be made in other healthcare segments as well, provided there is a focus on skilling.

However, in this regard, it will be important for the developing country members to lead the efforts at the WTO to get a global commitment on easing norms related to movement of healthcare professionals and skilled workers related to the sector. Mutual Recognition Agreements on educational qualifications, standards and certifications will enable greater cross-border movement of healthcare workers and skilled workers in the related fields such as IT/ITeS as well and help address issues such as shortage of skilled workers in the sector across the world. This will also indirectly boost medical tourism and telemedicine.

Restrictions relating to commercial presence of healthcare centres overseas should also be given a relook so as to enable the setting up of foreign-owned private hospitals that can in turn complement services provided by state-run healthcare centres. Such a move can boost Foreign Direct Investment and cross-border collaborative efforts. It will also, in turn, help in transfer of technology and best practices in healthcare management as well as upgradation of skills and standards.

However, care must be taken to ensure that such moves do not result in privatising public health resources in a stealthy manner and lead to undesirable outcomes such as the poor being unable to access healthcare due to an increase in costs. Such a pact should also have provisions to address the competition policy concerns – that of healthcare monopolies abusing their dominance.

The major demand for health services already is from the elderly people in the developed world. Given the huge costs of patented medicines, even many developed economies are looking at developing countries like India and China for supply of generic medicines (Iyer, 2019; Haeder, 2019; National Academies of Sciences, Engineering, and Medicine, 2017). An agreement on global healthcare should also lead to trouble-free trade in generic medicines. In 2001 the Doha Declaration on Access to Medicines incorporated a provision which provided legitimacy to even exports of medicinal products produced through compulsory licensing to jurisdictions which showed shortage of medicines in dealing with severe health challenges. However, over time the modalities associated with the provision have made it dysfunctional. In this regard, it is also important to permanently extend the moratorium on Non-Violation and situation Complaints (NVC) under the Trade-Related aspects of Intellectual Property rights agreement (TRIPS). NVC refers to instances where a country can approach the WTO Dispute Settlement Body even when a WTO agreement has not been violated by another country. The TRIPS agreement provides crucial flexibilities to ensure that poor people, especially, have access to life-saving and essential medicines and to bring down their healthcare costs. These flexibilities include provisions on compulsory licensing (whereby a branded pharmaceuticals can be compelled in public interest to consent to licensing of their patented drugs) and on anti-evergreening of patents (whereby patent-holders cannot through minor modifications of an existing patented drug extend their patent rights on it and have to necessarily demonstrate 'efficacy' 'above and beyond that of the known substance' (Liu, 2015).There are apprehensions that developed countries are trying to use NVC against developing countries (where generic pharmaceutical companies are mainly located), a move, if successful, could help in the continued protection of the patents of big pharmaceutical companies at the cost of economically weaker people finding it difficult to access several life-saving medicines (Raja, 2015; Saez, 2017).

Conclusion and Way Forward

COVID-19 has disrupted globalisation (Diaz *et al*., 2020) and has led to suggestions that the process of strengthening the Central/federal government seen in many countries could even lead to de-globalisation (Sułkowski,2020). It has also adversely impacted global supply chains and is making enterprises and other stakeholders think about ways to make global supply chains more resilient to risks in the future as well as to better address similar health emergencies with the help of inter-governmental cooperation (Javorcik, 2020).

India, during the Non-Aligned Movement virtual conference held amid the COVID-19 pandemic, had pitched for "a new template of globalisation, based on fairness, equality, and humanity" due to COVID-19 exposing "the limitations of the existing international system". The new template, according to the Indian Prime Minister, should have international institutions that better represent today's world and promote not only economic growth but also human welfare. India wanted the international community and the WHO to bring together their "experiences, best practices, crisis-management protocols, research and resources" to strengthen health-capacity in developing countries including those in the NAM as well as to ensure that everyone has "equitable, affordable and timely access to health products and technologies" (official website of PM Modi).

