



DEVELOPMENT OF MEDICAL TOURISM IN INDONESIA: CHALLENGES AND OPPORTUNITIES

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Abstract

Introduction: Medical tourism has a positive impact on economic development. It generates significant revenue for the country. Medical tourism policies in Indonesia developed since 2015 adopt policies from other countries that have previously implemented medical tourism programs and are currently considered quite promising. In terms of tourism, Indonesia has a natural beauty that is attractive to foreign tourists. In terms of medicine, hospitals in Indonesia also have facilities and doctors that have been internationally accredited. The purpose of this literature review is to see the challenges and opportunities in the development of medical tourism in Indonesia. **Research Methods:** Literature review by collecting journals related to medical tourism in Indonesia and the development of medical tourism in Indonesia in the last five years. **Finding/Results:** In the last 8 years, the development of medical tourism in Indonesia, including programs to improve and equalize medical device technology through the Strengthening Indonesia's Healthcare Referral Network (SIHREN), Robotic surgery technology, telesurgery and remote surgery. Twenty-four hospitals that have been accredited by the Joint Commission International (JCI). Indonesia Medical Tourism Board (IMTB) as a specific website that is more easily accessible to medical tourists. Indonesia also offers various tourism sectors, including culinary, cultural, wellness, ecotourism and heritage. The intensive promotion and preparation of medical tourism in Indonesia is believed to be very attractive to local and international medical tourists to seek treatment in Indonesia.

Keywords: Challenges, Development, Medical Tourism, Opportunities

INTRODUCTION

Medical tourism is an increasingly popular phenomenon worldwide, including in Indonesia. Medical tourism in the era of globalization is a tourist trip that is not only about beautiful tourist destinations or delicious cuisine but also about travelling around the world to get medical treatment. It is a unique combination of cultural exploration, adventure, and quality medical care and services, as well as for travelling. (Asa et al., 2024; Ediansyah et al., 2023; Intama & Sulistiadi, 2022; Md Zain et al., 2022; Setiawan, 2020) In the past, the term usually referred to those who travelled from less developed countries to large medical centres in developed countries to receive treatments unavailable in their home countries. However, the term has also been used in recent years to refer to those from developed countries who travel to developing countries to receive lower-cost medical care (Amini et al., 2021).

Developing countries, especially in Southeast Asia, have capitalized on this phenomenon to develop the medical tourism industry as a new pillar of their economies. The challenge facing Indonesia in developing medical tourism is the intense global competition. Neighbouring countries such as India, Thailand, Singapore, and Malaysia have long been known as prime medical tourism destinations in Southeast Asia. Thailand, for example, is known for its low-cost but high-quality plastic surgery and beauty treatments, sex change surgery, liposuction and breast enhancement surgery. Singapore excels in high-tech healthcare services, sophisticated diagnostic and surgical procedures related to cardiology, neurology, oncology, ophthalmology, organ transplants, orthopedics, and pediatrics. India has an attractively low cost-effective medical care destination and recognized medical specialities such as cardiac surgery, craniofacial surgery, neuro-surgery, orthopaedic surgery. Malaysia has successfully positioned itself as one of the leading destinations for medical tourism with a focus on cardiac or heart, beauty-oriented services or cosmetic surgery, dental, orthopaedic, ophthalmology and diagnostic services (Ebrahim & Ganguli, 2019; Rahman, 2019).

Medical tourism is an active industry that contributes to sustainable development and affects a country's economy (Amini et al., 2021). Medical tourism is a significant source of national revenue because medical tourists' expenditure is usually three times higher than that of ordinary tourists. In 2015, medical tourism generated revenues of 60–70 billion US dollars, and this revenue is expected to double by 2020. Every year, around 50 million medical tourists

worldwide seek treatment in countries other than their home country. This is due to several motivational reasons: low cost of treatment in other countries, which are usually less developed, fewer barriers to travel, shorter waiting times, inability to undergo medical interventions in the home country, availability of advanced medical equipment and facilities accredited by the Joint Commission International (JCI), higher quality medical intervention care than in one's own country, trained doctors who can speak multiple languages, or availability of post-intervention care and rest (Klímová & Kuča, 2020). Therefore, the Ministry of Health of the Republic of Indonesia specifically issued regulations related to medical tourism services in the Regulation of the Minister of Health No. 76 of 2015 as a form of seriousness in developing medical tourism in Indonesia. (PERATURAN MENTERI KESEHATAN REPUBLIK INDONESIA NOMOR 76 TAHUN 2015 TENTANG PELAYANAN WISATA MEDIS, 2015)

