T20 POLICY BRIEF

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Task Force 01

FIGHTING INEQUALITIES, POVERTY, AND HUNGER

To Fight Against Future Pandemics, We Need Better Technology Transfer Initiatives

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Abstract

The Covid-19 pandemic has caused distress worldwide, yet it has also facilitated the accelerated and intense development of health products, with a strong emphasis on vaccines. However, not everyone had access to these life-saving technologies. Broadly speaking, low- and middle-income countries were excluded from access to mRNA platforms, which are vital for expanding technological and production capacity, disseminating doses more rapidly, and preventing avoidable deaths.

Scientists say another pandemic is likely. In this context, broad and affordable access to technologies, especially those developed with public resources, must be a non-negotiable objective.

Proposals to address deficiencies in the realm of access to health have not yielded satisfactory results. Such proposals notably included resolutions to redress inequalities and rebalance investments in research and development, alongside the creation of mechanisms to ensure access to technologies and products aimed at combatting the pathogen.

Efficient measures, backed by multilateral support, for technology transfer in the face of serious global crises are imperative to prevent the concentration of vaccine and other health product production. This approach aims to enhance local and regional capacities. This policy brief seeks to underscore the significance of technology transfer as a pivotal mechanism for pandemic preparedness. This can help the G20 play a decisive role, addressing prevailing challenges, and ensuring the issue remains a priority on regional and multilateral agendas. Finally, this brief draws upon both new and existing proposals and evidence-based approaches to present policy recommendations aimed at improving technology transfer initiatives, expanding technological and productive capacity essential to saving lives in LMICs, and contributing to the economic well-being of nations. We propose promotion of R&D to generate knowledge and products for pandemic preparedness, alongside production expansion.

Keywords: Technology transfer; pandemics; intellectual property, know-how

The Issue

There has been a long debate within the WHO, particularly following the adoption of the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) in 1994, regarding access to medicines, pricing, intellectual property, and technology transfer. The 2008 WHO Global Strategy and Plan of Action on Public Health, Innovation, and Intellectual Property (GSPA-PHI), which relied on diplomatic action by several Low and Middle-Income Countries (LMICs) throughout its various stages, reaffirmed the Organization's responsibility to address the interface between intellectual property and access. Additional initiatives such as the 2007 WIPO Development Agenda and the 2001 WTO Doha Declaration on the TRIPS Agreement and Public Health have also grappled with issues surrounding adequate access, affordability of products, and equity.

In our understanding, the promotion of equity is underpinned by full attention to the diverse needs of every citizen and social group anywhere in the world. Within this framework, and closely tied to the notions of equality and social justice, health is a right for all. It falls upon the state to guarantee access to health initiatives and services. Conversely, health inequities denote unjust and avoidable disparities. The term inequity thus has ethical, economic and social dimensions (Whitehead and Dahlgren, 2021).

In times of crisis, it becomes imperative to treat health products and services as global public goods, given the undesirability of imbalances in global access. Analyses, such as the report "A World at Risk" convened by the Global Preparedness Monitoring Board (GPMB) in 2019, which forewarned of the advent of a pandemic, have underscored the necessity of formulating strategies, preparedness, and providing responses as global public goods in such scenarios (WHO, 2019).

The sharing of technologies encompasses pivotal elements like patents, know-how, and, in several cases, viruses and cell banks. Debates and controversies surrounding intellectual property management have been pervasive since the onset of the pandemic, impacting diverse facets – from freedom to operate, wherein one can conduct operations with assurance of non-infringement of third-party rights, to voluntary and compulsory licensing agreements. Regulation of know-how, a crucial component in technology transfer processes, has increasingly garnered attention, particularly as access to biotechnological products like vaccines hinges heavily on knowledge not explicitly outlined in patent documents.

Regarding local production, the pandemic has highlighted issues such as the geographical clustering of production, and challenges in accessing essential life-saving technologies. These factors have led to numerous instances where voluntary licenses for production could not be attained. Broadly speaking, the recourse to a compulsory license also proved to be unsatisfactory, largely due to the barriers to access (Perehudoff et al, 2022).

