

Vaccine diplomacy: Exploring the benefits of international collaboration

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Abstract

Global health diplomacy has given birth to vaccine diplomacy and later it got linked with vaccine science diplomacy which itself an amalgamation of science diplomacy. Since India is leader in vaccine manufacturing, it contributes approximately 60% of vaccines to the global vaccine supply. According to the present scenario, India is harnessing the power of soft skill by offering COVID-19 vaccines to its immediate neighbors to leverage diplomacy. Vaccine diplomacy could serve humanity and suffering countries if significant collaborations and efforts by global entities are to be done on the multilateral level.

Key words: Influenza, vaccine, pandemic, antipoverty vaccine, ascariasis and trichuriasis

Introduction

The world is going through a tough time and facing the worst situation ever due to the COVID 19 pandemic, but even in normal time, up to half of the world's tropical diseases are being ignored. Most commonly it includes diseases such as schistosomiasis, leishmaniasis, hookworm infection, leprosy, rabies, trachoma, dengue lymphatic filariasis, etc; these can severely cause long-term disabling health effects. The adverse disabling can affect the rural working sectors, particularly in the developing countries where the lack of proper treatment directly affects the ailing persons and making them difficult to work that directly affects our economic productivity. Because these diseases mostly affects the poor sections of the society therefore the health conditions of girls and women as well as child development,

the vaccines under development at Sabin are sometimes referred to as the antipoverty vaccines [1,2]. This ultimately can lead to various insecurities, including agricultural and industrial challenges. There is a likelihood of increased conflict among groups and states. Thus, the question on cheaper alternatives and preventive therapeutics like vaccines, the ability to resolve conflict, and how it can nurture diplomacy pops, continuously provokes. Some of the first-world countries including the United States and the United Kingdom have established scientific ties with the developing countries to implement potentially strong vaccine diplomacy.

The production of polio vaccine and its implementation is a tremendous example showing how vaccine diplomacy has driven collaboration and coordination in times of crisis, allowing nations to put aside their dogmatic differences to eradicate a pandemic. The way diplomatic efforts have been put in place to counter various other diseases such as cholera, measles, hepatitis, Ebola, etc. This is how a meaningful programme on vaccine research and development opens the door of uncounted opportunities to potentially improve and strengthen foreign relations and promote peace, thus empowering science diplomacy.

The miraculous term Vaccine was first used in 1798 when cowpox was administered as an inoculum to prevent smallpox. It is derived from Vacca, which in Latin is used for the cow. Since Smallpox was a massive killer epidemic, the first vaccine immediately got acclaim at the beginning of the 19th century. The next set of vaccines,

including a new rabies vaccine, was developed almost one hundred years later by France's Louis Pasteur [3,4].

Vaccine diplomacy flourished in the later decades of the 20th century. According to WHO's, Health as a Bridge to Peace-Humanitarian Cease-Fires Project (HCFP), vaccines and vaccinations were used to negotiate so-called "days of tranquillity" in more than a dozen countries during the 1980s and 1990s, including Afghanistan, Angola, Chechnya, Democratic Republic of Congo, El Salvador, Guinea Bissau, Iraq, Lebanon, Philippines, Sierra Leone, Sri Lanka & Sudan [5].

At the beginning of 2001, the broad frame work of global health diplomacy outlined above helped to generate the concepts of vaccine diplomacy and vaccine science diplomacy. Vaccine diplomacy refers to almost any aspect of global health diplomacy that relies on the use or delivery of vaccines and encompasses the important work of the GAVI Alliance, as well as elements of the WHO, Gates Foundation, and other important international organizations. Central to vaccine diplomacy is its potential as a humanitarian intervention and its proven role in mediating cessation of hostilities and even cease-fires during vaccination campaigns[5-7,8]. In such cases, an international organization, such as WHO or the United Nations Children's Fund (UNICEF), or an associated nongovernmental organization may play a central role.

Science Diplomacy: The concept of science diplomacy itself is much debatable, considering its recent origin. It was not before the golden age of the 21st century that science diplomacy activities were becoming popular and attempted to practice by academicians, politicians, stakeholders, and activists. The concept of science diplomacy involves practices in numerous ways that broadly includes the practice of making international decisions involving science to fulfil a definite and common goal.