In 2024, Indonesia's Tourism position is ranked 22 out of 119 countries in the Travel and Tourism Development Index (TTDI). This ranking has increased significantly compared to 2019, which was ranked 44. TTDI evaluates various factors that contribute to sustainable tourism development, including infrastructure, cleanliness conditions, and price competitiveness. Indonesia obtained an overall score of 4.46 on a scale of 1 to 7, which shows significant progress in its tourism sector (World Economic Forum, 2024), so the opportunity for medical tourism in Indonesia is very large (Pramana, 2024). Meanwhile, from the Medical side, many Indonesian hospitals have been accredited by JCI (Joint Commission International, 2024) with doctors who have undergone international training. The government and various parties continue to strive to advance this industry to increase access to health services, attract tourists, and strengthen the economy. Some aspects that reflect the development of medical tourism in Indonesia include the Indonesian government increasingly realizing Indonesia's potential as a tourist destination so that hospitals and clinics in Indonesia continue to improve the quality of medical services according to international standards so that they can attract the attention of local and foreign tourists. The government also actively promotes and supports the medical tourism industry through massive promotions and other supporting facilities, such as plans to build international hospitals. This literature review aims to see the challenges and opportunities in the development of medical tourism in Indonesia.

LITERATURE REVIEW

Medical Tourism

Medical tourism is a term commonly used to describe international travel to seek medical care, with a variety of reasons, including lower costs, recommendations from friends or family, the opportunity to combine medical care with a vacation destination, a preference for care from a healthcare provider who shares the same culture, or a desire to obtain procedures or therapies not available in their home country. Medical tourism is a multi-billion dollar global market that continues to grow as the globalization of healthcare increases. Most medical tourists pay for their care during service and often rely on private companies or medical concierge services to identify foreign healthcare facilities (Crist et al., 2024). In Indonesia, according to the Regulation of the Minister of Health of the Republic of Indonesia Number 76 of 2015, medical tourism is travel outside the city or from abroad to obtain examinations, medical procedures, and/or other health checks at a hospital. (PERATURAN MENTERI KESEHATAN REPUBLIK INDONESIA NOMOR 76 TAHUN 2015 TENTANG PELAYANAN WISATA MEDIS, 2015). Medical Tourism activities combine travel packages, hospitality, and medical care with the expertise of medical practitioners (doctors, nurses, and other health experts). The field of medical tourism is starting to become a separate issue that is very promising in the future. In the Hastings Center Report, Cohen divides medical tourism into three types:

- (1) Services that are illegal in the patient's home country and destination country, such as those related to organ sales,
- (2) Services that are illegal in the patient's home country but legal in the destination country, such as some stem cell therapies,
- (3) Services that are legal in the patient's home country and destination country, such as joint replacement.

There are several advantages and disadvantages of Medical Tourism. Some of the advantages, namely:

- (1) Lower health care costs,
- (2) More luxurious accommodations than local hospitals, including "recovery resorts",
- (3) Ability to access new treatments or procedures not available in the country of residence,

- (4) The possibility of combining recreational activities with medical care,
- (5) Faster access to medical service providers.

The potential disadvantages include:

- (1) Accreditation standards and regulations may not provide adequate patient protection,
- (2) Experimental treatments or procedures may not be effective,
- (3) Possible variations in laws governing insurance coverage,
- (4) Limited lawsuit options in the event of a bad outcome,
- (5) Potential language or cultural barriers,
- (6) Risks of long-distance travel, including postoperative travel risks,
- (7) Risk of adverse outcomes, especially infections, possibly with drug-resistant organisms,
- (8) Use of healthcare resources and personnel that may be available to local residents in low-income countries. (Gaines & Lee, 2018)

Tourists who travel abroad for medical purposes are conceptually referred to as medical tourists and can be categorized as a Special Interest Group (SIT). Based on the services offered there are four types, namely

- (1) Wellness tourism: spa, stress relief, rejuvenation centers,
- (2) Alternative system of medicine: ayurvedic, Siddha, treatment for diseases such as arthritis and rheumatism,
- (3) Cosmetic surgery: dental care, plastic surgery, breast enhancement, tummy reduction, skin treatment,
- (4) Advanced and life-caring healthcare: organ transplants, cardiovascular surgery, eye treatment, and hip replacement (Nugraha, 2019a).

