Journal of International Commercial Law and Technology
Print ISSN: 1901-8401

Website: https://www.jiclt.com/

Article

Reimagining Intellectual Property: The Role of Patent Pools and Open Licensing in Pandemic Preparedness

Article History:

Name of Author:
Ms. Alisha Thomas[1] , Ms. Gargi Lad[2] and Dr. Yash Tiwari[3]

Affiliation:

Corresponding Author:
Ms. Alisha Thomas

How to cite this article:
Thomas A *et. al*, Reimagining Intellectual Property: The Role of Patent Pools and Open Licensing in Pandemic Preparedness. *J Int Commer Law Technol*. 2025;6(1):1616–1630.

Received: *15-10-2025*
Revised: *25-11-2025*
Accepted: *05-12-2025*
Published: *16-12-2025*

Abstract: The COVID-19 pandemic highlighted the drastic inequalities on a global scale when it came to equitably accessing life-saving medicines, vaccines, and diagnostic tools, and exposed the flaws in a patent scheme that emphasises on rewarding invention but fails to distinguish the significance of public health. This article examines the potential of patent pools and open licensing to serve as transformers in the response to equity in future pandemics. The scope of the study includes a detailed legal and economic analysis of the Medicines Patent Pool (MPP) besides the WHO COVID-19 Technology Access Pool (C-TAP), with specific focus on how these initiatives used the flexibilities of the TRIPS Agreement to exercise equity, solidarity, and transparency. Using a multidisciplinary method incorporating doctrinal analysis, economic analysis of collaborative IP Models and political assessment of global health governance, the article offers explanations for the most significant positive structural outcomes of cooperative IP arrangements. Findings indicate that delinking R&D costs from pricing of the final product strengthens innovation, as well as global health equity. It is suggested that the institutionalization of patent pooling and mandatory open licensing should be required in the foundation of future pandemic preparedness, an advancement not a rejection of the IP system as it relates to innovation in public health.

Keywords: Patent Pool, Open Licensing, Voluntary Licensing, Technology Transfer, Equitable Access.

INTRODUCTION

The Global Imperative for Equitable Access

Pandemics are inherently geopolitical and ethical, in addition to their biological aspects. The COVID-19 pandemic and other infectious diseases outbreaks have exposed the disparities in the geography and access of medical counter-measures. One recent study state that nationalism has outperformed solidarity, ensuing in redundant loss of life and discriminatory access to vital technologies. (Hassoun et al., 2024) The argument that no one is safe until everyone is safe underscores the reality of global public health, diseases cross borders and the absence of lifesaving tools in one area has global consequences, including the potential spread of the disease, economic disruption, and the development of vaccine-evading mutations. For these reasons, equitable access to medical counter-measures is and will continue to be critical for responding to and preparing for a global health crisis. (Saxena A et al., 2023)

Equitable access consists of four interconnected dimensions: availability (sufficient supply), affordability (costs that permit uptake), acceptability (local integration of health technologies), and accessibility (distribution and logistics channels), all of which must meet assured quality for health technologies. (World Health Organization, 2024) The global governance framework has these elements. For example, World Health Organization (WHO) member nations implemented a resolution that explicitly called for common, well-timed and impartial access to … all quality, safe, efficacious and affordable essential health technologies and products and stimulated voluntary pooling and licensing of patents to facilitate timely, equitable and affordable access in May 2020. (World Trade Organization; World Health Organization; World Intellectual Property Organization, 2020) The demand on equitable access for health technologies in future

pandemics is clear: more rapid, wider, and improved allocated health tools and technologies. (Eaton E, 2020) The challenges of current IP (intellectual.

property) regimes, bottlenecks in manufacturing, fragile supply chains, and unequal global production capacities will remain roadblocks to achieving this goal.

Barriers to Equitable Access: The Role of Intellectual Property and Supply Chains

Incentivizing innovation is one of the justifications for providing a temporary monopoly to rights holders. However, during a pandemic, innovation is the least of the concerns. The exclusivity of most rights-covered IP, the proprietary know-how to manufacture, trade secrets, and the intricacies of monopolistic supply chains may inhibit hastened and mass-accepted production. As one of the reviews, for example, put it through the COVID-19 pandemic:

The pace at which inexpensive varieties of a new creation are accessible in LMICs is crucial … When started early in the R&D life phase, licensing could enable rapid progress of broad versions of advanced products in LMICs throughout a pandemic. (Braimoh, T., Burrone, E., Gore, C. et al., 2024)

Even more, one analysis has stated the IP obstacles under which therapeutic firms' function … have posed hurdles to mounting manufacturing competence, and guaranteeing sufficient supply, reasonable pricing, and impartial access to COVID-19 vaccines and other health commodities in low-income and middle-income nations. (Braimoh, T., Burrone, E., Gore, C. et al., 2024) Additionally, the global distribution of production capacity is uneven. Countries in low then middle-income brackets are more prone to import than manufacture. This means that when larger producing countries enforce vaccine nationalism, other countries are denied access when the larger countries are allowed to access the vaccines.

It's not just an IP issue; factors like scale of manufacturing, shortage of raw materials, and regulations have to be considered. With that said, IP and licensing options do create structural bottlenecks that can be removed with policy changes.

Emerging Mechanisms: Patent Pools and Open Licensing

In light of structural bottlenecks, novel approaches have come to the forefront. These approaches are intended to make access timelier and more equitable, such as the creation of patent (or IP) pools and the development of open licensing frameworks.

Patent Pools

Patent pools are methods by which several patent holders come together to consolidate specific technologies and license the IP as a single entity (often non-exclusively) to third parties. In the health technologies sector, patent pools enable several producers to open up the manufacturers and reduce transaction costs. (World Intellectual Property Organization, 2025) Producers are able to coordinate the licensing terms and avoid duplicative negotiations.

The Medicines Patent Pool (MPP) depicts an excellent case of in what way patent pools can be beneficial. MPP started in 2010 with the goal of improving access to HIV treatments and has since expanded to cover additional diseases and technologies. MPP's model includes:

- public health-oriented non-exclusive licenses;
- transparent terms with broad geographic scope; and
- allowing generic manufacturers in lower and middle-income nations to manufacture at scale.

During the COVID-19 pandemic period, the MPP formed a partnership alongside the WHO through the COVID-19 Technology Access Pool (C-TAP), which enabled the licensors to contribute IP, know-how plus data, and sublicense them to capable manufacturers around the world. (World Health Organization, n.d.) To illustrate recent activities, MPP and WHO promoted a sublicense agreement for rapid diagnostic tests with a Nigerian company technology transfer from SD Biosensor demonstrating how the model applies to diagnostics and regionally-distributed manufacturing. (Medicines Patent Pool, 2025) (World Health Organization, WHO and Medicines Patent Pool , 2025)

Open Licensing and Technology Sharing

Open licensing involves voluntary arrangements whereby patent-holders provide extensive access to their IP, sometimes even royalty-free or at a nominal cost, and often alongside technology, know-how, data, and materials. Open licensing, in the background of a pandemic, would allow many manufacturers to enter the market, particularly in LMICs.

Concurring to a primer by White & Case, open innovation models and global non-exclusive licensing "increase local manufacturing and supply capacity." (World Trade Organization; World Health Organization; World Intellectual Property Organization, 2020) Similarly, licensing frameworks under C-TAP emphasize voluntary, non-exclusive, transparent licenses to producers around the world while safeguarding fitting royalties. (World Health Organization, n.d.)

