

Digital Health impact on Medical Tourism

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Medical tourism

- Medical tourism is the process of travelling abroad or outside one's residential country with intention of receiving non-emergency medical treatments.
- The tourism and travel sector is a large and thriving with almost 5 billion international tourist arrivals recorded in 2019, with an annual growth of 4% on the previous year.
- Besides, this sector is a market of hundreds of hotels, hospitals, clinics and agencies all seeking to make money and the market is growing at a rate of 15-25%.





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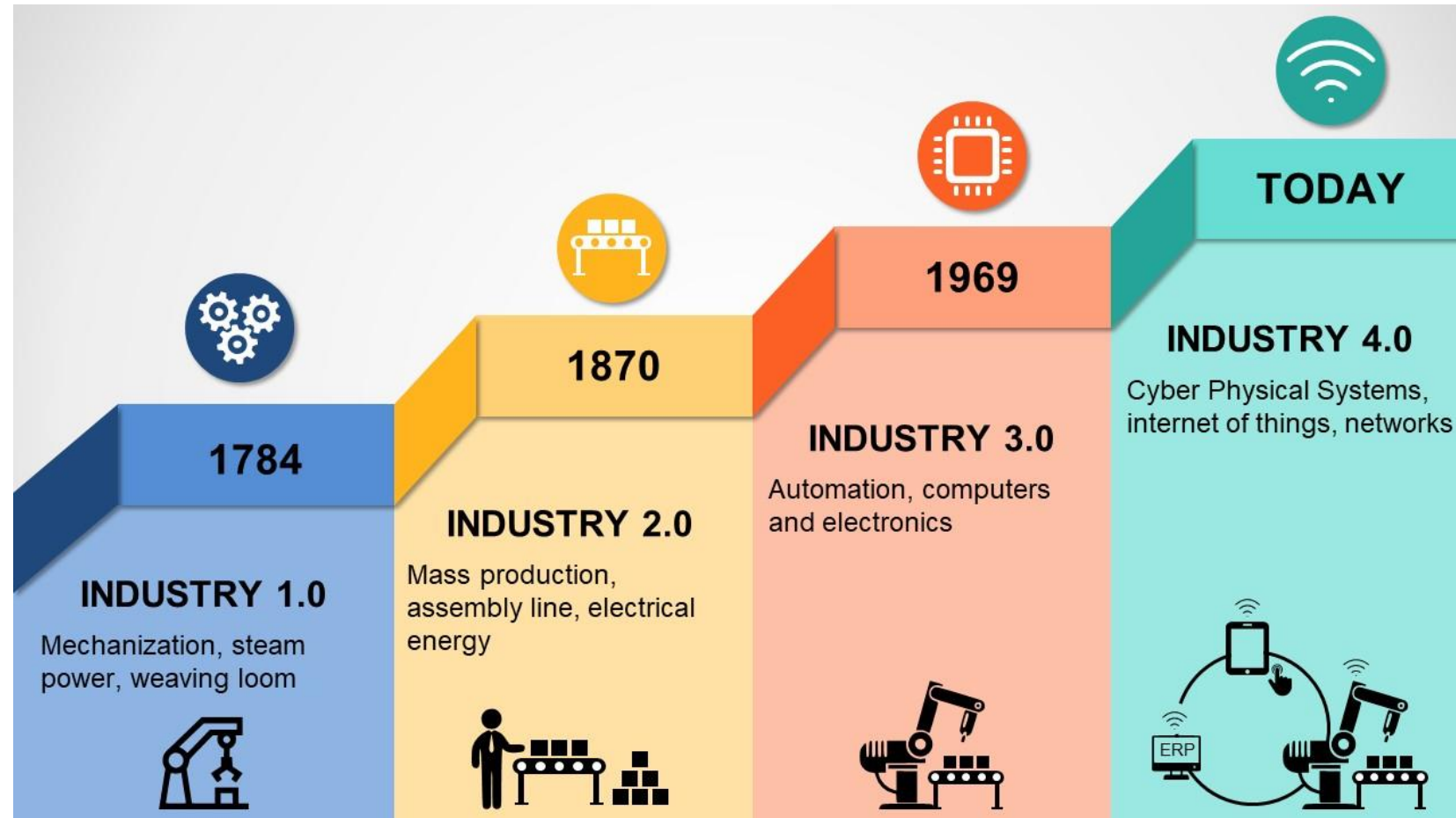
Medical tourism