According to the definition by Smith and Puczko (2014) Health tourism consists of three components, namely (Smith & Puczko, 2014):

1. Medical tourism: the phenomenon of people traveling from their usual country of residence to another country with the expressed purpose of accessing medical treatment. Domestic Medical Tourism is where people who live in one country travel to another city, region, or state to receive medical, dental, and surgical care while at the same time receiving equal to or greater care than they would have in their own

home city, and are traveling for medical care because of affordability, better access to care or a higher level of quality of care.

2. Wellness tourism: people traveling to a different place to proactively pursue activities that maintain or enhance their personal health and well-being, and who are seeking unique, authentic, or location-based experiences or therapies that are not available at home.
3. Spa tourism: tourism focused on the relaxation, healing, or beautification of the body in spas using preventative wellness and/or curative medical techniques.

Government Involvement in the Development of Medical Tourism in Indonesia

Medical Tourism in Indonesia was actually been developed by the government in 2014 through cooperation between the Minister of Tourism and Creative Economy and the Minister of Health, who created a working group and pilot project as stated in the memorandum of understanding between the Ministry of Health and the Ministry of Tourism and Creative Economy Number 412/Menkes/SKB/XI/2012 and Number NK/30/PW.202/MPEK/2012 concerning Health Tourism.(Nugraha et al., 2019) In 2015, the policy regarding medical tourism was given a legal umbrella with the enactment of the Minister of Health Regulation No.76 of 2015 concerning Medical Tourism Services, which is a regulation on guidelines for Medical Tourism accompanied by an attachment of guidelines for organizing Medical Tourism in the form of a legal basis for the requirements and determination of Medical Tourism Hospitals and the development of Medical Tourism Hospitals. This Minister of Health Regulation provides clear rules on how a Hospital can be designated as a Medical Tourism Hospital, providing certainty for the three related elements: hospitals, the government as a facilitator, and partnerships with travel agencies. The government also made several policies that facilitate the entry of foreign tourists to Indonesia, such as Presidential Regulation of the Republic of Indonesia No. 2 of 2007 concerning the Ratification of the ASEAN Tourism Agreement, which makes visa-free between countries to speed up the patient departure process, Presidential Decree Number 31 of 1998 concerning the convenience of elderly foreign tourists with visa-free so that it becomes an opportunity for geriatric procedures (Sutanto et al., 2022). Since the enactment of Minister of Health Regulation No. 76 of 2015, many hospitals in Indonesia have begun preparing to become Medical Tourism Hospitals, especially in areas with attractive tourism.

Opportunity for the development of medical tourism

Indonesia has natural beauty, geology, historical heritage, and cultural arts that will attract tourists. Several regions in Indonesia that have natural tourism that can be one of the attractions for developing medical tourism include West Sumatra because it has natural beauty, geology, historical heritage, and cultural arts that will attract tourists. Semen Padang Hospital has collaborated with PT Duta Wisata Jaya, which is one of the tour and travel companies in West Sumatra. With this program, patients who come will only need to choose the type of medical service they want and the tourism they are interested in. Patients will get convenience starting from the pick-up process at the airport, the registration process for the selected health service, the check-in process at the hotel, the health examination process as well as the selected tourism services, and the ease of collecting the examination results. All of these things have been carefully prepared and planned by the team from PT Duta Wisata Jaya Flowerina (Reni et al., 2022).

Batam City is in a strategic position and directly borders Singapore and Malaysia, making Batam City one of the world's tourist destinations that can be developed as a gateway to Indonesian tourism. Based on data from the Batam City Central Statistics Agency, the number of foreign tourists visiting Batam City in January-July 2024 increased by 7.04% compared to January-July 2023, with the most tourists being Singaporeans. In addition, Batam City was awarded as the 3rd largest city in terms of the number of foreign tourist visits (Badan Pusat Statistik Kota Batam, 2024).

Bali is the main location for medical tourism in Indonesia because it is a favourite location for foreign tourists to travel. According to data collected by the Bali Provincial Tourism Office in 2018, over the past five years, there has been an increase in the number of tourists by 15.7% from 2013 to 2017, with most tourists coming from China and Australia. In addition, it is also a high-end holiday destination. In addition, Bali's potential as a medical tourism destination can also be seen from 3 international hospitals and several beauty clinics in Kuta that have also become medical tourism destinations, most of the patients come from abroad, especially Australia with the most popular services being filler injections, botox, and teeth (Nugraha, 2019b). In addition, Bali also has the potential to become a centre for dental tourism in Indonesia, the Chairperson of the Indonesian Dentists Association in Bali said that the practice of dental tourism in Bali has started since 2014, and 45% of Australian tourists have chosen to go to Bali to get dental care, there is even one clinic, where 80% of its patients

come from abroad, foreign tourists can see the quality of care provided with cheaper prices (Akbar et al., 2020).