In this regard, this paper proposes a collaborative value chain of international policies involving, among others: *(i)* Improvements in notifications on health/ medical emergencies to improve transparency, accountability and surveillance of such risks; (ii) Codification of principles on international collaborative research and technology development in Public space and encouragement through national and global policies to collaborative private research and technology development; (iii) Collaborative understanding towards development of global standards of products, services, procedures and protocols to help global interoperability by recognising huge differences in capacities and resource endowments; (iv) Easy flow of medical and health products and

services and their benign facilitation; and (v) Institutional mechanisms including those related to finance to raise global resources and facilitative flows to those in dire need of such resources in poor countries as well as poor people in other countries.

In a globalised world, the interdependencies are interminable. Recognising the mammoth demands of the healthcare architecture to become effective as well as taking into account the limited national capacities, it is imperative in the current situation that such an initiative should be taken forward by a set of like-minded nations.

Endnotes

[1] Health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The "enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."

[2] AMR refers to the "resistance of a microorganism to an antimicrobial drug that was originally effective for treatment of infections caused by it."

[3] IHR (2005) entered into force in June 2007 (WHO website).

[4] Certificate given by the port health authorities to a ship to enter port on the ship captain's assurance that the ship is free from contagious disease.

[5] According to the WTO, they include "chemical and pharmaceutical products, and a range of other items such as surgical gloves, bed nets, sterilizers, wheelchairs, surgical instruments, orthopaedic appliances, as well as medical, surgical, dental and veterinary furniture".

References

ADB. 2020. An Updated Assessment of the Economic Impact of COVID-19. Asian Development Bank. ADB Briefs No. 133. May. https://www.adb.org/sites/default/files/publication/604206/adb-brief-133-updated-economic-impact-covid-19.pdf

alliancehsc (Alliance for Health Security Cooperation) website https://www.alliancehsc.org/global-health-security-and-ihr-implementation/joint-external-evaluation-jee/

Al-Fadhli, A. A., Othman, M., Al-Rejal, H. M. A., & Al-Jamrh, B. A. 2018. Developing a telehealth readiness assessment framework and tool for least developed countries: A case of yemen. *Indian Journal of Public Health Research & Development*, 9(11), 1489-1498.

Ayati, M. H., Pourabbasi, A., Namazi, N., Zargaran, A., Kheiry, Z., Kazemi, A. H., & Larijani, B. 2019. The necessity for integrating traditional, complementary, and alternative medicine into medical education curricula in Iran. *Journal of ntegrative Medicine,* 17(4), 296-301.

Bisong, A., Ahairwe, P. E., & Njoroge, E. 2020. The impact of COVID-19 on remittances for development in Africa.

Bloom, D. E., Cadarette, D., & Sevilla, J. 2018. EPIDEMICS & ECONOMI. Finance & Development.

Board, G. P. M. 2019. A world at risk: annual report on global preparedness for health emergencies. Geneva: World Health Organization. 2019.

Bodeker, G., & Graz, B. 2020. Traditional medicine. In *Hunter's Tropical Medicine and Emerging Infectious Diseases* (pp. 194-199). Content Repository Only!.

Boekholt, P., Edler, J., Cunningham, P., & Flanagan, K. 2009. Drivers of International collaboration in research. Final report, 40.

Boutayeb, A. 2020. Social Determinants of Health and Health Equity in the WHO African Region. In *Disease Prevention and Health Promotion in Developing Countries* (pp. 11-28). Springer, Cham.

Brolan, C. E., Te, V., Floden, N., Hill, P. S., & Forman, L. 2017. Did the right to health get across the line? Examining the United Nations resolution on the Sustainable Development Goals. *BMJ global health*, 2(3), e000353.

Brown, C., Harrison, D., Burns, H., & Ziglio, E. 2013). *Governance for health equity*. WHO Regional Office for Europe.

Bunzl, J. 2006. People-Centred Global Governance–Making it Happen!.

Chawla, D.S. 2018. International collaborations growing fast. Nature Index. 19 January. https://www.natureindex.com/news-blog/international-collaborations-growing-exponentially

Chinchilla-Rodríguez, Z., Miao, L., Murray, D., Robinson-García, N., Costas, R., & Sugimoto, C. R. 2018. A global comparison of scientific mobility and collaboration according to national scientific capacities. *Frontiers in Research Metrics and Analytics,* 3, 17.

