# **Question 1: Medical Tourism Trends**

## Extract 1: International Medical Tourism Market

Growing demand for health services is a global phenomenon, linked to economic development that generates rising incomes and education. Demographic change, especially population ageing and older people's requirements for more medical services, coupled with epidemiological change, i.e. rising incidence of chronic conditions, also fuel demand for more and better health services. Waiting times and/or the increasing cost of health services at home, coupled with the availability of cheaper alternatives in developing countries, has led to new healthcare consumers, or medical tourists, to seek treatment overseas. The international medical tourism market is expected to grow by US\$131.35 billion by 2025, with an average annual growth rate of 20%.

Source: National Library of Medicine, 8 May 2022

# Extract 2: Technology Trends

### Artificial intelligence

Hospitals and agencies are now leveraging ad companies that use AI in order to target potential patients anywhere in the world. This includes people who engage in or view content on the internet related to medical tourism and medical procedures. With the growth of targeted advertisements on people's internet browsers and social media platforms, AI has aided in increasing the number of medical tourists.

### <u>Telehealth</u>

Technology has enabled the advancement of telehealth, where healthcare services can be delivered remotely. Telehealth can range from the digital transmission of diagnostic scans to videoconferencing sessions between patients and physicians. Healthcare is no longer limited by physical geography.

For patients seeking health services oversees, barriers to treatment planning and both pre and post-operation consultations have been alleviated by telemedicine, where patients are able to obtain the procedure in a foreign country and receive follow-up care at home. Telehealth has encouraged patients to obtain medical procedures abroad, and virtual communication has allowed for seamless care to take place. This minimises some of the concerns of receiving health services abroad.

Source: Medical Device Network, 15 Jun 2021

Country	2017	2018	2019	2020	2021
United States	16.8	16.6	16.7	18.8	17.8 <sup>*</sup>
South Korea	7.1	7.5	8.1	8.4	8.8 <sup>*</sup>

## Table 1: Current expenditure on health (% of GDP): United States & South Korea

\* Projected

Source: Organisation for Economic Co-operation and Development (OECD)

## Extract 3: Effects of Medical Tourism

Medical tourism can contribute to wider economic development, which is strongly correlated with improved population health status as a whole, e.g. increased life expectancy, reduced child mortality rates. Encouraging foreign direct investment in healthcare infrastructure and related industries (eg pharmaceutical and hospitality) and medical tourist inflows with correspondent revenue can create additional resources for investment in health care. Furthermore, medical tourism may slow or reverse the outmigration of health workers, particularly of specialists.

However, unless properly managed and regulated on the policy side, the financial benefits of medical tourism for health systems may come at the expense of access to and use of health services by local consumers. Governments and industry players would do well to remember that health is wealth for both foreign and local populations. In addition, medical tourism does escalate other detrimental impact on the country. For instance, the natural greenery or forest cover of a region is compromised in order to accommodate more buildings, hospital facilities, roads, treatment or diagnostic centers etc. In addition, there is a continuous discharge of polluted air, solid-toxic medical waste, litters of sewage consisting of oil and chemicals. Also, with patient travels, there is significant risk of corresponding bacterial travel. Recent superbug research has created significant alert.

Adapted: National Library of Medicine, 4 May 2011 and Medical Tourism Magazine

# Extract 4: South Korea: Increased Medical Travellers in 2021

The South Korean government data shows that the number of medical travellers visiting South Korea expanded 25% between 2020 and 2021, despite the Covid-19 pandemic. The data shows medical tourist patients from the US and China accounted for 39% of the total medical tourists. The number of foreign travellers who visited South Korea for health check-ups skyrocketed by 278.9%, and those for integrated internal medicine, 64.7%, and ophthalmology, 55.2%. In contrast, medical tourists for cosmetic surgery remained almost unchanged, and those for dermatology fell 22.3% in 2021.