Bali also has other advantages in the form of wellness tourism. Health and fitness tourism (wellness tourism) can be a comparative and competitive strength and an opportunity to innovate in developing tourism products in Bali that are adjusted to the existing natural potential. For most Indonesians, spices, herbs, and plants such as rice, coconut, ginger, and others were used as holistic healing and relaxation (rejuvenation) materials that have been a hereditary habit, and some have been packaged into the spa industry. In the last ten years spa and wellness has grown rapidly in Indonesia, especially in Bali, and this industry generates high income. Bali is a popular destination and is also known as one of the SPA destinations that is in demand by local and foreign tourists. In addition, Bali also offers other wellness activities such as yoga, meditation, body cleansing, and detox programs that increasingly support Bali as a wellness tourism destination. Among the push and pull factors of tourists in choosing Bali as a wellness tourism destination, pull factors have a more significant influence on the interest of tourists to return to wellness tourism in Bali (Manuaba, 2021a). These results are in line with the results of research conducted by Baniya and Paudel (2016) and Baniya, Ghimire, and Phuyal (2017), which also stated that pull factors have a more significant influence on the interest of tourists to return than push factors. Pull factors described by the heritage and culture indicator have the largest cross-loading value of 0.789. (Baniya, 2016; Baniya et al., 2017) This can be caused by Bali's unique culture that is still preserved. When associated with wellness tourism, the Balinese cultural element is strong and can be felt in the concept and treatments offered at Balinese spas. Generally, spas in Bali have classic Balinese architecture equipped with Balinese-style furniture and combine traditional and modern equipment. Types of treatments such as Balinese massage and Balinese boreh which are very famous and in demand by both foreign and domestic tourists, have become a tradition and have even been carried out for years among the Balinese people.

East Kalimantan, which is part of the IKN Nusantara, also has superior potential related to natural tourism such as the Derawan Islands, Beach Tourism, Karst, Small Islands, River Tours, and other tourist attractions. This can be in line with the growth of health facilities in East Kalimantan, but strategy formulation is still needed to develop this. Some of the recommendations given are the development of infrastructure and tourism facilities and health facilities that support the medical tourism program still need to be further improved

so that they can be an attraction for tourists visiting East Kalimantan, increasing international standards for hospitals and laboratory certification that supports world-class health services, the need for support from the Central Government, especially the Ministry of Tourism and Creative Economy and the Ministry of Health in promoting East Kalimantan as one of the locations for Medical Tourism (Berliandaldo & Muhadli, 2022).

Research by Siswanto et al (2024) on the potential for developing medical tourism in Bandung stated that Bandung has the potential as a medical tourism destination. In the tourism sector, in the city of Bandung, there is shopping, culinary, and educational tourism, which are also in line with the growth of health facilities. However, there are several obstacles related to its development, namely the inequality of health facilities and human resources, the lack of use of international languages, and the lack of publicity and promotion. In Bandung, Santosa Hospital and Bandung Kiwari have provided services to foreign tourists. (Siswanto et al., 2024)

Challenges of Medical Tourism Development in Indonesia

1. Challenges in government-owned hospitals are usually more difficult to manage because they are limited by various government regulations, for example Dr. Sardjito General Hospital. Private hospitals are more flexible in managing hospitals. However, the challenges faced include internal factors in administration and management that still need to be improved, as well as a lack of English language skills if there are foreign patients (Arisanti, 2019a).
2. Lack of medical infrastructure (medical resources, medical equipment) that meets international standards in many regions. Although hospitals in big cities have received international accreditation, most health facilities in Indonesia still need improvement (Sutopo, 2021).
3. Not many patients know the services provided by the hospital and coordination between ministries in the government is not yet in line and hospitals are not fully integrated with tourism service providers. (Arisanti, 2019a)
4. Regulations governing medical tourism in Indonesia are still relatively minimal and do not fully support the development of this sector. This is exacerbated by the lack of targeted and systematic promotion of medical tourism, both at the national and international levels (Sutopo, 2021).

