International Trade in Health Services: An Exploratory Analysis

International Trade in Health Services: An Exploratory Analysis

Dissertation submitted in partial fulfillment of the requirements for the award of the degree of Master of Philosophy in Economics of the Jawaharlal Nehru University

Soumi Roy Chowdhury

MPhil Programme in Applied Economics

2010-12

CENTRE FOR DEVELOPMENT STUDIES

June, 2012

I hereby affirm that the work for this Thesis, **International Trade in Health Services: An Exploratory Analysis**, being submitted as part of the requirements for award of the degree of Master of Philosophy in Applied Economics of the Jawaharlal Nehru University, was carried out entirely by myself. I also affirm that it was not part of any other programme of study and has not been submitted to any other University for the award of any Degree.

30th June, 2012 Soumi Roy Chowdhury

Certified that this study is the bona fide work of **Soumi Roy Chowdhury**, carried out under our supervision at the Centre for Development Studies.

Prof. S. Irudaya Rajan
Professor

Dr. K.N. Harilal
Associate Professor

Prof. Pulapre Balakrishnan
Director
Centre for Development Studies

… to the love of
my parents and my sister Pranali

Acknowledgment

It is with intense gratitude that I thank my supervisors Dr. Irudaya Rajan and Dr. K.N. Harilal whose true criticisms on the path of my research helped me mould as a critical thinker. I thank them for all their support and guidance throughout my dissertation.

This is an occasion where I can recollect my entire journey at CDS, starting from the Foundation course days to these last days of dissertation. These recollections of events range from a timely presence in Prof. D. Narayana's classes at 9.00 am to sharing analysis shock over a piece of bread with Saumya at 3.00 am in our respective balconies. I have imagined this day a number of times in my thoughts, the day of our final completion of the course at CDS, but today it appeals me with a different sentiment. It marks the end of my stay at the campus with the people around. I loved the campus and my friends who made my stay all the more comfortable and enjoyable.

I will take this opportunity to thank all the faculty members of CDS who taught us in our M.Phil. Coursework. I also owe thanks to the teachers of my undergraduate days especially Dr. Biswajit Mandal without whose support I would not have been in CDS. My thanks are due to all the staffs of CDS that includes library, administration, computer centre, reception, courier office and all chechis. This also gives me a pleasure to thank the entire family of P. K. Gopalakrishnan for inspiring us with the funding support.

This acknowledgment would be incomplete without mentioning about some of my closest friends, Anirban da, Jyotirmoy da, Sravanthi di, Atish, Subbu, Kiran, Asha, Namrata and Sushma and many others who were always kind to me and have extended their love and support throughout the 'Sweet CDS' chapter of my life. I can never forget our first group outing with the entire class, predicted birthday 'Surprise' parties, Onam weeks and practice of Christmas carols with Saritha, Kavitha, Chinju, Saumya, and Sajitha. All these were my new experiences and I loved being in a different culture with different traditions.

I have spent some of the best moments with my closest buddies Nutan, Santosh, Pinak and Deepak. They were with me through my entire thick and thin; Nutan for her 'Rajdhani 'power of speech, Pinak for committing maximum number of unfollowed resolutions, I will remember Krugman for Santosh and Deepak for being a moral support in crisis situations.

Finally and most importantly, I owe my entire journey to God's grace and support of my family members. The unconventional love of my parents and my sister, Pranali ensured my keep going.

ABSTRACT OF THE DISSERTATION

International Trade in Health Services: An Exploratory Analysis

Soumi Roy Chowdhury
M.Phil. Programme in Applied Economics, Jawaharlal Nehru University, at the Centre for Development Studies

The General Agreement on Trade in Services (GATS) of 1995 provided a legal framework to the WTO member countries to liberalize trade in services. Introduction of GATS brought in two streams of opinion in the academia. Opponents of GATS believed that WTO members are forced to liberalize their health sector through privatization which erodes the power of the state in maintaining health standards domestically. Whereas supporters of GATS believed that WTO members do have their autonomy in deciding which sector to liberalize, this in fact lowers prices, increases competition, innovation, and overall efficiency (Adlung & Carzaniga, 2001 , Belsky et al. 2004 , Chanda 2003). Health Sector was one of the 12 sectors that were opened up for trade (MTN.GNS/W/120; 1991). Health being a service sector, the international transactions involves the interactions of four modes of trade. It is one of those sectors which saw the minimum numbers of commitments not only in its subsectors but even in the modes of trade. With this background, literature started evaluating India's commitments in terms of its potential to trade health services. Studies by UNCTAD (1997, 1998), WTO, World Bank (2009), European Centre for International Political Economy (2009), WHO (2003) realized that there is a potential for the developing countries to become a net exporter of health services. It was Rupa Chanda (Chanda 1999, 2001, 2002, 2006, 2011) from India who has been writing extensively on the subject capturing the modes through which trade in health services takes place. But there has not been much empirical evidence regarding the same. The thesis is an attempt to explore the trade that is taking place in the health sector. Using the CMIE data source, the estimates of the listed health companies reveal a much skewed distribution of the variables; Income, FOREX earning and FOREX spending. The analysis figured out the dominance of few companies in the health sector market. Most of these companies earn the advantage of an early mover. Export of services being an integral part of the companies' FOREX earnings, the discussion will continue further in describing the ways these companies trade. The study tries to collect, reframe and generate all the estimated facts related to these modes, highlighting the opportunities India has in this connection. The mode of Medical tourism gained a special significance with India being the second largest destination of medical tourists in Asia. The discussion on medical tourism supplemented by a primary survey on the hospitals of Thiruvananthapuram also explained the dynamicity of the concept. Inspite of the dynamicity of the concept, trading in health services has not appeared as the general practice of the hospitals. It has been learnt that hospitals are still domestic oriented and the trade aspects is still at a nascent stage.

Contents

Pages

List of Tables

List of Figures

List of Boxes

Chapter One - Introduction

India's emergence in the world economy as one of the fastest growing economies can be attributed to a large extent to the rapid growth of its service sector. The rate of service sector growth has surpassed the growth of agriculture, industry and the rest of the economy in general. It is also interesting to note that the growth performance of various sub-sectors of the service sector differed significantly among them. The rapid growth of the service sector is also reflected in India's trade in services. Services have emerged as a major area of India's external trade. Nonetheless, trade in services is yet to attract adequate attention of researchers. The present study is a modest endeavor to analyze India's trade in services, focusing on one of its fast growing components, viz., and trade in health services. Needless to say that even trade in health services is too broad an area to be done justice in a study constrained by time and resources as ours. The focus of the present study therefore is more on health tourism, which is one of the most dynamic areas of India's service exports.

1.1 Formation of GATS

After the end of World War II major trading countries of the world came forward to establish multilateral discipline in the field of international trade by launching the General Agreement on Trade and Tariff (GATT). The General Agreement of 1947 was signed by 23 countries. The principle approach of GATT had been to reduce the tariff level so that the trade in goods could be facilitated. During the eighth round of GATT, popularly known as the Uruguay round, major trading nations thought it necessary to expand the coverage of multilateral trading system, to include new issues such as service, intellectual property rights and investment. The Round transformed the GATT into the World Trade Organization (WTO) and the General Agreement on Trade in Services (GATS) entered into force on January 1st 1995. GATS came up with a set of

binding rules and disciplines to promote 'orderly' and 'transparent' trade liberalization in services. It is a multilateral agreement that is based on the premise that progressive liberalization of trade in commercial services will promote economic growth in WTO member countries.

1.2 GATS: The Framework

The GATS agreement is made up of three parts:

The 'Framework Agreement' containing 29 Articles which includes the general principles and rules. National schedules list a country's specific commitments on access to their domestic market by foreign providers. The specific limitations for each sector attached to the schedule of commitments are listed out in the Annex.

The agreement contains four sets of obligations for the WTO member countries with respect to trade in services.

The first set of rules involves the General Obligations – that apply to all measures affecting trade in services. These obligations are referred to horizontal disciplines because they apply to all service sectors. The second set of rules of Specific Commitments arises from voluntary undertakings by WTO members and applies to those sectors specified in the commitments. The third set of Progressive Liberalization lays out the obligation to the WTO members to continue negotiating in the successive rounds. The fourth set of rules establishes Institutional Framework to resolve the disputes.

Since the inception of GATS, concerns are raised on the ability of GATS to deal with the problem of equity- efficiency balance in the service sectors opened for liberalization and the interface of market mechanism and public policy in maintaining this balance. Proponents of the agreement consider that liberalizing service trade can result in increased competition, lower prices, more innovation, technology transfer, employment creation, and greater transparency and predictability in trade and investment flows (Chanda 2003). Whereas, opponents of GATS see liberalization of services as a threat to

national sovereignty, specially for the social service sectors like Education, Health and Environment.

For the purpose of structuring their commitments, WTO members have generally used a classification system comprised of 12 core service sectors (MTN.GNS/W/120 1991, cited from WTO 2004).

The sub sectors of the service sectors are as follows-

- Business services (including professional services and computer services).
- Communication services.
- Construction and related engineering services.
- Distribution services.
- Educational services.
- Environmental services.
- Financial services (including insurance and banking).
- Health-related and social services.
- Tourism and travel-related services.
- Recreational, cultural and sporting services.
- Transport services.
- Other services.

The commitments undertaken by different countries in these sectors have not been uniform across the sectors nor were it so across the modes1. This is true of the Indian case as well. The differences in the extent of liberalization across service sectors can be seen from the Table 1.1 below:

[1] Modes refer to the ways a service is traded; it reduces the proximity of a service supplier and consumer.

Table 1.1: Categorization of services Extent of Trade Liberalization and Growth

	Substantially Liberalized	**Moderately Liberalized**	**Less than Moderately/Restricted**
High Growth (10percent and above)	Software services↑ Telecommunication →	Banking→ Insurance→ Travel ↑ , Health ↓, Education↓	
Moderate Growth (5-9percent)			Legal ↓
Low Growth (0-5percent)	Transport (road)↓	Construction ↓ , Air Transport→	Professional services↓ and Rail Transport↓

Source: Banga (2005)
Note: ↑ High Share of Exports (10percent and above)
→ Moderate Share of Exports (5-9percent)
↓ Low Share of Exports (0-5percent)

While identifying the critical issues with respect to the growth of India's service sector, Banga (2005) classified all the service sectors into four categories:

- Substantially liberalized with high growth and high share of exports
- Moderately liberalized with high growth but low share of exports.
- Liberalized with low growth and low share of exports.
- Restricted liberalization with low growth and low share of exports.

The author linked the concept of liberalization of a service sector with its rate of growth and its share of export in the international market. It explains that service sectors which are substantial to moderately liberalize don't necessarily experience high growth rates. But those services sectors which face enough barriers to international trade, through limited liberalization do necessarily have least growth rate.

The present study will focus precisely on the 'Health sector' which comes under the broad category of 'Moderately liberalized, high growth and low share of exports'

(Vide: Table 1.2). It is useful for the present study to have a fairly clear idea on the commitments India has undertaken in the health sector with respect the four modes of a service transaction.

Before introducing India's commitment schedule on health sector, it is useful to understand the modes of service supply and the negotiating principles.

1.3 GATS and Health Services

The difference in the characteristics of goods and services creates corresponding difference in the way international transactions are carried out. Trading goods involved the physical movements of goods from one country to another; services on the other hand are intangible and invisible. The four modes of service transactions as defined by the GATS are the means of establishing such proximity. The modes are explained as follows:

- Mode 1: Cross border trade- It is the application of the information and communication technologies to treat the patients. Generally termed as e-health, it need not involve the face to face physical interaction between the provider and recipient.
- Mode 2: Consumption Abroad- It involves the movement of the patients from one WTO country to another country for getting the treatment. The treatments for which they move are mostly non emergency in nature. This mode is commonly referred to as 'Medical Tourism'.
- Mode 3: Commercial Presence- It is the route of Foreign Direct Investment into the territory of the other WTO member countries. It is the foreign participation or ownership of hospitals, clinics by a foreign entity. In most cases the extent of participation has been through collaborations and tie ups.
- Mode 4: Movement of the natural persons- Medical professionals through this mode move from one country to another to deliver the medical services. It is the importer country in this respect which authorizes the type of medical specialists to enter into their country and determines their qualification.

Negotiations on trade in services focus mainly on two important aspects, viz. Market Access and National Treatment. Market Access sets out the conditions under which the foreign suppliers are allowed to enter into the market. National Treatment means that foreign services and services suppliers are granted treatment no less favourable than that accorded to the like national service supplier.

Now, when a country makes commitments, those can be 'Full Commitments' which may mean that the country is offering full market access and national treatment to other WTO members without any limitations, these kind of commitments are referred as 'NONE' in the GATS schedule. Similarly 'Partial commitments' means scheduling the sectors with limitations, and 'Unbound' means the sector has not been scheduled for commitments.

1.4 India's Commitments in the Health Sector

Till date only 50 WTO member countries have signed up in a commitment on the health sector. Even the commitments undertaken have not reflected on the liberal way of negotiating on these issues. In the Indian case, commitments taken during the Uruguay round of GATS in 1995 happened to be very scanty and skewed, with a narrow focus on one sub sector of health. But, later in the conditional and revised offers of India during the Doha round of negotiations, her commitments have shown stark improvement in the health sector. By trade in health services, we mean trade in Medical and Dental Services, Services provided by the midwives, nurses, physiotherapists, paramedical staff, Hospital services and Veterinary services.

During the Uruguay rounds of negotiations, health sector was not recognized as an interest area for the negotiations for most of the WTO member countries. Similarly, as the case for India, Hospital sector was the only sub sector of health that was scheduled for commitments. But, later in the Doha round of negotiations, several developing countries like Colombia, Cuba and India submitted their negotiating proposals expressing their interest in the liberalization of health services.

The Table 1.2 will show India's schedule of commitments in the health sector.

Table 1.2: India's schedule of commitments: Health sector

Sector/Sub Sector	April 1995 (Uruguay rounds)	Conditional offers 2004	Revised offers 2005
Professional Service			
Medical and dental Services	Sector Not Scheduled	Mode 1: NONE for provision of service on provider to provider basis such that the transaction is between established medical institutions covering areas of second opinion to help in the diagnosis of cases or in the field of research. Mode 2: NONE Mode 3: Limitations: • Foreign Equity ceiling of 74percent • Latest technology of technique should be brought in FIPB approval Mode 4:Unbound except as indicated in the horizontal section	No change
Veterinary Service	Sector Not Scheduled	Sector Not Scheduled	Mode 1: None Mode 2: None Mode 3: Limitation of FIPB approval Mode 4: Unbound except as indicated in the horizontal section
Service provide by the midwives, nurses, physiotherapists and paramedical staff	Sector not scheduled	Mode 1: NONE for provision of service on provider to provider basis Mode 2: NONE Mode 3: Limitations: • Foreign Equity ceiling of 74percent • Latest technology of technique should be brought in • FIPB approval Mode 4: Unbound except as indication in the horizontal section	No change

Table 1.2 continues…

Health Services			
Sector/Sub Sector	**April 1995 (Uruguay rounds)**	**Conditional offers 2004**	**Revised offers 2005**
Hospital Services	Mode 1: Unbound Mode 2: Unbound Mode 3: Foreign equity ceiling up to 51percent through local incorporation Mode 4: Unbound except as given in the horizontal commitments	Mode 1: NONE for provision of service on provider to provider basis Mode 2: NONE Mode 3: Foreign equity increased to 74percent , FIPB approval required for foreign investors with prior collaboration ; only through local incorporation, latest technology, different conditions for publicly funded services Mode 4: No change	Mode 1: No change Mode 2: No change Mode 3: No change Mode 4: No change except restrictions removed for charitable purposes.

Source: WTO, compiled from Chanda (2011)

The fact that trading in health services can be beneficial to the developing economies was realized for the first time by the UNCTAD (1998) through its series of publications on issue of trade in health services. The conditional and the revised offers on medical and dental services, services provided by the midwives and nurses made by India mirrors the improvement it has made on its Uruguay round position. For the hospital sector, India increased the foreign equity threshold and attached new conditions relating to the transfer of latest technology and approval requirements. New commitments for the other sub sectors suggest 'None' for Mode 1 and Mode 2, increased foreign equity limits for Mode 3 and 'Unbound ,excepted as indicated in the horizontal section' for Mode 4.

With this background and the importance of India in the context of trade in health services, the following objectives are put forward for the thesis:

1.5 Objectives of the study

- To identify the companies those participate in the international trading of health services and to estimate their trading activities.
- To study the four modes of international trade in health service with special reference to the mode on Medical Tourism.
- To check the foreign participation of the multispecialty hospitals of Thiruvananthapuram in trading health services.

1.6 Limitations of the Data

Research in the area of trade in services, especially health services is constrained by serious limitations of the data base in terms of both availability and reliability. In the context of the present study data availability is almost nil in the case of Mode 1 and 4. Therefore it is difficult to give equal importance to all the four modes. Among the four modes of service trade, the present project will study more closely the Mode 2. In conducting analysis for generating evidence for policy on the trade in health services, one of the pre-requisites is a national framework for data collection and collation. But, systematic comparative data for amounts of trade in health services is difficult to achieve, this doesn't allow us to get an aggregate picture of the extent of trade that is taking place through the health sector. There are discrepancies with the definitions and collection methods that exist with no historical imperative for routine data to be disaggregated into health sector categories. Mode wise decomposition of the data on the amount of health trade is also not available.

For Mode 1 of the health service trade, the value of traded e-health services, the amount of service rendered by India through tele consultation, tele conferencing, the number of telemedicine cases can be used as the indicators of measurement. For Mode 2, the desirable indicators can be the revenue in currency value terms received by India through the treatment of the foreign patients or the numbers of foreign patients treated. Measuring the Mode 3 of health service trade requires the information on the inflow of

currency in the health sector, value of turnover, turnover in host countries as a percentage of national total turnovers of the respective industry, country of origin, number of employees of foreign affiliates etc. Similarly, for Mode 4, it is the outflows of the number of health professionals, their category, outward stock as a percentage of national total duration of stay and remittances received through this mode are the indicators of measurement.

The absence of a national framework for measuring the desirable indicators of the respective modes is the major limitation in the way of this kind of research. Hence, the research remains exploratory. Though initiatives and improvements are happening in this front2, but the progress is slow.

Incase of telemedicine services, estimates of the total amount of telecommunications, which consists of the BPO and IT related transactions are available. But, this is an aggregate amount and is not classified further to specific service related trade, i.e. teleconferencing for supporting health related services are not accounted separately.

For mode 2, literature is based on anecdotal evidences and case studies. Company wise data on this mode are common. Few of the corporate hospitals, who are the major players in this front, have estimates of the same.

For mode 3, time series data on the FDI in health sector can be obtained from the Department of Industrial Policy and Promotion (DIPP). FDI on Medical & Surgical appliances and Hospital & diagnostic centre are used as a proxy to measure the total FDI inflows in the health sector. The information on the desirable indicators for measuring the mode 3 as mentioned above are obtained with the Foreign Affiliates Statistics (FATS) to which India is not registered.

The BOP schedule gives us consolidated estimates of remittances under the receipt category of BOP, which is irrespective of the category of services. Hence, conclusions

[2] DGCI&S and CSSSC for the first time had conducted a pilot survey on all India basis for the year 2010-2011, and are yet to be reflected in the BOP data sheet.

cannot be derived on the amount of remittances earned by the medical professionals going abroad.

Given these limitations, the present project will try to compile all the information available on the four modes to make a case for India's development in this direction. For mode 1 and mode 2, it has tried to define the all India trends through locating and compiling the figures from the literature. Identifying different periods and their corresponding estimates of the mode has helped in framing a time series data. National surveys and case studies are compiled to enhance the data base. To supplement the unavailability of the data, a field survey with a case study on the hospitals of Thiruvananthapuram has also been undertaken. The information of the Department of Industrial Policy and Promotion (DIPP) proved to be a useful source for analyzing the Mode 3. Whereas, Mode 4 has mainly been measured and evaluated in terms of commitments made under successive negotiations of GATS.

1.7 Structure of the thesis

The introductory chapter of the thesis provides a brief overview of the GATS, as pertinent to the later analysis. It assesses the nature of liberalization realized so far under the GATS. This chapter introduces the objectives for the thesis and the inadequacy of the data which poses a threat towards achieving those objectives. In Chapter 2, the literature review is outlined with a detailed Estimation of the amount of trade undertaken by the Indian health companies. The estimation is done by using the CMIE data source which is the single source available on the private hospitals of India. Chapter 3 and Chapter 4 examine ways in which health services can be traded using the mode-wise characterization of trade defined in the GATS. The three modes pertaining to trade in health services is outlined in Chapter 3 whereas, detailed account of Mode 2 has been captured in Chapter 4. Chapter 5 details down the results of the primary survey to understand the extent of health trade being carried out in the city of Thiruvananthapuram. The survey has been exclusively on the multispecialty hospitals

of the city. The summary of the thesis with the major findings on the objectives have been jotted down in the concluding chapter. The chapter also talks about the interlinkage of the modes and the role of the traditional medicine in the fostering the development of trade in health service.

Chapter Two - Estimation of the Indian health companies

2.1 Introduction

As defined by Banga (2005) Health sector in the overall set of service sectors stands as a moderately liberalized, high growth and less exposed to the international market. The introductory chapter that described the GATS commitments highlights that health as a sector scheduled most of its sub sectors for commitments in the revised and the conditional offers as compared to the first round of GATS negotiations. In the initial round, India was skeptic in opening up its modes for trade in health service. But, the academic contribution over the years in identifying health trade as a prospective sector for development has led India to react positively to the commitments.

2.2 Trade in Health Services: Phases of Development

The literature review has been framed in the way to give a background describing the need and importance of the topic. The pattern of studies will describe the reasons behind the drastic improvement in scheduling India's health sector. India's revised and conditional offers show much improvement over the Uruguay round of negotiations. It has never been recognized that trade in health services is beneficial to the economy till the United Nation Conference on Trade and Development (UNCTAD) highlighted it out in 1997. Even World Health Organization recognizes its global economic implication with the OECD countries reported the availability of labour skills in medicine as the strong support for its foundation (Bookman 2007).The recognition that trade in health services is important to the economy brought in a series of discussion in the late 1990s from the UNCTAD floor. The first set of literature brought in the issue of the potential and the constraints for the developing country in trading health services (UNCTAD Secretariat 1998; Wolvardt 1998; Warner 1998; Outrevielle 1998; Marconini 1998; Adams et al. 1998).

Different countries have their respective comparative advantages. The modes through which trade in services are carried out may not be in an equal interest to all the countries. The potential and opportunities experienced by the country depends upon realizing this comparative advantage. There is a need to seek cost- efficient and cost effective strategies to strengthen the health system. Countries that lack the availability of health infrastructure or to those where the health infrastructure is not economical in terms of cost or time are searching for best available option to meet the needs of their population. Among the opportunities being examined is a greater attention to opportunities for trade (UNCTAD Secretariat 1998). The concern on equity and accessibility of health services and the changing balance between private and public sector on providing health services raises the question of the impact of health trade to the domestic population. It should be widely recognized that export strategies in the health services sector should never take precedence over the legitimate goals of national health policies, but the export orientation of the health sector could touch on market-related concerns such as the identification of niches and target markets as well as the enhancement of marketing capabilities (Marconini and Adams et al. 1998).