- The idea of traveling long distances for health reasons, and marketing destinations for that purpose is present from the spas of the ancient Greeks, and Romans, to the supposed curative properties of alpine and seaside health resorts in early modern Europe.
- However, lately, medical tourism has been growing due to the low-cost treatment, specialization of medical agencies, hospitals, and medical professionals in the host countries
- According to international health travel data provider Patients Beyond Borders, the global medical tourism market is worth between \$65bn and \$87.5bn and, medical procedures range from cosmetic surgery and dentistry to cardiovascular procedures and experimental cancer treatments



The Industrial Revolution (IR)

- Medical tourism is a robust industry, which is tightly related to other sectors such as travel and tourism, wellness and information, communication and technology





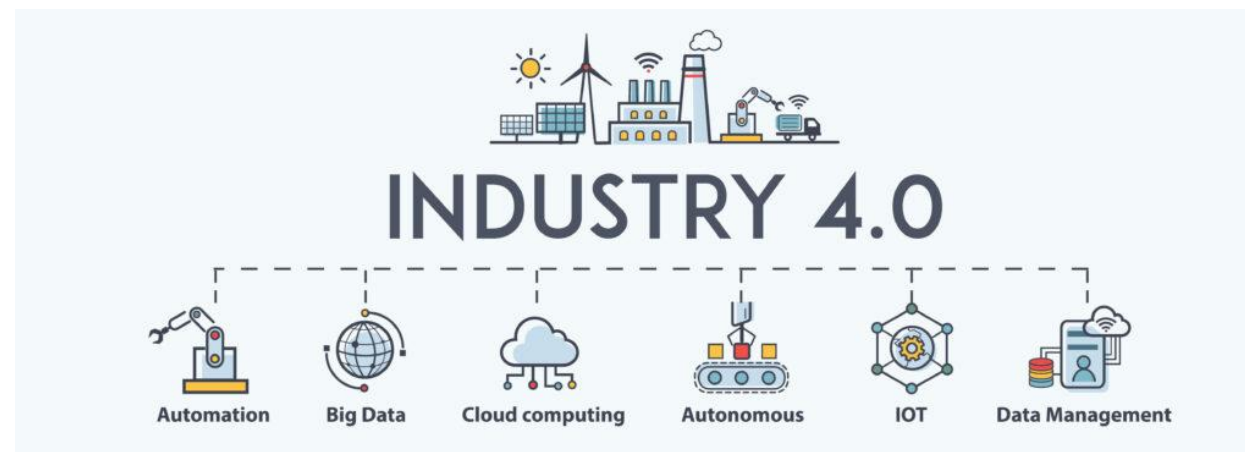
4th Industrial Revolution

- The **4th Industrial Revolution** (4IR) is a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), genetic engineering, cloud computing, and more.
- The adoption of IR 4.0 technologies in medical tourism is expected to make seeking treatments overseas more affordable, accessible and health records readily available on a real-time and secured basis.

Perhaps, with the adoption of IR 4.0 technologies among the health tourism facilities, health tourists may not necessarily require physical movement elsewhere anymore in seeking and receiving health services, such as simple health checks or health advice



- The recent corona virus pandemic that puts global travelling almost to a halt is a good example of why the future of health tourism should evolve through the technology advancement, specifically the IR 4.0 technologies.
- Health care is no longer just about local accessibility but cross-national borders, be it physically or virtually





New concept : Smart Medical Tourism

- With the increasing demand and growth of medical travel around the world, now **smart technologies** provide a stronger push to the medical tourism sector.
- Most of the medical tourism countries have already merged technological advancement with medical services under the **smart healthcare system (SHS)** concept to increase their global market value.
- The combination of healthcare services, technology, and smart tourism has resulted in the notion of **smart health tourism**.
- Applications of smart technologies in medical tourism will bring more innovations in the field and have more positive impacts on economy, culture, employment, society, and destination image.