CRS. 2020. US Congressional Research Service report on COVID-19: An Overview of Trade-Related Measures to Address Access to Medical Goods https://crsreports.congress.gov/product/pdf/LSB/LSB10424

Dare, S., Merlo, E., Ekanem, P. E., &Berni, J. 2019. Behavioural Evaluation of the Anticonvulsant Properties of the Traditional Medicine Anonna Senegalensis on Parabss Drosophila melanogaster Mutants. bioRxiv, 519322.

Delany, L., Signal, L., & Thomson, G. 2018. International trade and investment law: a new framework for public health and the common good. *BMC public health*, 18(1), 602.

Delivorias, A.,&Scholz, N. 2020. Economic impact of epidemics andpandemics. European Parliamentary Research Service. February. https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/646195/EPRS_BRI(2020)646195_EN.pdf

Díaz, F. R. V., Loayza, F. V., Ruíz, J. D. M., Mendoza, J. A. G., & Olivo, M. R. 2020. Covid-19: Early Lessons From A New Paradigm in The Globalization Process. *Journal of Research and Opinion*, 7(4), 2699-2712.

Durkin, A. & Calder, A. 2020.Free trade in medicines and supplies is the healthiest approach. Tradevistas. 19 March. https://tradevistas.org/free-trade-in-medicines-and-supplies-is-healthiest-approach/

11principles.org website. https://11principles.org/

GHSA (Global Health Security Agenda) website https://ghsagenda.org/

GHS Index website and 2019 GHS Index https://www.ghsindex.org/

Gostin, L. O., Friedman, E. A., Buse, K., Waris, A., Mulumba, M., Joel, M., Dare, L., Dhai, A., & Sridhar, D. 2013. Towards a framework convention on global health. *Bulletin of the World Health Organization*, *91*, 790-793. https://www.who.int/bulletin/volumes/91/10/12-114447.pdf

Gostin, L. O., & Katz, R. 2016. The International Health Regulations: the governing framework for global health security. *The Milbank Quarterly*, 94(2), 264-313.

Habibi, R., Burci, G. L., de Campos, T. C., Chirwa, D., Cinà, M., Dagron, S., ... & Negri, S. 2020. Do not violate the International Health Regulations during the COVID-19 outbreak. *The Lancet*, 395(10225), 664-666.

Haeder, S.F. 2019. Why the US has higher drug prices than other countries. The Conversation. 7 February. https://theconversation.com/why-the-us-has-higher-drug-prices-than-other-countries-111256

HealthMap website https://www.healthmap.org/promed/

Health Policy Watch. 2020. United Nations Approves Second COVID-19 Resolution; Stresses Global Collaboration On R&D, Medicines and Equipment Access. 21 April. https://healthpolicy-watch.org/united-nations-approves-second-covid-19-resolution-stresses-global-collaboration-on-rd-medicines-and-equipment-access/

Hoffman, S. J., &Røttingen, J. A. 2015. Assessing the expected impact of global health treaties: evidence from 90 quantitative evaluations. *American journal of public health,* 105(1), 26-40.

Huremović, D. 2019. Brief History of Pandemics (Pandemics Throughout History). *In Psychiatry of Pandemics* (pp. 7-35). Springer, Cham.

IPCHS website https://www.integratedcare4people.org/ipchs-framework/

Iyer, R. 2019. Making the case for Indian generic drug manufacturing. Pharma Manufacturing. 16 September. https://www.pharmamanufacturing.com/articles/2019/making-the-case-for-indian-generic-manufacturing/

Javorcik, B. 2020. 8 Global supply chains will not be the same in the post-COVID-19 world. COVID-19 and Trade Policy: Why Turning Inward Won't Work, 111.

Jones, E., & Zeitz, A. O. 2019. Regulatory Convergence in the Financial Periphery: How Interdependence Shapes Regulators' Decisions. *International Studies Quarterly*, 63(4), 908-922.