Open licensing more broadly may be part of an Access to Pandemic Tools Accelerator" (APT-A) or "Pandemic Open Technology Access Accelerator (POTAX) (Hassoun N et al., 2024) framework that combines financing with a requirement to vest

licenses into a pool or global access mechanism.

Why These Mechanisms Are Important for Pandemic Preparedness

There are three key strategic dimensions around the use of patent pools and open licensing that are important for pandemic preparedness:

- **Scale and speed of production**: Non-exclusive licensing allows many players to step in and reduce production bottlenecks during the ramp-up phase. Licenses and transfer that occur earlier in R&D also allow LMIC manufacturers to enter earlier. (Burrone E et al., 2019)
- **Competition and affordability**: More producers mean more competition that ultimately drives prices down. With non-exclusive authorisations in a pool, licensing increases the entry of generics or biosimilars, lessening pricing burdens. This offers countries with supplementary alternatives.
- **Geographical diversification and production competencies**: These technologies licence manufacturing undertakings to be more extensively dispersed. For example, sublicensing to producers in LMICs lifts local competencies, minimises reliance on limited suppliers, and surges supply chain robustness. (World Health Organization, 2025)

Methodology:

This article employs a doctrinal and comparative legal methodology grounded in extensive analysis of international IP instruments, including the TRIPS Agreement, Doha Declaration, WHO, WIPO, and WTO documents, alongside national patent legislation. It integrates a policy-based and economic assessment of collaborative IP models by examining institutional reports, licensing datasets, and pandemic-era agreements released by the MPP, C-TAP, CEPI, GAVI, and Unitaid. The study further synthesises insights from scholarly literature, human-rights instruments, and patent-landscape data to evaluate structural outcomes of patent pools and open licensing. Secondary materials including academic articles, global governance reports, and patent analytics constitute the core evidentiary base for the analysis.

Patents and Public Health Emergencies: The Legal Perspective

Introduction

Emerging public health disasters, particularly the COVID-19 pandemic, raise fundamental and recurring issues in IP law at the global level: how to balance the safeguard of innovations with the right to fair as well as reasonable access to indispensable medicines, vaccines, as well as diagnostic tools. While it is true that the law has the potential to reward innovation and stimulate the desired R&D, in the case of patents, the law can also work against access by providing exclusivity that limits supply and keeps prices out of reach of LMICs. The World Trade Organization (WTO) Trade Related Aspects of International Property Rights (TRIPS) Agreement is the international baseline for patents. However, in and under the history of the interpretation of its own texts, TRIPS also contains flexibilities to allow member nation-states to prioritize access to drugs in periods of crises.

Patent Rights under the TRIPS Agreement

Since the Uruguay Round was adopted in 1994, the TRIPS Agreement has stipulated that all WTO affiliates must offer patent safeguard to innovations in all arenas of technology, comprising medications, for twenty years since the filing date of the patent application. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 27(1)) Article 27(1) describes the non-discrimination principle, and makes it clear that the differentiability of patentability must not depend on the field of technology, nor the source of the invention. Thus, TRIPS extended patent protection to non-pharmaceutical inventions in developing countries. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 27(1))

Joying the private right to create, use, market or import a patented innovation aids to recover the R&D investments. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 28(1)) However, in public health emergencies the exclusivity right holder or its licensees will make production scarce and life-saving health products may become unaffordable to a multitude of the public. TRIPS aimed for worldwide IP convergence, yet it also included legal flexibilities intended to accommodate the diverse stages of growth and health requirements of member states.

TRIPS Flexibilities: Articles 31, 31bis, and 6

Compulsory Licensing underneath Article 31

According to Article 31 of TRIPS, a member state can authorize patent holders to use a patented invention deprived of the permission of the right owner in circumstance of a nationwide emergency or severe urgency. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 31(b)) Compulsory licensing is when a government or authorized agent is permitted to build or import a patented creation exclusive of the patent owner's approval but is required to make reasonable payment. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 31(h)) This licensing becomes essential during a pandemic when rapid and inexpensive access is required. At first, the article required that all invention under a CL be mainly for the stock of the local market but this restriction proved to be

problematic for countries that didn't have local manufacturing capabilities. (Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 31(f))

Export under Article 31bis

To resolve this issue, WTO members implemented the 2003 Decision on the Implementation of Paragraph 6 of the Doha Declaration, which later became Article 31bis. (WTO General Council, 2005) This article allows CL holders to transfer essential patented pharmaceutical products to CL holders. (WTO General Council, 2005) This might be complicated from a bureaucratic standpoint, but it is CL backed by law to show regional support and cooperative manufacturing during a pandemic.

Parallel Importation under Article 6

Article 6 of TRIPS does not give individual countries the ability to create their own rules concerning the exhaustion of rights and circumstances of the importation of patented products. (TRIPS Agreement, art. 6) Under a system of international exhaustion, parallel importation is when a nation permits the importation of a patented invention, legally marketed in another country, deprived of the consent of the patent-holder. This permits governments to import inexpensive patented products, such as medicines, from other countries. This flexibility becomes even more important during a pandemic, when time and money are the most important factors.

The Doha Declaration on the TRIPS Agreement and Public Health

The 2001 Doha Declaration on the TRIPS Agreement and Public Health broadened and confirmed the rights of WTO followers to practice TRIPS flexibilities to defend public health. (WTO Ministerial Conference) Paragraph 4 of the Declaration states that the TRIPS Agreement does, and would not, restrict members from defending public health and boosting access to drugs for all members of the population. (Doha Declaration, ¶ 4) This represents a critical shift from a narrow, trade-focused understanding of the TRIPS Deal, to a more health-centred perspective.

The Declaration considers the unique challenges that nations with inadequate or no manufacturing competences in the pharmaceutical area face, resulting in the development of the Article 31bis mechanism. (Doha Declaration, ¶ 6) In legal and political terms, Doha was a milestone it sanctioned the use of compulsory licensing, parallel imports, as well as other actions as aligned with, rather than out of, TRIPS obligations. Doha's interpretive authority is still applicable today, especially with the renewed discussions on the waiver of IP obligations during global health emergencies like COVID-19.

National Patent Regimes and Public Health Clauses

TRIPS establishes minimum global standards. However, the realization of these standards at the nationwide level is what will determine whether these flexibilities will make a difference in the real world. For this reason, many countries have incorporated public health clauses in their domestic statutes on patenting to allow rapid government action.

India's Section 92

The Patents Act of 1970 along with subsequent amendments is an outstanding example of domestic operationalization. India's Section 92 is unique since it permits the government to release compulsory licenses in events of national emergency or extreme urgency or public non-commercial use. (The Patents Act, 1970, Section 92) The government notifies the public and then any interested company is free to apply for a license to build the patented product deprived of prior compromises with the patent proprietor. (The Patents Act, 1970, Section 92(3)) During the COVID-19 crisis, India targeted these provisions for potential use for the manufacture of antiviral drugs and vaccines, further establishing India's position as a public health-oriented IP policy champion.

Other nations, like Brazil, Thailand, and South Africa, have used the same or alike provisions, mainly in relation to HIV/AIDS or pandemic influenza, to obtain access to affordable generic medications. These examples show the use of domestic law as a first line approach to balancing the inequities of IP law and the pressing health needs of a population.