The definition of science diplomacy is still evolving and considering its relation among different

sectors of international relations. It can therefore be considered as a subcategory of the arena of international relations that fosters the interaction among scientists, researchers, officials, politics, activists, research-educational institutions, diplomats, and stakeholders.

Science diplomacy is mainly classified into 3 major categories that include "Science in Diplomacy" where scientific knowledge is used to advise, inform, or support foreign policy objectives, "Science for diplomacy", where scientific cooperation may improve international relationships, and "Diplomacy for science", where diplomacy facilitates international scientific cooperation. These 3 categories are based on several actions that include the actions that intends to advance a country's national needs, set opportunities to meet global challenges and needs, and designed to address international interests. The actions were framed by the present and former science advisers to the Foreign Ministers of the United States, the United Kingdom, New Zealand, and Japan.

Some of the examples of Science Diplomacy encompasses the bi-polar world (to avoid any detrimental use of technology during the cold war between the US and the then Soviet Union), non-proliferation treaty, climate conventions, 1-2-3 agreement providing access to nuclear fuel for civilian uses, the launch of satellites for other countries by select countries, working on energy security through International Solar Alliance, etc.

Indispensable Science Diplomacy: The soft power of science has the potential to reshape global diplomacy" (Ahmed Hassan Zewail). Science diplomacy is crucial for foreign affairs and address challenges shared with other nations. The global challenges include issues related to research funds, international research partnerships, global organization, future of public policy, and global governance. It is important to promote scientific cooperation, to fence any diplomatic failures, and to reduce the potential for conflict among countries or international scientific organizations.

Leveraging science diplomacy to increase cooperation and collaboration is a demand of the hour. Whenever we talk about fighting a crisis that is affecting most of the parts of the world, diplomacy always emerges as a major milestone not only in terms of collaboration but also from sharing resources without any extra cost which India has already done. As we know Science and Technology can't work in a vacuum since multilateral collaborations and efforts are becoming the bridge to fulfil the gap of sustainability.

Vaccine Diplomacy along with Vaccine Science Diplomacy:

The Right to adequate healthcare flows from the sanctity of human life and the dignity that belongs to all persons. Health is a fundamental right, which has as its prerequisites social justice and equality. It should be accessible to all. It is not simply the right not to be unwell, but to be well. It encompasses not just the absence of disease or infirmity, but "complete physical, mental and social well-being", and includes freedoms such as the right to control one's health and body and to be free from interference (for instance, from non-consensual medical treatment and experimentation), and entitlements such as the right to a system of healthcare that gives everyone an equal opportunity to enjoy the highest attainable level of health.

Vaccine diplomacy is one of the branches of global health diplomacy, which refers to both- a system of organization & means to communicate as well as negotiate processes that help to shape the sphere of health that provokes its determinants in the sector of the global policy environment. Vaccine diplomacy is predominant for the use and delivery of vaccines among different global locations. Being a hybrid of global health diplomacy and science diplomacy, vaccine diplomacy offers innovative and unique approaches for promoting foreign policies and diplomatic relations between nations, particularly between adversarial nations. Vaccine science diplomacy leads to the testing of vaccines of some highly neglected diseases and innovative opportunities to develop vaccines to

combat diseases, especially the Neglected tropical diseases (NTDs) and other emerging novel diseases. It was eminent that many developing countries were on the "outside looking in" when it came to having access to influenza vaccines, including the vaccine for the H1N1 pandemic influenza in 2009 and prototype H5N1 avian influenza vaccines[9,10]. These types of activities acquire heavy scientific input, international cooperation, and compromise on issues between nations.

An underlying theme of both vaccine and vaccine science diplomacy is that vaccines are unique in comparison to other medical or public health interventions. By some estimates, vaccines are the single most powerful intervention ever developed by humankind in terms of the lives that they save. By one estimate, modern vaccines have saved more lives than those that were lost in the world wars during the 20th century Vaccine Science Diplomacy is within the overall ambit of Vaccine Diplomacy with inputs both from Science Diplomacy and Global Health Diplomacy. Scientists are major contributors not only in the development of Vaccines but also in the related technologies. There are situations when scientists of more than one nation (even nations hostile to each other) work together to develop these techniques and produce a vaccine based on scientific interactions.