Developing countries are also increasingly realizing that outsourcing to other developing countries, especially for specialist, high-technology, diagnostic and rehabilitation services, may be a more cost-effective approach than attempting to develop national self sufficiency. This holds particularly true with regard to capital intensive services such as specialized care, diagnostic services, high technology services, rehabilitation of services and management services. Developing country also face certain challenges of a brain drain of skilled professionals from the country, an outflow of financial resources accompanying the cross-border movement of patients, the creation of a two-tier system with higher quality being afforded to foreign patients and the potential of importing highly infectious diseases. (Wolvardt 1998)

Increased foreign travel, new forms of medical insurance in developing nations, worldwide sources of information to medical consumers and joint ventures in providing

services have all led to the increased consumption of medical care abroad (Warner 1998).

The focus of the second set of literature (Adlung and Carzaniga 2001; Smith, Blouin and Drager 2006; Mattoo 2005; Fidler et al. 2006; Blouin 2006; Nielson 2006; Mashayekhi et al. 2006) mainly centered around GATS agreements:

i) The commitments made under health sector of the GATS agreements (Adlung and Carzaniga 2001; Fidler et al. 2006)

ii) Steps to be consider before making commitments in the Health Sector (Nielson 2006; Mashayekhi et al. 2006).

iii) Review of the current trends and policy issues of GATS (Blouin 2006).

The papers dealt with the legal aspects of GATS, the general obligation and the specific commitments taken by the WTO member countries while committing in the sector. These papers are commitment focused which assess the commitments taken by a country in terms of the comparative advantage it enjoys. The four modes of trade with their extent of liberalization have also been dealt with.

Among the Indian authors, Rupa Chanda has been writing extensively on the GATS aspects of health trade (Chanda 1999; Chanda 2001; Chanda 2002a; Chanda 2002b; Chanda 2003; Chanda et al. 2006; Smith, Chanda and Tangcharoensathien 2009; Martínez Álvarez, Chanda and Smith 2011a; Chanda 2011b) and some of the specific issues of her writing include:

i) Mode wise analysis of health trade (Smith, Chanda and Tangcharoensathien 2009; Martínez Álvarez, Chanda and Smith 2011a)

ii) Describing / Evaluating the commitments taken by India in health sector (Chanda 2003; Chanda 2011b)

iii) Evaluating the extent of health trade through anecdotal evidence/case studies (Martínez Álvarez, Chanda and Smith 2011a).

iv) In understanding the importance of India in trading of health services among the other SAARC members (Chanda 2011a).

Rupa Chanda has called for an immense need on the proper collection and compilation of data (Chanda 2002). To compensate for this, researchers have used the anecdotal evidences, undertaken case study to arrive at an estimation of the same. Each modes of trade have been studied separately with their listed potential benefits and risks (Smith et al. 2009; Martínez Álvarez et al. 2011). Many of the risks associated with trade in health services existed even before the globalization, so the main question is whether the prevalence of trade is likely to aggravate those problems (Chanda 2001). The impact of trade in health services for equity, access, costs, and quality of health services is largely dependent on the policies and safeguards governments put in place and on the existing conditions in the sector (Chanda 2002). The recent discussions on trade in services in the South Asian countries highlight the importance of India among the SAARC member countries (Chanda 2011b). India's importance arises from the non availability of the proper health infrastructure facilities in those countries which reflected in the policy decision to extend SAFTA to include services.

The next set of literature (Outreville 2007; Catteneo 2009; CII and McKinsey & Company 2002; Deloitte 2008; Gautam et al. 2010; Smith 2004; Kumar et al. 2009; UNESCAP 2009; Banik et al. 2011; Hermer 2009) are concerned with the issues of:

i) Forecasting the extent and importance of market (CII and McKinsey & Company 2002).

ii) Impact of trade in domestic health sector (Catteneo 2009).

iii) Need to improve the data base to estimate the mode wise trade (Kumar et al. 2009; UNESCAP 2009).

Mc. Kinsey & Company and CII 2002 studied the Mode 2 (Medical Tourism) with an estimated profit of $450 million in 2004 and revenue of about $2.2 billion by 2012. UNESCAP (2009) has taken the case study of the countries explaining the impact of the four modes on trading of services. Gautam et al. (2010) in their research has explained the health scenario of India identifying the spaces where medical tourism with their other modes of trading can fits in such a scenario. Where CUTS report 2007 analyze the

movement of medical professionals' from India. Smith (2004) and Outrevielle (2007) talk about the limited FDI inflows in the hospital sector inspite of having a liberal policy. Trade in health services may create opportunities and have a number of benefits – not only for the business partners involved in trade, but for the population as a whole, it could also potentially have a cost and negative effects (Cattaneo 2009).

Rupa Chanda estimated the global market for Mode 1 which is between US $1 billion to $1 trillion. Employment in mode 1 has increased from in 2000 to 242500 in 2005 and revenue rose from US $264 mn to $4072 mn during the same period.

In summing up the review of the literature on health services, we find that the concept is still in infancy. The studies are limited to the commitments and reliable estimates of the trade through these modes have not yet come up. DGCI&S through the implementation of a pilot project is working forward to address the problem of inadequate data availability. The aim of the literature review is to introduce the concept of international trade in health services and its development since the formation of GATS. Whereas detailed review on the Modes will be dealt in the following chapters with their corresponding sections.

2.3 Performance of the Health Companies

With the non availability of a national framework, it is very difficult to get the precision of data on the world exporters and importers of health services. There is no measure of the aggregate figure on the amount of health trade being carried out through the different modes as defined by the GATS. Mode wise analysis of the data is also not available. In such a dearth of the availability of the data, Centre for Monitoring Indian Economy (CMIE) has come up with a list of health companies with the information on their Financial Statements and other indicators. CMIE database is comprised of (both financial and non-financial) more than 22000 Indian companies which collect data on 2000 indicators including their Financial statements, Shareholding pattern, Product and Raw Material profiles and many others.

Health sector comes under the broad category of Non financial services of the CMIE data. This is a time series data on 137 Indian health companies. Table 2.1 gives the classification of these companies according to their ownership groups.

Table 2.1: Classification of companies according to categories

Sl.No	Structure	Companies
1	Private ownership(Indian)	87
2	Private ownership(Foreign)	3
3	Apollo Group of Companies	11
4	Ranbaxy	11
5	Raunaq Singh Group	3
6	CDR Group	2
7	Bhai Mohan Group	6
8	Bharatia Group	2
9	United Group	2
10	Panacea Biotec Group	1
11	Indian Express (R.N. Goenka) Group	1
12	Peerless Group	1
13	Piramal Ajay Group	1
14	Sahara India Group	1
15	Co-operative Sector	1
16	Tainwala Group	1
17	Modi Umesh Kumar	1
18	Wockhardt Group	1
19	Gujarat Inject Group	1
Total	**Total no. of companies**	**137**

Source: Computed from CMIE data

Table 2.1 identifies all the groups of ownership and their corresponding companies. Companies that come under individual ownership group are termed as "Unit Groups". Considering Unit Groups as a separate group of ownership[3], 137 companies can finally be classified into 10 groups. Private (Indian) ownership group has the highest number of listed companies under it, followed by Apollo group of companies and Ranbaxy.[4]

[3] 10 to 19 position in the above table comprised of the members of Unit groups

[4] The groups with the name of their listed companies will be provided in the annex for further reference.

2.4 Methodology and Analysis

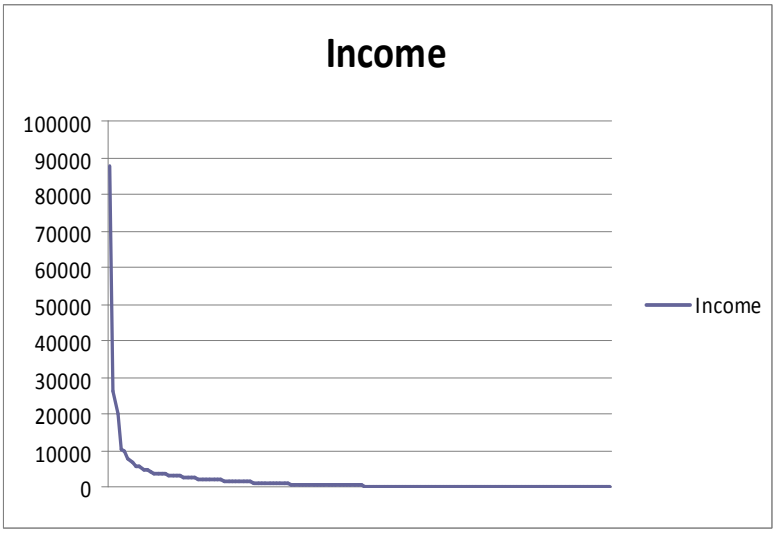
2.4.1 Nature of the data

At the outset, it should be noted that, the nature of the data is very limited. The variables identified for analysis are Income, Foreign exchange (FOREX) earning, Foreign exchange spending along with their respective components. But, the data on these variables chosen are not consistent over the years. The period of analysis ranges from 2000-2010. Observations are mostly consistent for the Private (Indian) and Apollo group of companies and maximum concentration of data lies in the latter part of the period for the other groups. Ownership group like United Group has no observation on any of the variables chosen. CDR group holds information only on Income. Bharatia Group holds no information on income but on FOREX earned and spent. Bhai Mohan Groups (BHG) is formed of 6 individual companies. Data on income variable are consistent across the companies. Only 2 and 3 companies of BHG have their observed data on FOREX earning and spending respectively. 2 out of 10 companies of the Unit group holds observation for the income variable, where 90 percent of the group estimate on FOREX earning is borne by Wockhardt Company alone.

2.4.2 Distribution of the companies across different indicators

The distribution of all the 137 companies is negatively skewed across the income and FOREX indicators. Such an analysis is useful in understanding the orientation of the Indian health companies. We can locate the presence of few companies with the maximum contribution to the market. The distribution of the companies across income and other trade indicators is much skewed as can be seen from the Figure 2.1, Figure 2.2 and Figure 2.3.

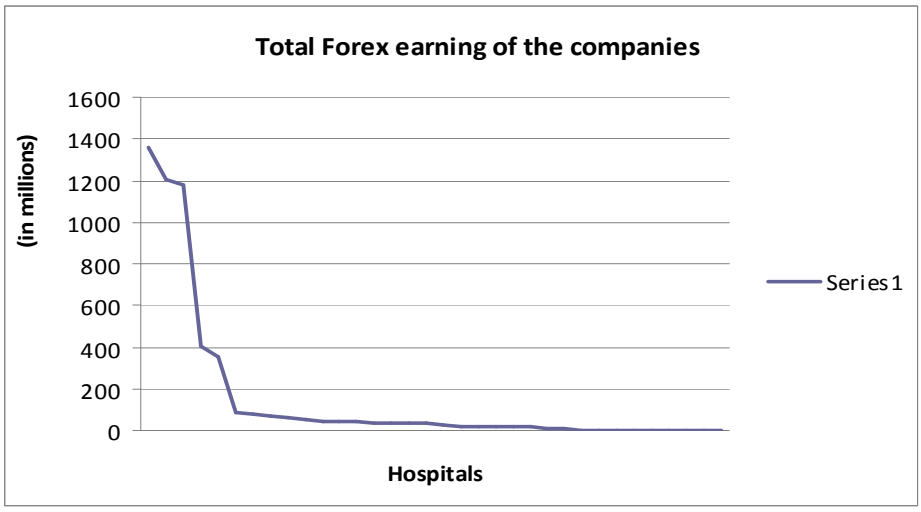
Figure 2.1: Distribution of income of the companies



Source: Computed from CMIE data

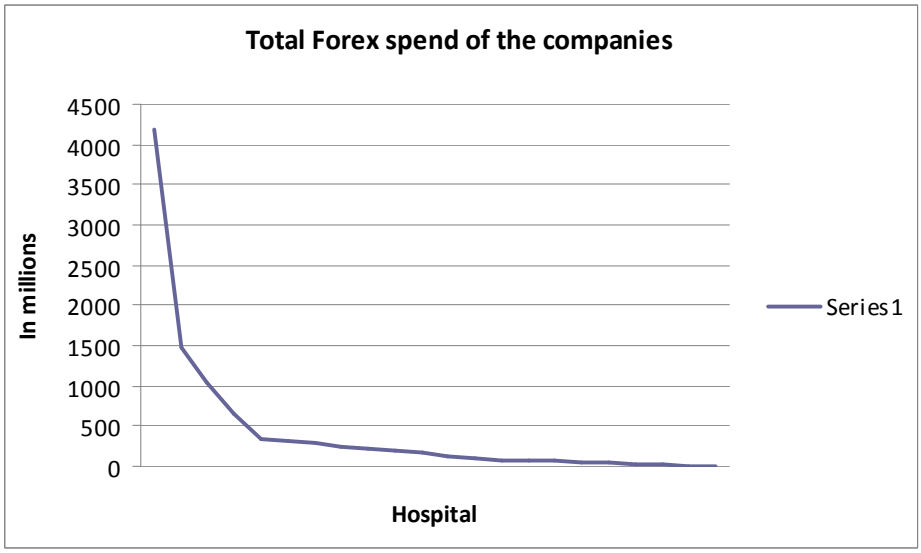
Even in the case of FOREX earning and FOREX spending, the entire market is borne by a few companies.

Figure 2.2: Total FOREX earning of the companies



Source: Computed from CMIE data

Figure 2.3: Total FOREX spending of the companies



Source: Computed from CMIE data

From the above analysis, it is evident that international trade in health services is not a general practice for all the hospitals listed under CMIE. Only a small number of listed companies are actually trading health services. From this corner, it becomes imperative to know about this segment of the companies, their types, the actual estimates of their income indicator and their trading intensity.

2.4.3 Companies sharing the maximum market

This section will try to unfurl those companies who share the maximum amount of market in terms of income and other trade indicators. Income is taken as our first indicator of measurement. Amongst the 137 companies, 28 companies don't have observation on income variable; hence the analysis will proceed with 109 companies. We calculated the average income from the total income of all the 109 companies taken together and we can locate 23 companies whose total income over the years lies above the average income. These 23 companies belonging to different ownership group comprised of 21 percent of the total sample. Table 2.2 will list out the details of top 20 percent companies (approximately).

Table 2.2: Top 20 percent of the Companies

Company	Ownership Group	Location	Type of Service
Apollo Gleneagles Hospitals Ltd.	Apollo Hospitals Group	Kolkata	Hospital
Apollo Hospitals Enterprise Ltd.	Apollo Hospitals Group	Chennai	Hospital collections
Apollo Hospitals Intl. Ltd.	Apollo Hospitals Group	Ahmadabad	Hospital
Indraprastha Medical Corpn. Ltd.	Apollo Hospitals Group	Delhi	Hospital
Escorts Hospital & Research Centre Ltd.	Ranbaxy Group	Haryana	Hospital,
Fortis Healthcare (India) Ltd.	Ranbaxy Group	New Delhi	Hospital
Fortis Malar Hospitals Ltd.	Ranbaxy Group	Chennai	Hospital
Artemis Medicare Services Pvt. Ltd.	Raunaq Singh Group	Gurgaon	Hospital
Wockhardt Hospital Ltd.	Wockhardt Group	Mumbai	Hospital collections
Piramal Diagnostic Services Pvt. Ltd.	Piramal Ajay Group	Mumbai	Chain of Medical testing
Lakeshore Hospital & Research Centre Ltd.	Private (Foreign)	Kochi	Hospital

Table 2.2 continues… Companies of Private (Indian) ownership group

Company	Location	Type of Service
Asian Heart Institute & Research Centre Pvt. Ltd.	Mumbai	Hospital
Breach Candy Hospital Trust	Mumbai	Hospital, Mumbai
Dr. Agarwal's Eye Hospital Ltd.	Tamil Nadu	Hospital collections
G N R C Ltd.	Guwahati	Hospital
Kims Health Care Mgmt. Ltd.	Thiruvananthapuram	Hospital
Kovai Medical Center & Hospital Ltd.	Coimbatore	Hospital collections
Malabar Institute of Medical Sciences Ltd.	Calicut	Nursing school & hospital
Miot Hospitals Ltd.	Chennai	Hospital collections,
Pulikkal Medical Foundation	Kerala	Hospital
Quality Care India Ltd.	Hyderabad	Hospital
Sahyadri Hospitals Ltd.	Pune	Hospitals collection
Sterling Addlife India Ltd.	Ahmadabad	Hospital

Source: Computed from CMIE data

As can be seen from the table, all the listed companies are either hospital or hospital collections except the Piramal Diagnostic centre, which is a chain of medical testing. 4 of the total 23 companies belong to the Apollo group, 3 companies to Ranbaxy group, with

the Artemis belonging to the Raunaq Singh Group. Unit Group and Private ownership (Foreign) have 2 and 1 company respectively in the list of top 20percent.

2.5 Results

2.5.1 Income and trade indicators

If we closely analyze these top 23 companies with respect to their income share, FOREX earning and FOREX spending, we can see that the top 20 percent of the companies capture around 80percent of the market share in terms of these variables (Vide Table 2.3).

Table 2.3: The share of top 20 percent of the companies in income and trade (in percent)

Year	Income	FOREX earned	FOREX spend
Mar-00	83	99	100
Mar-01	84	99	99
Mar-02	83	91	98
Mar-03	78	97	95
Mar-04	82	81	92
Mar-05	79	91	86
Mar-06	81	90	90
Mar-07	81	86	80
Mar-08	83	85	90
Mar-09	82	87	78
Mar-10	78	82	77

Source: Computed from CMIE data
Note: Not all top 20percent companies have consistent time series information on the variables.

But the share of the market varies accordingly to their ownership group. A distribution of income across these 23 companies reveals that Apollo group of ownership dominated the market with more than 80percent of the income in the initial period of analysis. With the emergence of the other groups over the years, Apollo's unique existence in the health market has been shared by the others (Vide Table 2.4).

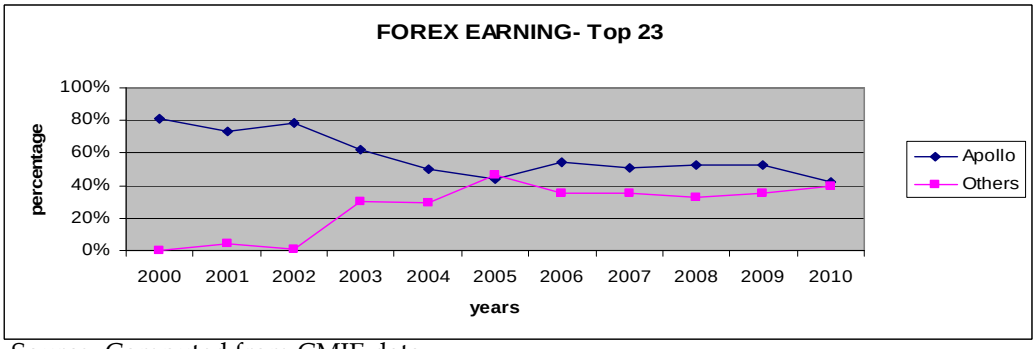
Table 2.4: The share of income of top 20 percent companies (in percent)

Years	Apollo market share	Ranbaxy market share	Private	Wockhardt	Others
Mar-00	83	8	9		1
Mar-01	83	6	9		2
Mar-02	81	8	9		2
Mar-03	67	5	22	5	0
Mar-04	58	9	24	7	3
Mar-05	61	8	19	9	3
Mar-06	57	9	24	9	2
Mar-07	53	8	26	10	4
Mar-08	48	7	29	11	5
Mar-09	48	7	28	10	7
Mar-10	52	8	25	11	4

Source: Computed from CMIE data

Established in 1980, Apollo group of company is Asia's biggest chain of health care provider and the forerunner in the international market of trade in health services. Hospitals such as Escorts, Fortis, and Wockhardt have a late incorporation year compared to Apollo and have made their foray in the international market of trading health services. The FOREX earning of the companies have been analyzed by categorizing Apollo companies over other groups of companies (Vide Figure 2.4).

Figure 2.4: FOREX earning of top 20percent companies



Source- Computed from CMIE data

FOREX earning and spending can be further deduced to few subcomponents. The former variable can be reduced to export of goods, export of services, FOREX earning

dividend, FOREX earning interest and others, where the latter one comprised of import of raw material , import of stores and spares, import of finished goods, import of capital goods, FOREX spending on dividends, royalties, travelling etc.

Of all the sub components of the main variables, it is the Export of services from FOREX earning and Import of capital from FOREX spending that consists of the entire magnitude of these variables as can be seen from the Table 2.5.

Table 2.5: Components of FOREX earned and spend (in percent)

Years	Import of capital/ FOREX spend	Export of services/ FOREX earning
Mar-00	26	100
Mar-01	34	60
Mar-02	70	99
Mar-03	80	96
Mar-04	84	90
Mar-05	60	58
Mar-06	70	98
Mar-07	75	95
Mar-08	79	99
Mar-09	86	100
Mar-10	88	98

Source: Computed from CMIE data

We can identify the trade component of the variables through the export of services and import of capital goods. We can attribute the import of capital to the huge demand of medical equipment in India. As per a USA company study IMaCUS VIRTUS (2010), import consists of 65 percent of the entire medical equipment market of India with 85percent dependence on USA. Even though, there are about 700 medical device makers in the country, India imports approximately 75 percent of devices (CII & KPMG 2012). On the other hand, FOREX earning of the companies are entirely comprised of the export of services.

From the above discussions, we can state that trading in health services has not yet developed as the general practice for the hospitals listed in the CMIE data. The

skewness in the values of the variable is for 20percent of the companies who share 80percent of the market in terms of income and other trade indicators. But if measured in terms of intensity, we can further filter out those companies those are actively engaged in trade. Even there may be some companies in the bottom 80percent who are actively engaged into trade but couldn't make up to the list of top companies due to the size of its activity or incorporation year.

2.5.2 Trade Intensity

We have taken into account two indicators to measure the trade intensity - Raw material imported /Raw material purchased (percent); Total FOREX earnings / Total income (percent).

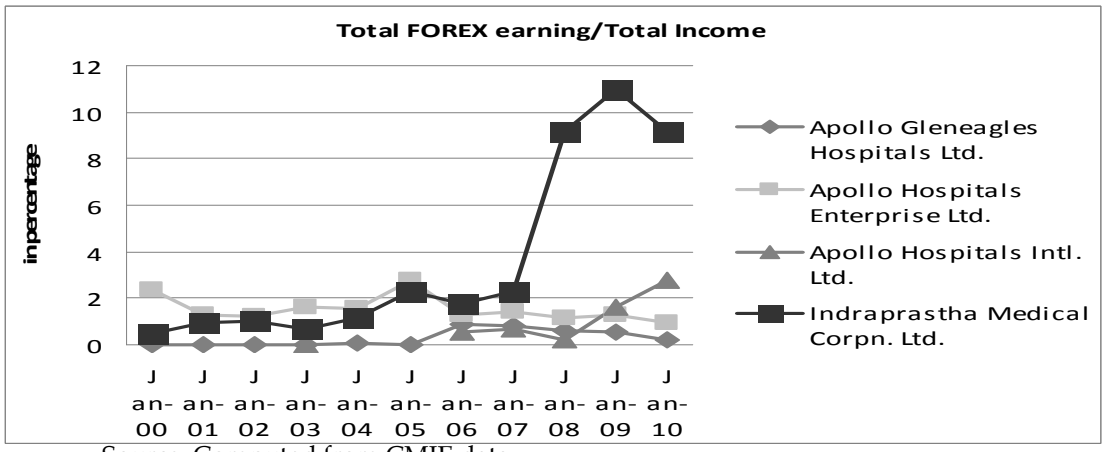
Amongst the 137 companies, only 33 companies have the FOREX earning intensity greater than zero, rest all are zero. Whereas for the variable Raw material imported /Raw material purchased (percent), none of the companies listed in the CMIE data set have any observation other than zero.