Karam, G., & Ross, A.L. 2020. The WHO International Clinical Trials Registry Platform: Providing global clinical trial information to all. BMC Blog Network. 15 May. http://blogs.biomedcentral.com/on-medicine/2020/05/15/the-who-international-clinical-trials-registry-platform-providing-global-clinical-trial-information-to-all/

KFPE. 1998. Guidelines for Research in Partnership with Developing Countries. Swiss Commission for Research Partnership with Developing Countries. https://www.zef.de/fileadmin/webfiles/downloads/conferences/VW_WS_Swiss_Guidelines.pdf

KFPE. 2017. Guidelines for equitable research partnerships A short history and some lessons learnt. Dr. Jon-Andri Lys, Executive Secretary of the KFPE. https://naturwissenschaften.ch/uuid/155d1ebd-feb1-5882-a8f5-23921be7a8a9?r=20180524162801_1527108431_444cddf8-ab4f-5487-85d4-f56c2cbb13f5

Kwa, A., &Lunenborg, P. 2019. Notification and Transparency Issues in the WTO and the US'November 2018 Communication. *South Centre Research Paper*, (92).

Kwan, M. 2018. The World Health Organization Framework for Virus Sharing: Law, Recent Challenges and its Compliance. Public Health Law, Forthcoming.

Labonte, R., & Sanger, M. 2006a. Glossary of the World Trade Organisation and public health: part 1. *Journal of Epidemiology & Community Health*, *60*(8), 655-661.

Labonte, R., & Sanger, M. 2006b. Glossary on the World Trade Organisation and public health: part 2. *Journal of Epidemiology & Community Health*, *60*(9), 738-744.

Liburd, L. C., Hall, J. E., Mpofu, J. J., Marshall Williams, S., Bouye, K., & Penman-Aguilar, A. 2020. Addressing Health Equity in Public Health Practice: Frameworks, Promising Strategies, and Measurement Considerations. *Annual Review of Public Health*, *41*.

Liu, J. 2015. Compulsory Licensing and Anti-Evergreening: interpreting the TRIPS flexibilities in sections 84 and 3 (d) of the Indian Patents Act. Harv. Int'l LJ, 56, 207.

Nahal, S. & Ma, B. 2014. Be Prepared! Global PandemicsPrimer. Thematic Investing. Bank of America Merrill Lynch. 26 September. https://www.longfinance.net/media/documents/BAML_2015_Be_Prepared_-_Global_Pandemics_primer.pdf

National Academies of Sciences, Engineering, and Medicine. 2017. Health and Medicine Division; Board on Health Care Services; Committee on Ensuring Patient Access to Affordable Drug Therapies; Nass SJ, Madhavan G, Augustine NR, editors. Making Medicines Affordable: A National Imperative. Washington (DC): National Academies Press (US); 2017 Nov 30. 1, The Affordability Conundrum. Available from: https://www.ncbi.nlm.nih.gov/books/NBK493099/

NHS (UK) website https://www.nhs.uk/conditions/sars/

Pattnayak, S., Murmu, D., Panda, M. K., Maharana, R., Mandal, K., & Dhal, N. K. 2020. Traditional Herbal Practices of Eastern Ghats, Odisha, India, for Treatment of Bone Fracture. *In Advances in Pharmaceutical Biotechnology (pp. 145-154). Springer, Singapore.*

Parker, M., &Kingori, P. 2016. Good and bad research collaborations: researchers' views on science and ethics in global health research. PloS one, 11(10).

Raja, K. 2015. US, Big Pharma pushing to end NV dispute moratorium on TRIPS. *Third World Network*. Issue No. 595, 16-30 Jun 2015, pp11-13. https://twn.my/title2/twe/2015/595/6.htm

Ribeiro, L. C., Rapini, M. S., Silva, L. A., & Albuquerque, E. M. 2018. Growth patterns of the network of international collaboration in science. *Scientometrics,* 114(1), 159-179.