Global Human Rights Interface: The Right to Health

In regard to patent laws, a consideration of legal obligations related to the right to health is central, particularly with the implications of global human rights laws. The ICESCR, particularly Article 12, recognizes the right of all to the satisfaction of the maximum achievable standard of health. (International Covenant on Economic, Social and Cultural Rights, art. 12) The Committee on Economic, Social and Cultural Rights (CESCR) in General Comment No. 14 interprets this right to include access to essential medicines and obligates states to ensure that access is not undermined by their IP regimes. (Comm. on Econ., Soc. & Cult. Rts., General Comment No. 14:, 2000)

Moreover, General Comment No. 17 states that IP rights, unlike human rights, are social products, and, therefore, human well-being should be their ultimate goal. (Comm. on Econ., Soc. & Cult. Rts., General Comment No. 17, 2006)

Over and over, the UN Human Rights Council insists that nations have both nationwide and global

obligations to maintain access to medicines, particularly in global health emergencies. (Human Rights Council Res. 15/22, 2010) The connection among human rights and IP law reframes the discussion: the right to access medicines is not just a policy decision, but a positive right under international law. This means that the use of TRIPS flexibilities to issue compulsory licenses and expediate the handover of technology is a positive realization of human rights, not a breach.

Balancing Innovation Incentives and Public Health

The key issue is the equilibrium amid incentives for innovation and public health. Advocates for strong patent protection and monopoly rights claim that exclusivity is fundamental to gain investments and cover the price of research and development (R&D) in the risky and high-cost pharmaceutical industry. However, every epidemic creates unique situations in which, for the foreseeable future, the immediate public health requirements will take priority over considerations of profit. From an economic standpoint, an epidemic is a market failure since investments in research and development for treatments are made by private stakeholders where the demand is uncertain, and the market is short-term. Public investments and risk sharing, as in the case of the growth of the COVID-19 vaccines, undermines the moral claim to uncontested exclusivity.

Legal approaches, by way of patent pools and voluntary licensing, risk sharing, and public funds, can help overcome this impasse by breaking the relation amid the charges of R&D and the final sale value of a product. Both the Medicines Patent Pool (MPP) and the World Health Organization (WHO) COVID-19 Technology Access Pool (C-TAP) are examples of how well-designed cooperative legal mechanisms can promote access and protect innovation. (World Health Organization, n.d.) However, their political and economic viability depends on international collaboration, which is currently inconsistent.

Patent Pools and Open Licensing - Concepts and Mechanisms

Introduction

The universal response to pandemics such as COVID-19 has emphasised that scientific innovation alone is lacking to promise equitable access to health know-how. Patents while incentivizing research can make divided ownership and coinciding exclusivities that adjourn manufacturing and drive-up expenses. In this setting, patent pools and open licensing have seemed as shared legal and marketable tools intended to simplify access, promote technology transfer, and hasten worldwide production of requisite health know-hows.

These tactics symbolise a paradigm shift from competitive individuality to collaborative innovation, affording a structure through which patent owners voluntarily share intellectual property rights under clear and coherent terms. The succeeding sections examine the legal structure, analysis, and functioning dynamics of patent pools and open licensing models, and inspect critical platforms that signify these instruments in global health governance.

Understanding Patent Pools

Definition and Structure

A patent pool is a plan in which several patent title-holders aggregate their patents and license them collectively to third parties on uniform terms. (World Intellectual Prop. Org., 2020) These pools are usually governed by an autonomous entity that manages licensing, gathers royalties (if applicable), and distributes them mid contributors. Such arrangements simplify access by offering a "one-stop" licensing mechanism for technologies that otherwise require negotiating multiple bilateral agreements.

Patent pools initiated in industrial spheres such as aviation and telecommunications but have expanded importance in public health, predominantly for medicines and diagnostics necessitating arrangements of patented technologies. (Keith E. Maskus, 2012) During pandemics, they mitigate "patent thickets" dense webs of overlapping rights that hinder rapid product development and scale-up.

Voluntary and Collective Licensing

Most health-related patent pools operate on a voluntary basis, meaning that participation by patent holders is not mandated but encouraged through policy incentives and reputational benefits. (Carlos M. Correa, 2000) By offering licenses to multiple manufacturers often in LMICs these pools promote competition and expand supply chains, thereby lowering prices.

The Medicines Patent Pool (MPP), founded in 2010, pioneered this model by aggregating licenses for antiretroviral drugs (ARVs), later extending to hepatitis C, tuberculosis, and COVID-19 technologies. (Medicines Patent Pool (MPP), n.d.) Such collective frameworks align with Article 31bis of the TRIPS Agreement, which empowers cross-border manufacturing under compulsory licenses, but they operate through voluntary consent rather than state compulsion.

Understanding Open Licensing

Concept and Legal Nature

Open licensing signifies the practice of making IP open to the public under uniform, transparent terms that license extensive use, reproduction, or modification frequently royalty-free or at negligible cost. (Lemley, Mark A., 2014) Contrasting to patent pools, open licenses are normally non-exclusive,

empowering several parties to access and exploit the same technology concurrently. The model began in software development but has since been adapted for biomedical invention.

In a pandemic situation, open licensing sanctions rapid technology propagation, dropping reliance on single manufacturers or geographical dominations. These licenses are compatible with Article 31 of TRIPS, which permits government approval in emergencies, but they vary in being voluntary and pre-emptive recognised before crisis intensification.

Economic Rationale

Economically, open licensing tackles the market failure intrinsic in pharmaceutical innovation through pandemics. Because the universal need for vaccines or diagnostics can surge arbitrarily, conventional patent exclusivity may hinder timely supply. By lessening entry barriers for generic and region-based manufacturers, open licensing promotes competitive production, leading to affordability and range of supply. (Ellen 't Hoen, 2016) Furthermore, it allows delinking the parting of R&D costs from product costs safeguarding sustainability deprived of unwarranted reliance on monopolistic earnings.

Types of Licensing Models

FRAND Licensing

FRAND (Fair, Reasonable, and Non-Discriminatory) licensing terms are frequently used in technology standards and can be modified for health technologies. (Richard Gilbert, 2004) They necessitate patent holders to provide access on unbiassed terms that balance return on investment with social benefit. FRAND terms can synchronize with both pooled and open licensing measures, guaranteeing that no licensee is unfairly eliminated.

Royalty-Free Licensing

In emergencies, royalty-free licensing has developed as the ideal standard, particularly for publicly financed or humanitarian technologies. (World Health Org., n.d.) Under this method, the patent owner relinquishes royalty payments to hasten access, often imposing settings linked to quality control, safety, and reasonable supply. The WHO's *COVID-19 Technology Access Pool (C-TAP)* and the *Open COVID Pledge* illustrate this model. (Open COVID Pledge, n.d.)

Time-Limited or Conditional Licensing

Some licenses are time-constrained, elapsing after the emergency period or after a pre-set number of years. (Frederick M. Abbott & Jerome H. Reichman,, 2007) This arrangement preserves incentives for invention while guaranteeing that pressing needs are met without constantly eroding exclusivity. Provisional terms by way of compulsory data sharing or technology transfer can similarly be incorporated to expand long-term capacity expansion in LMICs.