The Korea Tourism Organization, partnered with the Medical Tourism Association, the world's leading medical travel expert, to expand healthcare offerings to a wider international patient base. Thanks to a partnership agreement with leading local healthcare facilities – Seoul National University, Seoul St. Mary's, Asian Medical and Samsung Medical — oil-rich Arab nations have been sending their patients to Korea for gastrointestine diseases, and cardiovascular, cancer, infertility, orthopedic and spinal pain concerns. In turn, Korean hospitals are doing their share to transfer medical systems to counterparts in Saudi Arabia. Under a project called the Medical Systems Twinning Project, one of six agreements between the two health ministries, Korea has agreed to establish hospitals – among them for brain imaging techniques and neuroscience research – in the Middle East country and bring educational and management expertise to their medical staff.

Source: LaingBuisson, 5 Jul 2022 & Medical Tourism Magazine, Jan 2020

# Extract 5: India's Medical Tourism Industry

India offers less expensive treatment options compared to the US and UK without compromising the quality of healthcare services. The treatment costs in India are around a quarter of those in America.

In terms of alternate medical treatment, the Indian medical treatment systems of yoga, ayurveda and rejuvenation therapy are among the most ancient methods of medical treatment in the world. Various relevant data on Foreign Tourist Arrival was analysed to study the existence of price elasticity in medical tourism. It was estimated that the elasticity of demand with respect to price of tourist location is -0.6 to -0.8.

The Ministry of Tourism has taken several initiatives to promote India's medical tourism industry:

- Medical Visa was introduced in June 2005
- In 2018, the government established a dedicated fund of US\$641 million for enhancing 12 Champion Services Sectors, with medical value travel being one of them. The e-tourist visa launched in September 2014 to ease the visa regime was subsequently expanded to include medical visits.
- The Marketing Development Assistance Scheme offers financial assistance to approved tourism service providers.
- Publicity materials, such as brochures, intended to promote medical and health tourism have been circulated in target markets by the Ministry of Tourism. Medical tourism has been announced on various international forums.

To make India a brand in the medical tourism sector, what India needs, according to Dr. Mansukh Mandaviya, is a system to obtain feedback/testimonials from tourists travelling to the country for medical purposes. Critical factors such as trained medical professionals and doctors, fluency in English, availability of the latest medical technology and affordable medical treatment have helped India emerge as a hub for medical tourism.

Source: Journal of Emerging Technologies and Innovative Research, Feb 2021 & India Brand Equity Foundation, 24 Jun 2022

## Questions

- (a) With reference to Table 1,
  - (i) Compare the current expenditure on health as percentage of GDP [2] between United States and South Korea.
  - (ii) Using a production possibility curve diagram, explain the likely impact of [4] US government continued expenditure on healthcare on its economic growth.
- (b) The South Korean government data shows that the number of medical travellers visiting South Korea expanded 25% between 2020 and 2021, despite the Covid-19 pandemic.

Discuss whether demand or supply factors have a greater impact on the [8] number of foreign patients visiting South Korea.

- (c) With reference to Extract 5, account for the value of price elasticity of demand [2] of India's medical tourism services.
- (d) Explain a possible measure that governments can adopt to mitigate the [4] adverse effects of increased medical tourism.
- (e) Discuss the possible policy options that the Indian government can adopt to [10] increase medical tourism revenue.

[Total: 30]

## **Suggested Answers**

- (a) With reference to Table 1,
  - (i) Compare the current expenditure on health as percentage of GDP [2] between United States and South Korea.

**General Trend**: Both United States and South Korea registered positive increase in current expenditure on health as percentage of GDP between 2017 and 2021.

**Refinement**: US current expenditure on health (% of GDP) fell marginally from 2017 to 2018 (or from 2020 to 2021) while that of South Korea continued to increase gradually from 2017 to 2021. **or** 

**Level**: United States consistently registered a higher level of current expenditure on health as percentage of GDP as compared to South Korea.

## Markers' comments:

Most candidates were able to provide the correct general trend change observed. However, there were some who described every time point in the table, which was not required. A minority inaccurately described the general trend as an increasing trend instead of an increased trend.

(ii) Using a production possibility curve diagram, explain the likely impact of [4] US government continued expenditure on healthcare on its economic growth.