RRING website. https://www.rring.eu/#

Saez, C. 2017. TRIPS Council: Fears That Non-Violation Complaints Could Undercut Flexibilities In IP Trade Rules. Intellectual Property Watch. 20 October. https://www.ip-watch.org/2017/10/20/trips-council-fears-non-violation-complaints-undercut-flexibilities-ip-trade-rules/

Schwarzburg, M. 2020. A Century of Pandemics - Counting the Economic Costs. toptal.com. https://www.toptal.com/finance/market-research-analysts/pandemic-cost

SIIS. 2020. International Cooperation for the Coronavirus Combat: Results, Lessons, and Way Ahead. Shanghai Institutes for International Studies. https://www.fmprc.gov.cn/mfa_eng/topics_665678/kjgzbdfyyq/P020200310355462655277.pdf

Sułkowski, Ł. 2020. Covid-19 Pandemic; Recession, Virtual Revolution Leading to De-globalization?. Journal of Intercultural Management, 12(1), 1-11.

Suthar, A. B., Allen, L. G., Cifuentes, S., Dye, C., & Nagata, J. M. 2018. Lessons learnt from implementation of the International Health Regulations: a systematic review. *Bulletin of the World Health Organization*, 96(2), 110.

Swiss Academy of Sciences. 2018. 3rd Edition. A Guide for Transboundary Research Partnerships 11 Principleshttps://naturalsciences.ch/uuid/564b67b9-c39d-5184-9a94-e0b129244761?r=20190807115818_1565139307_8ef687bc-7b14-5a4f-ad9e-bf494cddc1d7

Tilburt, J. C., &Kaptchuk, T. J. 2008. Herbal medicine research and global health: an ethical analysis. *Bulletin of the World Health Organization*, 86, 594-599.

OECD website http://www.oecd.org/tax/oecd-releases-further-guidance-for-tax-administrations-and-mne-groups-on-country-by-country-reporting-december-2019.htm

Official website of Prime Minister Narendra Modi. PM addresses NAM virtual meeting. https://www.narendramodi.in/intervention-by-the-prime-minister-narendra-modi-at-video-conference-of-nam-contact-group-in-response-to-covid-19-549535

ProMED website https://promedmail.org/about-promed/

UN website on General Assembly Resolutions. https://www.un.org/en/sections/documents/general-assembly-resolutions/index.html

UN website on health. https://www.un.org/en/sections/issues-depth/health/

UN CERF website. https://cerf.un.org/

UN. 1999. For developing world, globalization means not interdependence but overdependence on aid, markets of wealthy. GA/EF/2881.United Nations. 28 October. https://www.un.org/press/en/1999/19991028.gaef2881.doc.html

UN. 2008. The Right to Health. Fact Sheet No. 31. United Nations. June. https://www.ohchr.org/Documents/Publications/Factsheet31.pdf

UN. 2015. Resolution adopted by the General Assembly on 25 September 2015. A/RES/70/1. United Nations. 21 October. https://undocs.org/en/A/RES/70/1

UN. 2019. World Population Prospects 2019: Highlights (ST/ESA/SER.A/423). Department of Economic and Social Affairs, Population Division.https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf

UN. 2020. Sharedresponsibility,globalsolidarity:Responding tothe socio-economicimpacts of COVID-19. United Nations. https://unsdg.un.org/sites/default/files/2020-03/SG-Report-Socio-Economic-Impact-of-Covid19.pdf

UNDP. 2017. Social and economic costs of Zika can reach up to US$ 18 billion in Latin America and the Caribbean. UN Development Programme. 6 April. https://www.undp.org/content/undp/en/home/presscenter/pressreleases/2017/04/06/social-and-economic-costs-of-zika-can-reach-up-to-us-18-billion-in-latin-america-and-the-caribbean.html

UNGA. 2020. International cooperation to ensure global access to medicines,vaccines and medical equipment to face COVID-19. A/74/L.56. UN General Assembly. 8 April. https://undocs.org/A/74/L.56

Wang, Z., & Tang, K. 2020. Combating COVID-19: health equity matters. *Nature Medicine*, 1-1.