Key Global Platforms

The Medicines Patent Pool (MPP)

The Medicines Patent Pool (MPP), crafted by *Unitaid* in 2010, remains the prominent established model for patent pooling in global health (Unitaid, n.d.) Its obligation is to negotiate with patent proprietors chiefly pharmaceutical firms and sublicense to generic companies in LMICs. By 2024, MPP had secured licenses for over 20 essential medicines, contributing to noteworthy price discounts and extended treatment approach. (MPP, 2024)

MPP's agreements are transparent and publicly available, indicating product coverage, entitled territories, and quality assurance obligations. For instance, through the COVID-19 pandemic, MPP and the WHO mutually enabled sublicenses for prompt diagnostic technologies to regional producers, improving testing capacity in Africa and Asia. (World Health Org., 2025)

MPP works under the standard of voluntary sharing but relies on prescriptive force from global organisations such as the WHO, the UN Development Programme (UNDP), and the Human Rights Council, which classify it as an ideal for harmonising innovation and equity. (U.N. Human Rights Council Res. 15/22, 2010)

The WHO COVID-19 Technology Access Pool (C-TAP)

Launched in May 2020, the COVID-19 Technology Access Pool (C-TAP) was planned as a corresponding lead to MPP, increasing the pooling model beyond patents to comprise data, know-how, and clinical data. (World Health Org., 2020) C-TAP urges patent holders to willingly license COVID-19-related skills to MPP for universal non-exclusive sublicensing. The tool seeks to operationalize the values of the *Solidarity Call to Action*, a WHO initiative advising open science and technology sharing throughout the pandemic. (World Health Org., 2020)

Despite slow preliminary participation, C-TAP attained notable growth when the WHO and MPP broadcasted sublicensing arrangements for rapid diagnostic test technologies in 2025, counting alliances with Nigerian research institutes for indigenous diagnostic innovations. (News-Medical Life Sciences, 2025) These expansions demonstrate C-TAP's potential to support regional self-reliance and South-South cooperation.

Unitaid, GAVI, and CEPI Collaboration Models

Establishments such as Unitaid, GAVI (the Vaccine Alliance), and the Coalition for Epidemic Preparedness Innovations (CEPI) indicate complementary approaches that incorporate funding, IP management, and reasonable access

principles.

- **Unitaid** funds and supervises MPP, linking market interventions with global access main concerns. (Unitaid, n.d.)
- **GAVI** puts efforts on vaccine procurement and propagation, by means of advanced market commitments (AMCs) to assure stock for low-income countries. (GAVI, n.d.)
- **CEPI** funds vaccine R&D with linked universal access clauses, safeguarding that publicly backed innovations are subject to affordability and open licensing settings. (CEPI, 2021)

Generally, these bodies form international public goods modus, reconciling economic instruments with legal tools to accomplish IP during pandemics. Their shared governance underscores the intensifying association of law, economics and politics in global health.

Data analysis and interpretation

Data available from WIPO, WHO, and WTO, and the following data, provides a framework for modeling (cost-benefit, game theoretic, and simulation) economically. It needs to be acknowledged, however, that there is little publicly available data, so the modeling is bound to be stylized and will reflect the data assumptions.

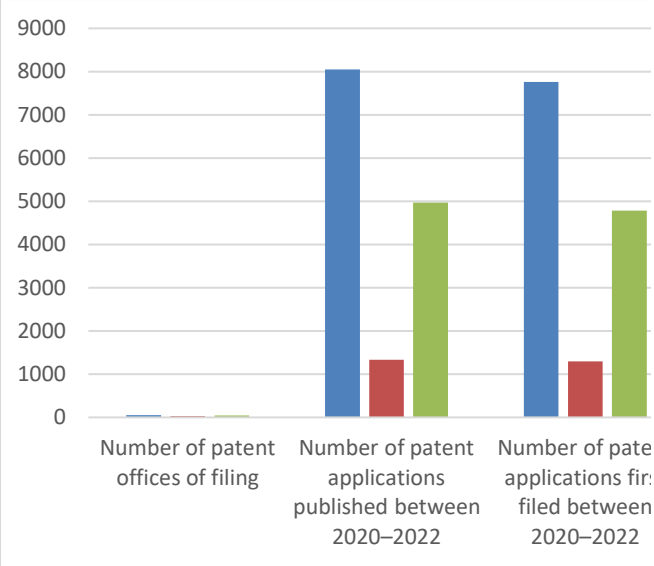
Key Data from WIPO, WHO, and WTO

1. ***Patent Filings (COVID-19)***
    - From January 2020 to September 2022, 8,050 COVID-19 related patent applications were published in 49 patent offices.
    - Out of these, 1,298 were for vaccines, 4,787 for drugs, and the rest were for other technologies related to COVID-19. (WIPO, 2023)
    - According to WIPO, the peak of patent applications was in April 2020 and peak publications was in October 2021. (WIPO, n.d.)
    - For filings 52% patent vaccines came from patent, 42% from universities/research organizations, and 6% from independent inventors.
    - For patent distributions, the largest filling countries for vaccines are China and the U.S, for therapeutics China is again the leader. (WIPO, 2023)
    - Collaboration: About one-fourth of the patent applications related to COVID-19 came from more than one assignee, suggesting cross-institutional collaboration. (WIPO, 2023)
2. ***Type of Technology (WIPO)***
    - For patent vaccines, conventional platforms (e.g., protein-subunit) make a large share (47%) while 11% are mRNA platforms.
    - For therapeutics, small molecules (50%) and biologics (43%) are in the lead, while traditional medicine is 10%.
3. ***Speed of Grants***
    - WIPO claims the COVID-19 patent applications for COVID-19 were often fast tracked, many underwent accelerated procedures or general fast-tracking. (WIPO, 2022)
    - There's a time average of 18 months for filling to publication.

Patent applications related to COVID-19 in general, COVID-19 vaccines and COVID-19 therapeutics, first published and filed January 2020 through September 2022

Over three-quarters of the overall COVID-19 patent dataset is related to COVID-19 vaccines or therapeutics. Patent filings related to COVID-19 therapeutics were almost four times higher than for COVID-19 vaccines and patent protection sought at most patent offices.

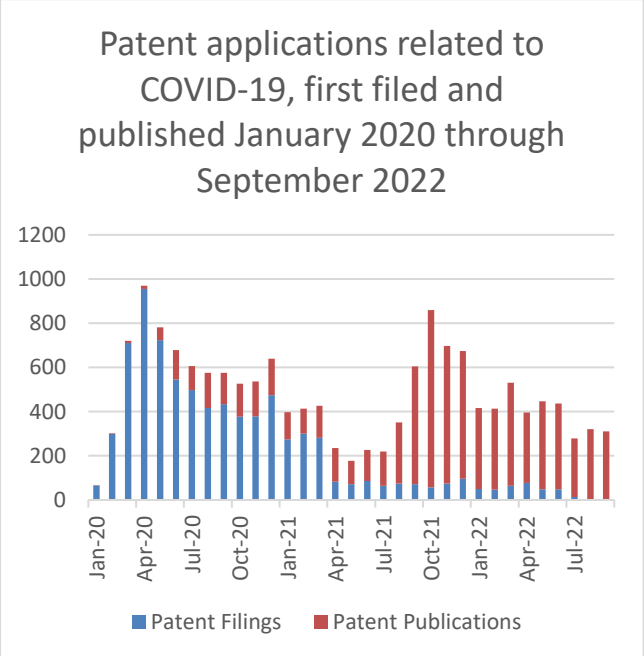
Patent dataset	Number of patent offices of filing	Number of patent applications published between 2020–2022	Number of patent applications first filed between 2020–2022
COVID-19 overall	49	8050	7758
COVID-19 vaccines	30	1331	1298
COVID-19 therapeutics	44	4968	4787



Source: WIPO, based on patent data from the CAS Content Collection, September 2022

Patent applications related to COVID-19, first filed and published January 2020 through September 2022, by patent filing and publication month

COVID-19-related patent application filing peaked in April 2020, followed by a corresponding peak in COVID-19-related publications in October 2021.



