

# IRAN'S HEALTH DIPLOMACY IN STRENGTHENING MEDICAL TECHNOLOGY COOPERATION WITH INDONESIA: A CASE STUDY OF TELEROBOTIC SURGERY AND TELEMEDICINE IMPLEMENTATION IN INDONESIA (2021-2023)

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## ***Abstract***

*Iran-Indonesia bilateral relations have reached 75 years, and both countries have been members of the Organization of Islamic Cooperation (OIC) since 1969. Amid the global health crisis since 2019, Iran and Indonesia have cooperated in various fields, including the health sector. In this contemporary era, Iran's health technology is growing. However, Iran is also facing economic sanctions from Western countries, which impacts Iran's relations with Western countries. Thus, considering the health situation in Indonesia, Iran is trying to expand its health technology by cooperating with Indonesia. This research aims to answer the question of how the implementation of Health Diplomacy was conducted by Iran in Indonesia through the Telerobotic Surgery and Telemedicine project in 2021-2023. The author uses Ilona Kickbush's Global Health Diplomacy Theory approach to analyze the research question. This research uses a qualitative approach with descriptive methods and literature study techniques to obtain data from various sources, such as journals, reports, books, media, and official documents. The results showed that Iran's Health Diplomacy was considered adequate, as seen from the implementation of the Telerobotic Surgery and Telemedicine cooperation, which ran smoothly in 2021-2023. The implementation of this cooperation also has a positive impact on the increasingly intense and sustainable Iran-Indonesia relations.*

**Keywords:** *Iran-Indonesia, Health Diplomacy, Medical Technology, Telerobotic Surgery, Telemedicine*

## Introduction

The history of Iran's closeness to Indonesia, if we look deeply at its historical development, shows that the relationship between the two countries has been going on since 250 BC until the 20th century AD. This relationship certainly stems from the entry of Islam into Indonesia brought by traders from Persia, resulting in cultural similarities, social traditions, and Persian language vocabulary in Indonesia (Azad, 2020). In its development, diplomatic relations between the two countries continued until after Indonesia's independence. The diplomatic relations were established in 1950 at the ministerial level when the highest Iranian authority accepted the Indonesian envoy to carry out diplomatic duties in Tehran. The relationship continued to increase until 1959 when diplomatic relations between the two countries were established at the Embassy level. This relationship brought continuity related to friendly relations, peace, and various cooperation between Indonesia and Iran until contemporary times today (Embassy of the Islamic Republic of Iran, Jakarta, n.d.).

When viewed through history, the Iran-Indonesia relationship has been going on for quite a long time. Starting in 2025, the official bilateral relations between Indonesia and Iran have reached 75 years of establishing cooperative partners and strong diplomatic relations and sustainability since 1950. This is certainly one of the achievements of both countries and strategic efforts in continuing to develop Iran-Indonesia bilateral relations in the future (Window, 2025). Furthermore, in recent years, the dynamics of global health have been of great concern to the world, where the whole world is facing a very serious health challenge, namely Coronavirus. All countries are also active in conducting bilateral relations in the health sector; in this case, especially Iran and Indonesia, they are also active and have focused on cooperation in various fields, including the health sector. In 2018, the Ministries of Health of Iran and Indonesia signed an agreement in the health sector. This cooperation focuses on health services such as

medical products and equipment, as well as medical research and development. Furthermore, the Indonesian health minister also conducted a review and health visit to Iran in September 2019 (Yulianto, 2020).

Iran-Indonesia relations in the health sector continued to develop in 2019. The Directorate General of Pharmaceuticals and Medical Devices of the Indonesian Ministry of Health and the Directorate General of International Relations of Iran signed a Plan of Action (POA). There are seven Iran-Indonesia collaborations, including 1. Health Services, 2. Pharmaceutical Products and Medical Devices, 3. Health Research and Development, 4. UHC, 5. Disease Prevention and Control, 6. Traditional Medicine, 7. Health Emergency Response and Disaster Management (Biro Komunikasi dan Pelayanan Masyarakat, Kementerian Kesehatan RI, 2019). Based on data from Media Indonesia, which cites data from the official website of the Indonesian Ministry of Foreign Affairs, the diplomatic relations increased the value of trade between the two countries in 2020, which amounted to 215.97 million US dollars (Jelita, 2021). The agreement has a significant impact on the progress of Iranian diplomacy in Indonesia and also brings positive value for both countries to continue cooperation.