The top 20percent of the companies in the list belong to different groups of ownerships, analyzing these variables separately for each group of ownerships will give us the companies with the highest trading intensities.

Apollo group of companies

Indraprastha Medical Corporation Ltd, a branch of Apollo group of companies is the sole company of the group with a FOREX earning of 10percent of their total income. As the figure 2.5 below shows, for most of the other companies, the measure of the intensity is less than 2percent. Apollo hospitals and enterprise limited is the first company of Apollo group of companies and the largest in terms of income. But as foreign exchange earning is concern, Indraprastha Apollo is the highest contributor to total FOREX earning of the group (Vide Figure 2.5).

Figure 2.5: Apollo Group: Total FOREX earning/Total income (in percent)

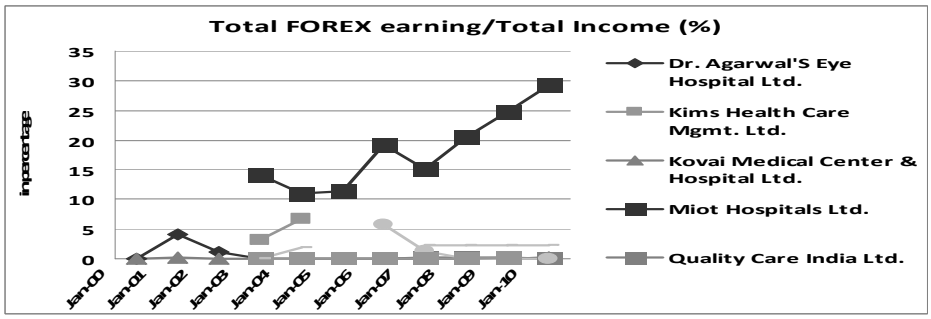


Source: Computed from CMIE data

Private (Indian) ownership

Private (Indian) ownership group has 87 companies under it. Amongst these 87 companies 12 companies appeared in the list of top 23 companies. Miot hospital is the only company with an increasing trend of FOREX earning as a proportion to the total income (Vide Figure 2.6). No other company has FOREX intensity of more than 10percent.

Figure 2.6: Private (Indian): Total FOREX earning/Total income



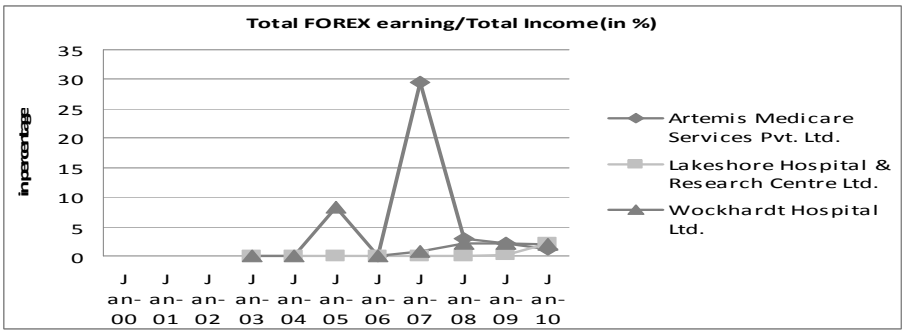
Source: Computed from CMIE data

Other ownership groups

None of the companies of the Ranbaxy group have a unit digit figure on the FOREX earning intensity. Wockhardt hospital in the year of 2005-06 touched a FOREX earning

intensity of 10 percent and 30 percent trade intensity has been recorded for Artemis Medicare Services Pvt. Ltd for the year 2007-08 (Vide Figure 2.7).

Figure2.7: Others: Total FOREX earning / Total income (percent)



Source: Computed from CMIE data

As has been mentioned before, 33 companies have a positive value on trade intensity, 16 of them belongs to the top 20 percent of the companies. The trade intensity of these 16 companies has been analyzed above. We also find a set of companies whose total income over the years is below the average income of 109 companies, but their trading intensity is at the higher range. They belong to the bottom 80 percent of the companies and they have been analyzed below.

The percentage of FOREX earning to income is less than 1 percent for the companies of Private (Indian) group like Aditya Birla Health Services Ltd, Banashankari Medical & Oncology Research Centre Pvt. Ltd, Chennai Meenakshi Multispeciality Hospital Ltd and International Hospital Ltd. It is slightly higher (1 percent – 3 percent) for Mandke Foundation and Noida Medicare Centre Ltd.

It is higher for some companies listed in the Table 2.6 due to the nature of the services produced.

Table 2.6: Total FOREX earning/ Total income (percent)

Year	Accentia Technologies Ltd.	*Ayurveda*gram Heritage Wellness Center Pvt. Ltd.	Nagarjuna Ayurvedic Centre Ltd.
Mar-04	0		48.57
Mar-05	0		41.98
Mar-06	0		33.33
Mar-07	0		24.65
Mar-08	0	38.96	
Mar-09	98.22	34.68	10.27
Mar-10	98.59	35.25	14.36

Source: Computed from CMIE data
Note- The blank cells denote the unavailability of data

The percentage is not any better for the Ranbaxy companies such as Escorts Heart & Superspeciality Institute Ltd. whereas nothing conclusive can be said for the Fortis Hospitals with the non availability of data for most of the years of analysis.

On the other hand, companies like Max Healthstaff Intl. Ltd and Max Neeman Medical Intl. Ltd of the Bhai Mohan Group have very high FOREX earning intensity for all the periods of analysis (Vide Table 2.7).

Table 2.7: Total FOREX earnings/ Total income (percent)

Year	Max Healthstaff Intl. Ltd.	Max Neeman Medical Intl. Ltd.
Mar-04	--	89.26
Mar-05	100	76.2
Mar-06	117.54	50.85
Mar-07	96.83	54.43
Mar-08	93.77	69.06
Mar-09	50.32	63.64
Mar-10	0	55.2

Source: Computed from CMIE data

The substantial higher range of FOREX exchange intensity motivates us in analyzing deeper about the nature of these companies. We can envision the fact that these companies are not the hospital collections but are Contract Research Organisation (CRO) and the International Nurses placement centre where the major activity of the hospital is to cater the international market.

Even for other members of the Apollo group like Apollo Health & Lifestyle Ltd., Apollo Hospitals Intl. Ltd. and Imperial Hospital & Research Centre Ltd, the intensity is no higher than 6percent in selected years of analysis.

2.6 Summary

The chapter is broadly divided into two sections. The first section is meant to provide a background regarding the importance of the topic. The literature review has identified certain periods of time and the coeval issues that came up during these years. The next section of the thesis aims at identifying the companies that play an important role in the international trade of health services. We don't find a significant presence of the companies in the international market. The companies are oriented towards the domestic market. Though the export of services comprises of their total FOREX earning and so the Import of raw material to the FOREX spending, they don't make up a dominant part of the total income and expenditure. We find much skewed distribution for all the trade indicators and income variable. Intensity of trading in the International market is higher only for those companies whose nature of the product is different. With this analysis, we can conclude that international trade in health services have yet not started flourishing in a significant way in the hospitals. Trade in health services are not very contributive to the total income earned by the hospitals. Exceptions are those companies who are not hospitals in general sense, but are the facilitating agencies for the foreign patients seeking medical care in India.

Chapter Three – Trade in Heath Services: Discussing the three modes

3.1 Introduction

International trade in services relates the geographical location and proximity between consumers and producers, as well as factors of production. These dimensions limit our ability to provide a single best measurement of the magnitude of international trade in services.

Stern and Hoekman (1987, cited from Herman 2009) explained that trade in services can be measured through the following three modes: separated services, demander-located services and provider-located services. The first category relates to the trading of services across borders in the same manner in which goods are traded. Demander-located services refer to the mode of trade that require the presence of the supplier in close proximity to demand, while provider-located services necessitate the movement of consumers to the location of the suppliers. This definition has been widely adopted in the literature and provides the conceptual and legally binding framework of the General Agreement on Trade in Services (GATS) of the World Trade Organisation (WTO) through the four modes of supply categorization (Herman 2009).

Mode 1: The patients and doctors in such kind of treatments do not have a face to face contact, all the diagnosis carries out through the internet. Example: Telemedicine.

Mode 2: This is the mode through which the patients traveled from their home country to the destination country for getting their medical treatment done. This is called Medical Tourism (MT) and will be in the special focus throughout the study.

Mode 3: This is the route of commercial presence of the foreign companies, a route of foreign direct investment to the health sector.

Mode 4: This way refers to the movement of medical personnel i.e. doctors, nurses from one country to another for delivering medical services.

Each of these modes has their respective contribution in the trading of health services but their contribution over the years remained different. All the modes have not flourished uniformly, few of the modes are at a very nascent stage, and researchers can only forecast their potential. In order to provide a wide and comprehensive perspective of the health sector, the study will try to evaluate the international trade through the four modes of health sector. The present chapter will discuss three of the four modes of GATS; Mode 1 (Cross border: Telemedicine), Mode 3 (FDI in health sector) and Mode 4 (Movement of natural persons). Mode 2 popularly known as medical tourism will be discussed with a special reference in the following chapter. The theoretical background of Mode 2 will be supplemented with a Primary survey being undertaken in the hospitals of the Thiruvananthapuram city which will be presented in Chapter 5.

3.2 Mode 1: Telemedicine

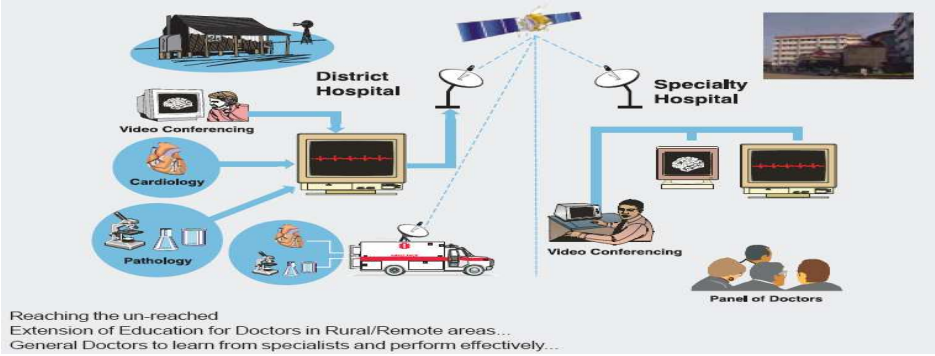
The World Health Organization defines Telemedicine as, "The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities" (DIT, MCIT and Technical Group Report 2003).

This mode is indeed a rapidly growing field of medical informatics that consists of two aspects: the revolution of the information technology that enables both the parties (patients and health care providers) in securing unlimited access to information on health care and the possibility to overcome the remote distance between patient and the provider through the introduction of video conferencing.

Research and developmental programme has well identified the poor communication gap between the hospital specialists and the general practioner and even between the primary and secondary care of the health sector, this urged the need of a joint

consultation between the two levels of health care for the better educational gain and for mitigating the problem of distance between the patients and medical provider. Figure 3.1 shows how exactly the process of telemedicine works on in an installed setting

Figure 3.1: Telemedicine concept



Source: ISRO, *www.isro.org/publications/pdf/Telemedicine.pdf, accessed on 18th Nov.2011*

The above figure portrays the way a telemedicine project operates. The diagram shows the district hospital with a telemedicine installation is having a connection with a specialty hospital located in the city, where patients through the video conferencing can interact with the doctors of the multi specialty hospitals. Even the ambulance is also having a telemedicine set up which is used to take care of the emergency cases. To take care of the emergency situation, a system based on wireless communication AMBULANCE is in existent in few European countries along with a Global system for Mobile communications (GSM). Even scanned images can be sent through the store and forward method from any district hospital which helps in quick diagnosing of the cases and in reducing the opportunity costs of the patients and the providers.

3.2.1 A review of various dimensions in telemedicine

Given the unavailability of the disaggregated data on trade in health services and the infancy state of the mode telemedicine, there is no proper data base which can estimate the correct figure on the telemedicine operations and trade.

But the literature on telemedicine centered on certain issues:

i) Whether telemedicine is really an effective mode of delivery of health services?

ii) Whether it is good for the patients?

The first issue asks the questions that whether telemedicine is really an effective mode of supply of health services in comparison to the face to face interaction with the patients and providers. Studies of telemedicine are mainly centered on the clinical effectiveness and its policy implications. In this respect, Ekeland et al. 2010 reveals a detail analysis of the major issues of the telemedicine sector classifying studies based on three issues: the potential of telemedicine practice, the effectiveness of telemedicine and the conclusion of limited and ineffectiveness of telemedicine.

In Indian context, report of Technical working group for telemedicine standardization (2003) lays down certain framework for a telemedicine system to work properly. Studies by Dasgupta et al. (2008), Bashshur et al. (1997), Bedi (2003) and Sinha (2000) describe the initiatives that are being carried out from India through policy formation and projects defining telemedicine as a virtual gaze of healthcare in the next century.

Each telemedicine centre either acts as a Telemedicine Consulting centre (TCC) or Telemedicine Specialist Center (TSC). TCC is the centre where a patient and a medical practitioner will be present to transfer the information of the patient for treatment to the specialist center i.e. TSC.

3.2.2 Efforts to develop telemedicine in India

The beginning in the field of telemedicine in India was made by the ISRO in form of Telemedicine Pilot Project in 2001 linking Apollo hospital of Chennai to Apollo Rural hospital of Aragonda village of Andhra Pradesh. Later after this year, Karnataka telemedicine project linked Narayan Hrudalaya with the district hospital of Chamarajanagar and Vivekananda memorial trust hospital at Saragur in South Karnataka. Madras Medical College is the first Government College to have a telemedicine installation in India.

In India, telemedicine programs are actively supported by:

- Department of Information Technology (DIT),
- Indian Space Research organization (ISRO),
- NEC telemedicine programme for the North –eastern state,

In the development of telemedicine centre ISRO plays the most important role with its wide range satellite connectivity 'HEALTHSAT', an exclusive satellite for meeting the heath care and medical education needs of the country. Installation of ISRO ranges to 332 hospitals with 229 rural/district hospitals connected to the 33 specialty hospital treating 30,000 patients since its first installation (ISRO 2011).

3.2.3 Telemedicine and Trade

The global market for Mode 1 is estimated between US $1 billion to $1 trillion. Employment in mode 1 has increased from 30551 in 2000 to 242500 in 2005 and revenue rose from US $264 mn. to $4072 mn during the same period (Smith et al. 2009).

The concept of telemedicine in trading health services is at a very nascent stage. The entire concept of telemedicine gained importance out of the inadequate healthcare facility for the majority section of the domestic population. There is the need to re-integrate the rural section of the population to the specialized India. Specialized India through mobile telemedicine facilities and installation in the remote areas can connect the rural hospitals and can bring the poor section of the population to the zone of medical care.

The need also arises to supplement the problem of inadequate availability of qualified doctors in the rural areas. As per the survey of Indian Medical Society, 75percent of the practiced doctors reside and practice in the urban area leaving out 22percent in the semi urban with 2percent of the doctors' practicing in the rural areas.

Hence the focus of telemedicine as of now has not been towards linking India's medical institute to the foreign renowned hospitals, but it is more towards connecting the rural areas. The projects on telemedicine like National telemedicine Grid, National Onconet Project, National Medical College Network, SAARC telemedicine network etc are also working towards the fulfillment of this objective.

Even the 11th five year plan, (2007—2012) allocated 2000 million rupees (about US $50 million) to telemedicine with the belief that it will be able to "access all the inaccessible parts" of the country in the next 5 years. Most of the funding will be channeled through private-public partnership.

The NASSCOM reported that 120-150 companies in India are engaged in medical transcription in India with aggregate annual revenue of about US $220 mn- $240mn.

In the international sphere, corporate hospitals play the major role. Identified facts as given in the Table 3.1 don't reveal much of the international linkage and are limited to the SAARC countries.

Table 3.1: Identified Telemedicine Cases

Location	Hospital	SAARC countries	No. of cases
Bangalore	Narayana Hrudalaya	Bd, Bh, Np, SL,	3000
Chennai	Apollo Hospital	Bd, Ml, Np, SL,	10,000-12,000
Chennai	Global hospital and health city	Bd	300
Chennai	Sri Ramachandran Medical Centre	Bd, Bh, Ml, Np, Pk, Sl, Af	700
Delhi	Apollo Hospital	Bd, Np, Pk, Af	-
Kolkata	Rabindranath tagore International Institute	Bd	12000

Source: Compiled from the Banik et al., 2011

Note: The observations are exclusively for the SAARC countries Bd-Bangladesh, Bh- Bhutan, Np-Nepal, Sl-Srilanka, Af-Afganisthan, Ml-Maldives, Pk-Pakistan

The advantages of this telemedicine linkage will be beneficial especially between those countries whose political tension often curb the movement of the natural persons. Apollo group of companies having a telemedicine linkage with Pakistan is the best example of this fact.

We can conclude from the section of Mode 1 that there has not been much trade aspects happening in this mode, much of the initiatives are for the domestic population. The development of this mode will depend upon the patients' belief in this method of treatment which is different from the traditional means of imparting health services.

3.3 Mode 3: Commercial Presence

This mode refers to the movement of capital from one country to another, which most commonly involves a joint venture between domestic and foreign partners to establish a new hospital, clinic, diagnostic facility, or purchase an existing institution. The GATS commitments in the health sector limit the presence of the foreign provider through limiting the amount of foreign equity, the number of service provider, type of legal entity and also by the extent of the foreign capital participation.

Commercial presence complements the domestic private investment and hence contributes to transfer of technology. We can attribute the cultural distance between the two countries, level of economic development, governance and the availability of the quality inputs to be the major determinant of FDI to a particular country.

3.3.1 A review of literature on foreign investment in the health sector

Mode 3 is the most crucial (Sinclair and Grieshaber-Otto 2002) in all of the four modes because it has the ability to underpin the outward migration of the health professionals and inward influx of the medical tourists.

FDI is gaining importance in the global economy (Mashayekhi & Julsaint 2002; Woodward 2001, cited from Smith 2004). FDI from developed country to developing country grew up from $36 bn to US $155 bn in 1999, the amount is three times that of official development aid during that time (HMSO 2000, cited from Smith 2004).

Even towards the end of 1990s, a steady transition in the average share of services can be observed towards the service sector (10.5percent in 1990s to 28.3percent in 1999), even the flow of FDI in services accounted for half of the total FDI (UNCTAD 1997), with telecommunications and financial sector in the forefront of the recipient sector.

When it comes to services, FDI is believed to bring in additional resources and expertise to improve the quality and efficiency of services offered, though much of the improvement depends on the form of regulation (Chanda, 2001) and existing structure of the domestic sector (Janjararoen & Supakankunti 2002; White & Collyer 1998, cited from Smith 2004).

The World Development Report of 1993 on 'Investing in Health', which recommends a private public mix for financing and organization of health system has lead to the growth of FDI from 5 percent-20percent from 1990 – 2000, this is the period when literature on the relationship of health sector and FDI has started spurting out.

Even after the liberal policies of the RBI in allowing 100percent FDI in health sector, health sector is not experiencing much improvement in this line, the causes can be attributed to the high import cost of medical equipments, high cost of accruing lands, inappropriate structural reforms in the health sector, such as the lack of health insurance reforms and the improper regulations on the medical providers (Chanda 2003).

Regarding the availability of data, the value of FDI in the service sector can be availed from the Department of Industrial Policy and Promotion (DIPP). It lists out various sectors with the information on the amount of FDI and the trading partners. FDI inflows to the health sector can be understood using the proxy of FDI to hospital and diagnostic centres & Medical and Surgical appliances. Table 3.2 shows the FDI inflows in the service sector in comparison to the hospital and diagnostic centre. In the case of service sector, a stark improvement in the percentage is recorded which is otherwise almost stagnant for hospital sector. Financial and communication sectors are responsible for the high percentage of services sector, whereas hospital sector is much more limited by the domestic constraints and regulations, the same reasons which we can attribute to the poor domestic investment to health sector. Table 3.2 gives a comparison of the FDI inflows in the overall service sector as compared to the hospital sector.

Table 3.2: FDI Inflows to the service sector

Year	Service: percent of total	Hospital & Diagnostic centre: percent of total
1991-2005 Sep	9.71	
1991-2006	9.46	
1991-2007	18.39	
2000-2008	22.64	0.69
2000-2009	22.96	0.72
2000-2010	21.32	0.68
2000-2011	20.83	0.78

Source: DIPP, Compiled from various years

A recent dip in the FDI inflows to the service sector has been encountered in the recent years. Literature attributes it to the turbulence of crisis. It still stands out to be the most attractive sector to the foreign investment. Before 2008, FDI to the Health sector is marked by FDI to the medical and surgical appliances (Vide Table 3.3). Data on FDI to the hospital sector started coming up in the post 2008 period.

Table 3.3: FDI inflows to Health Sector (Pre 2008)

Years	**Medical and surgical appliances (Rs. Cr)**
2007	594.51
2006	22.67
1991-2005 Sep	4459.74

Source: Computed from various years of DIPP

After 2008, service sector has experienced a serious drift in the year 2010. Not only health sector, but all the sub sectors of service sector realized the dip in the magnitude. But, recent observations of 2011 have again shown an upward trend (Vide Table 3.4).

Table 3.4: FDI inflows to health sector (Post 2008)

Years	Hospital and diagnostic centre (Rs. Cr)
2000-2008	1,705.32
2009	1,038.90
2010	647.16
2011	1,125.32

Source: Computed from various years of DIPP

3.3.2 Forms of FDI

The degree of international involvement can be measured in terms of the intensity of the foreign operations that are undertaken by the firm or the number of host countries in which a company is established.

The international involvement can be ownership specific which includes the managerial, marketing and the brand name of the main company; Location specific which focuses on

the geographical proximity and the level of infrastructure; Market Internationalization includes the exploitation of resource to participate in the global business and Good Governance of the foreign country to set up foreign affiliates.

In the post liberalization era, it is not only that FDIs are formed out of foreign investment in monetary terms, the extent of foreign participation can be better understood through the foreign collaboration either through the participation of insurance companies or through any sort of tie –ups. The common pattern of foreign participation is through Equity and Non Equity forms. Investing in existing facilities or to enter into a joint venture with the local partners is the common form of Equity, whereas managed care services which integrate the financial and delivery of medical services in the form of management contract are FDI in non equity forms. The share of foreign funded hospitals is significantly higher than that for specialized surgical procedures.

Other than Foreign Direct Investment, the other common forms of foreign presence in Indian hospitals are:

- Foreign Institutional Investment (FIIs)
- Equity and Non Equity funding
- Joint ventures
- Private Equity funds
- Integration of financial and delivery of medical service
- Diaspora Investment
- Collaborations, tie-ups with foreign institution

3.3.3 Unit level instances on FDI (Evidences from DIPP)

As per the Department of Industrial Policy and Promotion, information on 19 hospitals experiencing FDI is available. The foreign investor country along with the amount of foreign equity is also reported in the Table 3.5. There are not many cases where FDI is reported from the direct route, most of the forms of foreign collaboration are through tie-ups and other non equity routes.

