

PATENTS VERSUS PUBLIC HEALTH: LEGAL FAILURES IN GLOBAL VACCINE DISTRIBUTION DURING PANDEMICS

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Abstract

The distribution of vaccines in a global health crisis is a crucial battle between corporate profits and human survival. Intellectual property laws such as the TRIPS Agreement facilitated in rewarding pharmaceutical companies for developing vaccines at a record speed. However, the distribution of these vaccines is often extremely inequitable. Rich countries gets the first doses of vaccines. This disparity highlights a massive failure of international law and global health regulations which becomes powerless against market forces. The world needs structural as well as legal change, e.g. mandatory technology transfer, local manufacturing hubs in developing countries, and above all, legally binding treaties to force global cooperation.

INTRODUCTION

Researchers assert that concentration of vaccine production, monopolization of supply chains, and the influence of pharmaceuticals have significantly exacerbated global disparities (Demir & Bican, 2023; Santangelo et al., 2024). Vaccine access is presented as a global common good, not a commercial commodity, through ethical considerations, such as entitlement to health, distributive justice, and global solidarity (El Kheir-Mataria et al., 2022). Equitable distribution minimizes the risks of mutation, reinforces collective immunity, and eliminates economic disruption (Mukherjee et al., 2023; Srivastava et al., 2023). Nonetheless, the issues of governance remain unresolved, such as vaccine nationalism, export restrictions, and flaws in the

multilateral allocation systems like COVAX (McMahon, 2025).

The WTO TRIPS Agreement protects intellectual property, which makes vaccines less affordable and limits production in low- and middle-income countries (Arup & Plahe, 2023). The controversies of the temporary TRIPS waiver are stressing the tension between innovation incentives and global equity (Park & Konken, 2024; Ranjan & Gour, 2023). The international human rights law, especially Article 12 of the ICESCR, provides states with the duty to make sure that they have the necessary medicines, but the use of this duty is not as strict in cases of global emergencies (Upreti, 2024). The present study critically analyzes the global vaccine allocation in terms of equity,

intellectual property rights, and international legal obligations to determine the gaps in the system and offer effective changes.

Research Justification

Studying the global vaccine distribution is important as unequal access to vaccines contributes to worsening health inequalities, prolonging pandemics, and destabilizing the global economy. Poor nations have been blocked from getting vaccines time and again because of tough intellectual property regulations, small production and the monopoly of advance purchases by richer nations. It is also important to understand how intellectual property systems influence vaccine production in this modern world. International trade regimes have a huge impact on the ability of states to respond to health emergencies. Patents hamper technology transfer and local production, which means vulnerable groups have to wait longer to be vaccinated, putting their lives at risk and economies at risk." People struggled to save their lives.

Literature Review

The literature on the global distribution of vaccines is uniform in that there are structural imbalances that are enshrined in the global political and economic systems (Park & Konken, 2024; Santangelo et al., 2024). Researchers believe that initial immunization policies were based mostly on bilateral assistance and a system of donors, which strengthened the dependency patterns of low-income nations and reduced the sustainability in the long term (Arup & Plahe, 2023).

Research has shown that financing gaps, concentration of production, and monopolization of the supply chain made it hard for people in developing areas to get vaccines (Mukherjee et al., 2023). As globalization sped up, the governance of vaccines became more market-driven, with the intellectual property regime and co-creation schemes of vaccines moving manufacturing to industrialized economies (Demir & Bican, 2023; Ranjan & Gour, 2023).

There exists a considerable body of literature by scholars like El Kheir-Mataria et al. (2022); McMahon (2025); Srivastava et al. (2023); and Upreti (2024)

examining vaccine nationalism during global health crises such as H1N1 and COVID-19. Researchers record how the use of advance purchase agreements allowed richer countries to get a first-mover advantage, as a result of which the principles of global solidarity are undermined, and the loopholes in the international system of cooperation in law enforcement are revealed (Ranjan & Gour, 2023). Research also highlights that export restrictions, technologies safeguarded by IP, and restricted transfer of technology have highly reduced manufacturing capacity in the Global South (Demir & Bican, 2023). Multilateral allocation systems failed to balance the unequal bargaining power of developed and developing countries, which strengthened structural inequalities (Arup & Plahe, 2023).

The recent scholarly discussions are concentrated on the relationship between the intellectual property regimes and the international law commitments. Researchers have argued that restrictive IP regimes focus on incentives to innovate, rather than on fair access in the case of emergency public health (Ranjan & Gour, 2023). The legal studies also show that global health and human rights commitments are hard to enforce. This suggests that the ways people work together are mostly voluntary and political so far (Arup & Plahe, 2023; Santangelo et al. 2024). Together, the literature highlights the importance of enhanced global responsibility frameworks, adaptable IP policies, and enforceable international obligations to bring fair distribution of vaccines.