State that US government consistently allocated about 16-18% of GDP on healthcare expenditure. Thus, boosting both actual and potential economic growth.



#### Impact on actual and potential economic growth Actual economic growth

↑ US government continued expenditure on healthcare greater utilisation of resources higher employment rates  $\uparrow$  actual economic growth, movement from point x within the PPC to a point, say pt A, on the PPC<sub>0</sub>.

## Potential economic growth

If the continued healthcare expenditure by US government

higher labour productivity or lengthen productive working life of US residents

greater outwards shift of PPC<sub>0</sub> to PPC<sub>2</sub>

However, if the above benefit is outweighed by the tradeoffs incurred (eg lower R&D grant provided, higher opportunity costs in terms of lower government expenditure in education)

smaller outwards shift of PPC<sub>0</sub> to PPC<sub>1</sub>

### Markers' comments:

Some candidates stumbled in this question. Many candidates did not explain the concept on increased actual economic growth (movement from a point within the PPC to a point on the PPC). For candidates who conducted PPC analysis, almost all focused on the outwards shift of PPC (i.e. increased in potential economic growth.

Candidates need to improve on:

- Labelling of axes (eg goods and services, not expenditure)
- Clarify their concepts on PPC and AD/AS
- (b) The South Korean government data shows that the number of medical travellers visiting South Korea expanded 25% between 2020 and 2021, despite the Covid-19 pandemic.

Discuss whether demand or supply factors have a greater impact on the [8] number of foreign patients visiting South Korea.

#### Introduction

Identify the demand and supply factors that resulted in the 25% increase in number of medical travellers visiting South Korea between 2020 and 2021, despite the Covid-19 pandemic.

Main Body Point I: Explain 2 demand factors that lead to an increase in the number of medical travellers visiting South Korea between 2020 and 2021

- Ageing population + rising incomes & education in developed economies heighten consumers' interest in individual health and quality of life ↑ DD for for medical services longer waiting time in home country
- [More affordable options compared to home country] Availability of cheaper alternatives in South Korea Shift of taste and preferences of foreign patients towards consuming healthcare services in reputable overseas medical institutions
  ↑ DD for medical services in South Korea as medical services is a normal good thus leading to increase in number of foreign patients visiting South Korea

• COVID-19 pandemic changes patients' attitudes towards the use of telehealth services + coupled with advancement in technology trends

Hospitals leveraging on artificial intelligence to advertise to potential patients anywhere in the world

↑ DD for medical services in South Korea

Demand for medical services is price inelastic

• Basic necessity for patients who are able to afford the services to improve health and quality of life

Main Body Point II: Explain at least one supply factor that lead to in increase in the<br/>number of medical travellers visiting South Korea between 2020 and 2021Advancement in technology trendsHospitals can leverage on telehealth eg<br/>videoconferencing sessions between patients and physiciansdecreasing costs of<br/>medical procedures for foreign patients↑ SS for medical services

- Wider supply of medical services (eg health check-ups, cosmetic surgery)
- Medical tourism may reserve the outmigration of health workers, especially specialists in South Korea ↑ SS for skilled healthcare personnel ↑ SS for medical services

Other acceptable SS factors: Decreasing costs of air travel

[Optional] Supply for medical services is price inelastic

• Long training period for medical personnel, in particular, specialists

Explain your stand: ↑ in DD + ↑ in SS

- ▷ Compounding increase in number of foreign patients visiting South Korea
- ⇒ Explanation on the adjustment process



<u>Evaluation [2m]:</u> Justify your stand to which whether demand or supply factors have a greater impact on the number of foreign patients visiting South Korea

## <u>↑ in DD > ↑ in SS</u>

As COVID cases eases globally, there is now further easing of community and border measures, thus the demand of medical services by foreign patients would continue to rise. Due to price inelasticity of supply of South Korea's medical services, there will be a limit to which how fast the supply of medical services can be further expanded. Thus, demand factors plays a greater impact on the number of foreign patients visiting South Korea.