Table 3.5: Unit level FDI inflows

Period	Indian companies	Foreign investor	Rs million	US $ mn
Apr-02	Fernandez Maternity Hospital, Hyderabad	Australia	0.42	0.01
Dec-02	Sir Edward Dunlop Hospitals, New Delhi	Canada	1,282.25	26.71
Jan-04	Max Healthcare, New Delhi	Mauritius	316.21	6.63
Jan-00	Dr. Ramayya's Pramila Hospitals Ltd, Hyderabad	UK-NRI	15	0.35
Jan-00	HN Hospital, Mumbai	USA-NRI	0	0
Sep-03	Kalinga Hospital, Bhubaneshwar	NRI	54.09	0.11
Aug-00	Thaqdees Hospitals Ltd, Kerala	Saudi Arabia	0.32	0.01
Jan-03	Duncan Gleneagles, Kolkata	Singapore	59.24	1.29
Jul-04	Pacific Hospitals, Hyderabad	Singapore	5.82	0.13
Oct-01	Malabar Institute of Medical Science Hospital Ltd, Calicut	UAE	133.61	2.97
Jul-02	Peoples General Hospital Ltd, Bhopal	UAE	73.32	1.53
Aug-01	Thaqdees Hospitals Ltd, Ernakulam	UK	0.34	0.01
Jul-01	Trichur Heart Hospital, Thrissur	UK	49.89	1.11
Aug-02	Bhimavaram Hospital Ltd, Bhimavaram	USA	0.1	0
Dec-02	S&V Loga Hospital Pvt Ltd, Peramanur, Salem	USA	3.79	0.08
Nov-03	Vikram Hospital, Mysore	USA	29.65	0.64
Feb-04	Basappa Memorial Hospital Pvt Ltd, Mysore	USA	22.83	0.5
Apr-04	Parekh Hospital Pvt Ltd, Mumbai	USA	0.5	0.01
Jul-04	Columbia Asia Hospital Pvt Ltd, Bangalore	USA	0.9	0.02
Aug-04	Add Life Medical Institute Ltd Sterling Hospital Building, Ahmedabad	USA	326.24	7.07
Jan-04	RA Multispecialty Hospital Pvt Ltd, Coimbatore	British Virginia	0.06	0

Source: DIPP, Various years, cited from Chanda 2003

As can be seen from the list and it has also been argued in the literature that well known corporate players of the health market didn't make an appearance in the list of DIPP. The hospitals as refereed to here are small hospitals in the smaller cities. The Indian Diasporas are the main investor with a meager amount of investment. The approved amount is mainly used for reasons other than establishing hospitals. Some of the

hospitals with approved amount of FDI don't even exist on ground (Chanda 2003). This gives us the reasons to belief that though FDI in the hospital sector has been made liberal, the actual presence of FDI in the health sector is much lower.

3.3.4 Unit level instances on FDI (Evidences from CMIE data)

The umbrella of FDI comprises of various forms. Apart from the foreign equity holding, amount of FDI can also be understood through the Foreign Institutional Investment (FII), shareholding pattern of the companies etc. The unit level evidences of CMIE data in the Table 3.6 gives a list of those companies having shareholders belonging from outside India. The observations can be located mostly for Apollo group and Private (Indian) ownership group.

Table 3.6: Shareholders of the companies outside India

Company Name	Mar 00	Mar 01	Mar 03	Mar 04	Mar 05	Mar 06	Mar 07	Mar 08	Mar 09	Mar 10
Apollo Hospitals Enterprise Ltd.	717	1011	968	981	988	971	246	239	237	224
Chennai Meenakshi Multispeciality Hospital Ltd.					20	12	24	20	22	21
Indraprastha Medical Corpn. Ltd.			45	39	35	32	32	30	29	29
Kovai Medical Center & Hospital Ltd.						98	97	98	96	92
Palakkad Medical & Research Centre Ltd.			10	10						
Sada Sharada Tumour & Research Institute.				1				1	1	1
Trichur Heart Hospital Ltd.			463	463	463	463	273	272	272	271
Thiruvananthapuram Medical Specialty Services Ltd.				39	39	39	39	40	21	21

Source: Computed from CMIE data

Foreign presence in the Indian hospitals can also be traced down from their collaboration with the international institutes and other facilitating agencies. Collaborations of this kind help the companies in enhancing their role in the international market.

3.3.5 Examples of foreign presence of hospital in the Indian health sector

- Singapore's Pacific Healthcare has made its first entry into the Indian market, opening an international medical centre, which is a joint venture with India's Vitae Healthcare, in the Indian city of Hyderabad.
- The Singapore based Parkway Group Healthcare PTE Ltd penetrated into the Indian health care market in 2003 through a joint venture with the Apollo group to build the Apollo Gleneagles hospital, a 325-bed multi-specialty hospital at a cost of US$ 29 million.
- Columbia Asia Group, a Seattle-based hospital services company, a worldwide developer and operator of community hospitals, has started its first American- style medical centre in Hebbal, Bangalore. Columbia Asia is the first hospital to enter the Indian healthcare market through the Foreign Direct Investment route.
- Wockhardt, the international arm of the Harvard Medical School, which also has a strategic association with Harvard Medical International, has set up a new hospital (a tertiary service provider) in Bangalore at a cost of around Rs. 200 crores.
- The Parkway group has also entered into a joint venture with a Mumbai-based Asian Heart institute and research centre to set up specialized centres of medical excellence in Mumbai.
- Max Healthcare and Singapore General Hospital (SGH) have entered into collaboration for medical practice, research, training and education in healthcare services.
- Steris, a US $1.1 billion healthcare equipment company, plans to set up a wholly owned arm in India to sell its devices and products in the country's booming medical device market. Steris plans to make an initial investment of US $1,00,000 to set up the wholly owned subsidiary.
- Apollo Hospitals Enterprise Ltd (AHEL) has entered into a joint venture with Amcare Labs, an affiliate of Johns Hopkins International of the US, to set up a diagnostic laboratory in Hyderabad. An initial amount of US $2.2 million is to be invested and the

laboratory is likely to be operational by mid-2006. Apollo Hospitals is the only International training organization for the American Heart Association Technical support from Texas Heart institute and Minneapolis Heart Institute for Cardiology and Cardio Thoracic surgery. Apollo Hospitals also have an association with Mayo Clinic & Cleveland Heart Institute, USA. Apollo-Gleneagles Hospitals Ltd. entered into a joint venture with West Asia and North Africa Institutes, whereas Apollo Hospitals also shares a partnership with the Yemen's Hayel Saeed Anam Group. Apollo is currently working in collaboration with Britain's National Health Service (NHS) to do operations and medical tests for patients at a fraction of cost in Britain for either a Government or private health care.

- India's first geriatric hospital, the Heritage Hospital of Hyderabad has formed a joint venture with US-based United Church Homes to recruit, train and provide placement to registered Indian nurses in USA.
- The US-based healthcare products major, Proton Health Care has made an entry into India with its range of digital health monitoring devices and has a strategic tie-up with the Delhi-based S M Logistics for distributing its products in the Indian market.
- The American Association of Physicians of Indian Origin (AAPI), a Non-Resident Indian group will be launching two pilot projects in Bihar and Andhra Pradesh in July 2006 to help improve India's healthcare in rural areas. The AAPI has committed itself to the improvement of primary healthcare under a memorandum of understanding during the *Pravasi Bharatiya Divas*, the annual conclave of the Indian Diaspora, with the government.
- The Escorts Heart Institute of Faridabad and Ruby Hospital of Kolkata are among those Indian hospitals approved by the UK medical insurance company BUPA.
- Narayana Hrudalaya has a tie up with the Hyatt College of technology and with Queen's Mary Medical School for training. The hospital has further tie –up with the University of Ohio to train nurses and with the University of Minnesota for temporary registration of doctors to train there.

Thus, the overall view of the internationality of the health sector is not very transparent. The foreign presence is not directly through the route of FDI, but more through the route of foreign collaborations, tie-ups. As mentioned earlier, foreign presence has given a chance to boom by allowing a 100percent FDI in the sector, but it still failed to attract its potential.

3.3.6 Limitations and constraints to FDI in health sector

Exploring few reasons why investment in health sector has been a myth to the foreign investor:

- Health sector till recently was not looked upon as a core sector by the Indian Government, the policies associated with the health sector is still blurred and non transparent. Primarily, health was considered a state subject, private sector has got to play a very minimal role in this. Liberalization was not been promoted initially. The fear of losing the sovereignty power of the state deters the foreign interference at the initial stage. Hospital sector, the only sub-sector of health was committed in the Uruguay rounds. After 2004, with the conditional and revised offers, situations have inclined towards more participation and collaboration with the foreign entity.
- For most of the health companies, the major component of their FOREX spending is through the import of capital goods. The extensive dependence on external market for capital makes the sector volatile. FDI through direct route become expensive for the foreign investors, in most cases it comes through the path of non equity.
- Certain domestic factors like the state of the health infrastructure in general, lack of regulatory framework and bureaucracy, internal problems going onto the sectors, long gestation period involved in establishing hospitals prevent the foreign investors to turn up.
- The inadequate penetration of the health insurance also constrains the inflow of FDI in the health market.

3.4 Mode 4: Movements of natural person

United Nations (UN) International Convention on the Protection of Rights of all Migrant workers & Member of their families defined an international migrant worker "as a person who is to be engaged, is engaged or has been engaged in remunerated activity in a state of which he or she is not a national".

3.4.1 Studies defined the movement of medical professionals

In apropos to this, WHO has undertaken a detailed study on the flow and stocks of physicians and nurses in 40 countries (Mejia et al. 1979, cited from Connell 2008), the figures says that in 1972, about 6 per cent of the world's physicians (140,000) were located in countries other than those of which they were nationals. OECD countries are the biggest recipient of the physicians which is estimated to be around 86 per cent of all migrant physicians in five countries (Australia, Canada, the Federal Republic of Germany, the United Kingdom (UK) and the United States (US) (Bach 2003).

Martineau et al. (2002) cited the example of the movement of the South African nurses to other developed part for gaining employment. The condition has been much worse in South Africa (SA) with 80percent of native doctors situated in non SA countries in 1999. Numbers of nurses seeking verification has increased from 511 in 1995 to 2543 in 2000 (Xaba & Phillips 2001).

Philippines also played a kernel role in the practice of international migration of health workers. It is the country which deliberately promotes this practice through their medical educational standard and also through policy. Medium term Philippines Development Plan views overseas employment as a key source of economic growth. In 1970s, 13,480 native physicians were working in Philippines compared to 10,410 Philippines trained physicians working in United States. Filipo nurses earn $3,000-4,000 in foreign destination compared to $75-$200 per month in the home country (Goldfrab et al. 1984, cited from Bach 2003).

Coming to India, India is traditionally the largest source country of doctors and nurses (Mejia et al. 1978, cited from Martineu et al. 2002). The movement of doctors can be

traced down from the period of 1950s; it is mostly the cultural ties of India with the UK that tend to attract the health professionals. UK was traditionally the biggest destination country for the Indian health professionals. But over the years in the globalized era, the reason for migration has surpassed the reason of culture to more economic requirements.

Nursing phenomenon began their journey to the Middle East but has now shifted attention to UK, USA, and Australia etc (Adkoli 2006). IOM (2003) estimated the health related remittances for India to be $11.5 bn. Table 3.7 gives a historical link to migration; it shows the outflows of the Para- medical staffs from India to Middle East.

Table 3.7: Skill Composition of Labour Outflows from India to Middle East, 1984-86

Skill category	1984		1985		1986	
	Nos.	Percentage	Nos.	Percentage	Nos.	Percentage
Para-medical staff	2,630	1.3	1,205	0.7	1,175	1.0

Source: Ministry of Labour, GOI cited from Nayyar 1994

56percent of the AIIMS doctors went abroad from 1956-1980, 75percent of the AIIMS doctors are continuing their study at the West. 30percent of the doctors in NHS (UK) are Indian, with Antitheist, Radiologist and Psychiatrist in maximum number. In USA, Indian doctors exceed 50,000, the ratio being 1 Indian doctor for every 1325 Americans in contrast to 1 Indian doctor for over 2400 Indians in India. James (1976) proposed that by taxing the brain drain, the developing countries could limit the extent of migration. To bring the NRI s back to the home country, few policy initiatives were launched by CSIR like 'The Pool Officers Scheme', TOKTENINRIST scheme and initiating PIO card for persons of Indian Origin.

The extent of trade through this mode of trading depends upon the commitments undertaken in this mode by the destination country. Developed countries like USA, Australia and EU are mostly the destination countries of the medical professionals. If

the destination countries' commitments are flexible enough, then it is easy for the medical professionals to move. But the commitments of the developed countries are bounded by certain barriers; this limits the amount of trade. Table 3.8 will describe the agreements taken by the countries like USA, Australia, EU on this particular mode.

Table 3.8: Commitments on Mode 4

Country	Sector or Sub-sector	Limitations on Market Access	Limitations on National Treatment	Horizontal commitments
USA (no sector specific commitments)	Hospital and other health care facilities	Unbound except as indicated in the horizontal section	NONE	Unbound except: Service sales person, Intra corporate transferees a) managers b) executives c) specialists ; 2) there are wage parity issues 3) working condition issues 4) issues of labour laws(lockouts etc) 5) Recruitment issues (to sustain the domestic employment)
Australia (no sector specific commitments)	Unbound except as indicated in the horizontal section	Unbound except as indicated in the horizontal section. Permanent residency requirement for chiropodists (South Australia). Permanent residency requirement for podiatrists (Western Australia).	Unbound except Executives and senior managers, as intra-corporate transferees, for periods of initial stay up to four years. Independent executives, Service sellers, Specialists	Australia (no sector specific commitments)
Canada	No commitments taken			

Table 3.8 continues...

Sector or Sub-sector	Limitations on Market Access	Limitations on National Treatment
European Union		
Health Related and Social Services		
Hospital Services (CPC 9311)	Unbound except as indicated in the horizontal section and subject to the following specific limitations: F: Access to management functions is subject to prior authorization. In granting the authorization conditions such as professional experience and skills, availability of local managers and degree of specialization required, are taken into consideration. GR: Condition of nationality for public hospitals.	Unbound except as indicated in the horizontal section
Medical and Dental Services, Midwives	Unbound except as indicated in the horizontal section and subject to the following specific limitations: DK: Limited authorization to fulfil a specific function can be given for maximum eighteen months. GR, P: Condition of nationality F: Condition of nationality, however access is possible within annually established quotas D: Condition of nationality for doctors and dentists which can be waived on an exceptional basis in cases of public health interest. A zero quota for midwives	Unbound except as indicated in the horizontal section and subject to the following specific limitations: DK: Residence requirement in order to obtain necessary individual authorization from the National Board of Health. I: Residence requirement
Nurses, Physiotherapists and Paramedical Personnel, etc.	Unbound except as indicated in the horizontal section and subject to the following specific limitations: DK: Limited authorization to fulfil a specific function can be given for maximum 18 months. GR, P: Condition of nationality.	Unbound except as indicated in the horizontal section and subject to the following specific limitations: DK: Residence requirement in order to obtain necessary individual authorization from the National Board of Health.

Table 3.8 continues...

	I: Subject to economic needs test: decision is subject to regional vacancies and shortages.	
Social Services Convalescent and Rest Houses, Old People's Homes	Unbound except as indicated in the horizontal section and subject to the following specific limitations: F: Access to management function is subject to prior authorization. In granting the authorization conditions such as professional experience and skills, availability of local managers and degree of specialization required, are taken into consideration.	Unbound except as indicated in the horizontal section

Source: WTO
Note: DK – Denmark; F – France; GR – Greece; I – Italy

The commitments of the scheduled countries on Mode 4 are not free from limitations. Most of the countries have kept the Mode 4 'Unbound with limitations as indicated in the horizontal commitments'. To ensure flexibility in the movement of natural persons, under the Doha round of negotiations, India had requested the developed countries to modify some of their commitments, which are imposing barriers to her trade. The requests made by India to the popular destination countries are listed down in the Table 3.9.

Table 3.9: Requests made by India to the developed countries

Country	Market access	National treatment
USA	Full commitments and schedule none in case of doctors , dentist , paramedical staff, dental assistants, midwifery professionals (increase the category of service providers)	Take full commitments and schedule none
EC	quirement of nationality and quantitative o enter and delivery+ remove the ENT+ dentification of IDS and IMS	Take full commitments and schedule none and remove residency requirements
Japan	Same as EU	Same as EU

Source: WTO cited from Kumar et al. 2007

The section will conclude with the listing of the major restrictions that have been imposed on the cross border movement of health professionals (Kumar et al. 2007).

- Entry restrictions for certain sectors/categories of natural persons.
- Restrictions on duration of stay of natural persons.
- Conditions for entry and other related requirements.
- Economic needs test, labour market tests, management needs test etc.
- Quantitative restrictions by way of number, fixed proportion of total employment, fixed proportion of total wages etc.
- Restriction on capital transfers.
- Prohibition against foreigners obtaining local qualifications.
- Tax discrimination.
- Requirement of Government approval.
- Requirement of work permits/residency/citizenship.
- Non-recognition of professional qualification by importing country.
- Domestic regulations concerning registration, licensing, certification, recognition and accreditation, and also residence, nationality or citizenship requirements
- Restriction by way of minimum investment requirements.

3.5 Summary

Health is among the relatively few service areas in which, subject to various qualifications, developing countries may prove to be competitive exporters, under several modes. Health service trade is facilitated by four modes as recommended by the GATS commitments. The potential for trade in health services has expanded rapidly over recent decades. The chapter focused on the areas of Telemedicine, Foreign investment to the Indian hospitals and the Movement of the natural persons. Telemedicine in the form of new tele-communications technologies have reduced the impact of geographical barriers to trade. Foreign investment in health facilities represents a positive transfer of resources whose ramifications may reach well beyond

the health sector. While the economic value of mode 3 commitments is self-determined, contingent on a country's own schedule, the export opportunities under mode 4 necessarily depend on other Members' policies. Since, the commitments of the developed country on Mode 4 are beset with limitations; India has come up with a set of requests to be made to the developed countries to keep the mode more flexible.

The mode on medical tourism will be taken apart exclusively in the next chapter giving a theoretical sense to the trend on medical tourism. The theoretical background will be supplemented by a primary survey to understand the practical extent of the market.

Chapter Four – Trade in Health Services: Cross border movements of patients

4.1 Introduction

The present chapter will focus on Mode 2 of trade in health services which is popularly known as Medical Tourism. As we have already seen it refers to the movements of patients across countries for getting their medical treatment done (UNESCAP, undated). It is about extending health-care services across international borders and expanding choices for patients on where to access health care. This process is facilitated by the corporate sector, involved in medical care in collaboration with the tourism industry - both private and public.

Since, there are no national frameworks reporting the Mode wise data on international trade in health services, our attempt in this chapter is to collate different pieces of information available from various scattered sources, so that we have some reliable picture on Mode 2 trade in health services. Needless to say that the picture we draw here lacks in rigor and precision. Nevertheless, it helps us generate a broad idea on the state of affairs of the heath tourism sector in the country, besides throwing light on the broad directions of change in the sector.

As UNESCAP (undated) has rightly pointed out:

> 'It needs to be acknowledged at the outset that reliable figures on the number of medical travelers and the expenditure made by them are not available from official sources. Except in countries such as Singapore, information related to medical travel is not captured in a systematic manner. The only source of such figures in many countries is the media or promotional material produced by private providers. The reporting of medical travel figures is often distorted by use of different units and methods of calculation. For example, in many cases figures on medical travelers include expatriates who live in the country and in some cases each visit is counted as a new patient. In other cases, figures may be

under-reported as they are subsumed in the figures for the general population. Therefore, the figures and projections used in this paper are only indicative, and are an effort to convey the general trends for an understanding of the policies required'.

4.2 History of Medical Tourism

Medical tourism in its present form is a relatively new concept, but the history of medical tourism dates back to the ancient times. Studies of ancient cultures depict a strong link between religion and healthcare. Most ancient civilizations recognized the therapeutic effects of mineral thermal springs and sacred temple baths. Some of the earlier instances of medical tourism rests with the Sumerians (4000 BC) known for the earliest construction of health complexes around the hot springs. Ancient Greeks were known to be the first to develop a medical tourism network, when thousands of years ago pilgrims from the Mediterranean region traveled to a small territory in the Saronic Gulf called Epidaurus to visit the sanctuary of the healing god, Asklepios. Western Europe too had a long tradition of medical travel, Rome emerged as a global power with several hot water and springs which gained the popularity especially among the elite class.

Later with the downfall of Rome civilization, temples gave way to hospitals that provide clinical services to the foreign patients with the Mansuri Hospital, being built at Cairo during 1248 A.D which became the first and the largest healthcare institution, attracting patients from around the world.

In India, the history of medical tourism grew with the popularity of yoga and Ayurvedic medicine. As early as 5000 years ago, constant streams of medical travelers and spiritual students flocked to India to seek the benefits of these alternative-healing methods.

Till about the later half of 1990s, popularity of medical tourism was confined mainly among the affluent sections of the people. USA and the European countries became the

commercial destinations of health care. The first phase of medical tourism is characterized by the domination of the private sector, servicing mainly the small richer segment of the population with the ability to buy medical care at a high price. But, at the end of 1980s and the beginning of 1990s, with the rising costs of health care in the industrialized nations, patients started seeking less expensive options. In the process, Cuba was the first country to systematically enter into the business with the Cuban Government promoting health sector as an industry targeting countries like Argentina, Chile, Mexico and Venezuela. After the events of 9/11 and the construction boom in Asia, medical tourism continued its massive growth in the Asian countries like India, Thailand, Singapore and other South East Asian countries. The main areas of treatments included the Cosmetic surgery and the dentistry. This phase of the movement of the patients was directed from the developed countries to the developing countries, whereby uninsured and underinsured consumers from the industrialized countries could seek first class care at the developing country prices.

4.3 Types of medical tourists

It is possible to categorize the medical tourists into 4 categories:

Firstly, patients from developed countries especially from United States of America, Australia and the European countries who do not have or have inadequate health insurance coverage tend to move to the developing countries for treatments.

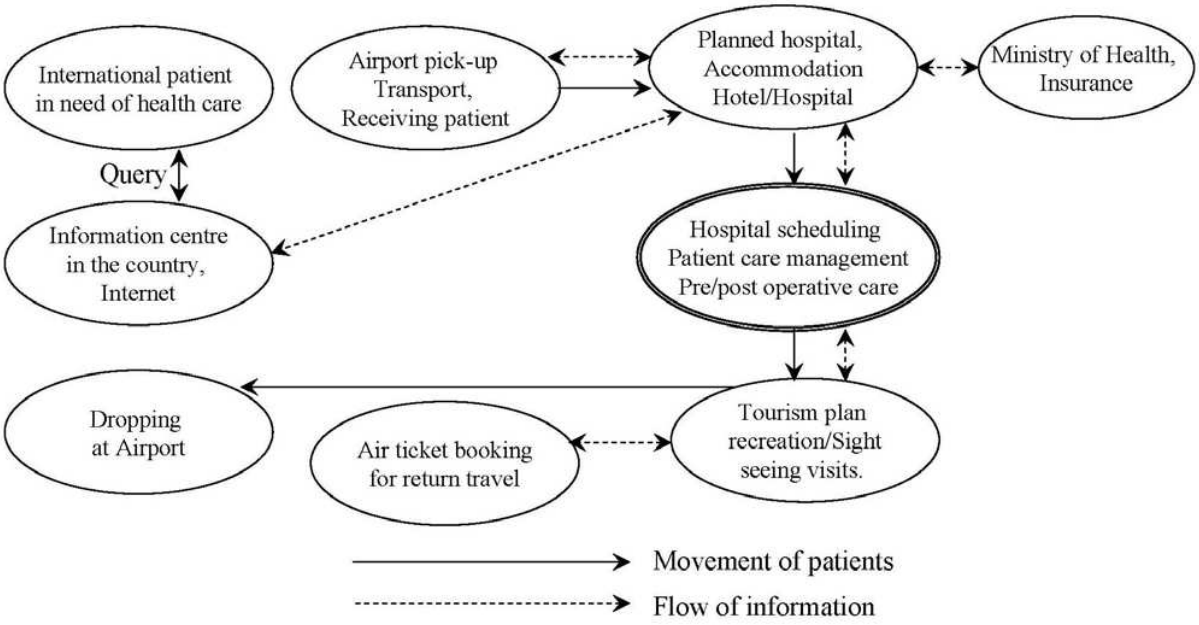
Secondly, we find a group of individuals who face long waiting time for non elective surgery and other critical cosmetic procedures. They are mostly the patients from Canada and United Kingdom (UNESCAP undated).