WEF. 2020. The Global Risks Report 2020. World Economic Forum. http://www3.weforum.org/docs/WEF_Global_Risk_Report_2020.pdf

World Federation of Public Health Associations (WFPHA) website.https://www.wfpha.org/publications/news/266-framework-convention-on-global-health-fcgh

WHO website on the 72nd World Health Assembly.

https://apps.who.int/gb/e/e_wha72.html

https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_11-en.pdf

WHO website on the 73rd World Health Assembly. https://apps.who.int/gb/e/e_wha73.html#resolutionshttps://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R1-en.pdf

https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_CONF1Rev1-en.pdf

https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_4-en.pdf

https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_5-en.pdf

WHO website on COVID-19 situation reports. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

WHO website on Global Observatory on Health R&D. https://www.who.int/research-observatory/en/

WHO website on International Clinical Trials Registry Platform (ICTRP). https://www.who.int/ictrp/en/

WHO website on MERS-CoVhttps://www.who.int/emergencies/mers-cov/en/

WHO website on non-communicable diseases.https://www.who.int/nmh/events/un_ncd_summit2011/resolutions/en/

WHO website on Ebola. https://www.who.int/news-room/fact-sheets/detail/ebola-virus-disease

WHO Ebola Situation Report. https://www.who.int/emergencies/diseases/ebola/drc-2019/situation-reports

WHO website on IHR.https://www.who.int/news-room/q-a-detail/ten-things-you-need-to-do-to-implement-the-international-health-regulations

WHO websitehttps://www.who.int/sdg/targets/en/

WHO website on IHR, 2005 entering into force. https://www.who.int/mediacentre/news/releases/2007/pr31/en/

WHO website on influenza. https://www.who.int/influenza/human_animal_interface/H5N1_cumulative_table_archives/en/

WHO website on collaborations and partnerships. https://www.who.int/about/collaborations/en/

WHO website on Collaborating Centres for Traditional Medicine.https://www.who.int/traditional-complementary-integrative-medicine/collaboration/TM_CCs/en/

WHO website on R&D Blueprint. https://www.who.int/teams/blueprint/about

WHO website on R&D Blueprint and COVID-19. https://www.who.int/teams/blueprint/covid-19

WHO website on Traditional, complementary and integrative medicine. https://www.who.int/traditional-complementary-integrative-medicine/news-events/en/

WHO website on work with countries

https://www.who.int/country-cooperation/what-who-does/strategies-and-briefs/en/

WHO. 2000. General Guidelines for Methodologies onResearch and Evaluation ofTraditional Medicine. WHO/EDM/TRM/2000.1. World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/66783/WHO_EDM_TRM_2000.1.pdf?sequence=1

WHO. 2015a. WHO global strategy on people-centred and integrated health services. Interim Report. World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/155002/WHO_HIS_SDS_2015.6_eng.pdf?sequence=1

WHO. (2015b). Weekly epidemiological record. No. 20, 2015, 90, 217–252. World Health Organization. 15 May. https://www.who.int/wer/2015/wer9020.pdf

WHO. (2017). Tokyo Declaration on Universal Health Coverage. https://www.who.int/universal_health_coverage/tokyo-decleration-uhc.pdf?ua=1

WTO website on notifications https://www.wto.org/english/thewto_e/acc_e/transparency_anna_varyanik_12_feb_2019.pdf

WTO website on 'COVID-19 and world trade' https://www.wto.org/english/tratop_e/covid19_e/covid19_e.htm

WTO website on 'health and social services' https://www.wto.org/english/tratop_e/serv_e/health_social_e/health_social_e.htm

WTO website on medical technologies. Chapter 4: Medical technologies: the access dimension. https://www.wto.org/english/tratop_e/trips_e/trilatweb_e/ch4d_trilat_web_13_e.htm

WTO. (1994). Trade in Pharmaceutical Products. L/7430. 25 March. https://www.wto.org/gatt_docs/English/SULPDF/91770009.pdf

WTO. (2019a). World Trade Report 2019: The future of services trade. World Trade Organization. https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf

WTO. (2019b). Trade Policy Review Body - Overview of developments in the international trading environment - Annual report by the Director-General - Mid-October 2018 to mid-October 2019. WT/TPR/OV/22. World Trade Organization.

WTO. (2020). WTO report on 'Trade in medical goods in the context of tackling COVID-19'. https://www.wto.org/english/news_e/news20_e/rese_03apr20_e.pdf

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