Iran-Indonesia diplomatic relations that took place well before created confidence in both countries to continue to encourage cooperation programs. In 2021, the two countries agreed to cooperate in the health sector. In general, Iran is one of the Middle Eastern countries with a very developed civilization, especially in technology and medical and health sciences (Muhibbuddin, 2019). With technological and scientific resources undergoing significant development, Iran uses this position to make diplomatic efforts with Indonesia, specifically cooperation in Telemedicine and Telerobotics implemented in Indonesia. The health project was first

implemented in 2021 Iran and Indonesia and focused on technology transfer and local production of robotic surgical systems through cooperation with Badan Usaha Milik Negara (BUMN) and Indofarma (Ang, 2024).

The term Telemedicine was coined in the 1970s by American healthcare professional Thomas Bird. Telemedicine comes from the Latin "Medicus" meaning "healing" and the Greek "Tele" meaning "distance" (Strehle & Shabde, 2006). In general, Telemedicine is healing that is done remotely. Meanwhile, according to the National Health Institute, Telemedicine is a health service that uses electronic information and communication technology to provide healing, even in remote conditions. This kind of understanding strategy has an important role to play in improving the quality of healthcare services, chronic disease management, and addressing healthcare challenges found in remote areas. Today, it is universally recognized that the use of information and communication technology is key to achieving transformative goals in the global healthcare system (Picozzi et al., 2024).

Furthermore, technological advancements in telemedicine include telerobotics, which combines telecommunication technology with robots. Telerobotics is a technique for remotely controlling robot movements. In Telerobotic systems, robot movements are controlled by humans, such as in Telerobotic surgery (Tech Target, 2020). Telerobotic surgery has the potential to transform healthcare in the future. Providing advanced surgical care to patients even in the farthest locations at an affordable cost and the highest quality can be realized with Telerobotic surgery (Hamid, 2024). In addition, Telerobotic surgery has a faster recovery time than conventional surgery, allowing patients to return to normal activities sooner. Economically, Telerobotic surgery costs less than conventional surgery, which requires patients to come to the hospital. The technology enables 3D visualization with 10-fold magnification (Yasmin, 2025).

In diplomatic relations between Iran and Indonesia, both countries are also members of the Organization of Islamic Cooperation (OIC). Both countries joined the OIC in 1969. The OIC aims to establish consultative and cooperative relations with the United Nations (UN) and other international organizations (The Organisation of Islamic Cooperation, n.d.). In 2024, Indonesia is ranked second in the world with a total Muslim population of 236 million, while Iran is ranked eighth with a Muslim population of 82.5 million (GoodStats Data, 2024). The similarity of the Muslim majority between the two countries and the same membership in the OIC creates a strong foundation for bilateral cooperation and Health Diplomacy, especially those that Iran and Indonesia have implemented through collaboration in Telerobotic Surgery and Telemedicine. This cooperation is certainly in line with the OIC's goal of increasing solidarity between Muslim countries that are members of the OIC.

This research aims to answer the question: how was the implementation of Health Diplomacy conducted by Iran in Indonesia through the Telerobotic Surgery and Telemedicine project in 2021-2023? This research assumes that health issues are very important in contemporary times, as Iran is a rapidly developing civilization, namely the development of technology, science, and medicine. While Indonesia is a country with a large population, health issues are the most important issues. Thus, Iran-Indonesia Health Diplomacy is a very interesting topic to discuss.