The third group of patients is those who move for affordable treatments. The treatments can range from the cosmetic surgery such as facelifts, hair transplants, and non surgical procedures to specialized surgical treatments. The relatively high cost of the procedures in their home country is the driving force behind the movement of the patients.

The fourth group of medical travelers belongs to the developing countries seeking quality-assured healthcare. Patients are not able to avail the quality care treatment due to the inadequate availability of medical resources in the source country. Thus the patients have to move to the nearest best destination for getting their treatments done. The patients of SAARC and Middle East countries moving to India are an example of this kind.

4.4 Hospital supply chain for International patient

Figure 4.1: Movements of information and patients



Source: Adapted from Acharyulu and Krishna Reddy, "Hospital logistics strategy for medical tourism", accessed from http://www.ilsc2004.qut.edu.au/Post_per_cent20Conf/Conference_per_cent20Papers/ILSC_per_cent20101_per_cent20Acharalu_percent20Medical_Touris.pdf, cited from UNESCAP 2009

The pictorial representation (Vide Figure 4.1) portrays the entire process of medical tourism. It starts with the patients' enquiries on foreign hospitals, the movements of the patients from their home country to destination country, the patient care management of the hospitals, post operative recreation visits of the patients to the nearest

destinations and it concludes with the dropping of the patients in the airport. The involvement of the hospital is not only limited to the treatment of the patients but in various other stages that facilitates the process like patients' accommodation, arrangement for the tickets, visa facilitation, travelling and sightseeing visits. All these associated services are carried out by a group of medical travel facilitators who deal with the hospitals and clinics and facilitate them in undertaking these activities.

4.5 Medical Tourism: The Global Scenario

The global business of Medical Tourism ranges from $20-$40 billion in 2009 and is expected to grow by $100 billion by 2012. Asia takes the lead in this direction with revenue of $1.3 billion in 2009 which is expected to touch $2.2 billion by 2012 (Smith et al. 2009). Thailand is the biggest destination in Asia followed by India, Singapore, Philippines, Taiwan, Malaysia and South Korea. Among the Non-Asian countries, Jordan, Costa Rica, Cuba, Brazil and South African countries also encourage the business.

Table 4.1 shows the direction of the movement of the patients, their home country and their destination country.

Table 4.1: Movement of the patients for medical treatment

Patients from(Home country)	Patients to (Destination country)
Association of South East Asian Nations	Singapore
Association of South East Asian Nations	Malaysia
Caribbean and Central America	Cuba
Yemen, Bahrain, Sudan, Syria, Libya, Palestina, Saudi Arabia	Jordan
USA, Japan, Australia, Britain, Middle East, South and South East Asia	Thailand
USA, China and Japan	Korea
USA,UK,SAARC	India

Source: Compiled by the author.

Countries like Singapore, Malaysia mostly caters to the patients from the South and South East Asian countries. Patients from USA, Australia and other European countries

move to Thailand, Korea and India for medical treatments. Among the Non Asian countries, Cuba, Jordan, Hungary, Brazil, Costa Rica and South Africa are known to extend their services to the foreign patients.

The Government of different countries has indicated their commitments to the goal of making their country a world leader in the industry. Recognizing the potential of the business, initiatives are taken forward to institutionalize the relevant processes.

- As Deloitte 2008 survey reports, Department of Health in Philippines has come out with a medical tourism guidebook describing its facilities across the state of the country. This guidebook of medical tourism has been circulated all through the Europe to provide proper information to the interested patients. The Medical Tourism industry of Philippines is called PMTP (Philippines Medical Tourism Programme). Medical director of Philippines had a meeting with the government officials in 2007 at California in the presence of St. Luke Medical centre, Asian hospitals, Philippines Heart Centre to discuss the promotion of this industry (Medical Tourism Magazine, 2008)
- Thailand government has launched a campaign on Medical tourism and described Thailand as 'The Medical hub of Asia'. The First health mart in the country happened in 1999 to promote health care services to the tourists (Jirasakunthai 1999, cited from Cohen 2008). The Tourism Authority of Thailand introduced 'Thailand health Expo 2004' for promoting medical tourism (Harryono et al. 2006).
- Malaysian Government in order to promote the business has extended the medical visa from 30 days to 6 months (Deloitte. 2008).
- Singapore is known for its aggressive campaigns, the government officials collaborated with the medical industry representatives holds discussions for its promotion. (Kedar 2010).
- Taiwan Government holds huge investment of about $318 million with the motive of extending the industry. (Deloitte 2008).
- Korean Medical Tourism Policy leads to a new institution for foreign patients. As a preliminary step, Ministry of Health and Welfare and the Korea Health Industry

Development Institute (KHIDI) have launched a strategic organization which includes more than 30 hospitals. The organization is called the 'Korean International Medical Service Association (KIMSA). MOHW is supporting 50percent of the US $1.06 million budget, and the participating hospitals will provide the remaining 50percent (EUCCK 2010).

Thailand is the biggest destination of medical tourism in Asia followed by India. The medical field of Thailand which was initially based on herbal medicines and massage treatments was out of the economic realm until and unless a breakthrough came with the foreign oriented establishments. Given the significance of Thailand, a country case study is undertaken to highlight the substantial level of health service from the country (Vide Box 4.1).

Box 4.1: Medical Tourism: Thailand

Medical tourism in Thailand happened to start with the increasing demand of cosmetic and other elective surgeries which are not covered by health insurance. These surgeries were less expensive in Thailand and hence the people from the West started coming to Thailand for these particular treatments. Realizing the potential of the business, the specialized treatments were expanded to include general healthcare and preventive treatments. Thailand was too well known for Spas and Well being (Russell 2006, cited from Cohen 2008). In addition to this, the political conflict of 9/11 in USA leads many Middle East patients to log out of USA because of the Visa problems and they are being directed to Thailand (Cohen 2008). This is how Middle East patients mainly the Muslim community became the leading medical tourist group to Thailand. Thailand has really been successful in keeping hold of this community; the facilities provided in some leading hospitals of Thailand are quite unique in some respect. Apart from having a well connected international facility, a well developed international patient centre, Bumrungrad the leading hospital of Thailand in this field holds a proper orientation course on Islam for the employees and that too maintain a Halal Kitchen with a Muslim room prayer. (Edey 2002, cited from Cohen 2008). Thailand has a total of 15 JCI accredited hospitals till 2011 with Bumrungrad the first and fore runner in medical tourism. It is thought to treat 1,50,000 foreign patients annually with the estimates reaching around 5,50,000 in 2007. Other than this, Bangkok

Box 4.1 continues…

Hospital Group, Phuket Hospital, Phya Thai Hospital, Bangkok Dusit medical services Vibhavadi general hospitals are few in the list. Concerns were raised regarding the sustainability of medical tourism in Thailand when the estimated figures were started coming down in 2008 due to the political instability of the economy accompanied by the closures of airports marked Thailand as an unstable economy. This results in the redirection of the medical tourists from Thailand to India. That is how India started sharing a share of Thailand's medical tourists. The proportion of medical tourists in India is much limited in comparison to the domestic population of any economy as a whole. Hence, at this stage, it is very difficult to show the impact of the medical tourists on domestic population. Nevertheless, a possibility of such an impact remains in the near future. The diversion of 240-700 Thai Physicians for every addition of 1,00,000 medical tourists from public to private sector can be justified as a consequence of medical tourism. (Pannarunothai 2004 and Wibulpolprasert 2008, cited in Tolliver 2011)

Table 4.2 gives us the numbers of foreign tourists visiting Thailand for medical procedures.

Table 4.2: Estimates of the medical tourists in Thailand ('000)

Years	Number of medical tourists
1991-97	50
2002	632
2003	730
2004	1,100
2005	350
2006	1,200
2007	1,400
2008	1,300
2009	1,200
2010	2,000
2015(pr)	10,000

Source: Adapted from information referenced throughout this paper.

Singapore, known for aggressive and Malaysia known for concerted and synergetic efforts are closely following the market on medical tourism. The governments of both of

the countries have been taking sincere steps towards extending the health services to the foreign patients. Affected by the Asian crisis of 1997, the private hospitals of these countries faced a serious downturn of domestic patients. The currency exchange rates caused the price of the imported medical equipments to rise. The hospitals were facing the difficulty in managing their operating costs and the profit margin were also coming down. Faced with such a situation, the private hospitals looked for the market abroad. These two countries have the advantage of a systematic data collected on a national basis. Tables 4.3 and 4.4 have reflected the growth of this business in terms of the numbers and the revenue earned by these two countries in selected years.

Table 4.3: Growth in the number of medical tourists

Countries	2002	2007
Singapore	200,000	4,10,000
Malaysia	103,000	3,00,000

Source: Compiled by author

Table 4.4: Revenue earned through medical tourism

Countries	Revenue (in $ million)	
	2002	2003
Malaysia		40
Singapore	420	
Thailand	482	

Source: Singapore Tourism Board, cited from Arunanondchai & Fink (2007)

Korea is also an emerging country which has treated 10,000 patients in 2008 (Medical Tourism Magazine 2008). As per the limited information on other Non Asian countries, Jordan treated 450,000 patients in 2007 which includes 25,000 from Palestine, 1800 from USA, 1200 UK citizens and 400 Canadians. Costa Rica with 3 JCI accreditation, treats around 1, 50,000 medical tourist annually (Tattara 2010).

4.6 Medical Tourism: India

India has earned a profit of $450 in 2004 and is expected to earn an additional revenue of $2.2 billion in 2012 (CII and McKinsey & Company 2002) from medical tourism. In terms of the inflow of medical tourists, the sector had experienced a phenomenal growth from 10,000 patients in the year 2000 to 180,000 by 2005 (RNCOS 2010).

India is the biggest competitor of Thailand in respect to medical tourism. Historically, India's Medical Tourism accounted for the Yoga and Spas along with the beaches around and greenery. The direction is changing over time with the cutting edge technology coming in the fore front of the patients' choice.

India's National Health Policy (2002) identified that:

"To capitalize on the comparative cost advantage enjoyed by domestic health facilities in the secondary and tertiary sector, the policy will encourage the supply of services to patients of foreign origin on payment. The rendering of such services on payment in foreign exchange will be treated as 'deemed exports' and will be made eligible for all fiscal incentives extended to export earnings".

The policy was followed by the Government initiative to promote the medical travel industry. The then Finance Minister Jaswant Singh in the budget for 2003-2004 called for the objective to promote India as a global health destination. This was the first step which marked the tie up of the medical expertise and travel industry. Medical Tourism was considered as a vital part of India's 'Tourism Year of 2006'.

India is getting the political support of USA too in this respect, after the 1st meeting of the Private Sector Advisory Group (PSAG) of US-India Trade Policy Forum in New York, the Indian commerce minister said that USA is 'keen to ask its insurance company to work with hospitals in India' (Medical Tourism Magazine 2008).

The compiled data on the number of medical tourists coming to India as shown in the Table 4.5 show a steady increase over the years. The data has not been collected through any systematic procedure, but it is being used to give a reflection of the recent trends on medical tourism in India.

Table 4.5: Number of Medical Tourists visiting India ('000)

Years	Numbers
2000-2002	50
2003-2006	150
2007-2009	517
2009-2015 +	585

Source: Adapted from information referenced throughout this paper.
+ Estimated figures using the compound annual growth rate.

At present, under the guidance of an Expert Group on Strengthening of Institutional Mechanism for Regular Collection and Compilation of Data on International Trade in Services set up by MOSPI, a pilot survey on the international trade in health services has been initiated (Economic Survey 2012). The pilot survey had taken place in 8 different cities of India. It is the first initiative of its kind and is expected to project the market for different components of international trade in health services.

4.6.1 Medical tourism: India & SAARC

India not only attracts the patients from the developed countries on the grounds of low costs of treatments but it also attracts the patients from the neighboring developing and under developed countries. The trade between India and SAARC member countries is motivated by the reasons which are different compared to those of the developed countries. For the SAARC countries, India is their nearest destination with a well recognized medical infrastructural facility and availability of skilled health personnel. Above all, factors like unavailability of cutting edge technology in their home countries, cultural affinity between the countries, common economic background, easy availability of VISA, lesser difficulty of communication and easy follow up care makes India a favourite destination for these countries.

The SANEI report of 2010, based on the primary survey of 190 South Asian patients and 20 Indian hospitals catering to the South Asian patients observed that telemedicine as the first Mode of trade in services is still in infancy, only 5 out of the 20 hospitals interviewed practiced telemedicine, whereas almost all the hospitals catered to the foreign patients with the number of patients ranges from less than 100 to 10,000 for the

period of analysis (Vide Table 4.6). The hospitals belonging to the same city has been clubbed together. We see patients from Bangladesh, Bhutan and Nepal abound in all the cities, whereas Mali and Srilankan patients can only be traced in the city of Chennai. Hospitals like AIIMS, Apollo, Global hospital and the health city, Narayana Hrudalaya, Escorts heart and research institute are important hospitals in this respect with patients counting more than thousand for the respective year.

Table 4.6: India and SAARC member countries in Mode 2 Trade in Health services

City	Name	No. of patients	Destination country
Bangalore	Manipal Health System	300	Bd, Bh, Np, Sl
	Narayana Hrudaya	3000	Bd, Bh, Np, Sl
	Sri Jayadeva Institute of Cardiology	200	Bd, Np, Sl
Chennai	Apollo Hospitals	2500	Bd, Bh, Np, Sl, Pk, Af, Ml
	Chetinad Health City	100	Bd, Sl
	Global Hospital and the Health City	10,000	Bd, Bh, Np, Sl, Pk, Af, Ml
	Lifeline Multi Specialty Hospital	86	Ml, Sl
	MIOT	300	Bd, Bh, Np, Sl, Af, Ml
	Sri Rama Chandran Medical collge	200	Sl
Delhi	AIIMS	2000	Bd, Bh, Np, Af, Pk
	Indraprastha Apollo	1000	Bd, Bh, Np, Af, Pk
	Escorts Heart and Research Institute	500	Bd, Af, Pk
	Jaipur Golden Hospital	100	Bd, Af, Pk
Kolkata	Rajiv Gandhi Cancer Institute and Research	800	Bd, Bh, Np, Af, Pk
	Peerless Hospital	600	Bd, Bh, Np
	Rabindranath Tagore International Institute	3000	Bd, Bh, Np
	Ruby General Hospital	1500	Bd, Bh, Np
Mumbai	Tata memorial hospital	1200	Bd, Bh, Np, Sl, Af

Source: Banik et al. 2010

Note: Bd-Bangladesh, Bh- Bhutan, Np-Nepal, Sl-Srilanka, Af-Afganisthan, Ml-Maldives, Pk-Pakistan

4.6.2 Indian states on medical tourism

In tune with the national goal to promote India as a favourable medical destination, the states are also actively participating towards promoting the business.

For setting up Apollo hospitals, Delhi Government in 1980 has allotted 15 acres of land with a total investment of 42 crores. Today Apollo is the most popular destination for the foreigners.

Tamil Nadu Government has opened a new Medical Tourism desk at Tamil Nadu Tourism complex and listed 25 hospitals of Tamil Nadu which will invite foreign patients. At the Pacific Asia Travel Association (PATA), the Indonesian Government has invited Tamil Nadu government to hold a fair of the super specialty hospitals of the state in Jakarta in order to make the Indonesian Patients aware of the facilities available in India.

The Tourism department of Chennai has also listed many hospitals under it with a motive of promoting health care. Chennai has been declared as India's Health capital with 45percent of the health tourists from abroad (Tattara 2010).

The Department of Health and Family Welfare has released an advertisement on Gujarat Medicare tourism. Gujarat is about to develop a Medical Tourism Council with a Memorandum of Understanding signed with the private sector hospitals in this respect. This state is believed to contribute 25percent-31percent of the industry and a growth of 33percent has been registered in the growth of medical tourists in the state (Bhattacharya 2008).

Karnataka is believed to have 8,000 foreign patients on an annual basis. Bangalore is the main hub for the state.

The Maharashtra government in collaboration with the Federation of Indian Chambers of Commerce and Industry (FICCI) – Western Region Council has launched the Medical Tourism Council of Maharashtra (MTCM) (De Souza 2007, cited from Reddy and Quadeer 2010).

Kerala is traditionally well known for its Ayurvedic rejuvenation. Realizing the growing importance of the matter, Kerala Government in association with the Confederation of Indian Industry undertook an International Conference on Medical Tourism in the year 2007. The growth rate of foreign patients in the state has seen an upward trend after the event.

4.7 Advantages of medical tourism

The factors that have a bearing on the market of medical tourism in India are-

- One of the important reasons behind the movement of foreign patients for medical treatment is the cost of treatment. Cost of the treatment is much lower in the developing countries and is likely to be the lowest in India. The cost advantages particularly hold true in comparison with the developed countries. A comparison of costs across the countries for the different kinds of treatments is given in the Table 4.7.

Table 4.7: Comparison of costs among different countries

Treatments	Countries (In $)					
	USA	India	Thailand	Singapore	Costa Rica	Korea
Heart Bypass	80,000-130,000	6,651-9,300	11,000	16,500	24,000	34,150
Heart valve replacement	160,000	9,000	10,000	12,500	15,000	29,500
Angioplasty	57,000	4,998-7,500	13,000	11,200	9,000	19,600
Hip Replacement	43,000	5,800-7,100	12,000	9,200	12,000	11,400
Hysterectomy	20,000	2,300-6,000	4,500	6,000	4,000	12,700
Knee Replacement	40,000	6,200-8,500	10,000	11,100	11,000	24,100
Spinal Fusion	62,000	4,500-8,500	7,000	10,000	25,000	3,311

Source: Medical Tourism Association (2008)

The cost comparisons among the chosen countries and over different types of treatments show that India is the least expensive country in terms of the medical treatment.

Comparing Indian price with that of USA reveals that the latter is 10 to 15 times more expensive compared to India. India shares the closest figures with that of Thailand, the largest destination of medical tourism.

- It is a widely spoken English state with 16 JCI accredited hospitals. Indian hospitals have also started entering into collaboration with the renowned foreign institutes which gives the confidence to the patients seeking for treatments. The Apollo hospitals with its branches in Bangalore, Kolkata and Delhi collaborate with John Hopkins Medicine International is the forerunner in this context. Apollo also encourages telemedicine service; it has a telemedicine network that connects it with its South Asian patients. Other corporate hospitals, like Fortis, Escorts Heart Institute have the collaboration with British United Provident Association (BUPA). Wockhardt –a tie up with Harvard International are also among the few.
- Indian health professionals are widely accepted in the developed countries like USA and UK. The outflow of the health professionals to the developed country, presence of Indian doctors and nurses in the foreign health system creates a sense of belief in the Indian medical system.
- Over and above the innovative capacity of the pharmaceutical industries of India, their soundness in the medical industry win over the foreign patients regarding India's firmness in medicine and health care.
- From the commitments' point of view, GATS agreements have always been more liberal towards this particular Mode of trading health services. The highest share of MFN access is recorded in this particular Mode.
- The disadvantages of the developed countries on account of demographic transition leave them with the shortage of manpower creating the problem of long waiting time to get a surgery done. This enables the patients to come down to the developing country and get required treatment in less time and in lower cost.
- The possibility of alternative medicine, yoga and natural beauty help India in developing as a better medical tourism spot.

- Lastly India's cultural affinity with the South Asian and other European countries is also an important factor behind the growth of medical tourism.

4.8 Implications of Medical Tourism

- In India, there is a possibility that health tourism will end up in serving the wealthy foreigners and will set in 'internal brain drain' for the medical professionals from public to private sector (Tattara 2010).
- Medical tourism is demanding more subsidies and incentives from the Government with the assurance that the amount of foreign currency and revenue earned by the hospitals will be ploughed back to the economy so that the domestic health system could be improved. But, the mechanism by which the benefits of the profit making institutions can be advantageous for local population is very debatable.
- Government in lieu of providing subsidies sets out certain rules for the corporate hospitals. These hospitals are supposed to provide a stated percentage of (30percent) in-patient facilities (IPD) and 40percent out patient diagnostic services (OPD) services free of cost for the people Below Poverty Line (BPL). But the lobbies of the private hospitals are so strong, that they don't respect the rules of the government and refuse the free care to the patients. This leads to the growth of a two tiered system of health care and enhance the possibilities that the wealthy domestic and foreign patients can crowd out the poor ones.

From the available data set and sources of information on medical tourism, it is difficult to draw firm conclusions on its benefits and drawbacks. This problem will continue to exist unless and until initiatives in the form of a national framework for data collection and inter-country agreements on data coalition to enable cross country comparisons are taken up.

4.9 Conclusion

The economic significance of healthcare sector in the overall economic activity seemed to have a scope and unexploited potential for greater international trade in healthcare services. In the context of the Mode on medical tourism, we find that it is gaining a global attention, with developing countries in the forefront of the practice. For Indian states, SAARC member countries are the dominant importer of India's medical resources. Developed countries have also made their foray into the Indian market. There are a wide variety of barriers that affect the Mode on medical tourism. Bilateral negotiations between the countries can be the most accepted method in handling the barriers (Martinez et al. 2011b) but problem lies in the formulation of correct policies in a data vacuumed environment. The research gaps should be addressed with a national framework ensuring a proper collection and compilation of data for the better understanding of the market of medical tourism.

Chapter Five - Trade in Health Services: Case Study of Thiruvananthapuram Hospitals

5.1 Introduction

Located in southern India, Kerala with her lengthy costal belt, large number of beaches, and serene atmosphere is rated as one of the top three tourism destinations in the world by the World Travel & Tourism Council. Kerala has gained an international attention for Health Tourism and is the hub of a traditional but popular alternative medicine, *ayurveda*. *Ayurveda* sector was the pioneer of health tourism in Kerala, but the state is also witnessing a surge in the inflow of medical tourists in dental care and modern medicine (CII 2011). As pointed out by Dr. Philip Augustine, CEO of Lakeshore Hospital, the new focus of the region is on the modern medical tourism, which accounts for the bulk of the visitors these days. The International Medical Tourism conference jointly organized by the Kerala Tourism Department and Confederation of Indian Industry (CII) at Kochi (2007 and 2011) were major initiatives in further honing the strategies to develop the medical tourism sector. Part of their mission is to address the perceived dangers of medical tourism by promoting the accreditation, certification, training of their hospital staff and personnel. Thirty per cent to forty per cent increase in the influx of medical tourists has been recorded in Kerala after the first year's summit. According to the CII- Mc.Kinsey report 2004, medical tourism industry in Kerala is expected to be worth $4 billion by 2017 declaring 2006-2007 as Medical Tourism year for Kerala. Thiruvananthapuram, the capital city of Kerala is an important destination of medical tourists in the state. Thiruvananthapuram is also known as the medical capital of the state with 4 medical colleges and 33 private super specialty hospitals.