5. The competition from neighboring countries like Malaysia and Thailand, which have established themselves as leaders in medical tourism, poses a significant challenge. These countries benefit from advanced healthcare facilities and a well-developed tourism infrastructure that attracts international patients. To compete effectively, Indonesia must enhance its service standards and innovate within its medical technology sectors. (Mahendradhata, 2019; Sapta Putra et al., 2024)

RESEARCH METHODOLOGY

Our literature review was conducted using a comprehensive search strategy involving academic databases such as Google Scholar, Pubmed, and Science Direct. To refine our search, we used keywords like [medical tourism Indonesia], [development], [opportunities], and [challenges]. The selection criteria included studies published between 2019 and 2024 focusing on the development of medical tourism in Indonesia. We also analyzing existing literature to identify key factors influencing medical tourism in Indonesia. This includes scientific articles, books, and reports that provide insights into the current state and potential of the sector. All sources were properly cited using APA style.

RESULT AND DISCUSSION

The weaknesses of Permenkes No. 76/2015 concerning Health Tourism Services include the limited number of type A and type B hospitals, the lack of socialization of the requirements for submitting hospitals for Health Tourism services, and accreditation requirements (*Nasional Tingkat Paripurna*), and cooperation documents with Travel Agencies that have medical tour guides. These requirements are quite difficult to achieve by Regional Hospitals (Nayla Aura, 2023). Responding to the obstacles that occur in the development of Indonesian medical tourism, the Ministry of Health is carrying out various accelerations in the field of equalizing medical equipment through the Strengthening Indonesia's Healthcare Referral Network (SIHREN) program, which aims to strengthen the health referral service system in Indonesia physically and in terms of service capacity by providing quality and

equitable access to health through the provision of medical equipment in all districts/cities and provinces in Indonesia with an implementation duration of 2024-2027. Another objective of the SIHREN program is to reduce the morbidity/mortality of Cancer, Heart, Stroke, Urology, Maternal and Child Health. The increase in chronic diseases in Indonesia is expected to also reduce the number of Indonesians going abroad for medical treatment. (Sanguni Andi, 2024)

Advanced Health Technology will be more complete with internationally certified Health Resources. Short-term programs to fulfill Specialist doctor resources include Fulfillment of health resources through fellowship/training (6-12 months), adding centers and fellowship/training quotas (existing HR participants of network hospitals), Assignment of doctors through BLUD contract/honor schemes (Using SIP or Letter of Assignment from the Ministry of Health), Assignment of Specialist Doctor Utilization (*Penugasan Pendayagunaan Dokter Spesialis*), Senior resident placement program (special assignment of Health workers), Assignment of doctors through Utilization of Indonesian Overseas/Foreign National Health Workers (Especially for Specialist Doctors who have a small supply, for example, Sp.KN). Long-term programs include specialist and subspecialist doctor education programs (2-5 years) through Ministry of Health and LPDP scholarships, ASN Recruitment (PK), Fulfillment of human resources through college-based programs, Addition of specialist and subspecialist doctor education centres and quotas. The Ministry of Health is also planning a proctorship program with countries with more advanced health technology than Indonesia, and foreign doctors with international certification are brought in to collaborate and transfer knowledge with doctors in Indonesia (Qomar Syamsul, 2021).

Robotic surgery and telesurgery are rapidly evolving fields in Indonesia that aim to improve healthcare access and quality, especially in remote areas. The Indonesian government is developing these technologies to enhance surgical services across the archipelago. Robotic surgery is a technology that allows surgeons to perform surgical procedures with the help of robots to achieve high precision. This technology is usually used in minimally invasive surgery, where the resulting wound is smaller, trauma to the patient is reduced, and the recovery process is faster. In Indonesia, the development of robotic surgery is still in its early stages. Still, it has shown great potential to change the face of the medical world, especially in improving the quality of health services. Robotic surgery was first introduced in Indonesia in the early 2010s. One of the most widely used systems is the Da