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Smart Medical Tourism

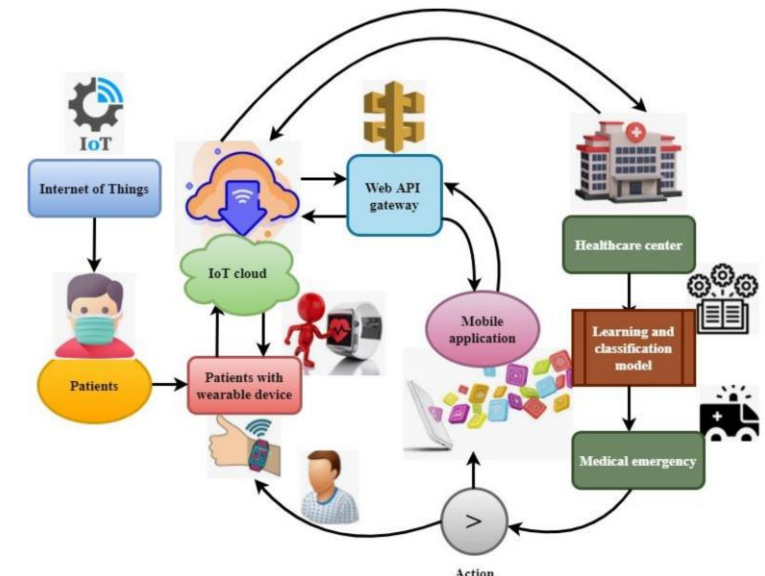
- Smart Medical Tourism is a type of tourism development that makes use of modern technologies (such as sensors, wireless communications systems, and big data analytics) to meet long term sustainability goals, to enhance destination's innovative capacity, and to provide superior experiences to tourists.
- The applications of smart technologies are increasingly being recognized as a viable solution for boosting the competitiveness of tourism destinations.
- Some of them are mobile technology, recommender systems, social media, the internet of things, big data, augmented (AR), and blockchain.