Source: WIPO, based on patent data from the CAS Content Collection, September 2022.

WHO / C-TAP (COVID-19 Technology Access Pool) Data

1. ***C-TAP Structure & Purpose***
   - WHO C-TAP seeks to enable transparent voluntary non-exclusive licensing of COVID-19 health technologies IP, know-how, and clinical data. (WHO, n.d.)
   - Connecting IP holders (developers) with quality-assured LMICs manufacturers is the aim of C-TAP.
   - In addition to patenting opportunities, manufacturers in C-TAP receive expertise, know-how, and necessary clinical, trial, and commercial data for approval.
2. ***Licensing Agreements***
   - As of July 2023, Medigen Vaccine Biologics, received and signed a non-exclusive, worldwide license through C-TAP / MPP for a COVID-19 subunit vaccine. (WHO, n.d.)
   - This license covers not just patents, but also know-how, regulatory documents, information on the CHO cell lines and adjuvant, and data on the transfer of technology necessary for manufacturing.
   - As of August 2023, the World Health Organization also announced three additional licensing agreements under C-TAP. (WHO, 2023)
3. ***Membership & Support***
   - Roughly 45 Member States of the World Health Organization publicly support C-TAP. ((WTO), 2022)
   - C-TAP functions in collaboration with other institutions including the Medicines Patent Pool (MPP), UNDP, Unitaid advanced, and others. (World Health Organization (WHO), n.d.)

Evaluating Effectiveness and Challenges

Though patent pools and open licensing devices have displayed concrete benefits, their success depends on voluntary participation by patent bearers, which is repeatedly influenced by political pressure and corporate incentives. Confrontation may stem from fears over loss of market exclusivity or undetermined remuneration. Likewise, administrative obscurities such as quality control, data standardization and regulatory position can impede swift operationalization.

Nonetheless, these mechanisms stay fundamental tools for pandemic readiness. They operationalize

TRIPS flexibilities in a supportive rather than provocative manner, enabling nations to evade cumbersome compulsory licensing dealings. More glaringly, they institutionalize solidarity by instilling equity into the very idea of IP governance.

Global Case Studies: Lessons from the COVID-19 Pandemic

When COVID-19 rushed around the world, every public health safeguard and idea sharing model was thrown to the breaking point. One obvious takeaway is that nations must line up quick, fair access to the tools that in reality save lives. Patent rules and innovation policy sat squarely in the middle of both vaccine roll-outs and the hunt for novel treatments.

C-TAP: Underutilization and Political ResistanceIn May 2020, the World Health Organisation rolled out the COVID-19 Technology Access Pool, or C-TAP, asking scientists, companies, and governments to swap patents, data, and production know-how without charge so that lifesaving tools could reach every corner of the world. The concept sounded hopeful, yet it soon became obvious that the pool was barely getting used. (WHO, n.d.)

None of the biggest drug firms released their patents or manufacturing tricks a move driven by political unease and the desire to keep profits high. Wealthy countries, for their part, protected their home firms from foreign competition, signing fast supply contracts that left talk of global fairness on the shelf.

Medicines Patent Pool's Licensing for Antivirals

The Medicines Patent Pool (MPP) made obvious success for COVID-19 antivirals, comprising Molnupiravir and Paxlovid. Together with Unitaid, it obtained voluntary licences from Merck and Pfizer permitting generic production in over 100 LMICs.

The arrangement diminished manufacturing lead times and lowered costs in areas where it is expensive to purchase branded medicines. However, large-population middle-income countries like Brazil and China were excluded, raising fresh concerns with respect to equity. (Medicines Patent Pool, n.d.)

Moderna's COVID-19 Patent Disputes and Open Pledge

At the beginning of the pandemic, Moderna openly declared not to enforce its COVID-19 patents which was viewed as a step to ensure wider access. However this view changed by 2022, the company sued suppliers and competitors in multiple nations, claiming they infringed its patents.

What the firm still calls its genuine promise now feels more like a catchy tagline than a real contract. It even disengaged from the WHO mRNA hub in South Africa, ignoring repeated calls for shared expertise. (Sherkow, Jacob S., & Contreras, Jorge L., 2022)

This flip-flop proves that goodwill promises can fade away under stress and shows the urgent need for tough, binding policies on emergency IP.

India and South Africa's TRIPS Waiver Proposal

In October 2020, India and South Africa asked the WTO for a limited-time waiver on key TRIPS rules, so countries could make and move COVID-19 tests, vaccines and treatments without fearing patents. The goal was straightforward: widen supply, speed delivery and protect public health without getting bogged down in courtroom fights.

Over a hundred governments and a long list of activist groups supported the idea, but the European Union, the United Kingdom and Switzerland still froze it. After marathon talks, the WTO ministerial conference in June 2022 settled for a bare-bones waiver that covered only COVID-19 vaccines. (WTO, 2022)

The spat proved how ragged the global system for managing intellectual property can be and how nearly impossible reaching consensus becomes amid a health emergency. It also showed the urgent need to thread temporary safety valves into international law.

Vaccine Production in the Global South: mRNA Hub in South Africa.

To reduce dependence on Northern suppliers, WHO established a technology-transfer hub in South Africa that trains local companies in making mRNA vaccines. Afrigen Biologics later used open-source blueprints to make its own version of the Moderna vaccine.

However progress was slow because patent holders denied to cooperate and their confidential trade secrets were not shared. The South African manufacturing hub represents real progress towards local production but also demonstrate the extent to which science can be pushed when IP rules are tight. (WHO, n.d.)

These incidents illustrate the urgent need for legally binding agreements that will compel know-how-sharing in critical times of health emergencies so factories in the Global South can act swiftly and confidently.

COVID-19 was able to test and expose both the strengths and cracks in today's system of patents and licenses when global emergencies strikes. The Medicines Patents Pool and the South African mRNA centre showcase the potential of such collaboration, yet initiatives such as C-TAP and Moderna's public

promise stalled due to larger political and economic hurdles.

The long discussion surrounding the TRIPS waiver further demonstrated how slow existing international law can be when an urgent crisis knocks on the door. To be prepared next time, nations should agree in advance on binding policies for patent pools, open licenses and fast know-how transfer as quintessential. Self-regulatory, temporary goodwill schemes are helpful but do not go far enough. That highlights the need for legally binding global treaties which will be vital if innovation prioritises public health when the world is at its most vulnerable form.

Evaluating Effectiveness Challenges and Opportunities

The COVID-19 pandemic placed every nations' health system under enormous stress and hurried the world into a testing ground for new models. At the core of the crisis lay the problem of intellectual property: whether there were patents and open licensing to ascertain if life-saving technologies and resources could be made available to all. While there were initiatives such as the COVID-19 Technology Access Pool C-TAP and the Medicines Patent Pool MPP were launched to widen access, the very limited engagement from pharmaceutical giants revealed the major weakness in the current IP model.

1. *Why Were Patent Pools Underused During COVID-19?*

Policymakers hailed patent pools and open licenses as front-line tools to break monopolies on vaccines and treatments. In practice, however, C-TAP attracted only token involvement from most leading pharmaceutical companies. As a result, calls for worldwide solidarity did not translate into tangible transfers of key patents, technical knowledge, or raw data, leaving many manufacturers in the Global South locked out of production.