## Markers' comments:

Majority of the candidates were able to identify the demand and supply factors. Stronger candidates were able to explain that the key demand factors were ageing issues and rising incomes of the foreign patients whilst the supporting demand factor was the taste and preferences of the foreign patients favouring South Korea as the choice destination of medical treatment. Weaker candidates tend to be confused between increase in demand and increase in quantity demanded. These candidates were also confused with the demand/supply factors affecting South Korea and their own home country.

Level	Description	Marks
L2	For a well-developed answer that demonstrates good economic understanding on whether demand or supply factors play a greater impact on the number of foreign patients visiting South Korea.	4-6
L1	For an under-developed answer on whether demand or supply factors play a greater impact on the number of foreign patients visiting South Korea.	1-3

	Evaluation	Marks
E1	An unsupported judgement which are neither supported	1
	nor relevant to the context of the question.	
E2	Well-explained judgement and/or an evaluation with	2
	some economic justification.	

(c) With reference to Extract 5, account for the value of price elasticity of demand [2] of India's medical tourism services.

Price elasticity of demand (PED) refers to the degree of *responsiveness* of quantity demanded of a good to a given change in the price of the good itself, ceteris paribus.

The price elasticity of demand of India's medical tourism services is price inelastic.

Possible reasons:

- Degree of necessity: It is necessity for patients to improve their health and quality of life
- Lack of close substitutes within similar price range

### Markers' comments:

Most candidates were able to identify that the demand for India's medical tourism services is price inelastic. A minority struggled with identifying and explaining the correct factor affecting price elasticity of demand.

(d) Explain a possible measure that governments can adopt to mitigate the [4] adverse effects of increased medical tourism.

## Approach

Explain the adverse effects of increased medical tourism [1m] Explain one possible measure that governments can use [3m]

## Explain the adverse effects of increased medical tourism [1m]

 Rise in negative externalities or rise in MEC Increased in medical tourism detrimental impact on the country Eg 1: rise in air, noise, water pollution Eg 2: with patient travels, there is significant risk of corresponding bacterial travel

## Explain one possible measure that governments can use [3m]

Use of market-based instruments such as indirect taxation by governments to mitigate the adverse effects of increased medical tourism

Imposition of indirect taxes on increased medical tourism aim to **tackle the root cause** of over-production of medical tourism. This is because through rational decision making in the **free market**, producers and consumers **ignore external** 

**costs** and only account for their self-interests by considering private benefits and costs.

By levying an indirect tax, the burden of this tax can be shared by both producers and consumers, hence **forcing them to internalize the negative externalities incurred**.

The presence of negative externalities of production causes the MPC and MSC to diverge. By imposing an indirect tax that is equal to the amount of MEC, this will increase the unit cost of production and reduce the willingness of producers to produce medical tourism services at each and every price level, hence shifting the MPC curve upwards by an amount equal to the size of the per unit tax towards the MSC.

The imposition of the indirect tax has caused the market output to be reduced to coincide with the socially optimal output, thereby eliminating the welfare loss ABC. With the indirect tax imposed, the medical service producers could pass on some of the tax burden to the foreign patients. This forces the foreign patients to internalise the marginal external cost. This will then reduce their demand and remove the deadweight loss.



Other Policies are acceptable: Legislations / Rules and Regulations, Research and Development efforts, Public Education and Campaigns

## Markers' comments:

Stronger candidates were able to explain the rise in third parties effect and subsequently explained the appropriate measure that government can employ to mitigate the adverse effects of increased medical tourism. Commonly explained measures were indirect taxation and grant given for R&D efforts. Weaker candidates explained the policy measure with little application to case extracts.

(e) Discuss the possible policy options that the Indian government can adopt to [10] increase medical tourism revenue.

<u>Approach</u>	
Main body 1:	Explain and comment the policy option(s) that Indian government
	can adopt to increase domestic supply for medical tourism.
Main body 2:	Explain and comment the policy option(s) that Indian government
	can adopt to increase foreign demand for medical tourism.
Evaluation:	A mix of supply-side and demand management policy can be used.
	Apply to case context

## Introduction

The international medical tourism market is expected to grow by US\$131.35 billion by 2025, with an average annual growth rate of 20%. In many developing countries, including India, medical tourism is one of the top expanding export category.