Vinci Surgical System, which is widely known worldwide as a sophisticated technology in the field of minimally invasive surgery. The application of this technology in Indonesia was first carried out in large hospitals such as Cipto Mangunkusumo Hospital (RSCM) in Jakarta and several private hospitals in large cities. At the beginning of its application, robotic surgery in Indonesia was used in several special medical procedures, especially in the fields of urology and gynecology. Operations such as prostate removal (prostatectomy), hysterectomy (removal of the uterus), and several types of cancer surgery began to be performed with the help of robots. Doctors in Indonesia, both from the public and private sectors, undergo special training abroad, such as in Singapore, Europe, and the United States, to learn how to operate this system. Although the use of robotic surgery is still relatively limited, the number of doctors and hospitals adopting this technology continues to increase along with the development of understanding and experience in its use. Currently, robotic surgery is used in urology, gynecology, thoracic, cardiovascular, and gastrointestinal surgery. The current development of robotic surgery in Indonesia, The Indonesian Ministry of Health has established robotic surgery centres at Hasan Sadikin Hospital in Bandung and Dr Sardjito Public Hospital in Yogyakarta. This initiative is part of a multi-year project to improve healthcare access in underserved regions. The government also developed telesurgery, which involves conducting surgeries remotely using robotic systems and has been piloted successfully since 2020. Notably, a robotic system named Sina was used for remote surgeries, demonstrating the ability to perform minimally invasive procedures over distances of up to 500 kilometres. Indonesia has partnered with Iran to expand its robotic telesurgery capabilities. This collaboration aims to connect hospitals across the country, enhancing surgical accuracy and reducing patient travel distances, but there are some challenges despite the promising advancement. Currently, there are no specific laws governing telesurgery practices in Indonesia, which presents regulatory hurdles for implementation. The high cost of robotic surgical systems and telesurgery technology poses a barrier for many healthcare facilities, particularly those in rural areas with limited budgets. Reliable high-speed internet connectivity is crucial for successful telesurgery. Efforts are needed to improve telecommunications infrastructure across the country to support these advanced medical technologies. Although robotic surgery technology has many advantages, there are several obstacles that slow down its adoption and spread in Indonesia. One of the biggest challenges is the very high cost. In addition, there is also a challenge in terms of the availability of trained

medical personnel. Although there are already some doctors in Indonesia who have received special training abroad, the number is still minimal. Training in the use of this technology requires a long time and large investment, both in terms of costs and human resources. Doctors in Indonesia need to master not only technical skills in operating robots but also a deep understanding of the medical procedures carried out. (Badan Kebijakan Kemenkes, 2022; Karolin & Mardijono, 2024a)

Telesurgery, or remote surgery, has emerged as one of the most promising breakthroughs in healthcare technology. This technology allows surgeons to operate on patients in remote locations using surgical robots and digital communication networks. In Indonesia, an archipelago of more than 17,000 islands, telesurgery offers an important solution to addressing the problem of access to healthcare, especially in remote areas. With this technology, surgical operations that require specialists no longer have to be performed in large hospitals in major cities, but can be accessed from more remote areas, utilizing advanced communication networks. The development of telesurgery in Indonesia began with pilot projects in several large hospitals. One of them is Dr. Hasan Sadikin General Hospital, Bandung, a pioneer in developing remote surgical technology in Indonesia. This hospital has conducted several trials involving surgeons who are specially trained to operate surgical robots in the context of telesurgery. This project also involves international collaboration, including with countries that are more advanced in medical technology, such as Iran. At Dr. Hasan Sadikin General Hospital, surgeons are trained using simulators before operating on patients. This training aims to improve doctors' skills in controlling robots with high precision, which is important in telesurgery. After mastering the simulation stage, doctors move on to direct training using animal tissue to ensure they are ready to face real challenges. This program shows that Indonesia is serious about preparing surgeons for the digital and robotic medical era. (Direktorat Jenderal Pelayanan Kesehatan, 2023) Telesurgery also provides benefits for doctors, through this technology, surgeons can work together with experts from around the world to handle complex cases. This international collaboration enriches the knowledge and skills of doctors in Indonesia while improving the quality of care for patients. Although the development of telesurgery in Indonesia shows a lot of potential, there are several challenges that need to be overcome so that this technology can be widely implemented. Some of the main challenges are: Telesurgery requires a large investment for surgical robotic equipment and supporting infrastructure such as secure and reliable

communication systems. Many hospitals in Indonesia may not have enough budget to invest in this technology, especially in areas with limited resources. In addition, the cost of maintaining robotic equipment and training doctors is not cheap, making this one of the main obstacles to the widespread adoption of telesurgery. The use of robotic surgical technology requires specially trained doctors and medical staff. However, the number of surgeons in Indonesia with expertise in telesurgery is still minimal. A comprehensive training program is needed to ensure more doctors can operate surgical robots safely and efficiently. Several hospitals have begun to develop this training program, but the scope is still limited. Telesurgery involves the transmission of highly sensitive medical data over the Internet. Therefore, data security is a very important aspect of the development of this technology. Indonesia needs to have strict regulations regarding the protection of patient data and ensure that telesurgery operations are carried out in accordance with international security standards. In addition, regulations regarding licensing doctors who perform telesurgery, especially in an international context, must be clarified. (Karolin & Mardijono, 2024b)