Because there were no binding rules, the post-COVID technology pools remained voluntary and never gained real traction. On top of that, companies hesitated to pay into C-TAP, worried they would lose exclusivity and profits. Their choice to join only when convenient clashed with the speed and fairness public-health advocates had called for. (Ellen 't Hoen et al., 2022)

2. *Corporate Reluctance and Profit Models*

At heart, the denial to back open-licensing models comes from the urge to maximize profit. Drug manufacturers rely heavily on patents to cover research and development costs and return profits to shareholders. COVID vaccines and treatments were profit-making, so anything resembling open licensing felt counterproductive to those gains. (Tahir Amin, 2021)

A prime example includes Pfizer and Moderna, both firms bypasses C-TAP and the WHO mRNA hub in South Africa, arguing solely on the basis of quality control and IP protection. Their argument is a testament to wider unwillingness to shift from the standard patent model, especially during a state of global emergency.

3. *Legal and Political Barriers: IP Nationalism and Export Restrictions*

Legal and political obstacles greatly hindered efforts in IP-sharing. At the core of these obstacles, IP nationalism makes countries more concerned about safeguarding homegrown technology rather than sharing it. The U.S. Defense Production Act, which limited export of critical vaccine supplies, added additional complication of trouble for foreign producers.

WTOs TRIPS Agreement has been considered as a legal barrier, particularly regarding compulsory licensing and technology transfer. (Suerie Moon et al., 2021) When India and South Africa offered a proposal for COVID-19 waiver under TRIPS, the final output still excluded diagnostics and therapeutics. (WTO, 2020)

4. *Public-Private Partnership Complexities*

Through the first years of the pandemic, the collaboration of Public-private sectors through COVAX and ACT-A proved invaluable. Yet, with boards comprising of mainly private sector representatives, there was lack of accountability and transparency. (Garrett W. Brown et al., 2021)

Pharmaceutical firms within these public-private collaborations possessed the means to leverage their bargaining power. They publicly announced to abide by expectations with respect to public funding, pricing, access and licensing. This created a shortcoming which lead to reducing demand in access to mechanisms that could provide access to publicly funded research. (WHO Independent Panel for Pandemic Preparedness and Response, 2021)

5. *Opportunities: Building Global Solidarity and Trust*

The crisis has further exposed the need to rethink the potential for and scope of global patent law. It has reminded us that with inequitable access in the forefront of public health, there is room for broader international limitations.

One way is to advance global IP sharing provisions within pandemic treaties or the WHO International Health Regulations. They should allow manufacturers to open public licenses, mandated with rapid

technology transfer in the case of a public health crisis. (WHO, 2022)

Trust and collaboration could also be built by enhancing C-TAP with political backing and funding. Governments could sweeten the deal for transparency and equitable access by subsidizing, providing purchase agreements, or offering contracts with the manufacturers.

6. *Harnessing Pools for Diagnostics, Treatments, and Future Pandemic Threats*

To date, IP sharing has concentrated on the development of vaccines, but so too should tests and treatments. In the interim, patent pools have been absent and so have been the opportunities for the clinical early stage diagnosis and treatment of the illnesses.

There are gaps in the coverage of patent pools that, if addressed will improve the early stage diagnosis and treatment of the illnesses. The Medicines Patent Pool is for example the holder of licenses for the antiviral products Molnupiravir and Paxloid and has facilitated the entry of generics. These examples demonstrate that voluntary licensing models can be profitable if the collaborators share the value equitably. (Medicines Patent Pool, 2022)

Preparedness plans must also contain pre-agreed open-licensing models, starting with standard clauses on data and IP sharing in public research contracts. (David Matthews, 2023)

RECOMMENDATIONS AND CONCLUSION

Future Framework for Pandemic Preparedness Policy Recommendations

COVID-19 exposed the weakness of world's emergency system, especially pinpointing extreme inequity when people cannot get the fundamental resources they need. Although scientists developed and manufactured effective vaccines at record time, there was still failure to distribute vaccines which revealed serious cracks in the system. Fixing this problem means building an effective future preparedness plan on a public-focused intellectual property framework that treats equity as a goal.

Mandatory Open Licensing in Public-Funded R&D

Public funding led to rapid development of COVID-19 vaccines and tools, through initiatives like Operation Warp Speed and national research grants. Despite this, the patent rights remained with private companies, limiting access to and further development of the work. To prepare for the next outbreak, governments and donors should write open-licensing clauses into every deal they fund. Such clauses would make grantees share new patents on non-exclusive, low or no royalty terms, reaching manufacturing or emerging economies as well.

Strengthening C-TAP and MPP with Legal Mandate and Funding

The WHO-led COVID-19 Technology Access Pool (C-TAP) and the Medicines Patent Pool (MPP) proved useful for sharing intellectual property and know-how, yet they still lack a strong legal base and steady money. C-TAP, set up in May 2020 with Costa Rica, UNDP, and other partners, offered voluntary, non-exclusive licences for vaccines, drugs, tests, and technical insight. That effort produced meaningful deals, such as the Spanish CSIC Covid test and technology transfers from the NIH. Still, because its mandate is purely voluntary and funding is sketchy, the initiative has not reached its full promise.

To move faster, C-TAP should be written into a binding WHO treaty that obliges all member states to take part. Countries would pledge multi-year budgets, backed by philanthropies, to meet day-to-day expenses and reward patent holders with fair royalties. In this model, MPP-one that already arranged early licences for HIV drugs and pandemic tools-would act as C-TAP's day-to-day partner. Although its licensing know-how is well established, reaching every corner of the globe will require formal legal backing in future health preparedness plans.

Encouraging Regional Patent Pools

Despite sweeping global agreements, factories remain patchy across continents, and many regions still struggle to make their own essential medicines. Regional patent pools-set up by groups like the African Union, ASEAN and the African Medicines Agency-are a promising second line of defence. Because these bodies already harmonise rules through joint reviews in AUDA-NEPAD, they should now build regional IP-sharing hubs tied to C-TAP and MPP that meet local manufacturing and regulatory needs.

Tying IP Sharing to the WHO Pandemic Treaty

As negotiators draft a WHO Pandemic Treaty, they have a rare chance to put equitable access front and centre. In the context of the Treaty, equitable access should mean mandatory licensing through C-TAP and patent pools for all pandemic related research, coupled with meaningful enforcement mechanism such as trade sanctions, withdrawal of export credit, removal of priority in procurement, and embargoes.

Specifications must include:

- All patents and know-how must be shared for research that was publicly funded.

- All explicit guarantee of non-exclusive licenses for tests, vaccines and treatments that save lives.
- Timely, obligatory collaboration on the data from the trials and the knowledge for production so that any capable facility can ramp up production quickly.

Aligning legal obligations with WHO oversight and transparency should prevent the copyright fragmentation that characterised COVIUD and ensure countries actually implement the rules.

An Access-First IP Model for Pandemics

Compiled together, these suggestions build an 'Access First' IP Model for Pandemics.

Element	Description
Public Funding → Mandatory Access Clauses	• Research funded by taxpayers must result in globally licensed IP
C-TAP / MPP with Legal Mandate	• Central, multi-stakeholder platforms with sustainable funding
Regional Patent Pools	• Strengthened through regional institutions (e.g., Africa/ASEAN)
Pandemic Treaty Integration	• IP-sharing obligations embedded in international law
Royalty Structures	• Tiered, royalty-free to LICs; fair-tier to UMICs; adjusted royalties to HICs

Combining the proposal with the expectation of new ideas and public responsibilities, it keeps the private capital flowing while foremost addressing global in equities during global threats. It suggests that the global south should share trade enabling new domestic productive capacity and accessible pricing.