In the medical tourism industry, medical tourists travel from one country to another to receive higher quality and advanced healthcare. The Indian government can adopt appropriate policy options to augment demand and supply for medical tourism and its related industries eg accommodation, transportation & food and beverages. These efforts will boost medical tourism revenue.

Main Body Part I: Explain and comment the policy option(s) that Indian government can adopt to increase domestic supply for medical tourism

• Use of Expansionary Fiscal Policy ↑ G

In 2018, the Indian government established a dedicated fund of US\$641 million for enhancing 12 Champion Services Sectors, with medical value travel being one of them.

the above can be used to

- Further investment in building infrastructural of hospitals, upgrading of medical facilities and equipment
- R&D grant on using AI and robotics for surgery improve accuracy and reduce time to recover from surgery

Increased productivity Lower unit costs of operating Increase dynamic efficiency of the industry  $\uparrow$  firm's competitive edge, improve international ranking of the hospital(s) & credentials of doctors  $\uparrow$  SS for Indian medical tourism services as well as  $\uparrow$  DD of foreign patients for Indian medical services  $\uparrow$  medical tourism revenue

 Use of Expansionary Fiscal Policy ↑ G Development of tourism and leisure facilities and services are also very important for medical tourists. Aside from the medical tourists that receive services related to their surgeries, medical tourists and their companions have a high possibility of pursuing recreational activities after their medical care. Thus, tourist and leisure facilities and services must also be developed continually to attract medical tourists Increase in domestic supply of tourism related industry eg accommodation ↑ medical tourism revenue

- Use of Expansionary Fiscal Policy  $\downarrow T$ 
  - Tax incentives to the medical service providers Expansion of hospitals supply of bed capacity ↑ medical tourism revenue
  - Import duty reduction on medical equipment DD for medical equipment Increased productivity and efficiency of the industry ↑ medical tourism revenue

# Comment

(+) Targeted to the medical tourism industry able to increase supply of domestic medical services

(-) Both increase in G (eg on infrastructure projects) and cut in T, faces time lag such as impact lag which might restrict its effectiveness.

- Use of supply-side policies to increase competition in the medical service industry Along with the fame of its medical staff, the level of medical facilities is of most importance to medical tourists. Indian government can:
  - o Support Indian hospitals to gain accreditation by Joint Commission International (JCI), International Society for Quality in Healthcare (ISQua) and other international standards high standards attained by the relevant hospitals
  - o Registration of doctors and nurses, small doctor-patient ratio
  - Switch from the hospital service model (standard model that involves the patient receiving diagnosis and treatment at a hospital, then recovering and resting at the hospital or hotel) to the medi-resort service model that involves treatment and recovery occurring in a resort that is equipped with medical facilities.

[Note: the above point can be used to explain why DD for medical services increases]

- o Lower barriers to entry eg licensing requirements, to enable foreign hospitals' to entry into domestic medical services market.
- o Improve skills training of medical personnel

 $\uparrow$  supply for medical tourism  $\uparrow$  medical tourism revenue

<u>Comment</u>

- (+) The switch to the medi-resort service model should enable India to reap the benefits of rising tourist expenditures and expand its tourism related industries.
- (-) Supporting medical services industry to gain international accreditation may be a costly lengthy process.

Main Body Part II: Explain and comment the policy option(s) that Indian government can adopt to increase foreign demand for medical tourism

• Price competitiveness: India offers less expensive treatment options compared to the US and UK without compromising the quality of healthcare services. The treatment costs in India are around a quarter of those in America.