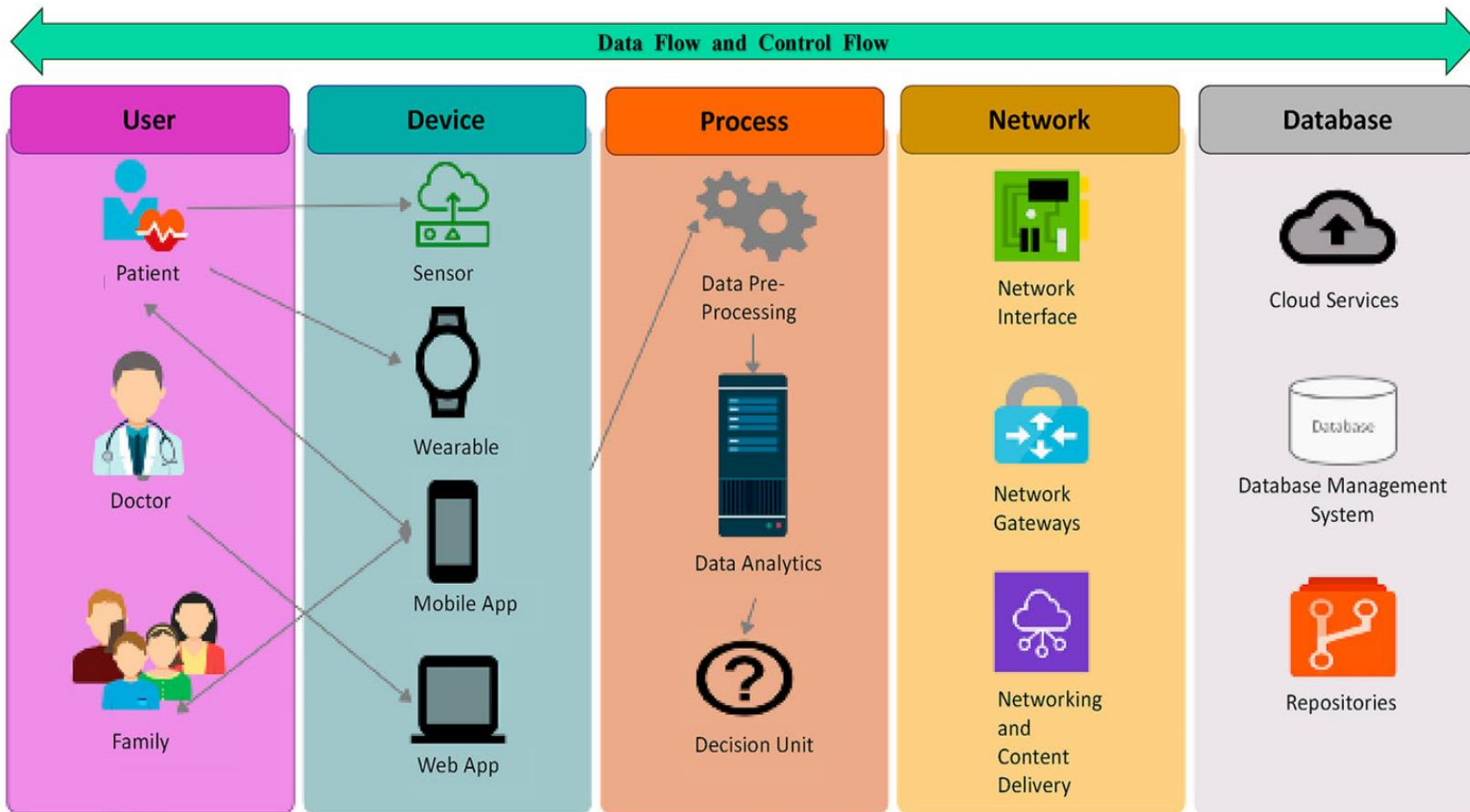
Smart healthcare system (SHS)

- An SHS is a network of wireless and interconnected wearable devices that are equipped with electronics, software, sensors, actuators, and connections to connect, store, and share data.
- During COVID-19 pandemic, technology applications have had a significant global impact, making smart medical tourism more “attractive”.
- An SHS can facilitate the proper diagnosis, consulting, treatment of medical tourists, local community involvement, and improve the medical destination’s efficiency.



Smart healthcare system (SHS)

SHS is divided into five stages with its set of functions. Across all five stages, there is data and control flow in both directions.





How medical tourism industry can benefit from technological advancements

- The only way to provide better patient experience and healthcare services to the foreign patients is to utilize the technological innovations properly.
- The medical tourism companies or facilitators, hospitals and other organizations involved in this industry should utilize cloud-computing facilities for easy access to necessary information.
- Technology can help in reducing the communication gaps and synchronizing all the parties involved international business transactions.

Technology has contributed to knowledge advancement for medical tourism

- Applications of concepts such as Web 2.0 and 3.0, cloud computing, [mobile technology](#), are not limited to Information Technology anymore but are being actively applied to benefit agile medical practitioners, across the world.
- For instance, an Australian doctor who wishes to learn a particular surgical procedure from his European counterpart can effortlessly do so, from the comfort of his clinic through videos based on web2.0 application or through a live webcast.



Technology has contributed to better customer service for medical tourism



- Irrespective of the convalescent's origin or time zone, medical information services are available to him twenty four hours a day, seven days a week and three hundred and sixty five days a year.
- Toll-free telephone services, internet connections, web portals and email have opened doors to the seeker's questions on almost anything, be it healthcare facilities, physicians, specializations or general amenities and ambience.
- These services convey information and aid in advanced confirmation of all interrelated services.