Historical Context of Global Vaccine Distribution

The historical development of the distribution of vaccines globally portrays the historical differences that are based on the political and economic power systems (Demir & Bican, 2023), which have a direct effect on equity, intellectual property regimes, and international legal obligations (El Kheir-Mataria et al., 2022). Initial immunization

was based on a high level of bilateral aid programs, where low-income states were dependent on donations and voluntary assistance of high-income countries (Srivastava et al., 2023). Despite multilateral efforts to increase access, structural financing shortages and concentration of supply constrained sustainable distribution in developing areas (Mukherjee et al., 2023). With the deepening of globalization in the 1990s and early 2000s, vaccine governance became more market-driven, with intellectual property protection and public-private alliances that concentrated manufacturing in the economies of industrialized countries (Arup & Plahe, 2023; Santangelo et al., 2024)

Vaccine nationalism was re-emerging during global health crises, such as H1N1 and COVID-19, where the rich countries received priority access in terms of advance purchase agreements, revealing the vulnerability of international laws to encourage collaboration and fair distribution (McMahon, 2025). The ability to produce was further hindered by intellectual property-protected technologies and export restrictions in the Global South, whereas COVAX failed because of the unequal bargaining power of the states involved (Ranjan & Gour, 2023).

Traditionally, the equity of distributing vaccines has thus been affected by structural inequalities, strident intellectual property laws, and limited application of international law responsibility, which underscores the necessity of international obligations to be more accountable (Upreti, 2024; Park & Konken, 2024).

Theoretical Context of Global Vaccine Distribution

Global vaccine distribution is theoretically analyzed based on global justice, health equity, and the theory of public goods. Vaccines are broadly considered as universal public goods since they have cross-border effects by lowering the spread of diseases, death, and social and economic disturbance. In this context, fair access is not a charity but a global obligation. Equity theory supports equal distribution based on need, vulnerability and disease burden, not purchasing power and geopolitical privilege.

Vaccine markets, in economic terms, are often indicative of structural market failures. The pharmaceutical companies are in a strong position because of monopoly control, patent protection and information asymmetry. They possess specialized skills and technology of production which is not available to most states. In this case the intervention of the regulation is needed to remove the imbalances and increase equitable access.

The international legal theory also underlines the duty of states and international institutions to promote the right to health. Laws promote cooperation in prevention of diseases and availability of essential medicines flexibility in intellectual property such as compulsory licensing and technology transfer are ways to balance incentives for innovation with the urgent needs of population health. All the above-mentioned theoretical approaches indicate the conflict between business and ethics and legal obligations, and the need to establish more robust regulatory frameworks in order to reduce inequalities in the world.

Laws Regarding Global Vaccine Distribution

Although some developing countries were in favor of these actions to boost domestic production in the Global South, a large number of high-income countries and pharmaceutical stakeholders opposed it, based on the incentives of innovation, investment in research, and stability in trade. This controversy represented a conflict between the business and the immediate social health demands. The international human rights law imposes the duty on states to be able to access essential medicines and to cooperate in cases of global health threats. International health policies also highlight the fair allocation of health countermeasures in case of a public health emergency. Nevertheless, these legal frameworks are based on voluntary adherence and do not have powerful enforcement strategies, which restricts their practical impact on the decisions regarding the allocation of vaccines.

Multilateral efforts were aimed at decreasing inequality through the process of pooling procurement and allocating the vaccines according

to need. With these attempts, lack of funds, limitations of suppliers, and bilateral purchasing agreements undermined their success. Therefore, the distribution of vaccines was still unevenly distributed in more developed countries. On the whole, the current legal and policy framework is indicative of a piecemeal framework whereby intellectual property safeguards, voluntary collaboration, and geopolitical interests tend to give precedence over equity-based international duties.

Challenges for Global Vaccine Distribution

Major obstacles to equitable global vaccine distribution remain. First, there is still an access inequality as the high-income countries get and hoard a great amount of doses, while the low-income countries face a lasting shortage. Supply limitations, exportation restrictions and inadequate cold-chain systems further handicap developing regions.

These differences slow down the pace of immunizations and predispose to the emergence of new variants.

Secondly, intellectual property protection is a limiting factor for mass production.