## **Research Framework**

This research entitled "Iran's Health Diplomacy in Strengthening Medical Technology Cooperation with Indonesia: A Case Study of

Telerobotic Surgery and Telemedicine Implementation in Indonesia 2021-2023" uses a framework approach written by Ilona Kickbush, Haik Nikogosian, Michel Kazatchkine, and Mihaly Kokeny in their book entitled "A Guide to Global Health Diplomacy." This book explains in detail about Health Diplomacy, which is defined as a diplomacy tool that can be used by National, International, and Multinational actors and can even be used by non-state actors such as organizations, the private sector, industrial actors, and the people of a country that has an interest in Health Diplomacy. Therefore, various actors can gain interest in the health sector by applying health diplomacy. In the theory of Global Health Diplomacy, this book explains seven strong dimensions in implementing the Global Health Diplomacy perspective (Kickbusch et al., 2021). The author will use these dimensions as analytical variables in this study. The seven dimensions are:

1. *Negotiating to Promote Health and Well-Being in the Face of Other Interests:* This dimension explains that diplomatic actors should prepare themselves and the importance of assessing the interests to be negotiated more strategically.
2. *Establishment of New Governance Mechanisms to Support Health and Well-being:* This dimension describes the need for new mechanisms from Health Diplomacy outcomes to support relevant realizations.
3. *Building Alliances to Support Health and Well-being Outcomes:* This dimension explains that building an alliance aims to achieve mutually agreed-upon goals in Health Diplomacy.
4. *Developing and Managing Relationships with Donors and Stakeholders:* This dimension explains that once Health Diplomacy is successful and results in new and more relevant policies, it is important to maintain those bilateral relationships.
5. *Responding to Public Health Crises:* This dimension explains that with Health Diplomacy, bilateral relations must be active, and actors must be committed to each other in responding to health crises that occur.

6. *Building Relations Between Countries Through Health and Welfare*: This dimension explains that foreign policy can use health aid to maintain bilateral relations between countries.
7. *Contributing to Peace and Security*: This dimension explains that the application of Health Diplomacy between countries should result in peace and reduce the presence of armed conflicts that impact health.

Based on the seven dimensions in the book "A Guide To Global Health Diplomacy," the author will use four dimensions as analytical variables in this paper. This is because these four dimensions are the most relevant to be used in a study entitled "Iran's Health Diplomacy in Strengthening Medical Technology Cooperation With Indonesia: A Case Study of Telerobotic Surgery and Telemedicine Implementation in Indonesia 2021-2023". The four dimensions are *Negotiating to Promote Health and Well-Being in the Face of Other Interests*, *Establishment of New Governance Mechanisms to Support Health and Well-being*, *Developing and Managing Relationships with Donors and Stakeholders*, and *Building Relations Between Countries Through Health and Welfare*.

## Research Methodology

The author uses a qualitative approach with descriptive methods to answer how to implement Iran's Health Diplomacy with Indonesia through the Telerobotic Surgery and Telemedicine project in 2021-2023. The subject of this research is the Iranian government, and the object of this research is the implementation of Iran's Health Diplomacy in Indonesia. This study's data collection method uses literature studies and secondary data; the authors collect data from various written sources available and

accessible through websites, such as scientific journals, books, news sites, and official reports from the official websites of Iran and Indonesia. This research process is carried out by conducting research on cooperation between Iran and Indonesia in the health sector; then, the author will collect secondary data obtained from various literature sources, which will then be analyzed using the theoretical framework of Global Health Diplomacy.

## **Result and Discussion**

### **Iran's Interest in Cooperating with Indonesia in the Health Sector**

Indonesia's cooperation with Iran is established through various sectors, such as energy, trade, investment, and technology. The cooperation is conducted to support economic interests and mutually benefit both countries. Recognizing the strategic importance of the existing collaboration, both actively seek opportunities to develop broader forms of cooperation using the resources at their disposal. The imposition of sanctions by Western countries on Iran due to its nuclear program has significantly impacted Iran's economic strategy. The sanctions have forced Iran to seek alternative forms of cooperation, particularly with Asian countries, to mitigate the impact of sanctions and sustain its economic development through its strategic location and growing economy. Iran has made Indonesia a key partner in this cooperation. Based on the dynamics between Indonesia and Iran, economic ties are strengthening, and the focus is on the oil and gas sector, infrastructure development, and technology exchange. Such cooperation offers Iran new investment and market opportunities and contributes to Indonesia's energy resources' economic growth and security (Kementerian Koordinator Bidang Perekonomian Republik Indonesia, 2015). Both seek to explore new opportunities for further cooperation, considering the mutual benefits of existing cooperation (Kementerian Energi dan Sumber Daya Mineral Republik Indonesia, 2016).