Technology has contributed to cost reduction for medical tourism business



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- Technologies have considerably reduced several procedural hassles otherwise involved during treatment in a foreign country.
- Awareness and promotional programs tutor the foreign nationals with respect to the norms of the regimen.
- Service automations include obtainment of information, planning the complete process including traveling, lodging, booking and payment of the hospital charges in advance.
- All of these contribute to cost reductions.



Technology has contributed to create medical tourism portals



- The internet today is flooded with [web sites, portals and platforms](#) which provide all possible essentials for medical travel and rehabilitation in a foreign destination.
- Complete with interactive facilities between hospitals, official agencies, tourism conduits, international regulation managers and other referral services, these prominent healthcare sites have a wide array of end-to-end services that cater to any intrinsic need of the health traveler.





Technology has contributed to secure medical data transfer for medical tourism

- Given the wide applications of information technology being used in current medical travel, it becomes of utmost importance that strong security standards for the **protection** of health records of all travelers be established.
- It could be extremely simple for a [data hacker to access critical databases](#) with millions of hospital or patient details and pass them on into the wrong hands, in the absence of adequate security.
- use of passwords, antiviral security and scanners, secure data interchange protocols, access control systems electronic signatures are needed to institute basic security values for the medical network .





Technology has contributed to create mobile medical technology for medical tourism

- Medical tourism is becoming more efficient as a result of mobile technologies and it has become an integral part of an individual's life.
- Thanks to advances in mobile software, Smartphones are now programmed to allow doctors to make diagnoses from anywhere in the world.
- Software companies provide basic medical applications like mobile medical reference guides which aid physicians in securing medical data by assuring instant access to information on specific drugs, their dosage specificities, related interactions and so forth.

Hence, it not only makes a tourist smarter but also makes a smart tourist destination by providing smart facilities.



Technology has contributed to create Record Management for medical tourism

- The electronic medical record is consistent, economical, enforces quality assurance and helps maintain an integrated record of medical information, available and accessible on the web or through electronic media.
- Web EMRs allow online or web admittance to the patient's data thus giving foreign physicians absolute, precise, and instantaneous access to the complete medical history of patients.



Reasons Why Technology Is An Essential Part Of Medical Tourism

Technology bridges the gap between healthcare providers and medical tourists

- Cloud
- EMR
- Role of Smartphone
- Data Mining
- Telemedicine
- Social networking



Technology has contributed to create telemedicine for medical tourism

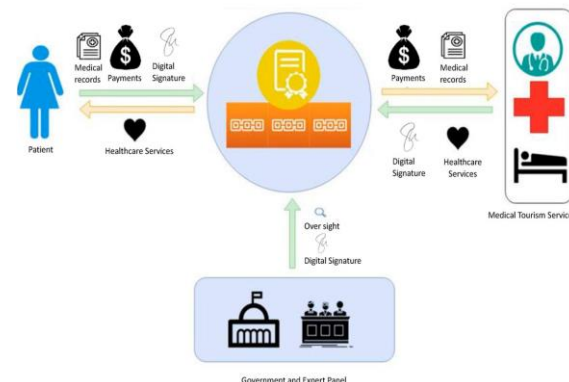


- **Telemedicine** incorporates diverse healthcare services which are rendered from a distance, through electronic telecommunications.
- These medical records of the patient are now made available to relevant global healthcare providers for studying the detailed case history.
- Technology allows the patient, his/her primary physician and the foreign consultant to discuss the case elaborately or even conduct surgery over a web conference.
- It makes the physical distances seem very irrelevant and even cuts down on travel.
- Subsequently, the **concept of telemedicine** enhances the overall efficiency, productivity and appeal of medical treatment, especially medical tourism.