The dominance of Vaccine Science Diplomacy:

Collaboration and partnership between nations and global organizations may lead to an extreme increase in the utilization of vaccine diplomacy and vaccine science diplomacy in foreign policy. Given the strong legacy and power of international scientists, vaccine developers, government officials, and global health practitioners joining their hands together for the same goal can improve health everywhere in the world. The improved smallpox vaccine which resulted in an international collaborative effort is a great example of the naturally occurring smallpox disease that was eradicated during the late 1970s. This effort shows the power of vaccine science diplomacy and

manifested the work of scientists across political and geographical barriers, and ultimately, helped overcome the pandemic.

Vaccine diplomacy is providing an excellent opportunity for almost every country to strengthen their weaknesses in the field of science diplomacy as well as improve their policy to nourish the environment of technology transfer. Though countries sometimes face personal dilemmas to share their resources with partner countries at last this will going to help its citizens so no harm in that. History of science diplomacy taught us that whenever the world is fighting for a common problem we must collaborate with solidarity on an international level without hampering our dogmas. The renowned French-biologist, Louis Pasteur once remarked, "Science knows no country because knowledge belongs to humanity".

Potential of Vaccine Science Diplomacy to restrain the COVID-19: Nearly after a century of Spanish flu, humanity has faced another global threat: "The COVID-19 pandemic". Countries should become the backbone to each other with which the globe can win the battle against this deadly virus in a more united way because the pandemic is global so that our strategies should be global and collaborative. To overcome this crisis, we need international collaboration, strong relationships between nations, and effective diplomacy. This is impossible without global ties among scientists of different nations, which have to be facilitated by the governments. Scientists, however, have long term formed relationships with their colleagues all across the world, even if their government hasn't got along.

The COVID-19 pandemic is a golden opportunity for scientists and the governments to engage with the public and so internationally. As science and technology rely on transparency and international collaboration promoting these values can nurture the change we need to solve the problems of the present and the future.

Even as many nations are battling the deadly pandemic, India, a world leader in health, has lent

a helping hand by exporting vaccines to them. During the pandemic, India also proved to the world that it has the best medical facility in comparison to most developed countries. India even reached out to supply Covid-19 medicines such as Hydroxychloroquine and Remdesivir, diagnostic kits, and equipment such as masks, gloves, and ventilators. Many of these supplies were given as gifts to partner nations. India also conducted virtual camps to train healthcare workers, especially on how to conduct tests

Social media has also played a great role in aiding the process by making internationally collaborated webinars a trend. While we all know now, the terms most of us have never heard of before, like flattening the curve, quarantine, physical distancing, and herd immunity. Unconsciously, modern digital media in a sense is helping to bring countries together, keeping us informed and strengthening science diplomacy.

Recently, the government asked for 45 lakh more doses from the makers of Covaxin and even allowed the manufacturers to provide vaccines to other countries. The first batch of one lakh doses of Covishield was delivered to Bhutan and Maldives. Besides, Nepal and Bangladesh too have received the vaccines. All four got it under the "Neighbourhood First" policy. Many other countries are in line to receive the vaccine from India. The ministry of external affairs has said that India will supply the vaccines to partner countries over the coming weeks and months in a phased manner, keeping in view the domestic requirements. With this, India has proved that it is the leading country in the field of medicine. Besides cementing diplomatic ties with other countries, it will also help to increase medical tourism.

Conclusion

Science diplomacy has proved itself a successful milestone in developing vaccines for some deadly diseases, such as Polio, Tuberculosis, Smallpox, Tetanus, etc as well as emerged as a blessing for combating diseases, like SARS, Ebola, and Zika. It similarly continues

to be extremely relevant during the COVID-19 pandemic today, through sharing of resources, research data, ideas, and rules and regulations.

Science is unquestionably facilitating diplomatic relations moreover allowing adversarial and conflicting nations to come together and find a definite solution to common global issues as quickly as possible. In a time of emergency, we must need Substantive joint collaborative efforts by local communities and global entities are required to solve global issues through science diplomacy. A proper overarching framework has not yet been formed to measure the expanded role of science diplomacy in foreign policy. Establishing such a framework might be useful in facilitating engagement between countries that have historically maintained tense for years.

No country is left behind by this deadly virus and we need to learn, design, and develop tools that can promote international relations particularly in the scientific arena to harness science diplomacy for the advancement & improvement of mankind.

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