As has been argued out before, India is yet to put together a reliable data base on trade in services including health services, which places India at a disadvantageous position with respect to her bargaining power in bilateral and multilateral agreements. Proper

estimation of trade in health services is important to understand the growing significance of this dynamic sector. In the absence of secondary data, collection of primary information becomes inevitable. We have decided to undertake a case study of hospitals in Thiruvananthapuram, which is an important and growing centre of heath tourism in the country. A primary survey of the hospitals of Thiruvananthapuram will help us in exploring the growing intensity of business in the region, besides generating primary information on trade in health services, especially on medical tourism.

5.2 Methodology

5.2.1 Survey Area

The survey was undertaken in the city of Thiruvananthapuram, the capital city of the state Kerala.

5.2.2 Unit of analysis

Twenty Superspeciality hospitals of the Thiruvananthapuram city were surveyed that includes a case study of the Kerala Institute of Medical Sciences, KIMS. Ayurvedic centres were kept out of the survey, for they represented a different segment of the market. . The survey has been done with a structured questionnaire5. Ideally, we should have collected data on 'revenue' for measuring trade in health services, but private hospitals were reluctant in disclosing the information. We had to therefore rely on the 'number of foreign patients' as an indicator of medical tourism. .

5.2.3 Sampling design

- Only the private super specialty hospitals were chosen for the survey.
- All the accredited hospitals (JCI, NABH, ISO etc.) have been included.
- Hospitals with well established website are chosen for survey.

[5] Questionnaire is provided in the appendix.

5.2.4 Interviews

Inspite of their busy schedule, we have managed to carry out indepth interviews with the top management of the selected institutions (Administrative officials/ Personal relation officer / Manager of the Accounts department / Director – Managing director of the hospital / (or some higher ranking officials) on the condition that their identity will be kept confidential.

5.2.5 Time length

The survey was carried out in the months of September-November 2011. The data pertains mainly to the financial year 2010-11.

5.3 Analyzing the data

20 Super-specialty hospitals chosen for the survey are listed out in the Table 5.1. They are private hospitals specializing in different fields. Most of hospitals as referred to are multispecialty hospitals, but we do also find those with the narrow areas of specialization like eye care, infertility treatments. Dentistry as a separate wing of treatment has become extremely popular among the medical tourists. Important specializations along with their developments will be discussed briefly in a separate column.

Table 5.1: Hospitals surveyed in Thiruvananthapuram

Hospitals	Specialty
Kerala Institute of Medical Science	Multi disciplinary super specialty
Credence Hospital	Comprehensive multi specialty hospital
Samad IVF Hospital	Specializes on infertility treatment
S P Fort Hospital	Multi disciplinary super specialty
S.U.T Hospital	Multi specialty hospital
Cosmopolitan Hospital	Multi specialty hospital
Anadiyil Hospital	Tertiary care hospital
Chaitanya eye research centre	Eye hospital
Ananthapuri hospital	Tertiary care hospital
Vasan Eye Care Hospital	Eye hospital
YCDC Dermatology	Dermatology and Cosmetology
The Lords Hospital Anayara	Multi specialty hospital

Table 5.1 continues…

Hospitals	Specialty
Chelsa Medical Care	Tertiary care hospital
Divya Prabha Eye Hospital,	Eye hospital
Jubilee Memorial Hospital	Tertiary care hospital
P R S Hospital	Multi disciplinary hospital
Sree Ramakrishna Hospital	Cooperative hospital
Arumana Hospital	Tertiary Care hospital
Hospitals	**Specialty**
Meditrina Hospital	Multispecialty
Ahaliya Eye Foundation	Eye hospital

Source: Primary Survey results (2011)

The structured questionnaire used for the survey spreads across the four modes of trade in health services with a special reference to medical tourism. It helps us in identifying those hospitals of Thiruvananthapuram that participate in international trade in services. It is useful in understanding the extent of interaction of the hospitals with the foreign patients and the process through which trade takes place in the health sector. Table 5.2 provides an overview of the participation of the hospitals in different modes of health service trade.

Table 5.2: Hospitals and Modes of participation in Trade in Health Services

Sl.No.	Hospitals	Mode1	Mode2	Mode3	Mode 4
1	Kerala Institute of Medical Science	Yes	Yes	No	Yes
2	Credence Hospital	No	Yes	No	Yes
3	Samad IVF Hospital	Yes	Yes	No	Yes
4	S P Fort Hospital	No	Yes	No	Yes
5	S.U.T Hospital	No	Yes	No	Yes
6	Cosmopolitan Hospital	No	Yes	No	Yes
7	Anadiyil Hospital	No	Yes	No	
8	Chaitanya eye research centre	No	Yes	No	Yes
9	Ananthapuri hospital	No	Yes	No	Yes
10	Vasan Eye Care Hospital	No	Yes	No	Yes
11	YCDC Dermatology	No	Yes	No	Yes
12	The Lords Hospital Anayara	No	Yes/No records	No	No
13	Chelsa Medical Care	No	No	No	No
14	Divya Prabha Eye Hospital,	No	No	No	No
15	Jubilee Memorial Hospital	No	Yes/No records	No	No
16	P R S Hospital	No	No	No	No
17	Sree Ramakrishna Hospital	No	No	No	No
18	Arumana Hospital	No	No	No	No

Table 5.2 continues…

Sl.No.	Hospitals	Mode1	Mode2	Mode3	Mode 4
19	Meditrina hospital	No	Potential	No	No
20	Ahaliya eye foundation	No	Potential	No	No

Source: Primary Survey results (2011)

Notes: No records- for those hospitals who cater to foreign patients but have no documentation of their flow. No-for those hospitals that don't cater to the foreign patients

5.3.1 Overview of the modes:

We don't find much presence of Mode 1, i.e. telemedicine practice and foreign investment in the hospital sector i.e. Mode 3. Thiruvananthapuram hospitals participate in international trade in health services primarily by the ways of Modes 2 and 4. Incidentally these two modes ensure face to face interaction between the doctors and patients. Mode 3 is conspicuous by its absence. Even though Mode 1 is supposed to be having some potential its prevalence is limited to just two hospitals.

Regarding Mode 1:

Out of 20 hospitals that were chosen for the survey, only two hospitals have the telemedicine facility. They are KIMS and Samad IVF hospital. Telemedicine installation in the Government hospitals of Thiruvananthapuram is funded by ISRO, whereas they are "Self Paid" for the private ones. The specializations treated through Telemedicine are Tele infertility, Tele Sonography, Tele Endoscopy / Tele microscopy (Genetics and IVF lab) and Teletherapy.

Regarding Mode 2:

Eleven out of the 20 hospitals surveyed have treated foreign patients in the year 2010-11. Most of the hospitals don't have any detailed records of their foreign interaction. This makes it very difficult to analyze the actual estimates of trade in these hospitals. Hospitals could only provide figures of the number of foreign patients treated in their units during the year 2010-11. KIMS is the only institute which keeps a systematic record of foreign interaction. KIMS has undertaken major initiatives for promoting the business of medical tourism luring more than 1.5 lacs foreign patients in the last 6 years.

Table 5.3 gives the figure on the inflow of foreign patients in these hospitals. It also highlights the initiatives taken by these hospitals to foster the development of this mode.

Table 5.3: Foreign patients in Thiruvananthapuram hospitals for year 2010-11 (in nos.)

Sl. No.	Hospitals	No. of patients/year	Countries	Activities to promote
1	Kerala Institute of Medical Science	36,357	Case study	International Patient cell
2	Chaitanya Eye Research Centre	5000	Maldives	Cashless benefits
3	Vasan Eye Care Hospital	1100	Maldives, European countries	Cashless benefits
4	S P Fort Hospital	400-500	Maldives and rarely Europe	No separate activity
5	Ananthapuri Hospital	500	Oman, Maldives	Cashless benefits
6	Cosmopolitan Hospital	250-300	Maldives, Iran ,New Zealand& Europe	No separate activity
7	Anadiyil Hospital	200	Only Maldives	No separate activity
8	Credence Hospital	100	Maldives, USA and rarely from Europe	Travel Desk with special services e.g. accommodation
9	S.U.T Hospital	100	Maldives, Middle East, Denmark	Soon to set up a separate cell on MT
10	Samad IVF Hospital	50-100	Maldives	Telemedicine and package-Treat and Retreat
11	YCDC Dermatology	250-300	Maldives	No separate activity

Source: Primary Survey results (2011)
Note: Cashless Benefits are tie-ups of the hospitals with the Maldives Government. They are reimbursement mechanism for the treatments availed by the Mali patients.

The number of foreign patients for the top three hospitals KIMS, Chaitanya eye and Research centre and Vasan eye care ranges from 1000 to 35,000 and for the rest of the hospitals, it ranges from 100 to 500. This also supports our contention that the distribution of health service prodders engaged in the business of overseas trade

institutions is highly skewed. Travel desk at the airport and the health packages during the busy season months are some of the other benefits provided to the foreign patients. Hospitals other than KIMS consider the patients of foreign origin at par with the native patients. They don't have any differential pricing strategy for the non native patients.

Regarding Mode 3:

As has been mentioned in the Table 5.2, none of the hospitals have any foreign subsidiary. But foreign collaborations in terms of insurance tie-ups like 'The Madana Plus Refeeral letter holder' and the 'Card Holders of Allied Corporate Clients of Maldives' are prevalent. Hospitals like KIMS, Ananthapuri hospital and Chaitanya Eye Research Centre have an insurance tie up with the Mali government, through the mechanism of cashless benefits. Such a tie up works as a reimbursement mechanism for the Mali patients.

Regarding Mode 4:

There has been a mixed opinion among the stakeholders regarding the movement of medical professionals and its implications for the health care sector of the state. Almost all those hospitals that practice Mode 2 do practice Mode 4. Hospitals like Sree Uthradom Thirunal (SUT), and SP Fort, Cosmopolitan hospital admit that shortage of medical personnel would be a natural outcome. After MBBS, junior doctors who practice in the hospitals tends to move out for higher education. Retaining the best doctors in the hospitals depends on two things: the wage paid to them and the working condition provided. Both are very important determinants in determining the ability of the hospitals to retain the doctors.

5.3.2 Treatments availed by the medical tourists

Kerala and so Thiruvananthapuram is known both for Modern and Alternate medicinal practice. We can select out the following specialty as the most popular ones among the medical tourists.

Modern Medicine includes the treatments of:

Cardiac Care, Orthopaedic, General Surgery, Cosmetic Treatment, Ophthalmology, Fertility Treatment and Dental care

Alternate Medicines

Ayurveda and other traditional medical practices

Multi treatment facilities:

Most of the hospitals mentioned in Table 5.1 are multi-specialty hospitals, the treatments ranges from Cardiac care, Orthopedic to General Surgery. SUT hospital, Ananthapuri, KIMS, S P Fort, Cosmopolitan Hospital and Lords Anayara Hospitals are the important ones in this connection.

Ophthalmology:

Whereas we find a cluster of Ophthalmology treatment centres like Vasan Eye Care, Divya Prabha Eye Hospital, Chaitanya eye research centre and Ahaliya Eye Foundation in attracting the medical tourists. Eye Care services with their cataract, cornea, retina, refractive treatments are the major attraction for the foreign patients. KIMS being an outlier in the number of foreign patients will be taken up in a separate case study. But other than KIMS, it is the Ophthalmology centres that ranks among the highest attracter of medical tourists.

Infertility treatments:

Mali patients abound in availing the infertility treatments. In this connection, Credence Hospital is the first comprehensive women's hospital in Kerala. Samad IVF Hospital, the first NABH accreditated and ISO 9001:2010 certified hospital in India specializes in the treatment of infertility is endowed with two distinguished achievements - South Kerala's first test tube baby was born at Samad Hospital on 24-09-2000 and South Kerala's first blastocyst test tube baby was born at Samad on 28-08-2001. Anadiyil hospital with a small complex is also known for specialization in maternity treatments.

Cosmetic Surgery:

Cosmetic surgery was one of the initial treatments for which patients started travelling overseas to seek the medical care. Treatments like face lifting, cosmetology and dermatology were not covered by insurance. To avail these kinds of treatments, patients without insurance coverage tend to travel overseas for medical care. Yogiraj Cosmetology and Dermatology centre is known for delivering these kinds of services mainly to the Mali patients.

Dental Tourism:

Dental Tourism in Kerala is an increasingly important segment of the Kerala medical tourism market. Dental tourism is a medical treatment where patients travel for the cost effective dental care to other countries combined with taking a pleasure vacation. Observations collected from six dental centres of the Thiruvananthapuram city reveal the presence of developed countries as the biggest importer of the dental services. As contrary to the hospitals of Thiruvananthapuram which observe the slew of Maldives patients, dental care centres mostly receives and treats patients from USA, UK and other European countries.

The six dental centres chosen for survey along with their respective information are given in the Table 5.4.

Table 5.4: Dental Clinics engaged in medical tourism

Sl. NO	Name of the centres	Patients (in nos.)	Countries
1.	Concepts Dental Care	100-500	USA, UK, Middle East
2.	Dental Designs	< 100	USA, UK, Middle east, Maldives
3.	Dental Practice	< 100	Maldives
4.	Cosmetic Dental centre Pvt. Ltd	100-500	USA, Germany, Middle East
5.	Kailash Centre	>1000	Middle East
6.	Super Specialty Dental Centre	100	USA, UK, Scotland, Germany, Russia

Source: Primary Survey results (2011)

Dental tourism through the mode 2 is the popular practice of the clinics. But telemedicine in the form of store and forward of images is also been practiced in these clinics. Dental surgeons believed that it is the quality of care and the cost advantages that directs the patients towards the city. Patients mainly seek the procedures of Tooth Whitening, Cleaning, Impaction, Extraction, Scaling, Tooth canal treatments, capping of the teeth etc. Unlike the general hospitals, they don't have the practice to report it to the nearest police station with each new arrival of medical patients neither they have any reimbursement facility on dental procedures except for the STAR Health Insurance which cropped up very recently. Clinics do charge a differential pricing for the medical tourists, charging 50 percent more to the Mali patients and a double amount to the patients of developed countries as compared to the domestic patients. But the service rendered is never at the cost of the domestic patients. The income of the foreign patients accounts for around 10percent of the total income of the clinic. In most of the cases the patients are facilitated by the agent operators who helped in their process of interaction to the doctors. These agent operators act as a potential source of promoting these clinics at their initial stages. Nevertheless, it is important to mention that foreign patients after getting their treatments do visit the clinics for the next consecutive years on their visit to India.

Thus, it can be stated that, the Thiruvananthapuram hospitals are exposed to the idea as well as potential of trade in health services through different modes. The combinations of different specialties also fostered the development of medical tourism in the city. Hardly, any hospital maintains a separate record for the foreign patients. This stands as a barrier to the utilization of the potential. KIMS has identified the potential of the market and has made separate arrangements to utilize the potential. The hospital has a separate wing specialized in international trade besides having a well maintained database on the inflow of the patients. The following section will take a close look to the dynamics of KIMS in handling the medical tourism market.

5.4 A Case study of KIMS

KIMS is a Private Multi super specialty hospital, established in 2002 with the total bed strength of 450 and is accredited with the National Accreditation Board for Hospitals & Healthcare Providers (NABH) and The Australian Council on Healthcare Standard (ACHSI). The size of the economic activity of KIMS can be best defined through the indicators of total consultations of patients, total revenue of the hospital and the amount of profit earned by the hospital. Table 5.5 gives data on the total number of patients (both domestic and international) treated in KIMS for the past 6 years. The hospital has been registering fairly high growth rates over the years when measured in terms of total consultation of the patients.

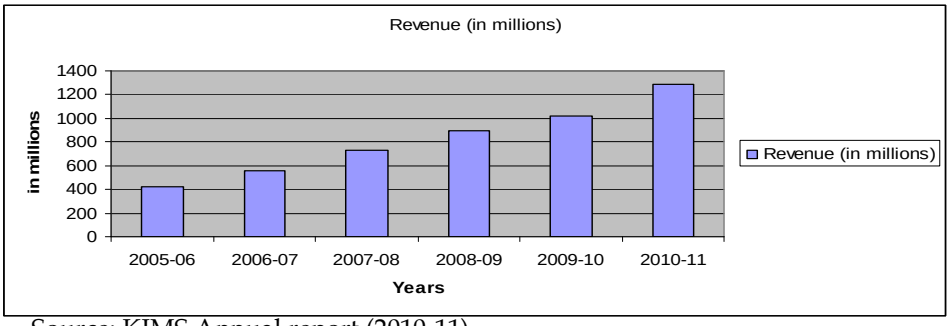
Table 5.5: Total consultations of patients

Years	Total Consultation	percent growth
2005-06	142,202	-
2006-07	179,585	26.29
2007-08	222,174	23.72
2008-09	253,575	14.13
2009-10	294,972	16.33
2010-11	364,633	23.62

Source: KIMS Annual report (2010-11)

Income indicator of KIMS has shown a substantial increase during the financial year 2010-11 (KIMS 2011). The net profit percentage increased to 12.43percent during this financial year as compared to 9.62percent registered during the previous year. The total revenue earned by the KIMS as shown in the Figure 5.1 has increased over the years.

Figure 5.1: Revenue earned by KIMS



Source: KIMS Annual report (2010-11)

This marked rise in the income indicators has prompted the hospital to undertake a special study on the inflow of foreign patients and foreign exchange earning (KIMS 2011). The inflow of the foreign patients has increased in absolute numbers, though its share in the total consultation has come down in the recent year (Vide Table 5.6). If looked from the perspective of FOREX earning, we can track an increase in the FOREX earning intensity of the hospital.

Table 5.6: Foreign consultation in comparison to the total consultation of the hospital

Items	2009-10	2010-11
Consultation foreign (nos.)	35,854	36,357
Total consultation	2,94,972	3,64,632
Percentage of total consultation	12.16	9.97

Source: KIMS Annual report (2011)

The hospital has made substantial increase under foreign exchange earnings during the financial year 2010-11 compared to the previous year. The FOREX earning intensity defined as the share of FOREX earning as a percentage of income has increased for the year 2010-11 (Vide Table 5.7).

Table 5.7: FOREX earning of KIMS

Items	2009-10	2010-11
FOREX Earnings (in millions)	73.49	109.51
Total earnings (in millions)	1019.6	1291.17
percent of total earnings	7.21	8.48

Source: KIMS Annual report (2011)

KIMS has been awarded the Health Tourism Award 2004-2005 instituted by the Government of Kerala, for earning maximum foreign exchange and for attracting most number of patients from overseas.

5.4.1 General procedure of treatment

KIMS takes care of 40 specialty treatments, which extend from general medicine, surgery, fertility treatments to Ayurvedic rejuvenation. It has a separate wing for cancer treatment named KIMS Pinnacle Comprehensive Cancer Centre. KIMS holds a separate entity for international patients called International Patients Relations. Understanding the importance of cultural differences and the uncertainties that go with them, KIMS International Patient Care center ensures that the foreign nationals can sit comfortably, away from the main reception crowds and they are assisted and directed through KIMS for doctor's consults, lab, radiology, reports and even follow-ups and appointments to enable a hassle-free procedures. KIMS is equipped with all the modern facilities like internet, fax and telemedicine procedures which enable an easy access for patients across the globe. As soon as a foreign patient reaches Thiruvananthapuram, KIMS group meet them at the airport and ensure their comfortable visit to the hospital. The group takes care of their stay in Kerala along with Visa formalities and ticket booking etc. After the patients' treatment phase gets over, guided tours in and around the city are arranged for the patients and also for those who accompany the patients.

But patients face complexities in the process of getting clearances to be treated in a foreign country. All the foreign patients visiting the hospital need to report in person to the nearest police station and to the Commissioner of police. If the patient fails to present there in person, the family members/ relatives accompanying him need to do the necessary proceedings. The process of getting the clearances is reported to be time consuming and complex specially for needed to be done in an alien country.

5.4.2 KIMS: Country wise analysis

The initiative of the hospital in undertaking a separate study on the foreign patients allows us to access a data series of 6 years. The data set is a country wise representation on the estimates of foreign patients. KIMS receives patients from 77 countries, these being both the developed and developing ones. These 77 countries can be further categorized into three heads based on consistency of patients from these countries.

i) Consistent country- from where patients can be recorded for all 6 years.

ii) Irregular countries- Patients can be observed for a maximum of 2 years.

iii) Regular countries- Countries that are neither consistent nor irregular, i.e. from where patients can be observed for more than 2 years but less than 6 years.

Consistent countries:

KIMS has been receiving patients from the consistent countries every year since 2005-06. Amongst 77 countries, 32 countries have a consistent flow of patients. Table 5.8 ranked the 32 countries accordingly in terms of their number of patients. KIMS observed the maximum number of patients from Maldives, a SAARC country accounting for 95percent of the hospital's total foreign patients. The top 3 countries also include UK and Oman who had observed more than a thousand of foreign patients in last 6 years.

Table 5.8 Countries with consistent flow of patients

Sl.no.	Country	2010-11	2009-10	2008-09	2007-08	2006-07	2005-06	Total
1	Maldives	34336	33965	35971	28339	20848	15560	169019
2	UK	222	293	267	425	401	204	1812
3	Oman	420	360	181	133	94	24	1212
4	UAE	166	145	261	149	138	39	898
5	Germany	138	178	141	130	130	142	811
6	USA	127	150	153	192	80	98	800
7	Italy	110	117	73	55	71	35	461
8	Saudi Arabia	73	55	71	54	38	35	326
9	Switzerland	45	46	46	39	71	31	278
10	Malaysia	47	23	21	88	42	39	260
11	France	40	41	44	44	44	52	255
12	Bahrain	72	35	32	32	32	42	242
13	Russia	68	39	29	26	19	1	182
14	Sweden	29	32	24	16	22	25	148
15	South Africa	28	13	24	11	36	17	129
16	Canada	36	26	16	20	20	14	122
17	Australia	10	19	16	28	28	21	109
18	Kuwait	29	14	9	6	31	10	99
19	Belgium	4	20	25	22	22	15	93
20	Ireland	13	20	35	8	4	13	93
21	Holland	21	31	13	11	11	2	90
22	Qatar	13	7	13	8	20	14	75
23	Austria	20	19	10	15	15	6	74
24	Korea	14	8	3	7	20	20	72
25	Sri Lanka	4	13	26	5	16	8	72
26	Lebanon	6	5	13	11	15	9	59

Table 5.8 contd.

27	Japan	19	8	9	12	2	6	56
28	Spain	7	7	12	11	11	4	52
29	Singapore	4	3	11	15	12	5	50
30	Denmark	25	8	3	5	5	5	46
31	Czech Republic	1	2	3	7	7	4	31
32	Philippines	4	1	1	3	1	1	11

Source: Primary Survey results (2011)

Irregular countries:

Patients from these countries don't come on a regular basis. Patients can be traced for not more than 2 years from these countries. Absence of an authoritative agency makes it very difficult to segregate the patients who have come for leisure and exclusively for medical purposes. Amongst 77 countries, 22 are irregular countries (Vide Table 5.9). They have not developed as potential source countries for the hospital.