Indonesia's 'Bebas Aktif' foreign policy strategy makes it a desirable partner for Iran, as it sees Indonesia as impartial. Indonesia's neutrality provides an opportunity for uncomplicated cooperation with other major powers. Iran's foreign policy prioritizes building balanced relations with countries worldwide while maintaining their independence and territorial integrity. Indonesia's non-aligned view aligns with Iran's view of encouraging multilateral relations (Kementerian Kelautan dan Perikanan Republik Indonesia, n.d.). Iran's expansion towards Indonesia is supported by its 'Kebijakan Timur Tengah,' which prioritizes cooperation with Asian countries, including Indonesia. The two countries share the same views in addressing issues faced by Muslims in the world, such as combating extremism and supporting the Palestinian cause. This standard view strengthens their cooperation, making it easier for Iran to develop business and economic relations with Indonesia. This expansion is further motivated by the potential for economic cooperation between Iran and Indonesia, significantly increasing trade between the ASEAN and ECO (Economic Cooperation Organisation) markets (Azad, 2020). The Indonesia-Iran Preferential Trade Agreement (II-PTA) is designed to increase exports and imports by lowering tariff and non-tariff barriers. The II-PTA agreement demonstrates the seriousness of both countries in maximizing bilateral economic opportunities, as shown in the negotiations undertaken to improve market access and increase trade volumes that had previously declined due to sanctions imposed on Iran (Azaroh, 2024).

Iran is interested in cooperating with Indonesia in Telemedicine to strengthen bilateral relations, enhance technological development, and develop its influence in the health sector. Iran has quite advanced nanotechnology, biotechnology, and nuclear technology technologies, which it seeks to enhance through international cooperation. Such cooperation allows Iran to expand its capabilities and expertise in

Indonesia, which is actively working to improve health infrastructure and access to specialist services. Furthermore, Iran sees Indonesia as a strategic partner in economy and investment, mutually benefiting the cooperation (Tempo.co, 2025). The cooperation is also a platform for Iran to provide educational opportunities for Indonesian health workers to study health technology in Iran (Riyanto, 2021). Exchanges can yield long-term benefits for both countries, fostering closer ties and enhancing developments in healthcare. Iran's opportunity to share its expertise in Telemedicine aligns with Indonesia's endeavors to transform and improve its healthcare system (Alinea.id, 2023).

## **Indonesia's Perspective on Accepting Iran as a Cooperation Partner**

The dynamics of health in Indonesia since the emergence of COVID-19 have changed significantly. The health crisis affects global health, and in Indonesia, health is an essential priority for the government. Indonesia is also committed to collaborating with various countries regarding health, especially in reducing the spike in COVID-19 cases in Indonesia. Iran is one of the countries that established a partnership with Indonesia long before 2019. Indonesia views Iran as a strategic partner that has dramatically influenced the country's health technology development (Yulianto, 2020). Since the COVID-19 pandemic. The Indonesian government relies heavily on health technology, so how could it not? The COVID-19 mortality rate 2020 reached 21,944 lives (Worldometer, 2024). Thus, the Indonesian government is facing a severe problem: the high need for health technology in Indonesia; the problem is distributing health services to remote areas in Indonesia.

Therefore, the government seeks to utilize available health technology and collaborate with digital health platforms. According to the Kementerian Kesehatan strategic plan for 2020-2024, Indonesia's targets

are indicated in 2021. One of the strategic goals is to increase the effectiveness of managing health research and development and health information systems for decision-making. In the strategic plan, it is explained that the use of information technology in the health sector in Indonesia since 2020 has been extensive, with various achievements that have been implemented, such as e-planning, e-budgeting, and e-money. Based on data from the Kementerian Kesehatan Republik Indonesia, it is recorded that since the pandemic, internet usage in Indonesia has reached 170 million users, the number of smartphone usage has reached more than 60%, the increase in the internet economy has reached the most significant target in Southeast Asia to reach USD 44 billion, and the projected digital growth has reached 60%. Although the implementation of the health technology sector is quite good, the reality is that Indonesia is still very much faced with technological challenges that are still not very effective in Indonesia (Kementerian Kesehatan RI, 2022).