Indonesia already has twenty-four hospitals that have been internationally accredited by the Joint Commission International (Joint Commission International, 2024). Hospitals that have received JCI Accreditation include: Awal Bros Hospital Batam; Awal Bros Hospital Pekanbaru; RSUD Dr. Soetomo Surabaya; Eka Hospital BSD; Eka Hospital Pekanbaru; Grha Kedoya Hospital Jakarta; JEC (Jakarta Eye Center); Mayapada Hospital Jakarta; National Cardiovascular Center Harapan Kita Jakarta; Primaya Hospital Bekasi Barat; Primaya Hospital Tangerang; RS EMC Alam Sutera; RS EMC Tangerang; RS Pondok Indah - Bintaro Jayan; RS Pondok Indah - Puri Indah; RS Pondok Indah - Pondok Indah; RS Premier Bintaro; RS Premier Jatinegara; RS Premier Surabaya; RSUP Dr. Hasan Sadikin Bandung; RSUPN Dr. Cipto Mangunkusumo (RSCM); Siloam Hospital Bali; Siloam Hospital Kebon Jeruk; Siloam Hospital Lippo Village. Based on the website of the Indonesia Medical Tourism & Medical Assistance Agency, several hospitals that are included in the partnership are Siloam Hospital Group and RSCM (IMTB). However, in various regions, many hospitals have initiated medical tourism programs even though they have not collaborated directly with the government. The 11 areas that can be targeted for medical tourism in Indonesia include Bali, Jakarta, Surabaya, Bandung, Semarang, Padang, Medan, Yogyakarta, Surakarta, Bengkulu and Makassar.

As one of Indonesia's prime destinations, Bali also has 3 international standard hospitals, namely Sanglah General Hospital, Bali Royal Hospital, and Bali International Medical Center. Sanglah General Hospital has standardized the quality of service, competency certification for health workers, and increased hospitality to provide maximum service. Bali Royal Hospital has been promoted to Germany and had the opportunity to launch a premiere package specifically designed to be marketed in the medical tourism program, namely the medical check-up package, IVF, plastic surgery, and orthopedic package (Rosalina et al., 2015). In 2021, the central government will build the Bali International Hospital in Sanur with a capacity of 300 rooms, which will collaborate with the Mayo Clinic from America with superior cancer services. This hospital has comprehensive health services, modern medical equipment facilities, competent and qualified health workers, and prioritizes patient satisfaction (Manuaba, 2021b).

Awal Bros Hospital Batam is located in the position of Batam City. It has a strategic position and directly borders Singapore and Malaysia, making Batam one of the world's tourist destinations that can be developed as a gateway to Indonesian tourism. Meanwhile, regarding the Hospital, Awal Bros Hospital Batam is a type B private hospital that has been nationally certified by KARS Paripurna and Internationally certified by the Joint Commission International (JCI). It has superior services for Minimally Invasive Surgery, Arthroplasty, Non-surgical Stone Surgery or ESWL, and Angiography, which is equipped with the complete and latest facilities and infrastructure. It also has professional medical human resources who are competent in their fields. The results of this study state that Awal Bros Hospital Batam is quite ready to serve Medical Tourism in terms of tourism and medicine, but follow-up is still needed, especially regarding coordination between the Hospital and the Travel Agency (Sutanto et al., 2022).

Yogyakarta stated that there are two hospitals that have implemented medical tourism programs, namely Prof. Dr. Sardjito General Hospital and An Nur Special Surgery Hospital, both of these hospitals have offered health tourism services on their websites. However, the one that has received international JCI accreditation is Dr. Sardjito General Hospital, while An Nur General Hospital received national accreditation from the Hospital Accreditation Commission (KARS). The leading services of Dr. Sardjito General Hospital are the Infertility Clinic and Skin Center. Nationally, the success rate of the IVF program is quite high, namely in the top five for hospitals as a whole, and it is the first hospital in Indonesia to successfully

implement an IVF program in the 1990s. An-Nur General Hospital offers health tourism program services, namely: (1) pick-up and drop-off of patients and families from the airport, station, train, and terminal; (2) pick-up and drop-off to tourist attractions; (3) Hotel reservations, accommodation, plane tickets or other transportation. Medical services provided by RSKB An Nur include kidney failure, urinary tract disorders, andro-urology, congenital urological abnormalities and reconstruction, erectile dysfunction, and others (Arisanti, 2019b).