Addressing Potential Resistance and Implementation Challenges

It is reasonable to assume some patent holders as well as some wealthy state actors will react to these proposals with hostility. To decrease the chances we suggest:

- Setting reasonable royalties and instituting fast arbitration for disputes.
- Setting up trust creating measures by compensating creators through a pooled fund or contract.
- Placing WHO-WTO watch dogs on the agreements.

Proceeding with coverage for testing and crisis tool coverage first, then with vaccines and medicines.

REFERENCES:

1. Hassoun N, Basu K, Gostin L. *Pandemic preparedness and response: a new mechanism for expanding access to essential countermeasures*. Health Economics, Policy and Law. 2024;19(4):474-497. doi:10.1017/S1744133124000094
2. Saxena A, Baker BK, Banda A, Herlitz A, Miller J, Karrar K, Fleurbaey M, Chiwa E, Atuire CA, Hirose I, Hassoun N. Pandemic preparedness and response: beyond the Access to COVID-19 Tools Accelerator. *BMJ Glob Health.* 2023 Jan;8(1): e010615. doi: 10.1136/bmjgh-2022-010615. PMID: 36650015; PMCID: PMC9852735.
3. World Health Organization. Intergovernmental Negotiating Body to draft and negotiate a WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response: Report by the Director-general of the WHO to the 77th World Health Assembly. Geneva; 2024. Available from: https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_10-en.pdf.
4. World Trade Organization; World Health Organization; World Intellectual Property Organization, *Promoting Access to Medical Technologies and Innovation: Intersections between Public Health, Intellectual Property and Trade* (2d ed., 2020), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_628_2020.pdf.
5. BioCentury. Eaton E. "Health assembly adopts COVID-19 resolution calling for patent pools." May 2020.
6. Braimoh, T., Burrone, E., Gore, C. *et al.* Intellectual property licensing of therapeutics during the COVID-19 crisis: lessons learnt for pandemic preparedness and response. *Global Health* 20, 52 (2024). https://doi.org/10.1186/s12992-024-01057-5
7. Braimoh, T., Burrone, E., Gore, C. *et al.* Intellectual property licensing of therapeutics during the COVID-19 crisis: lessons learnt for pandemic preparedness and response. *Global Health* 20, 52 (2024). https://doi.org/10.1186/s12992-024-01057-5
8. World Intellectual Property Organization, *A Primer on Technology Transfer in the Field of Biotechnology: 8 Biotechnology in the Time of COVID-19* (2025), https://www.wipo.int/web-publications/a-primer-on-technology-

transfer-in-the-field-of-biotechnology/en/8-biotechnology-in-the-time-of-covid-19.html

9. World Health Organization, *WHO COVID-19 Technology Access Pool (C-TAP)*, available at https://www.who.int/initiatives/covid-19-technology-access-pool
10. Medicines Patent Pool, *WHO and Medicines Patent Pool Announce Sublicensing Agreement for Rapid Diagnostic Test Technology*, May 9, 2025, https://medicinespatentpool.org/news-publications-post/who-and-medicines-patent-pool-announce-sublicensing-agreement-for-rapid-diagnostic-test-technology
11. World Health Organization, *WHO and Medicines Patent Pool Support Nigerian Innovation in Health Diagnostics*, May 9, 2025, https://www.news-medical.net/news/20250509/WHO-and-Medicines-Patent-Pool-support-Nigerian-innovation-in-health-diagnostics.aspx
12. World Trade Organization; World Health Organization; World Intellectual Property Organization, *Promoting Access to Medical Technologies and Innovation: Intersections between Public Health, Intellectual Property and Trade* (2d ed., 2020), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_628_2020.pdf.
13. World Health Organization, *WHO COVID-19 Technology Access Pool (C-TAP)*, available at https://www.who.int/initiatives/covid-19-technology-access-pool
14. Hassoun N, Basu K, Gostin L. Pandemic preparedness and response: a new mechanism for expanding access to essential countermeasures. *Health Economics, Policy and Law*. 2024;19(4):474-497. doi:10.1017/S1744133124000094.
15. Burrone E, Gotham D, Gray A, de Joncheere K, Magrini N, Martei YM, et al. Patent pooling to increase access to essential medicines. Bull World Health Organ. 2019;97:575–7
16. World Health Organization, *WHO and Medicines Patent Pool Announce Sublicensing Agreement for Rapid Diagnostic Test Technology,* May 9, 2025, https://www.who.int/news/item/09-05-2025-who-and-medicines-patent-pool-announce-sublicensing-agreement-for-rapid-diagnostic-test-technology
17. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 27(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
18. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 27(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
19. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 28(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
20. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 31(b), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
21. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 31(h), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
22. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 31(f), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S.
23. WTO General Council, Decision of 6 Dec. 2005, Amendment of the TRIPS Agreement, WT/L/641 (Dec. 8, 2005).
24. WTO General Council, Decision of 6 Dec. 2005, Amendment of the TRIPS Agreement, WT/L/641 (Dec. 8, 2005).
25. *TRIPS Agreement*, supra note 1, art. 6.
26. WTO Ministerial Conference, Declaration on the TRIPS Agreement and Public Health, WT/MIN(01)/DEC/2 (Nov. 14, 2001) [hereinafter *Doha Declaration*].
27. *Doha Declaration* ¶ 4.
28. *Doha Declaration* ¶ 6.
29. The Patents Act, No. 39 of 1970, Section 92, India Code (1970).
30. The Patents Act, No. 39 of 1970, Section 92(3)., India Code (1970).
31. International Covenant on Economic, Social and Cultural Rights art. 12, Dec. 16, 1966, 993 U.N.T.S. 3 [hereinafter *ICESCR*].
32. Comm. on Econ., Soc. & Cult. Rts., *General Comment No. 14: The Right to the Highest Attainable Standard of Health*, U.N. Doc. E/C.12/2000/4 (Aug. 11, 2000), 43–44.
33. Comm. on Econ., Soc. & Cult. Rts., *General Comment No. 17: The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from Any Scientific, Literary or Artistic Production*, U.N. Doc. E/C.12/GC/17 (Jan. 12, 2006), Pp 35.
34. Human Rights Council Res. 15/22, *Access to Medicine in the Context of the Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental*

Health, U.N. Doc. A/HRC/RES/15/22 (Oct. 6, 2010).

35. World Health Organization, WHO COVID-19 Technology Access Pool (C-TAP), https://www.who.int/initiatives/covid-19-technology-access-pool; Medicines Patent Pool, *About the MPP*, https://medicinespatentpool.org/who-we-are/about-us.

36. World Intellectual Prop. Org., A Primer on Technology Transfer in the Field of Biotechnology 35 (2020), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_628_2020.pdf.

37. Keith Maskus, Private Rights and Public Problems: The Global Economics of Intellectual Property in the 21st Century 121 (2012).

38. Carlos M. Correa, Integrating Public Health Concerns into Patent Legislation in Developing Countries 45 (2000).

39. Medicines Patent Pool (MPP), About the MPP, https://medicinespatentpool.org/who-we-are/about-us.

40. Mark A. Lemley, Intellectual Property and the Internet Economy, 28 *Harv. J.L. & Tech.* 1, 23–24 (2014).

41. Ellen 't Hoen, The Global Politics of Pharmaceutical Monopoly Power 118 (2016).

42. Richard Gilbert, Antitrust for Patent Pools: A Century of Policy Evolution, 2004 *Stan. Tech. L. Rev*. 3, ¶ 12 (2004).