During the COVID-19 pandemic, digital usage has increased dramatically. On 11 February 2020, Iran's Ambassador to Indonesia, Mohammad Azad, said in Jakarta, 'Iran and Indonesia have the potential to help each other to increase cooperation in all fields.' The relationship between Iran and Indonesia is indeed very harmonious and sustainable. The ministers of both countries and the presidents of Iran and Indonesia visit each other's countries. This strategic partnership occurs in the health sector and in all fields, including politics, economy, trade, security, and defense (Antaranews.com, 2020). Indonesia certainly sees this relationship as a strategic one, and it views cooperation in health aspects such as this, especially cooperation in telerobotic surgery and telemedicine, as cooperation with positive goals. Indonesia will undoubtedly have telerobotic and telemedicine technology that will be useful for the people of Indonesia in the future. Thus, Indonesia's perspective on Iran is positive

and welcomes the cooperation that will be carried out between Iran and Indonesia in health aspects in Telerobotic and Telemedicine technology (Ang, 2024).

### **Iran's Relationship with Indonesia in the Framework of Global Health Diplomacy**

In this research, the author uses the Global Health Diplomacy theory from a book written by Ilona Kickbush, Haik Nikogosian, Michel Kazatchkine, and Mihaly Kokeny, "A Guide to Global Health Diplomacy," to answer and analyze how the implementation of Health Diplomacy carried out by Iran in Indonesia through the Telerobotic Surgery and Telemedicine projects in 2021-2023. Global Health Diplomacy theory emphasizes that relations between countries can be carried out with efforts through cooperation in the health sector. The theory of Health Diplomacy can be used to understand how Iran conducted Health Diplomacy with Indonesia with cooperation steps in Telerobotic Surgery and Telemedicine in 2021-2023 and how the realization of this cooperation in Indonesia, whether Iran's Health Diplomacy is successful (Kickbusch et al., 2021). Thus, the author will use four relevant variables in the Global Health Diplomacy theory to explain the implementation of Iran's Health Diplomacy.

#### **1. Negotiating to Promote Health and Well-Being in the Face of Other Interests**

This variable explains the negotiation process between Iran and Indonesia through a health diplomacy framework involving a series of structured stages. This variable is used to identify the potential for cooperation, and a framework is prepared to determine the targets and basic principles of the collaboration (Sehat Negeriku, 2019). The most essential negotiation stage is the intensive negotiation, where

implementation details such as technology transfer, training, and budget must be discussed in detail. Finally, this stage ends with signing a legally binding agreement, which expresses the seriousness of both countries in carrying out cooperation. Iran's negotiation strategy emphasized its advantages in medical technology, such as telerobotics, and provided a complete offer of cooperation, including technology transfer, training, and technical support. On the other hand, Indonesia focuses on improving access to better quality health services, especially in remote areas, and ensuring sustainable technology transfer tailored to local conditions (Jabarprov.go.id, 2023).

The dynamics of the negotiations are influenced by internal factors such as technological capacity and government involvement in both countries, in addition to external factors such as geopolitical conditions and international sanctions. The success of the negotiations is expected to result in a detailed cooperation agreement, which will cover areas such as the purchase of telerobotic equipment, training of medical personnel, and development of Telemedicine platforms. The successful implementation of the cooperation will be determined by its effect on improving healthcare access and medical technology capabilities in Indonesia. Negotiating an effective agreement requires a deeper understanding of each party's needs and interests, mutual trust, and a willingness to reach a win-win solution (Zaki, n.d.).