The pandemic unfolded within an intricately layered global political landscape, a scenario likely to persist or even exacerbate in the short and medium term. The Covid-19 pandemic itself, along with its economic and social ramifications, continues to present considerable challenges. Furthermore, multilateralism finds itself in a state of crisis. Key institutions such as the United Nations and the World Trade Organization, struggle to furnish adequate responses to contemporary issues. While proposals for technology access have been tabled at both the WHO and WTO, tensions surrounding intellectual property, resource constraints, the challenge of consensus-building, and other obstacles have relegated poorer countries to the end of the queue. Meanwhile, competing issues and

crises drain diplomatic efforts - from the climate emergency to the burgeoning political demands of influential nations in the Global South, not to mention ongoing wars.

The emergence of Covid-19 has presented several challenges for science: (i) encompassing the comprehension of the virus's characteristics and its interaction with humans, (ii) deciphering the systemic facets associated with the disease, (iii) improving treatments for the infected, and (iv) devising preventive measures. Addressing the disease has required the mobilization of numerous well-established research, innovation, and production frameworks in both the public and private sectors. Public investment proved crucial for innovations used in the pandemic (Lalani et al, 2023).

The G20 has a key role to play in advocating for better technology transfer initiatives. This is crucial because, in the event of future pandemics, ensuring access to technologies, particularly for LMICs, and decentralizing technological production will be essential for preserving lives. Moreover, it will contribute significantly to reducing inequalities and advancing the attainment of the UN's Sustainable Development Goals.

Recommendations

Taking into account the diagnosis of the issue, we propose a five-point plan to enhance technology transfer aimed at addressing future pandemics and global health security threats. Image 1 provides a summary of these recommendations.

1. Visibility

The G20 can act as an innovation platform, offering greater visibility and fostering engagement to raise awareness about the criticality of technology transfer processes in tackling pandemics. Throughout the Covid-19 pandemic, most countries and communities experienced delayed access to innovations compared to more affluent countries and regions. These inequalities were associated with an increase in cumulative COVID-19 cases and deaths (Duroseau, Kipshidze, and Limaye, 2023). Poorer countries, with low productive and technological capacity, have had to wait longer to control the disease. Access to vaccines, therapies and diagnostics depends on several factors. One of the main and highly efficacious is technology transfer, which should be prioritised on the global health agenda with a focus on future pandemic preparedness. The issue should be included in the 2024 G20 Health Ministers Statement. In addition, a permanent working group on the subject should be set up within the G20.

2. R&D efforts

The responses provided during the COVID-19 pandemic would not have been attainable without the technological expertise acquired through consistent and substantial investments, supportive policies for research and development, prior understanding of the coronavirus family, staff training, regulatory frameworks, a network capable of

negotiating technologies, and the ability to generate incremental innovations, including adapting production structures. In the swift reaction to this previously unknown pathogen, innovation played a pivotal role, particularly concentrated on the pursuit of vaccines, diagnostics, new pharmacological compounds and biomolecules, and the repurposing of already established drugs. Efforts related to product-relevant R&D and innovation for diseases with pandemic potential should involve the widest possible range of actors - public, private, philanthropic, non-governmental, intergovernmental, and civil organizations. The G20 should encourage the promotion of R&D to generate knowledge and products for pandemic preparedness, with a focus on building and expanding LMIC capacities and stimulating international cooperation between the public and private sectors of high-income countries and LMICs.

3. Production expansion

The expansion of production aims to ensure that global demand is met in a balanced manner, considering the needs of all countries and addressing the disparities highlighted during the COVID-19 pandemic. Vaccine production has been particularly impacted by these historical practices. According to Kavanagh, Gostin, and Sunder (2021), "Approximately 1.2% of the global vaccine supply has been received by low-income countries, with just 14% received by lower-middle-income countries, despite comprising nearly 40% of the world's population." Equitable allocation is the most appropriate approach to meet global demand and mitigate fatalities.