Table 5.9: Countries with irregular flow of patients

Sl.No.	Country	2010-11	2009-10	2008-09	2007-08	2006-07	2005-06	Total
1	Alaska	2	0	0	0	0	0	2
2	Costa Rica	0	0	0	17	17	0	34
3	Estonia	0	9	1	0	0	0	10
4	Guatemala	0	0	1	0	0	0	1
5	Iceland	0	0	0	3	0	0	3
6	Indonesia	0	0	7	1	0	0	8
7	Iraq	0	0	0	1	0	0	1
8	Croatia	0	0	2	0	0	3	5
9	Kyrgyzstan	0	4	0	0	0	0	4
10	Mauritius	0	0	24	0	0	0	24
11	Rwanda	0	3	2	0	0	0	5
12	Scotland	0	0	0	0	11	0	11
13	Serbia	0	0	2	0	0	0	2
14	Syria	0	0	1	0	0	0	1
15	Thailand	0	1	0	0	2	0	3
16	Uzbekistan	0	0	0	0	0	6	6
17	Chile	32	0	0	0	0	0	32
18	Kazakhstan	11	0	0	0	0	0	11
19	Latvia	1	0	3	0	0	0	4
20	Pakistan	1	0	0	0	0	0	1
21	Uzbekistan	0	0	0	0	0	6	6
22	Nigeria	10	23	0	0	0	0	33

Source: Primary Survey results (2011)

Regular countries

Countries listed in Table 5.10 are regular countries. They are ranked according to the number of the foreign patients visiting the hospital. They are not consistent countries but patients from these countries can be recorded for more than 2 years.

Table 5.10: Countries with regular flow of patients

Sl.No.	Country	2010-11	2009-10	2008-09	2007-08	2006-07	2005-06	Total
1	Tanzania	5	28	20	20	0	0	73
2	Norway	17	30	1	2	11	0	61
3	Brazil	0	1	1	16	16	15	49
4	Kenya	23	10	3	6	0	0	42
5	Israel	3	4	21	0	6	3	37
6	Finland	4	5	3	12	12	0	36
7	Yemen	13	0	20	0	2	0	35
8	New Zealand	14	0	4	14	0	0	32
9	Iran	20	0	4	2	0	0	26
10	Poland	7	5	4	7	1	0	24
11	Zambia	0	11	0	0	4	5	20
12	Ukrain	11	2	0	2	0	2	17
13	Portugal	3	5	5	0	1	0	14
14	Afghanistan	0	1	6	2	2	2	13
15	Nepal	1	0	10	2	0	0	13
16	Slovenia	5	1	6	0	0	0	12
17	Bangladesh	3	3	5	0	0	0	11
18	Tibet	0	0	5	2	2	1	10
19	China	2	0	0	3	3	1	9
20	Egypt	1	0	1	3	3	0	8
21	Greece	5	2	0	0	0	1	8
22	Taiwan	3	2	2	1	0	0	8
23	Hongkong	1	0	0	1	1	0	3

Source: Primary Survey results (2011)

We can figure out the combinations of ASEAN, OECD and SAARC member countries in the three different categories of countries. Different associations differ in their reasons of irregularity. Thailand and the other ASEAN countries are themselves known for being the biggest hub of medical tourism in Asia, they export health services to the rest of the world. Countries like Pakistan and her neighboring states face Visa restrictions, which

position them among the irregular countries. On the other hand, for the South Asian Association for Regional Cooperation (SAARC) member countries, factors like cultural affinity, inadequate availability of medical services back home and proximity between the countries are the influential factors behind the movement of the patients.

Table 5.11 gives the distribution of the patients of the SAARC member countries coming to India.

Table 5.11: Inflow of patients from SAARC member countries

Sl.No.	Country	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Total
1	Afghanistan	2	2	2	6	1	0	13
2	Bangladesh	0	0	0	5	3	3	11
3	Maldives	15560	20848	28339	35971	33965	34336	169019
4	Nepal	0	0	2	10	0	1	13
5	Pakistan	0	0	0	0	0	1	1
6	Sri Lanka	8	16	5	26	13	4	72

Source: Primary Survey results (2011)

Medical tourism has not developed as an extensive procedure for all the Indian hospitals. It has not expanded as a general procedure to be practiced in all the states. Medical tourism is operated from a few hubs of India. Patients of the SAARC countries choose to go to that hub which lies in the proximity to their country. Thus distance can be attributed as a driving force to the practice of medical tourism. For example, patients from Bangladesh avail the treatment from the hospitals of Kolkata. The geographical location of Pakistan and Afghanistan directed the flow of these patients to Delhi and other North Indian states. Similarly patients from Maldives and Sri Lanka prefer to move towards Thiruvananthapuram (Kerala), Bangalore and other South Indian states. As is evident from the case study, KIMS receives the consistent flow of patients only from Maldives and Sri Lanka. It is not the cost advantage that determines the movements of the SAARC patients to India, but the unavailability of medical care in the home country together with the non economic factors like cultural affinity and language.

Association of South East Asian Nations (ASEAN) countries themselves are the biggest exporter of health services, especially Thailand. Medical services of the ASEAN countries have recently acquired an international reputation, attracting a rapidly growing foreign clientele. These countries themselves enjoy the comparative advantage in their health sector. It is likely that they will not be an important importer of India's trade in health services. But, countries like Singapore holds a Comprehensive Economic Cooperation Agreement, 2003 where healthcare has been highlighted as one of the key areas for greater Singapore-India collaboration. Following such bilateral agreements and initiatives of further collaboration, continuous flow of patients can be observed for the countries of Singapore and Malaysia (Vide Table 5.12).

Table 5.12: Inflow of ASEAN member countries

Sl.No.	Country	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Total
1	Thailand	0	2	0	0	1	0	3
2	Indonesia	0	0	1	7	0	0	8
3	Malaysia	39	42	88	21	23	47	260
4	Philippines	1	1	3	1	1	4	11
5	Singapore	5	12	15	11	3	4	50

Source: Primary Survey results (2011)

OECD countries constitute a group of 34 countries. Amongst the 34 countries, 29 countries have been figured out in the KIMS data source. These are the developed countries with well established medical institutions. But disadvantages in the form of age structure, demographic transition, higher waiting time for the surgeries and treatments, high cost of treatments lead the patients to move to other countries. The well known medical structure of India, country's renowned medical professionals working at different developed countries sets a confidence in the India's medical resource. This is complemented by the low cost of treatment and a quality care. Seventeen of those 29 OECD countries have a consistent flow of patients and 11 of the rest are Irregular

countries. The lists of OECD countries ranked under the categories of Consistent countries (Vide Table 5.13) and Irregular countries (Vide Table 5.14) are given below.

Table 5.13: Inflow of OECD Countries 'Consistent countries'

Countries	Total (nos.)
UK	1812
Germany	859
USA	800
Italy	461
Switzerland	278
France	265
Sweden	148
Canada	132
Australia	122
Belgium	108
Ireland	93
Austria	85
Korea	72
Japan	56
Spain	52
Denmark	51
Czech Republic	24

Source: Primary Survey results (2011)

Table 5.14: Inflow of OECD Countries 'Irregular countries'

Countries	Total (nos.)
Norway	61
Israel	37
Finland	36
Chile	32
New Zealand	32
Poland	24
Portugal	14
Slovenia	12
Estonia	10
Greece	8
Iceland	3

Source: Primary Survey results (2011)

KIMS also experience patients from countries that don't count under the categories of SAARC, ASEAN and OECD countries. Among the non member countries, we find 8

consistent countries, 6 countries belonging to the regular category and 17 irregular countries with patients ranging from unity to more than a thousand (Vide Table 5.15).

Table 5.15 Non member countries

Category	All 6 years	>=2 &<=6	Less than 2 years
	Consistent	Regular	Irregular countries
No. of countries	8	6	17
No. of patients	90- 1200	9 to 50	1 to 34

Source: Primary Survey results (2011)

5.5 Conclusion

Hospitals located in the city of Thiruvananthapuram are exposed to the idea of trade in health services and are trying to exploit the upcoming market. Kerala's natural beauty, availability of wide range of specialization and availability of highly specialized medical professionals are working behind the development of this practice whereas administrative regulations in the process of getting clearances, lack of proper documentation of data are some of the potential barriers to the growth of this sector. Keeping with the all India trend of trade in health services, a skewed participation of the hospitals in the international market is observed even for the Thiruvananthapuram hospitals. KIMS is the only player who is tapping the medical tourism market significantly. SAARC member countries are the major trading partner of the hospitals with Maldives and Sri Lanka as the most consistent countries. Pertaining to the maximum physical interaction through the modes of medical tourism and movements of the medical professionals, these two modes appear to be the most practiced modes of trading. Nevertheless, it should also be noted that hospitals are also experiencing patients from other developed countries be it in small numbers in the present situation. Proper identification and recognition of the dynamicity of the concept of medical tourism will bring in more initiatives in the state which can act as a potential means towards achieving a high growth rate in the overall trading of health sector.

Chapter Six - Conclusion

Despite severe limitations on the availability of data on trading health services, the project has tried to unfurl the trade in health services as a niche area of India's comparative advantage. India should aim at exploiting its comparative advantage in traditional and alternative medicine which could address the emerging issues of health service trade. The recognition of India's medical resources helped India in emerging as a major destination for the medical tourists.

Box 6.1: Developments of Traditional Medicine in India

Exposure of India's medical system in the international market follows from the initiatives taken in exploring the Ayurvedic potential of the country.

- 1978- 'Traditional Medicine Programme' by WHO which increases the credibility of Indian system of medicine, *Ayurveda* Health Care Declaration of Alma Ata.
- 1988- Realizing the importance of *Ayurveda*, few institutions in India started a short term training courses for the foreign nationals.
- 1989- In UK, The Indian *Ayurveda* lobby controlled by *Ayurveda* Company of Great Britain was established.
- 1989- European Institute for Scientific Research on *Ayurveda* (EISRA), established in Netherlands which started attracting Indian Ayurvedic personnel to impart academic knowledge in this institute.
- 1992- One year diploma programme was conducted by the International centre for Ayurvedic studies in Gujarat University, it is being documented that interested participants of 43 countries came and completed the course.
- 1995-Indian Government enters into collaboration with National Institute of Health, USA to introduce course on the *Ayurveda*, in this respect, California college of *Ayurveda* which was the only formal institution dealing with formal education on *Ayurveda* has been established.
- 1997- Hungary has given *Ayurveda* an official recognition as a medical procedure in their country.
- 1999- GOI signed a MOU with the NAAMI – AYU Medical Centre, Moscow.
- Exports from India – 17 cr in 1992-93 to 98 cr in 1998-99
- Exports to USA - 47 lakhs in 1992-93 to 8 cr. In 1998-99
- Exports to UK- 5 lakhs in 1992-93 to 1 cr. in 1998-99
- 2000- UK house of Lords subcommittee on Complementary and Alternative medicine, reclassified *Ayurveda* as group one medical procedure.

Box 6.1 continues…

- 2001-International conference in Gujarat *Ayurved* University concludes with signing a MOU of Gujarat Ayurvedic University with Japan, Australia, Italy and USA.
- 2002-The international *Ayurveda* Foundation between Europe and India was founded.
- 2004-The Oriental College of Netherlands founded jointly by the Indian system of medicine is running two courses on *Ayurveda*.

The sense of confidence that rests on the medical resources of India is brought up with and is getting reflected in the present trends of medical culture. GATS agreements through the four modes of health trade are a major contributing factor that shaped the medical system prevailing today. But making commitments under GATS is very different from unilateral liberalization. Unilateral liberalization can be reversed if deemed to be damaging but multilateral liberalization is legally binding and effectively irreversible (Chanda 2002).

6.1 Interlinkage of the modes:

While the GATS is a conceptual framework for understanding and analyzing trade in services, it is important to recognize that in reality, it is often difficult to distinguish between the different forms of trade in services (Chanda 2006). Migration of 'professionals and technical persons' which include the category of scientists, lawyers, engineers, teachers, doctors and others were recorded from 1970s. The movement of these professionals started long before the agreement of GATS was signed. The demand of the Indian skilled persons, in this case the medical professionals was supplemented by an independent move by the WTO countries through the GATS commitments. Movement of natural persons is the first mode to answer to the call of international demand of medical services. The impact of this 'high skilled migration' in the form of Brain-drain, emerged as a serious concern to the economy especially when the availability of doctors per 1000 of population is only 45 in India. The competitiveness of Indian medical professionals in the international market boosted the foreign

collaboration of Indian hospitals with the well known medical institutes like Harvard, Johns Hopkins medical college, BUPA and Mayo clinic etc. Thus health sector saw a reform in terms of foreign direct investment in the hospital sector. Foreign Institutional Investment, External commercial borrowing, Long term bank borrowing, private equity funds, Venture capital funds individual investors through NRIs are the other potential foreign financing. Health sector saw a huge investment of $379 million by USA in Indian hospital sector in 2007. This marked the presence of the Mode 3 in Indian health sector. The support of Government of India through tax incentives and subsidies also complemented the growth of corporate private hospitals both foreign and non foreign funded.

The tie-up with the respective foreign institutes gave the foreigners a way to come all along to India to get their medical treatment done. In this respect, India got the twin advantage of low waiting time, less cost of treatment and quality care treatment practiced in the developing country. These phenomenon leads to the movement of the patients from one country to another for getting their medical treatment done, thus how the whole concept of medical tourism i.e. mode 2 of the trade in services started. Uninsured patients for the sake of getting those treatments not coming under the purview of insurance also encourage medical tourism. On one side, the movement of health professionals were thought to create a scarcity in the domestic hospitals and on the other, it is the inflow of the medical tourists that are expected to crowd out the domestic population and will also lead to the crowding out of health professionals from public to private sector hospitals. In such a scenario where health services has been liberalized with the three modes opened up for the international market, the serious challenge being posed health sector is how to bring the whole economy under the shelter of health reforms so that the fruits of benefits reach to all. It was viewed that the benefits of government tax subsidies to private sector was only reaching a certain section of the population. The cost incurred in getting treatments in private hospitals could not be met by another section of the population. As a solution to this problem,

health sector came up with modern technologies in treating far off distant placed patients. The urban areas saw the cluster of medical professionals, whereas the rural area which were by then devoid of proper primary health centres, basic health care , adequate doctors were connected with electronic information and communication mechanism to deliver medical services. This mechanism of treating patients is called telemedicine, where patient can get the diagnosis, treatment, consultation of the doctors without being present there physically. All the information will be stored and forwarded to the specialists through electronic communication. The use of telemedicine in trading health services is at a nascent stage, it mainly occurs through tele-consultation. Medical tourists after returning back to their home country tend to suffer with the follow up care. Mainly the doctors of the home country are reluctant in taking up these cases. Telemedicine facilities enable the patients to contact the required overseas doctor overcoming the geographical barriers and regulatory barriers.

There is much evidence to indicate the interdependence of the four modes simultaneously. But this interdependence doesn't always work in the way to foster the growth of the other but it can also lead to the substitution across the modes and restrictions of one mode putting limitations on the other.

6.2 Summary of the thesis

The major objective set forth for the thesis was to explore the trade that is taking place in the health sector. It aimed at identifying the companies that are engaged in the international trading of the health services and in describing the ways a country trade in the international market.

The introductory chapter introduces the GATS commitments taken by India in the health sector. Analyzing the commitments reveal their skewness in the Uruguay round which thereby is improved upon in the next revised rounds of negotiations. The trend is no different for the modes of the health service supply. Though India was very skeptic

in opening up the modes of the health service, the revised offers of India has assigned a full commitments in all the four modes of health service trade.

The academic contribution towards realizing the importance of trade in health services has been detailed down in the Chapter 2. The review of the relevant developments of health trade has been supplemented with an analysis of health companies. The analysis is based on the CMIE data which has a listing of 137 companies. The companies are categorized in two categories ranked on the basis of their income earned. Even the top 20percent of the companies don't show much trading intensity though they share more than 80percent of the total FOREX earning and spending in absolute figures. Few companies with a lower share of income appeared to have a higher intensity of trade mainly because of the nature of the product produced. The macro picture evince that the whole concept of trading health services has not yet emerged as a popular concept, its emergence and establishment are limited to few companies, few modes and few countries.

With this background, the next two chapters dealt with identifying and exploring the ways a company trade in the international market. As per the GATS guidelines, there are four modes of trading health services. The first three modes such as Telemedicine, FDI in health sector and Movement of natural persons have been covered in the Chapter 3. FDI in health sector is calculated using the proxy FDI in hospital sector and Medical & surgical appliances. We don't find much evidence of FDI in hospital sector. Many of the hospitals with FDI approval don't exist on ground with the amount of approval being used for some other purposes. Though there is a liberal policy of 100percent FDI through the RBI route, very few foreign affiliates have made their entry into the Indian market and most of the foreign interaction is on the basis of collaboration and tie ups. Mode 1 is at the nascent stage which has not yet developed proper links with the international market. The initiatives and the projects facilitates the domestic utilization of the means of treating patients, corporate hospitals only have few installations in the international market which mostly caters to the SAARC member countries. Trade in

health services through the movement of the natural persons can be traced since 1970s, the foremost way of trading in the international market. Exploring the trade potential through this mode depends upon the commitments taken by the member states in this sphere. Importance of this mode encourages India to put forward a list of requests to the developed states asking for more liberal commitments in this mode.

Chapter 4 has given special focus on the mode of medical tourism. In the global context, medical tourism is majorly practiced by the developing countries, both Asian and Non Asian. Thailand is the biggest hub of medical tourism in Asia followed by India. Patients hail from both the developed and the developing countries to the destination country for seeking medical treatments. Not all the Indian states have adapted this practice but we can locate few hubs exploring their comparative advantage. Important of them are Delhi, Mumbai, Kerala, Chennai, Bangalore and Kolkata. The reasons behind the patients' flow from different countries depend on specific advantages India enjoys and disadvantages their home country incurred. But conclusive arguments on the extent of the growth of medical tourism depend on the availability of national data framework. Facing the limitations, the chapter has tried to create a time series data on the inflow of foreign patients both for India and Thailand. This is possible through a proper coalition and compilation of data as can be located from the whole set of literature on medical tourism.

In this context, a primary study on the hospitals of Thiruvananthapuram becomes really important. The study is on 20 private multispecialty hospitals with a case study on KIMS. The survey highlighted the significance of Medical tourism and Movement of natural persons as the most popular mode of trade in health service. Majority of the countries have a consistent flow of the patients over the years, the most important being Maldives with the maximum share. Inflows of the Mali patients are not exclusively determined by the cost advantages but by cultural affinity and geographical distance between the two locations. The inflow of the foreign patients has positively affected the

income indicators of the hospital which leads to the formation of a separate wing for the international patients.

Though a vast literature covers the topic of health services, GATS and multilateral trade negotiation, but they are mostly confined in analyzing the commitments pertaining to the sector. Anecdotal evidences and case studies are the common means of establishing the facts on international trade in health services. Situation will continue to be the same if the data gap is not addressed properly. National data collection, coalition and sharing of information among the various stakeholders will help in addressing some of the complex issues of health services trade. Concerns on the impact of medical tourism on the domestic health should be addressed in a way which could ensure the sustainability of the domestic health sector. Exploiting the potential of health trade market will depend on balanced policies and regulations which are beneficial to the destination and source countries. Regional cooperation among the countries, mutual recognition agreements for the medical professionals and implementation of policy to protect the rights of the consumer is some of the ways which could ensure the flow of medical patients across countries and growth in the trade in health services.

Bibliography:

1. Adams, O., & Kinnon, C. (1998). A Public Health Perspective. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective*. Geneva: UNCTAD-WHO.

2. Adkoli, B. V. (2006). Migration of Health Workers: Perspectives from Bangladesh, India, Nepal, Pakistan and Sri Lanka. *Regional Health Forum*, *10*(1), 49–58.

3. Adlung, R., & Carzaniga, A. (2001). Health services under the General Agreement on Trade Services. *Bulletin of the World Health Organization*, *79*(4), 352–364.

4. Apollo Hospitals. (Undated-a). Listing of Healthcare Facilitators. Apollo Hospitals Enterprises Ltd. Retrieved from www.apollohospitals.com/apollo_pdf/table.pdf

5. Apollo Hospitals. (Undated-b). *Annual Report: 2011* (Annual Report). Chennai, India: Apollo Hospitals Enterprise Limited. Retrieved from http://www.apollohospitals.com/apollo_pdf/Annual_Report_FY_March_2011.pdf

6. Arunanondchai, J., & Fink, C. (2007). *Trade In Health Services In The ASEAN Region*. World Bank Publications. Retrieved from http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-4147

7. Baby Care Hospital | Baby Care Hospital in Delhi | Best Baby Care Hospital India. (Undated). Retrieved June 22, 2012, from file:///G:/references_Soumi/bibliography_1/Fortispercent20insurancepercent20tiepercent20ups.htm

8. Bach, S. (2003). *International migration of health workers: Labour and social issues* (Working Paper No. 209). Sectoral Activities Programme. Geneva: International Labour Office. Retrieved from http://98.129.154.234/sites/default/files/content/images/Bachpercent20Healthpercent20workerpercent20Migrationpercent20WP.pdf

9. Baghel, M. S. (2003). Ayurvedic education in foreign countries Globalization of Ayurveda. International Ayurveda Foundation. Retrieved from http://iaf-ngo.org/pdf/Ayurvedicpercent20educationpercent20inpercent20foreignpercent20countriespercent20-percent20GLOBALISATIONpercent20OFpercent20AYURVEDApercent20percent28No.percent207percent29.pdf

10. Bajpai, N., & Sachs, J. (Undated). *Foreign Direct Investment in India: Issues and Problems* (Development Discussion Paper No. 759). Boston: Harvard Institute for International Development, Harvard University. Retrieved from

http://www.earth.columbia.edu/sitefiles/file/about/director/pubs/759.pdf

11. Banga, R. (2005). *Critical issues in India's services-led growth* (Indian Council for Research on International Economic Relations, New Delhi Working Paper No. 171). Indian Council for Research on International Economic Relations, New Delhi, India. Retrieved from http://ideas.repec.org/p/ind/icrier/171.html

12. Banik, A., Bhaumik, P. K., & Iyare, S. O. (2004). Explaining FDI Inflows to India, China and the Caribbean: An Extended Neighbourhood Approach. *Economic and Political Weekly*, *39*(30), 3398–3407.

13. Banik, A., De, P., Bhaumik, P. K., Huq, S. M. M., & Bajracharya, B. B. (2011). Trade in Health Services in South Asia: An Examination of the Need for Regional Cooperation. *SSRN eLibrary*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1933088\

14. Bashshur, R. L., Shannon, G. W., Krupinski, E. A., Grigsby, J., Kvedar, J. C., Weinstein, R. S., Sanders, J. H., et al. (2009). National telemedicine initiatives: essential to healthcare reform. *Telemedicine journal and e-health: the official journal of the American Telemedicine Association*, *15*(6), 600–610. doi:10.1089/tmj.2009.9960

15. Bedi, B. S. (2003, October 17). *Telemedicine in India: Initiatives and Perspective*. Presented at the eHealth 2003: Addressing the Digital Divide. Retrieved from www.telemedindia.org/eseminar/Telemedicine_in_india.pdf

16. Begde, P. (2008). Opportunity and challenges for Medical tourism in India. Indian Institute of Management, Kozhikode. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/576/1/336-356+prasad+Begde.pdf

17. Belsky, L., Lie, R., Mattoo, A., Emanuel, E. J., & Sreenivasan, G. (2004). The General Agreement On Trade In Services: Implications For Health Policymakers. *Health Affairs*, *23*(3), 137–145. doi:10.1377/hlthaff.23.3.137

18. Berra, J., & Molho, R. (2010). Ayurveda in Argentina and other Latin American countries. *Journal of Ayurveda and Integrative Medicine*, *1*(3), 225. doi:10.4103/0975-9476.72614

19. Bhangale, V. (2008). Medical Tourism: Taking off in a big way in India. Indian Institute of Management, Kozhikode. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/578/1/365-368+Prof.Vijay+Bhangale.pdf

20. Bhattacharya, M. (2008). Advantage Gujarat in Medical Tourism. Presented at the Conference on Tourism in India – Challenges Ahead, 15-17 May 2008, IIMK, India. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/581/1/405-417+Mousumi.pdf

21. Blouin, C. (2006). Economic Dimensions and Impact Assessment of GATS to promote and protect Health. In C. Blouin, N. Drager, & R. D. Smith (Eds.), *International Trade in Health Services and the Gats: Current Issues and Debates*. World Bank Publications.