In health diplomacy, visiting meetings are usually followed by information exchange, technical discussions, and in-depth exploration of cooperation opportunities. Therefore, it is estimated that by August 2021, there will be several meetings between Menteri Kesehatan, diplomats, and health workers to discuss opportunities for cooperation

in health technology. Considering that telerobotics is a sophisticated technology and involves a large amount of funding, the initial negotiations did not address the application of Telerobotics directly. However, the discussions started with broad cooperation. Discussions on Telerobotics are likely to emerge as a long-term option when both parties are comfortable with the advantages and challenges of the technology (Government of the Islamic Republic of Iran, 2021).

## **2. Establishment of New Governance Mechanisms to Support Health and Well-Being**

This variable explains the need for new mechanisms or policies that the government must implement due to Health Diplomacy efforts. In the case study of Iran's Health Diplomacy with Indonesia for the 2021-2023. Both countries have agreed upon several projects. Since 2019, the pandemic has taken place. These two countries have faced global challenges in the health sector (Antaraneews.com, 2020). the ongoing pandemic, with health technology's rapid development. The Iranian government sees the potential of health technology that allows it to be transformed into Indonesia. This is seen from the need for technology and digitalization of Indonesia's health, which has increased dramatically since the pandemic (Humas BKPK, 2022).

Bilateral cooperation between Iran and Indonesia has resulted in new policies in the field of health, with the main focus on telerobotic surgery and the implementation of Telemedicine in Indonesia. The health MoU (Memorandum of Understanding) signed in 2018 covers health services, pharmaceuticals and medical devices, health research and development, universal health insurance, and disease prevention and control. The development of a Telerobotic Surgery center in Indonesia began in 2021 through a pilot program at Sardjito Hospital Yogyakarta and Hasan Sadikin Hospital Bandung (Antaraneews.com,

2023). Bilateral cooperation between Iran and Indonesia has resulted in new policies in the field of health, with the main focus on telerobotic surgery and the implementation of Telemedicine in Indonesia. The health MoU (Memorandum of Understanding) signed in 2018 covers health services, pharmaceuticals and medical devices, health research and development, universal health insurance, and disease prevention and control. The development of a Telerobotic Surgery center in Indonesia began in 2021 through a pilot program at Sardjito Hospital Yogyakarta and Hasan Sadikin Hospital Bandung (Ang, 2024).

The agreement affirms cooperation between Iran and Indonesia, including health care services, pharmaceuticals, research, control, and prevention of infectious and non-communicable diseases (Rokom, 2023). Through comprehensive cooperation, the two countries agreed to strengthen bilateral relations and advance cooperation in various fields. The development of telerobotic surgery facilities in Indonesia, supported by Iranian technology, is an example of the potential to overcome geographical constraints. Improving the effectiveness and efficiency of healthcare results in better patient outcomes (Putri, 2023). On 23 May 2023, a Tele-Operation between Bandung-Yogyakarta at a distance of 500 km was conducted with the support of a 5G network in 14 hours without stopping and without any network interruption. The Tele-Operation was witnessed by the President of Iran and the President of Indonesia, which is one of the successes in the new policy resulting from the cooperation agreement between Iran and Indonesia (Indofarma, 2023).

The implementation of this cooperation has been going on since 2021. As reported by Indofarma's website, President Joko Widodo said

that cooperation with Iran has been carried out in various fields, one of which is the Pilot Project for Telerobotic Surgery in multiple hospitals and the Telemedicine Pilot Project, which has been implemented in 11 Puskesmas in Indonesia. In this case, this cooperation can be said to have been successfully implemented, although this project is a new policy of the Indonesian government. However, with the support of health technology implemented by Iran, this policy can be well realized (Indofarma, 2023)).

### **3. Developing and Managing Relationships with Donors and Stakeholders**

This variable describes the management of cooperation between donors and stakeholders, and this variable can be used to analyze the form of cooperation management between Iran and Indonesia and how the relationship between actors outside of the Iranian and Indonesian governments can contribute to the process of implementing the Telerobotic Surgery and Telemedicine project in Indonesia. Furthermore, the main actors of this variable analysis are the Iranian and Indonesian governments. Through diplomats from each country, the two countries agreed to establish various collaborations before realizing the Telerobotics and Telemedicine project in 2021. In December 2020, The Iranian government expressed its support and was ready to increase cooperation with Indonesia to the maximum. During the meeting, Iranian President Hassan Rouhani said that Iran was determined to cooperate with Indonesia in all fields, and the Iranian President also said that Islam in Iran and Indonesia is a practice based on moderation (Government of The Republic of Iran, 2020).