- Supply-side policy to facilitate ease of entry of medical travellers: Medical Visa was introduced in June 2005. The e-tourist visa launched in September 2014 to ease the visa regime was subsequently expanded to include medical visits.
- Use of supply-side policy to improve digital engagement of patient services via upskilling of tech skills eg use of artificial intelligence & Information and Communication Technology
- Improve the legal system: Establish law to protect patient privacy, evenness of enforcement, able to seek legal recourse for medical malpractice, transparency in financial billing process to foreign patients
- Marketing strategies: Publicity materials, such as brochures, intended to promote medical and health tourism have been circulated in target markets by the Ministry of Tourism. Medical tourism has been announced on various international forums.
- Marketing strategies: In terms of alternate medical treatment, the Indian medical treatment systems of yoga, ayurveda and rejuvenation therapy are among the most ancient methods of medical treatment in the world. India is able to offer a good blend of both modern, alternative and traditional forms of medicine such as Ayurveda which maybe effective in the management of certain chronic diseases. improve information flows on alternative therapy treatments availability.
- Establish a system to obtain feedback/testimonials from tourists travelling to the country for medical purposes. Critical factors such as trained medical professionals and doctors, fluency in English, availability of the latest medical technology and affordable medical treatment have helped India emerge as a hub for medical tourism

 $\uparrow$  demand for medical tourism  $\uparrow$  medical tourism revenue potential to become a leading exporter of services & be integrated into a much larger tourism eco-system.

# <u>Comment</u>

- (+) Demand for India's medical services is less price elastic. Able to compete with other foreign medical service provider – more competitive/affordable pricing & good quality treatment offered.
- Combined effect:  $\uparrow$  DD >  $\uparrow$  SS  $\uparrow$  TR

# Evaluation/ Reasoned Judgement

Medical Tourism doesn't only provide benefits to international patients; it extends a wide spectrum of benefits to many industries in India such as the healthcare industry, travel & tourism, commercial sector. Both positive and negative impacts of medical tourism on healthcare, economic, social and environmental sectors create opportunities and challenges for this growing industry which require cohesive collaborative work between various stakeholders.

For Indian medical tourism to flourish continually, the tourism, health, information and communication departments need to work in tandem for efficient patient care. These include building and promoting the image of India as a high-quality medical tourism destination, creating and promoting new combination of medical tourism products,

keeping up the high standard of quality treatments at a reasonable price, providing informative material online and offline and making it available to potential customers.

## Or

Policymaking by governments in developing countries, including India, focused mostly on developing supply-side capacities and increasing competitiveness of the medical tourism industry. This often leads to the detriment of local and community health needs in absence of regulatory controls. Inherently, there remains an underlining tension between medical tourism policy goals of economic growth and the need to maintain resilience and equity in domestic public health systems. Further, the need to establish international quality standards for international medical treatment, harmonizing legal, trade, migration and economic frameworks associated with multinational tourism services, and ensuring that patient choice is optimal for both domestic and tourism-seeking populations, continue to be critical concerns that need to be addressed by the broader global medical tourism industry. Critical in this approach should be an honest assessment of how medical tourism not only contributes to national economic output, but also how it can negatively impact domestic healthcare costs, access and affordability to treatment

## Markers' comments:

Stronger candidates discussed the policies options that boost foreign demand for medical tourism as well as how domestic supply could be augmented. Weaker candidates provided rehearsed answer with little application to question context or data provided in the case study. A few candidates wrongly argued that the Indian government should provide subsidies to foreign patients.

Level	Description	Marks
L2	For a well-developed answer that demonstrates good economic discussion on the appropriate policy options that the Indian government can adopt to increase medical tourism revenue.	5-7
L1	For an under-developed discussion on the possible policy options that the Indian government can adopt to increase medical tourism revenue. Some attempt to address the question but concepts related to how the policies work and/or its linkages to increase in supply and demand of medical tourism are not well-explained and/or there is limited reference to the case materials. <u>Note:</u> For a well-developed answer that discuss policy options to increase supply or increase demand for medical tourism – max 4 marks	1-4
	Evaluation	Marks
E2	Well-explained judgement and/or an evaluation with some economic justification.	2-3
E1	An unsupported judgement which are neither supported nor relevant to the context of the question.	1