Access to technologies for combating the pandemic primarily occurred through bilateral negotiations. While some agreements have proved fruitful, such as the technology transfer of the Oxford-AstraZeneca Adenoviral Vector-Based Vaccine Platform to Biomanguinhos/Fiocruz in Brazil and the Serum Institute in India, many other

attempts have faltered. Recognizing the urgent imperative to save lives on a global scale, various initiatives have been launched, including the 2020 proposal for an IP Waiver at the WTO, the establishment of a mRNA vaccine technology transfer hub, and the formation of the Intergovernmental Negotiating Body (INB) to broker a pandemic agreement at the WHO. These initiatives share a common objective: to establish structures facilitating access to technologies and safeguarding current and future generations from the ravages of the COVID-19 pandemic and potential future pandemics, guided by the principles of solidarity and equity. Regrettably, the response from the WTO has been ineffective, though the mRNA hub programme remains a beacon of hope. Meanwhile, negotiations within the INB are facing the familiar difficulties when intellectual property, know-how, and technology transfer issues are involved. That said, we know that despite all the barriers, the political will to construct fairer systems must ultimately prevail. This is essential for global health security and nations' capacity to prepare for future challenges as or more challenging than COVID-19. The G20 should advocate to improve the enabling environment for technology transfer for expansion of productive capacity in LMICs.

4. Sustainable Public Funding

Sustainable public funding is paramount for pandemic preparedness, encompassing the expansion and fortification of innovation and production capacities in LMICs. Incorporating conditionalities such as the adoption of access clauses in financing agreements can serve as best practice. The G20 should prioritize advocating for concerted efforts to augment funding for enhancing innovation and production capacities in LMICs, while also defining ex ante access conditions.

5. Global Governance

The intersection of public health, intellectual property, and technology transfer is embedded within a highly intricate international framework involving various organizations such as WHO, WIPO, UNCTAD, WTO, and others, alongside non-governmental entities, forums, and other stakeholders. Moreover, the landscape is further complicated by a multitude of local, regional, and bilateral audiences and interests (Sell, 2017). Naturally, the central role in health issues lies with the WHO. Coordinating objectives related to technology transfer and ensuring coherence demand significant governance efforts. The G20 must reaffirm its commitment to increasing the inclusion of LMICs in technological and productive expansion for pandemic preparedness. This entails recognizing the central role of the WHO and contemplating ways to strengthen relevant aspects of global governance.

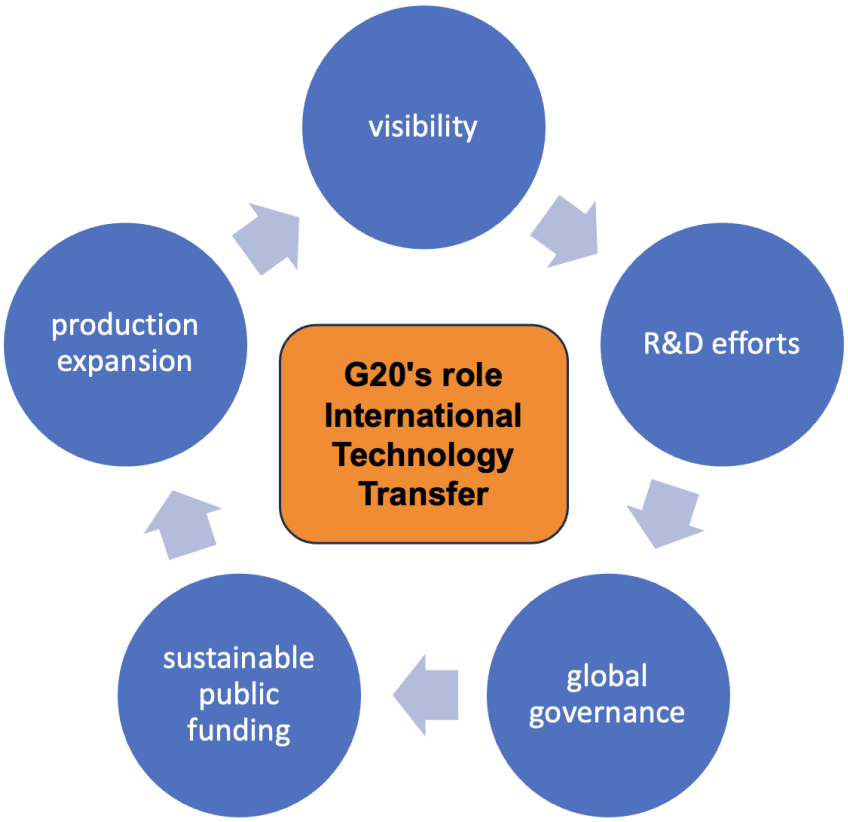

FIGURE 1. G20's role International Technology Transfer. *Source*: Own elaboration