Six factors that influence the attractiveness of health visits to Surabaya as a city based on medical tourism are the credibility of the medical team, quality of service to patients, medical equipment technology, hospital management, price comparison with benefits, and communication to patients and families. The credibility of the medical team is the highest factor in influencing the attractiveness of health visits to Surabaya as a city based on medical tourism, but communication with patients and families is the lowest factor in influencing the attractiveness of health visits to Surabaya as a city based on medical tourism. Thus, the medical team needs to make improvements in terms of developing good communication relationship patterns with patients and their families, developing better ethical and empathetic attitudes, and prioritizing patient safety so that the community is satisfied. The government also needs to involve related industries, such as the health industry, insurance industry, pharmaceutical industry, and regulators, who must be integrated with local/national tourism development programs. Hospitals in Surabaya have adequate facilities and are able to compete with international hospitals. Dr. Soetomo Hospital offers a variety of superior services, including plastic surgery and kidney and integrated heart transplants. (Prasetyo et al., 2020).

Padang, West Sumatra also has 1 hospital that has run a medical tourism program and two others are in the process of developing medical tourism hospitals. Semen Padang Hospital collaborates with the tour and travel company PT Duta Wisaya Jaya and it is one of the tour and travel companies in West Sumatra that is developing in the field of tour package management and training, especially in the hospitality sector. (Afriadi & Flowerina, 2024) RSU Bunda Padang, which provides an IVF program or In Vitro Fertilization (IVF), this hospital is also preparing itself as a hospital centre that is included in the medical tourism industry in Padang City and West Sumatra Province. RSOMH Bukittinggi and RSUD dr Rasidin in Padang City are currently being developed to become tourist hospitals (Reni et al., 2022).

Dr. Moewardi Hospital in Surakarta has several advantages in the field of medical tourism, including Integrated Heart Services which includes Heart Polyclinic, Intensive Cardiovascular Care Unit (ICCU), High Care Unit (HCU), and Diagnostic Coronary Angiography. Dr. Moewardi Hospital has the first and only spinal surgery navigation robot service in Southeast Asia, which is very useful for surgery on patients with scoliosis and spinal disorders. Plastic Surgery and Kidney Transplant Services, as well as endovenous ablation (EVLA) services for chronic venous insufficiency. Moewardi Hospital also participated in the Wellness & Health Tourism Expo in the development of Jamu as a treatment that is a medical tourism destination (RSUD Dr. Moewardi, n.d.) The following are some studies that have been conducted in Indonesia regarding the development, potential, and challenges faced in implementing medical tourism programs in Indonesia based on their location.

CONCLUSION

In the last 8 years, the development of medical tourism in Indonesia, including programs to improve and equalize medical device technology through the Strengthening Indonesia's Healthcare Referral Network (SIHREN), Robotic surgery technology, telesurgery and remote surgery. Twenty-four hospitals have been accredited by the Joint Commission International (JCI). Indonesia Medical Tourism Board (IMTB) is a specific website that is more easily accessible to medical tourists. Indonesia also offers various tourism sectors, including culinary, cultural, wellness, ecotourism, and heritage. The intensive promotion and preparation of medical tourism in Indonesia is believed to be very attractive to local and international medical tourists seeking treatment in Indonesia. The development of medical tourism in Indonesia presents a landscape rich with opportunities and challenges.

As the global medical tourism market continues to expand, Indonesia has the potential to position itself as a competitive destination due to its affordable healthcare costs and high-quality medical services. Some of the opportunities are (1) Cost-Effectiveness: Indonesia offers medical treatments at a fraction of the cost found in developed countries, making it attractive for international patients seeking affordable healthcare options; (2) Quality Healthcare Infrastructure: Many Indonesian hospitals are equipped with advanced technology and staffed by skilled professionals, enhancing the country's appeal as a

destination for medical tourists. Some challenges are (1) Lack of Awareness and Promotion: There is a significant gap in awareness about Indonesia's medical tourism offerings both domestically and internationally. Enhanced marketing strategies are needed to promote Indonesia as a viable medical tourism destination; (2) Regulatory Complexities: The intricate legal frameworks and administrative hurdles can deter foreign investments and complicate the operational landscape for healthcare providers; (3) Infrastructure Limitations: While some urban areas boast modern facilities, rural regions often lack adequate healthcare infrastructure, which can limit access for potential medical tourists.

While Indonesia possesses substantial potential for the growth of its medical tourism sector, it must strategically address the challenges identified. This includes improving regulatory frameworks, enhancing promotional efforts, and investing in nationwide healthcare infrastructure. By fostering collaboration among stakeholders—government bodies, private sectors, and healthcare providers—Indonesia can create a robust environment conducive to attracting international patients. Ultimately, leveraging its unique advantages while systematically overcoming its challenges will be crucial for Indonesia to emerge as a leading player in the global medical tourism market.

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