It can be seen that there are other actors in the implementation of this cooperation, both from Iran, such as Sina Robotic & Innovator



Co. Ltd, Iran Nanotechnology Innovation Council, Iran Advanced Clinical Training Centre, and Tehran University of Medical Sciences. These various actors from Iran certainly support the implementation of Telerobotic Surgery and Telemedicine in Indonesia (Indofarma, 2024). Iran Nanotechnology Innovation Council (INIC) has a role in helping Iranian government policies implement Telerobotic and Telemedicine projects. INIC is a facilitator in nanotechnology collaboration, specifically related to medical devices and pharmaceuticals. In further discussion, nanotechnology plays an essential role in the health sector, and nanotechnology can produce new products and diagnostic processes faster and more effectively. INIC also contributed to the Health Business Forum held in Jakarta in 2019 before the realization of the Telerobotic and Telemedicine projects taking place in 2021 (Sehat Negeriku, Biro Komunikasi dan Pelayanan Publik Kementerian Kesehatan RI, 2019).

Sina Robotic & Innovator Co. Ltd is Indonesia's primary producer of Telerobotic Surgery technology. Sina Robotic provides Sina Surgical System technology, which has undoubtedly been used to implement Telerobotics in Indonesia. One of the hospitals implementing this technology is RS Hasan Sadikin (RSHS) Bandung and RS Dr. Sardjito Yogyakarta. If studied further, this surgical technology can be applied and performed by surgeons to perform surgery with a minimally invasive approach that is more precise and flexible. Sina Robotic also contributes to the transfer of surgical technology in the production of surgical and robotic tools in Indonesia. Sina Robotic is also continuously collaborating with industrial partners in Indonesia to reduce Indonesia's dependence on the import sector. Of course, with this partnership, Indonesia can produce various local medical devices and instruments (Biro

Komunikasi dan Pelayanan Publik, Kementerian Kesehatan RI, 2022).

Advanced Clinical Training Center has a role in providing health services and training for medical personnel in Indonesia, iACT is in charge of implementing the use of technology that has been introduced by Iran to be operated and used by medical personnel in Indonesia in the practice of Telemedicine, training conducted by iACT is the installation and procedures for using Telemedicine equipment, one of which has been implemented at RSUP Dr. Wahidin Sudirohusodo and also integrated with puskesmas in Sinjai Regency and Bone Regency. Supported by iACT, medical personnel in Indonesia can run and operate the technology needed in the practice of Telemedicine in Indonesia (RSUP Dr. Wahidin, 2023).

Tehran University of Medical Sciences (TUMS), acting as an Iranian academic institution that provides facilities in the development of Human Resources capacity as well as collaboration with various institutions in Indonesia in the implementation of the Telerobotic Surgery project, TUMS indeed collaborates with various academic institutions in Indonesia, including, among others, the Universitas Sumatera Utara and Universitas Hasanuddin in the establishment of the Robotic Telesurgery Center which was realized at RS Haji Adam Malik Medan, dan RS Dr. Wahidin Sudirohusodo Makassar. This partnership is undoubtedly carried out regarding knowledge transfer, and training is conducted for Human Resources in various hospitals so that medical personnel can operate this robotic technology. Furthermore, training and curriculum development for doctors in Indonesia to have skills with international standards, TUMS is also active in holding seminars and workshops to introduce further the utilization of Telerobotic Surgery and Telemedicine technology in Indonesia (MoU TUMS, n.d.).