Blockchain technology

- Blockchain is relatively a new technology for securing and managing medical data within medical tourism sector.
- Blockchain is a suitable network for exchanging and preserving medical tourists' data and enhancing the performance, security, and transparency of shared medical data in the healthcare system.
- Stability and security are two of the most important benefits that blockchain technology may provide to the travel and tourism sector.



Cloud computing technology

- Cloud technology enables healthcare providers to access the treatment records of medical tourists in real-time.
- The digitization of medical records has improved medical tourist care and safety by making it easier to understand and read medical tourist data.
- Furthermore, electronic medical records (EMR) can be used to coordinate medical tourist care across several hospital systems and countries.
- Cloud technology gives a boost to medical tourism destination and its stakeholders for welcoming more medical tourists from all over the world by providing trust and reliability.





AI and robotics

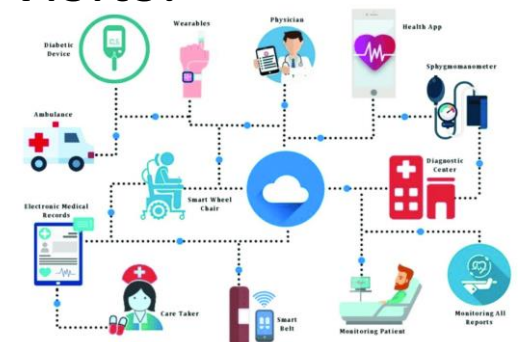
- Artificial intelligence (AI) technology is growing rapidly to contribute to the development and growth of the health and tourism domain.
- AI systems assist in better medical tourist monitoring, reducing treatment costs, and simplifying the workflow management of medical tourist data.
- Implementation of AI methods can aid in the prediction of future sickness and the prevention of pharmaceutical shortages which increases the efficiency of a medical tourism destination.
- AI and its applications have contributed to boosting the number of medical tourists by raising the number of tailored adverts on people's internet browsers and social media





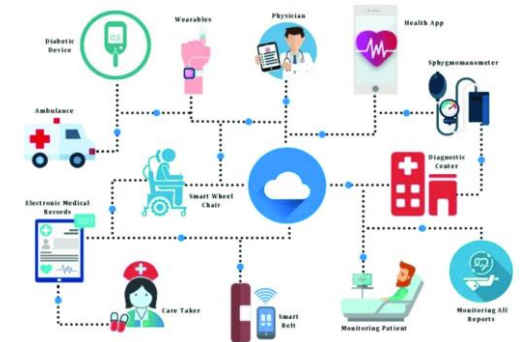
Internet of medical things IoMT

- The IoMT is a new paradigm that connects healthcare IT through a network of linked hardware infrastructure, medical equipment, and software applications
- The full implementation of IoMT in medical tourism is a mutual hope, as it allows healthcare providers to function more efficiently and medical tourists to receive better treatment care.
- Hospitals might use this information to identify possible medical tourist groups based on personal and social behaviours, as well as to send out reminders for follow-ups and annual check-up visits.
- This technology saves time because doctors, medical tourists, and service providers can examine data in real-time from any place.



Internet of medical things IoMT

- The use of IoMT devices throughout a bigger town or geographic area is referred to as Community IoMT.
- The personalized medicine generated with technology has the potential to be a game-changer because countries will promote innovative treatment prescriptions that are tailored to the individual.
- This could lead to increased revenue and market share, as well as better customer loyalty among medical tourists. As a result, it will become easier to attract more medical visitors.
- The internet of things is one of the most important technological innovations created for smart tourist destinations and tourism businesses.



IoT and Medical Tourism

- The recent 5G medical technology development further enhances the patterns of production and consumption of health tourism services, such as smart wearable (e.g. clothes that measure heart rate, blood pressure, body temperature, skin moisture, etc.) and active device location tracking.
- Such development is highly applicable and useful for health tourism, as it allows continuous communication and data updates through cloud computing between the health tourists (at home country) and the healthcare profession (at health tourism destination)





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