43. World Health Org., COVID-19 Technology Access Pool (C-TAP), https://www.who.int/initiatives/covid-19-technology-access-pool.

44. Open COVID Pledge, https://opencovidpledge.org (last visited Nov. 8, 2025).

45. Frederick M. Abbott & Jerome H. Reichman, The Doha Round's Public Health Legacy, *10 J. Int'l Econ. L.* 921, 932 (2007).

46. Unitaid, Medicines Patent Pool Governance and Strategy, https://unitaid.org/project/medicines-patent-pool.

47. MPP, *Annual Report 2024*, https://medicinespatentpool.org.

48. World Health Org., WHO and Medicines Patent Pool Announce Sublicensing Agreement for Rapid Diagnostic Test Technology (May 9, 2025), https://www.who.int/news/item/09-05-2025-who-and-medicines-patent-pool-announce-sublicensing-agreement-for-rapid-diagnostic-test-technology.

49. U.N. Human Rights Council Res. 15/22, Access to Medicine in the Context of the Right to Health, U.N. Doc. A/HRC/RES/15/22 (Oct. 6, 2010).

50. World Health Org., C-TAP: Key Principles and Implementation Guide (2020), https://www.who.int/initiatives/covid-19-technology-access-pool.

51. World Health Org., Solidarity Call to Action (May 2020), https://www.who.int/initiatives/solidarity-call-to-action.

52. News-Medical Life Sciences, WHO and Medicines Patent Pool Support Nigerian Innovation in Health Diagnostics(May 9, 2025), https://www.news-medical.net/news/20250509/WHO-and-Medicines-Patent-Pool-support-Nigerian-innovation-in-health-diagnostics.aspx.

53. Unitaid, *About Us*, https://unitaid.org.

54. GAVI, Vaccine Alliance Model and AMCs, https://www.gavi.org.

55. CEPI, Equitable Access Policy (2021), https://cepi.net/equitable-access-policy.

56. **WIPO**, *Patent Landscape Report: COVID-19 Vaccines and Therapeutics* (2023), https://www.wipo.int/edocs/pubdocs/en/wipo-pub-1075-23-en-covid-19-vaccines-and-therapeutics.pdf

57. **WIPO**, *Exploring COVID-19 Vaccine Patents*, https://www.wipo.int/en/web/patent-analytics/exploring-covid-19-vaccine-patents

58. **WIPO**, *Key Findings: Patent Landscape Report—COVID-19 Vaccines and Therapeutics (2023)*, https://www.wipo.int/export/sites/www/patentscope/en/docs/key-findings-patent-landscape-report-covid-19-vaccines-therapeutics-2023.pdf

59. **WIPO**, *Key Findings: Patent Landscape Report—COVID-19 Vaccines and Therapeutics (2023)*, https://www.wipo.int/export/sites/www/patentscope/en/docs/key-findings-patent-landscape-report-covid-19-vaccines-therapeutics-2023.pdf

60. **WIPO**, *Press Release: WIPO Releases New Patent Landscape Report on COVID-19* (Jan. 13, 2022), https://www.wipo.int/pressroom/en/articles/2022/article_0003.html

61. **WHO**, *COVID-19 Technology Access Pool (C-TAP)*, https://www.who.int/initiatives/covid-19-technology-access-pool

62. **WHO**, *COVID-19 Technology Access Pool (C-TAP)*,

https://www.who.int/initiatives/covid-19-technology-access-pool

63. **WHO**, *WHO Initiative Signs New Licensing Agreements on COVID-19 Technologies* (Aug. 29, 2023), https://www.who.int/news/item/29-08-2023-who-initiative-signs-new-licensing-agreements-on-covid-19-technologies
64. **World Trade Organization (WTO)**, *Emerging Trends in Intellectual Property Filing Activity in the Context of the COVID-19 Pandemic*, WTO Staff Working Paper ERSD-2022-01 (2022), https://www.wto.org/english/res_e/reser_e/ersd202201_e.htm
65. **World Health Organization (WHO)**, *What Is the COVID-19 Technology Access Pool (C-TAP)?*, https://www.who.int/initiatives/covid-19-technology-access-pool/what-is-c-tap
66. World Trade Organization, *Emerging Trends in Intellectual Property Filing Activity in the Context of the COVID-19 Pandemic*, WTO Staff Working Paper ERSD-2022-01 (2022), https://www.wto.org/english/res_e/reser_e/ersd202201_e.htm
67. World Intellectual Property Organization, "WIPO Releases New Patent Landscape Report on COVID-19," *WIPO Pressroom* (Jan. 13, 2022), https://www.wipo.int/pressroom/en/articles/2022/article_0003.html
68. World Trade Organization, *Emerging Trends in Intellectual Property Filing Activity in the Context of the COVID-19 Pandemic*, WTO Staff Working Paper ERSD-2022-01 (2022), https://www.wto.org/english/res_e/reser_e/ersd202201_e.htm
69. **World Health Organization (WHO)**, *What Is the COVID-19 Technology Access Pool (C-TAP)?*, https://www.who.int/initiatives/covid-19-technology-access-pool/what-is-c-tap
70. WHO, COVID-19 Technology Access Pool (C-TAP), https://www.who.int/initiatives/covid-19-technology-access-pool.
71. Medicines Patent Pool, Molnupiravir and Paxlovid Agreements, https://medicinespatentpool.org/licence-detail.
72. Sherkow, Jacob S., & Contreras, Jorge L., "The Ineffectiveness of Voluntary IP Pledges in Global Crises," 381 *New Eng. J. Med.* 10 (2022).
73. WTO, Ministerial Decision on the TRIPS Agreement, WT/MIN(22)/30 (2022).
74. WHO, mRNA Technology Transfer Programme, https://www.who.int/initiatives/the-mrna-vaccine-technology-transfer-hub.
75. Ellen 't Hoen et al., Medicines Patent Pool and C-TAP: Lessons from COVID-19, 28 *Lancet Glob. Health e159* (2022).
76. Tahir Amin, "IP and Inequity: Why Pharma Won't Share COVID-19 Technologies," *Health Aff. Blog* (2021), https://www.healthaffairs.org/do/10.1377/forefront.20211215.959774.
77. Suerie Moon et al., "Will the TRIPS Waiver Improve Access to COVID-19 Vaccines?", 397 *BMJ* 1294 (2021).
78. WTO, TRIPS Council Special Session: Waiver Proposal, IP/C/W/669 (2020).
79. Garrett W. Brown et al., "The Politics of ACT-A: Shifting Global Health Governance in the COVID-19 Response," 41 Dev. *World Bioeth.* e12541 (2021).\
80. WHO Independent Panel for Pandemic Preparedness and Response, COVID-19: Make it the Last Pandemic, Final Report (2021), https://theindependentpanel.org/mainreport/.
81. WHO, Working Group on Strengthening WHO Preparedness and Response to Health Emergencies: Report A/WGPR/16/5 (2022).
82. Medicines Patent Pool, Annual Report 2022, https://medicinespatentpool.org/who-we-are/annual-reports.
83. David Matthews, "Leveraging IP Pools for Diagnostics and Beyond," 12 *J. Intell. Prop. L. & Pract.* 945 (2023).