Furthermore, one of the Indonesian actors that has an essential

role in Telerobotic Surgery and Telemedicine cooperation is PT Indofarma Tbk, a State-Owned Enterprise (SOE) in the pharmaceuticals and medical devices field in Indonesia. Indofarma received an agreement with Iran through various collaborations with various actors from Iran, namely Sina Robotic & Innovator Co. Ltd, Iran Nanotechnology Innovation Council, Iran Advanced Clinical Training Centre, and Tehran University of Medical Sciences. Through these collaborations, Indofarma represents the Indonesian government in accommodating technology resources transformed by Iran to Indonesia. Indofarma plays an active role in supporting the implementation of the Indonesian government's program with Iran, namely Telerobotic Surgery and Telemedicine (Indofarma, 2024)

#### **4. Building Relations Between Countries Through Health and Welfare**

This variable explains that foreign policy can be used to achieve good bilateral relations in the future. In this case, Iran and Indonesia use foreign policy and cooperation in the health sector to maintain their bilateral ties. Iran's Health Diplomacy with Indonesia is also Iran's strategy in supporting Iran's geopolitical dynamics in Western sanctions against Iran. Iran's primary goal is expanding technology to Asia, especially Indonesia. Iran uses aspects of technology and health as a diplomatic tool to strengthen its influence and expand the network of relations between Iran-Indonesia institutions (Azad, 2020). Iran's Health Diplomacy efforts are implemented through an agreement or MoU on Telerobotic Surgery and Telemedicine cooperation in Indonesia in 2021. Iran cooperates with TUMS and PT Indofarma in distributing its health technology. In this case, Iran has built an image as one of the strategic countries by developing in Indonesia (Indofarma,

2024)

The implementation of Telerobotic Surgery and Telemedicine cooperation has been going well from 2021 to 2023. This is marked by the success of the MoU cooperation in 2021, and its implementation has started from 2021, 2022, to 2023. Pilot Project Telemedicine Technology distribution has occurred throughout health facilities in remote areas such as health centers. This Telemedicine Pilot Project is a program resulting from an agreement between Iran and Indonesia implemented through TUMS and PT Indofarma. Thus, the cooperation between Iran and Indonesia in the health field, especially in the case study of Telerobotic Surgery and Telemedicine implementation, certainly has a positive impact. Through this project, the two countries have strengthened their bilateral relations, not only in the field of health but in various other fields, which will increase the sustainability of cooperation between Iran and Indonesia in the future (BKPK, 2022).

## **Conclusion**

Iran-Indonesia relations in the health sector in the case study of Telerobotic Surgery and Telemedicine implementation in the 2021-2023 period reflect the dynamics of strategic international relations. The Health Diplomacy implemented by Iran aims to deepen bilateral ties and expand Iran's health technology. Through the Global Health Diplomacy Theory approach, Iran implements an effective partnership ecosystem where all aspects, such as academic institutions, health institutions, hospitals, and the robotics and health industries of both countries, are involved. Based on applying the four variables in the Global Health Diplomacy Theory, the author analyses that Iran-Indonesia cooperation in health diplomacy is vital in advancing cooperation in the health field, more precisely, the collaboration of Telerobotic Surgery and Telemedicine.

The cooperation improves health services in Indonesia and provides

for the transfer of knowledge and expertise of medical personnel from both countries. The implementation of the cooperation program has paved the way for healthcare in Indonesia to become more sophisticated and increase the capacity of medical personnel. Telerobotic surgery and telemedicine highlight Indonesia's incredible ability to overcome the geographical and demographic barriers it faces. Through cooperation with Iran, Indonesia has adopted advanced technologies that empower medical personnel to perform surgeries remotely and consult patients in remote areas. Not only can this develop health services efficiently, but it can also reduce traveling costs and patient time.

Thus, implementing Iran-Indonesia cooperation in the case study of Telerobotic Surgery and Telemedicine is not just ordinary cooperation. However, this cooperation implies collaboration and a strategy of Iranian Health Diplomacy to achieve Iran's interests, namely expanding Iran's health technology and seeking sustainable bilateral relations. The realization of the cooperation is well underway from 2021 to 2023. The author analyses that Iran's Health Diplomacy was successful, resulting in the formation of a new policy from the Indonesian government, namely the Telerobotic Surgery and Telemedicine Pilot Project, which is considered beneficial to the Indonesian people and Iran has also succeeded in strengthening its influence in Indonesia, as well as implementing sustainable bilateral relations.

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