Patents block the flow of technology and many developing states cannot produce their own vaccines. Where there are legal flexibilities, there are limits to its application due to technical complexity and low production capacity. The ability of pharmaceutical firms to control proprietary knowledge, supply chains and pricing structures further limits affordability and fair accessibility, further supporting the reliance on a few global manufacturers.

Third, poor international legal enforcement systems contribute to inequality in the world. Despite the fact that the international human rights principles declare that access to necessary medicines belongs to the right to health, there is no enforcement system that can bind states to share vaccines and work effectively in the situation of global emergencies. Voluntary commitments form the major foundation of global health governance, which, in most cases, fail to be effective when national interests are put first. Finally, multilateral efforts to address disparities

are unfunded and lack political will. Donor fatigue, geopolitical tensions and vaccine nationalism lead to less collaboration and hinder the performance of pooled procurement.

Opportunities for Global Vaccine Distribution

There are a few opportunities to capitalize on to improve global vaccine equity. It is possible to increase its regional manufacturing centers in Africa, Asia, and Latin America and reduce reliance on the high-income nations to ensure resilience in supply during emergencies. Long-term sustainability can be enhanced by setting up local manufacturing units, better regulation and investing in the development of a talented workforce. Technology transfers and capacity-building partnerships are now much enhanced. Greater institutional coordination can help in reducing political fragmentation and improve emergency responsiveness.

Conclusion

Although the international legal standards support fair access to key medicines, their practical application is still uneven. Most of the low-income nations have to rely on donations and scarce resources when facing health crises. International legal frameworks, reform of intellectual property, and coordination of health care at the international level are all important steps to ensure that everyone can get vaccines. Long-term investments in regional manufacturing, technology transfer, and international commitments are strong solutions. Equitable sharing of vaccines should not be viewed as a form of charity, but as a legal obligation, an ethical requirement, and a strategic need towards collective responsibility.

Recommendations

1. The rules of international trade need to be modified as facilitating the legal process would result in expedited manufacturing of much-needed vaccines in developing countries.
2. International health governance needs to be enhanced with the help of legally binding means that should be based on the fair distribution of vaccines and compel cooperation between states in case of pandemics. Well-defined

accountability systems can minimize solitary initiatives and the sense of shared responsibility.

3. The prolonged investment in regional vaccine-making centers is also needed to decrease the reliance on a few producer nations. The diversification of supply chains will increase resilience and improve response time in times of crisis.

4. It is necessary to strengthen global financing mechanisms to ensure that multilateral distribution initiatives are financed predictably. Stable financial engagements can win sufficient vaccine supplies to low-income states and prevent a lack of supply.

5. Enhancing human rights principles in global health decision-making will guarantee that the vulnerable population will be given priority in the allocation process. Having transparent international procurement systems will also help minimize price differences, enhance affordability, and build confidence in international distribution systems.

6. Lastly, developing open international procurement networks can minimize price differences, enhance affordability, and enhance confidence in the international distribution systems.

Research Limitations

The study is based mostly on secondary literature, policy studies, and global reports available publicly, which might not be able to reflect the fast-changing events in global health governance. Some findings may reflect temporary dynamics rather than long-term structural trends since vaccine distribution policies keep changing due to political bargaining and market conditions. In the pharmaceutical industry there is a dearth of proprietary information, a constraint to a closer study of pricing practices, manufacturing expenses and secret negotiations between governments and manufacturers. Also, the lack of data and reporting standards in the region makes it impossible to reach a consistent set of conclusions across all low- and middle-income countries.

Furthermore, the absence of any primary fieldwork, interviews or stakeholder involvement also limits the level of practical understanding of

the implementation issues. Thus, even with the study's extensive legal and policy discussion, it may not capture the operational complexities on the ground that influence the outcome of vaccine distribution.

Research Implications

These results shows that the international laws and regulation on the intellectual property need to update, for the improvement of international legal commitments and for the strengthening of technology-sharing systems to make fair access of the human to vaccines possible. By highlighting structural weaknesses in the current governance systems, this study provides a basis for policymakers to develop more adaptive and inclusive legal frameworks in future health emergencies for saving human lives.

The analysis shows that there are a lot of flaws in the global health governance system which need to resolve on the priority basis through interdisciplinary research, particularly in the enforcement mechanisms and manufacturing capacity. The findings can also be used by global health institutions to improve coordination, accountability and transparency in the processes of allocating the vaccines.

Future Research Directions

Field studies of the readiness of different regions to produce vaccines, including their infrastructure, staff training and legal and regulatory systems, should be part of research. Researchers should assess if approaches such as compulsory licensing, patent waivers and technology-sharing programs are truly effective during global health emergencies and if they improve fair access to vaccines.

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