Scenario of Outcomes

If the recommendations outlined above are adopted by the G20 countries, there will be increased attention to the technological demands of LMICs, alongside the reinforcement of their technological and productive capacities. Ample financial resources will be allocated to fortify these systems, promoting the decentralization of production. Enhanced coordination among various international organizations will also be achieved.

A positive outcome from WHO negotiations could result in a multilateral instrument facilitating the expansion of capacities and the transfer of technology and know-how. This would contribute to diminishing inequalities, broadening access to technologies, enhancing pandemic prevention, preparedness, and response capabilities, as well as strengthening local production. Mechanisms for technology transfer, not limited to voluntary arrangements, could also benefit proposals such as the alliance for local and regional production and innovation in health proposed by Brazil's G20 presidency.

Overall, in times of crisis, the most vulnerable will be better equipped to respond swiftly by introducing vaccines and other essential products to the market, thus saving lives. Certainly, the inclusion of more countries will entail the incorporation of new research priorities, which may differ from those of wealthier nations. However, this does not create obstacles to international cooperation; it may, in fact, spur the generation of fresh ideas and innovations, which can be invaluable in combating the health challenges posed by climate change and other threats. In this regard, and to conclude with a topic which deserves special attention, it is worth pointing out that the rise in average temperatures has led to the worldwide dissemination of a number of diseases that until very recently were confined to the tropical regions. Whether this will raise international awareness and contribute to the global cooperation this paper is advocating is another matter.

References

Brenice, Duroseau, Nodar Kipshidze, and Rupali Jayant Limaye. "The impact of delayed access to COVID-19 vaccines in low-and lower-middle-income countries." *Frontiers in public health* 10 (2023): 1087138.

da Fonseca, Elize Massard, Kenneth C. Shadlen, and Helena de Moraes Achcar. "Vaccine technology transfer in a global health crisis: Actors, capabilities, and institutions." *Research Policy* 52.4 (2023): 104739.

Kavanagh, Matthew M., Lawrence O. Gostin, and Madhavi Sunder. "Sharing technology and vaccine doses to address global vaccine inequity and end the COVID-19 pandemic." *Jama*326.3 (2021): 219-220.

Lalani, Hussain S., et al. "US public investment in development of mRNA covid-19 vaccines: retrospective cohort study." *bmj* 380 (2023).

Perehudoff, Katrina, et al. "A pandemic treaty for equitable global access to medical countermeasures: seven recommendations for sharing intellectual property, know-how and technology." *BMJ Global Health* 7.7 (2022): e009709.

Sell, Susan K. "The quest for global governance in intellectual property and public health: Structural, discursive, and institutional dimensions." *Global Health*. Routledge, 2017. 331-367.

Whitehead, Margaret, Dahlgren, Göran & World Health Organization. Regional Office for Europe. Levelling up (part 1): a discussion paper on concepts and principles for tackling social inequities in health / by Margaret Whitehead and Göran Dahlgren. Copenhagen: WHO Regional Office for Europe, 2006, https://iris.who.int/handle/10665/107790

WHO. Global preparedness monitoring board:a world at risk: annual report on global preparedness for health emergencies. Geneva: WHO, 2019, https://apps.who.int/gpmb/annual_report.html.

WHO, WIPO and WTO. *Promoting Access to Medical Technologies and Innovation: Intersections Between Public Health, Intellectual Property and Trade. (*World Health Organization, World Intellectual Property Organization and World Trade Organization), 2020, https://www.wipo.int/publications/en/details.jsp?id=305

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