22. Bookman, M., & Bookman, K. (2007). *Medical Tourism in Developing Countries* (2007th–08 ed.). USA: Palgrave Macmillan.

23. Cattaneo, O. (2009). *Trade in health services: what's in it for developing countries ?* (Policy Research Working Paper Series No. 5115). The World Bank. Retrieved from http://ideas.repec.org/p/wbk/wbrwps/5115.html
24. Centre For Monitoring Indian Economy (CMIE). (Various years).

25. Chakravarthy, K. K., Kumar, R. C. H., & K, D. (2008). SWOT Analysis On: Medical Tourism. Indian Institute of Management, Kozhikode. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/577/1/357-364+Kalyan.pdf

26. Chanda, R. (1999). *Movement of Natural Persons and Trade in Services: Liberalizing Temporary Movement of Labour under the GATS* (Working Paper No. 51). New Delhi: Indian Council for Research on International Economic Relations. Retrieved from http://www.eldis.org/vfile/upload/1/document/0708/DOC9508.pdf

27. Chanda, R. (2001). *Trade In Health Services* (Working paper No. 70). New Delhi: ICRIER. Retrieved from http://www.icrier.org/pdf/wp-rupa.pdf

28. Chanda, R. (2002a). *Globalization of services: India's opportunities and constraints*. Oxford University Press.

29. Chanda, R. (2002b). Trade in health services. *Bulletin of the World Health Organization*, *80*(2), 158–163.

30. Chanda, R. (2003). General Agreement on Trade in Services: Implications for Social Policy-Making. *Economic and Political Weekly*, *38*(16), 1567–1578.

31. Chanda, R. (2006). *Inter-modal Linkages in Services Trade* (OECD Trade Policy Working Paper No. 30). OECD Publishing. Retrieved from http://econpapers.repec.org/paper/oectraaab/30-en.htm

32. Chanda, R. (2011a). *Integrating Services in South Asia: Trade, Investment and Mobility*. Oxford University Press.

33. Chanda, R. (2011b). India-EU relations in health services: prospects and challenges. *Globalization and Health*, *7*, 1. doi:10.1186/1744-8603-7-1

34. Chanda, R., & Smith, R. D. (2006). Trade in Health Services and GATS: A Framework for Policymakers. In C. Blouin & N. Drager (Eds.), *International Trade in Health*

Services and the Gats: Current Issues and Debates. World Bank Publications.

35. Chinai, R., & Goswami, R. (2007). Medical visas mark growth of Indian medical tourism. *Bulletin of the World Health Organization*, *85*(3), 164–165.

36. CII, & Mc.Kinsey and Company. (2002). *Healthcare in India: The Road Ahead*. Report by CII McKinsey & Co.

37. CII. (2011). Kerala Health Tourism 2011. Retrieved June 26, 2012, from http://keralahealthtourism.in/about.html

38. CIO Case Study | Network Monitoring / Management implementation in Services industry: Max Healthcare's Telemedicine Push | CIO.in. (Undated). Retrieved June 22, 2012, from file:///G:/references_Soumi/bibliography_1/max-healthcares-telemedicine-push.htm

39. Cohen, E. (2008). Medical Tourism in Thailand. *Au-Gsb E-Journal*, *1*(1), 24–37.

40. Connell, J. (2008). *The International Migration of Health Workers*. Taylor & Francis.

41. CRISIL. (2011). *Apollo Hospitals Enterprise Ltd: Detailed Report* (Independent Equity Research). CRISIL Research. Retrieved from http://www.crisil.com/capital-markets/CRISIL-Research_ier-report-apollo-hosp-ent_Q3FY11.pdf

42. D'Essence. (2004). *Curing the World: An Opportunity for Medical Tourism in India*. White Paper Series on Tourism Industry. D'essence Consulting. Retrieved from http://www.dessenceconsulting.com/pdf/Medicalpercent20Tourism.pdf

43. Dasgupta, A., & Deb, S. (2008). Telemedicine: A new horizon in public health in India. *Indian Journal of Community Medicine*, *33*(1), 3. doi:10.4103/0970-0218.39234

44. Deloitte Center for Health Solutions. (2008). *Medical Tourism: Consumers in Search of Value*. Washington, D.C. Retrieved from http://www.deloitte.com/assets/Dcom-UnitedStates/Localpercent20Assets/Documents/us_chs_MedicalTourismStudypercent283percent29.pdf

45. Deloitte Development. (2011). *The hidden costs of U.S. health care for consumers: A comprehensive analysis*. Deloitte Center for Health Solutions, Washington, D.C., and Deloitte Center for Financial Services, New York. Retrieved from http://www.deloitte.com/assets/Dcom-UnitedStates/Localpercent20Assets/Documents/US_CHS_HiddenCostsofUSHealthCareforConsumers_032111.pdf

46. Deloitte. (2009). *Medical tourism: Update and implications*. Washington, D.C.: Deloitte Center for Health Solutions. Retrieved from

http://www.deloitte.com/assets/Dcom-UnitedStates/Localpercent20Assets/Documents/us_chs_MedicalTourism_111209_web.pdf

47. DIPP. (Various years). *Fact Sheet on Foreign Direct Investment (FDI)* (SIA Newsletters). Ministry of Commerce and Industry, GOI. Retrieved from http://dipp.nic.in/English/Default.aspx

48. Drager, N., & Fidler, D. P. (2004). *Managing Liberalization of Trade in Services from a Health Policy Perspective*. Trade and Health Notes. Geneva: World Health Organization. Retrieved from http://www.who.int/trade/resource/en/GATSfoldout_e.pdf

49. Ehrbeck, T., Guevara, C., & Mango, P. D. (2008). *Mapping the market for medical travel* (McKinsey Quarterly). McKinsey & Company. Retrieved from http://www.mckinseyquarterly.com/Mapping_the_market_for_travel_2134

50. Ekeland, A. G., Bowes, A., & Flottorp, S. (2010). Effectiveness of telemedicine: A systematic review of reviews. *International Journal of Medical Informatics*, *79*(11), 736–771. doi:10.1016/j.ijmedinf.2010.08.006

51. EUCCK. (2010). *Market Study: Korean Medtec Industry*. EUCCK Final Report on behalf of the Embassy of Switzerland in Korea. The European Union Chamber of Commerce in Korea. Retrieved from http://www.osec.ch/en/filefield private/files/6574/field_blog_public_files/7956

52. EXIM, B. (2003). *Road Beyond Boundaries (The Case of Select Indian Healthcare Systems)* (2003rd ed.). EXIM Bank and Quest Publication.

53. Fidler, D. P., Drager, N., Correa, C., & Aginam, O. (2006). Making Commitments in Health Services under the GATS: Legal Dimensions. In C. Blouin, N. Drager, & R. D. Smith (Eds.), *International Trade in Health Services and the Gats: Current Issues and Debates*. World Bank Publications.

54. Fortis. (2011). *15th Annual Report 2010-11* (Annual Report). Fortis Healthcare (India) Limited. Retrieved from http://www.fortishealthcare.com/UserFiles/AnnReport_15_25_07_glossy.pdf

55. GATS. (1994). *India: Schedule of Specific Commitments* (No. GATS/SC/42).

56. Gautam, V., Raman, R. M. V., & Prahalathan, S. (2008). *Healthcare Tourism Opportunities For India*. India: EXIM Bank.

57. Gopal, R. (2008). The key issues and challenges in medical tourism sector in India (A Hospital perspective). Indian Institute of Management, Kozhikode. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/575/1/331-+335+Dr.+R+Gopal.pdf

58. Government of India. (Undated). Achievements. Ministry of Health and Family Welfare, Department of Ayush. Retrieved from http://www.indianmedicine.nic.in/writereaddata/mainlinkFile/File67.pdf

59. Gupta, I., & Goldar, B. (2001). Commercial presence in the hospital sector under GATS: A case study of India. WHO/SEARO.

60. Gupta, I., Goldar, B., & Mitra, A. (1998). The Case of India. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective* (pp. 213–236). Geneva: United Nations: WHO.

61. Harryono, M., Huang, Y.-F. (Tom), Miyazawa, K., & Sethaput, V. (2006, May 5). Thailand Medical Tourism Cluster. Harvard Business School. Retrieved from http://www.isc.hbs.edu/pdf/Student_Projects/Thailand_Medical_Tourism_2006.pdf

62. Herman, L. (2009). Assessing International Trade in Healthcare Services. *SSRN eLibrary*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1395847

63. Herrick, D. M. (2007). *Medical Tourism: Global Competition in Health Care* (Policy Report No. 304). Texas: National Center for Policy Analysis. Retrieved from http://www.ncpa.org/pub/st315?pg=14

64. India Reports. (Undated). Sector News: Medical Tourism. www.India-Reports.com. Retrieved from http://www.docstoc.com/docs/26803077/week-january-28---february-4th_-2008#

65. IOM. (2003). *World Migration 2003: Managing Migration Challenges and Responses for People on the Move*. IOM World Migration Report Series (Vol. 2). Geneva: International Organization for Migration.

66. ISRO. (2005). *Telemedicine: Healing Touch Through Space, Enabling Specialty Healthcare to the Rural and Remote Population of India*. Bangalore, India: Indian Space Research Organisation. Retrieved from http://www.isro.org/publications/pdf/Telemedicine.pdf

67. IVG Partners. (2010). Indian Medical Equipment Industry – Opportunities for US Companies. IMaCS Virtus Global Partners Inc. Retrieved from http://www.ivgpartners.com/reports/USpercent20Indiapercent20Medicalpercent20Devicespercent20Opportunities.pdf

68. James, J. (1976). Taxing the Brain Drain — a proposal : Edited by J.N. Bhagwati and M. Partington (Amsterdam: North-Holland, 1976. pp. xiii + 222). The Brain Drain and Taxation — Theory and Empirical Analysis. Edited by J.N. Bhagwati

(Amsterdam: North-Holland, 1976. pp.xi + 292). *World Development*, *4*(8), 709–710. doi:10.1016/0305-750X(76)90051-6

69. Kedar, C. (2011). The Lighthouse. *The Project Panchdeep Journal*, (03). Retrieved from http://esic.nic.in/Publications/LH0810.pdf

70. KIMS. (2010). *Annual Report 2010-11* (No. 16).

71. KPMG-CII. (2011). *Excellence in Diagnostic Care: Creating a value chain to deliver an excellent customer experience*. India: KPMG. Retrieved from http://www.kpmg.com/IN/en/IssuesAndInsights/ThoughtLeadership/Excellence_in_Diagnostic_Care.pdf

72. Kumar, P., & Simi, T. B. (2009). *Barriers to Movement of Healthcare Professionals: A Case Study of India*. Jaipur, India: CUTS Centre for International Trade, Economics & Environment. Retrieved from http://www.springerlink.com/content/c474n10m56862879/

73. Marconini, M. (1998). Domestic Capacity And International Trade in Health Services: The Main Issues. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective*. Geneva: UNCTAD-WHO.

74. Martineau, T., Decker, K., & Bundred, P. (2002). *Briefing Note on International Migration of Health Professionals: Leveling the Playing Field for Developing Country Health Systems*. Liverpool: Liverpool School of Tropical Medicine. Retrieved from http://www.skills-for-america.com/sites/default/files/content/images/martineau_0.pdf

75. Martínez Álvarez, M., Chanda, R., & Smith, R. D. (2011a). How is Telemedicine perceived? A qualitative study of perspectives from the UK and India. *Globalization and Health*, *7*, 17. doi:10.1186/1744-8603-7-17

76. Martínez Álvarez, M., Chanda, R., & Smith, R. D. (2011b). The potential for bi-lateral agreements in medical tourism: A qualitative study of stakeholder perspectives from the UK and India. *Globalization and Health*, *7*(1), 11. doi:10.1186/1744-8603-7-11

77. Mashayekhi, M., Julsaint, M., & Turek, E. (2006). Strategic Considerations for Developing Countries: The Case of GATS and Health Services. In C. Blouin, N. Drager, & R. D. Smith (Eds.), *International Trade in Health Services and the Gats: Current Issues and Debates*. World Bank Publications.

78. Mathur, A. (2004). Designs of Healthcare Trade: Role of Information Technology. *Economic and Political Weekly*, *39*(20), 2036–2047.

79. Mattoo, A., Rathindran, R., & Trade, W. B. D. R. G. (2005). *Does health insurance*

impede trade in health care services? World Bank, Development Research Group, Trade Team.

80. Medical Tourism Magazine. (n.d.)., (Various issues). Retrieved from http://www.medicaltourismmag.com/

81. Medical Tourism Services, Medical Tourism India, Medical Tourism Services India. (Undated). Retrieved June 22, 2012, from file:///G:/references_Soumi/bibliography_1/medical-tourismpercent20inpercent20Apollopercent20hospitals.html

82. Murugan, A. (2008). Medical Tourism: Opportunities and Challenges in Tamil Nadu. Presented at the Conference on Tourism in India – Challenges Ahead, 15-17 May 2008, India: Indian Institute of Management, Kozhikode. Retrieved from http://dspace.iimk.ac.in/bitstream/2259/580/1/380-404+Annama

83. NAASCOM. (2011). *Role of IT in Indian Healthcare*. Retrieved from http://www.nasscom.org/role-it-indian-healthcare

84. Nayyar, D. (1994). *Migration, Remittances and Capital Flows: The Indian Experience*. Delhi: Oxford University Press.

85. Nielson, J. (2006). Ten Steps to Consider Before Making Commitments in Health Services under the GATS. In C. Blouin, N. Drager, & R. D. Smith (Eds.), *International Trade in Health Services and the Gats: Current Issues and Debates*. World Bank Publications.

86. Outreville, J. (2007). Foreign direct investment in the health care sector and most-favoured locations in developing countries. *The European Journal of Health Economics*, *8*(4), 305–312.

87. Outreville, J. F., & Hanni, M. S. (2011). Multinational Firms in the World Wine Industry: An Investigation into the Determinants of Most-Favoured Locations. *SSRN eLibrary*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1866144

88. Patel, P. (2006). Global resurgence and International recognition of ayurveda. Ayurveda and Its Scientific Aspects: Opportunities for Globalization, CSIR. Retrieved from http://iaf-ngo.org/pdf/GLOBALpercent20RESURGENCEpercent20&percent20INTL.percent20RECOGNITIONpercent20OFpercent20AYURVEDApercent20percent28No.percent2010percent29.pdf

89. Prabhu, K. S. (1994). World Development Report 1993: Structural Adjustment and the Health Sector in India. *Social Scientist*, *22*(9/12), 89–97. doi:10.2307/3517916

90. PTL. (2010). *49th Annual Report (2009-10)* (Annual Report). PTL Enterprises Ltd. Retrieved from http://www.ptlenterprise.com/pdf/PTL-annual-report-2009-2010.pdf

91. Reddy, S., & Qadeer, I. (2010). Medical Tourism in India: Progress or Predicament? *Economic and Political Weekly*, *45*(20), 69–75.

92. Report of the Technical Working Group on Telemedicine Standardization. (2003). *Recommended Guidelines & Standards for Practice of Telemedicine in India*. Ministry of Communications and Information Technology. Retrieved from http://telemed.esanjeevani.in/Telemedicine/Report.pdf

93. RNCOS. (2010). *Booming Medical Tourism in India*. Industry Research Report (p. 3). RNCOS. Retrieved from http://www.docstoc.com/docs/68435039/Booming-Medical-Tourism-in-India

94. Royal College of General Practitioners (RCGP). (2011, March 23). A CE College Central Records 1951 - 2010. Royal College of General Practitioners. Retrieved from http://www.rcgp.org.uk/pdf/Archives_Collegepercent20Centralpercent20Recordspercent20-percent20Apercent20CEpercent20Hpercent20Educationpercent20Mar2011.pdf

95. Sinclair, S., & Grieshaber-Otto, J. (2002). *Facing the Facts: A Guide to the Gats Debate*. Canadian Centre for Policy Alternatives/Centre Canadian de recherche en politiques de rechange.

96. Singh, D. (2007). General framework for country analysis: Product to process. *Trade and Health: Compilations of Presentaions made at the Inter-regional Workshop, New Delhi, October 2004*. New Delhi: World Health Organization.

97. Sinha, A. (2000). An Overview of Telemedicine: The Virtual Gaze of Health Care in the Next Century. *Medical Anthropology Quarterly*, New Series, *14*(3), 291–309.

98. Smith, R. D. (2004). Foreign direct investment and trade in health services: A review of the literature. *Social Science & Medicine*, *59*(11), 2313–2323.

99. Smith, R. D., Chanda, R., & Tangcharoensathien, V. (2009). Trade in health-related services. *The Lancet*, *373*(9663), 593–601. doi:10.1016/S0140-6736(08)61778-X

100. Smith, R., Blouin, C., & Drager, N. (2006). Trade in Health Services and the GATS: Introduction and Summary. In C. Blouin, N. Drager, & R. D. Smith (Eds.), *International Trade in Health Services and the Gats: Current Issues and Debates*. World Bank Publications.

101. Sohail, S., Hanif, N., & Quddus, M. (2011). *Liberalization of Trade in Services*

under SAFTA: Prospects and Challenges for Pakistan (Working Paper Series No. 11-15). SANEI Working Paper Series. Dhaka, Bangladesh: South Asia Network of Economic Research Institutes. Retrieved from http://www.saneinetwork.net/Files/0910201111271711_15.pdf

102. Tattara, G. (2010). *Medical tourism and domestic population health* (Working Paper No. 2010_02). Department of Economics, University of Venice. Retrieved from http://ideas.repec.org/p/ven/wpaper/2010_02.html

103. Tolliver, K. (2011). *Proliferation of Cross Border Trade in Health Services* (Honors Thesis Projects). University of Tennessee, Knoxville. Retrieved from http://trace.tennessee.edu/cgi/viewcontent.cgi?article=2471&context=utk_chanhonoproj

104. Torsekar, M. (2010, June). India's Medical Device Sector: Increasing U.S. Export Opportunities. Retrieved from http://www.usitc.gov/publications/332/executive_briefings/FINAL_EBOT_torsekar_0630.pdf

105. UNCTAD, S. (1997). *International Trade In Health Services: Difficulties And Opportunities For Developing Countries* (No. TD/B/COM.1/EM.1/2). Geneva. Retrieved from http://unctad.org/EN/docs/c1em1d2.EN.pdf

106. UNCTAD Secretariat. (1998). International Trade in Health Services: Difficulties and Opportunities For Developing Countries. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective* (pp. 1–28). Geneva: United Nations: WHO.

107. UNCTAD Secretariat. (1999). *Assessment of Trade in Services of Developing Countries: Summary of Findings : Background Note*. United Nations.

108. UNESCAP. (2009). *Medical Travel in Asia and the Pacific: Challenges and Opportunities*. Thailand: United Nations, Economic and Social Commission for Asia and the Pacific.

109. Warner, D. (1998). THE GLOBALIZATION OF MEDICAL CARE. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective*. Geneva: UNCTAD-WHO.

110. Wolvardt, G. (1998). OPPORTUNITIES AND CHALLENGES FOR DEVELOPING COUNTRIES IN THE HEALTH SECTOR. In S. Zarrilli & C. Kinnon (Eds.), *International trade in health services: a development perspective*. Geneva:

UNCTAD-WHO.

111. WTO. (2004). *Council for Trade in Services Special Session* (Restricted No. TN/S/O/IND).

112. WTO. (2009, September 15). Presence Of Natural Persons (Mode 4): Background Note by the Secretariat. World Trade Organization. Retrieved from www.sadc.int/index.php/download_file/view/483/607/

113. Xaba, J., & Phillips, G. (2001). *Understanding Nurse Emigration: Final Report*. Trade Union Research Project (TURP). Retrieved from http://www.queensu.ca/samp/migrationresources/braindrain/documents/xaba.pdf

Appendix A.1

Names of the companies corresponding to their ownership group

Apollo Group of companies	**Ranbaxy**
Apollo Gleneagles Hospitals Ltd.	Escorts Heart & Super Specialty Hospital Ltd.
Apollo Health & Lifestyle Ltd.	Escorts Heart & Superspeciality Institute Ltd.
Apollo Hospitals Enterprise Ltd.	Escorts Heart Centre Ltd.
Apollo Hospitals Intl. Ltd.	Escorts Hospital & Research Centre Ltd.
Apollo Lavasa Health Corpn. Ltd.	Fortis Clinical Research Ltd.
Indraprastha Medical Corpn. Ltd.	Fortis Health Mgmt. Ltd.
A B Medical Centres Ltd.	Fortis Healthcare (India) Ltd.
Deccan Hospitals Corpn. Ltd. [Merged]	Fortis Hospitals Ltd.
Emedlife Insurance Broking Services Ltd.	Fortis Hospital Ltd.
Unique Home Health Care Ltd.	Fortis Malar Hospitals Ltd.
Emedlife Insurance Broking Services Ltd.	International Hospital Ltd.

Appendix A.1 continues…

Bharatia Group	**CDR**	**United Group**	**Raunaq Singh Group**	**Private (Foreign)**	**Bhai Mohan Singh Group**	**Unit Group**
Asia Healthcare Devp. Ltd.	C D R Health Care Ltd.	United Diagnostic International Ltd.	Artemis Health Sciences Pvt. Ltd.	Lakeshore Hospital & Research Centre Ltd.	Alps Hospital Pvt. Ltd.	Mayo Hospitals Ltd.
Jubilant First Trust Healthcare Ltd.	Emed.Com Technologies Ltd.	United Health Care Ltd.	Artemis Medical Institute & Hospitals Pvt. Ltd.	Saumya Medicare International Ltd.	Hometrail Buildtech Pvt. Ltd.	Newrise Healthcare Pvt. Ltd.
			Artemis Medicare Services Pvt. Ltd.	Westfort Hi-Tech Hospital Ltd.	Hometrail Estate Pvt. Ltd.	Newschool Ventures Ltd.
					Max Healthstaff Intl. Ltd.	Peerless Hospitex Hospital & Research Center Ltd.
					Max Medical Services Ltd.	Piramal Diagnostic Services Pvt. Ltd.
					Max Neeman Medical Intl. Ltd.	Sahara India Medical Institute Ltd.
						Shushrusha Citizens' Co-Op. Hospital Ltd.
						Tainwala Healthcare Products Pvt. Ltd.
						Win Health Care Pvt. Ltd.
						Wockhardt Hospital Ltd.

Appendix A.2

Questionnaire used for surveying Hospitals / Dental clinics

Informed Consent Form:

I am a Research Scholar, named Soumi Roy Chowdhury doing my M.Phil. from Centre for Development Studies (CDS) affiliated to Jawaharlal Nehru University. The topic of my thesis is 'International Trade in Health Services'. I am currently working under Dr. Irudaya Rajan and Dr. K.N Harilal. As a part of my thesis, I have to undertake a survey on few private hospitals/ dental clinics in Kerala specially those who are catering to the foreign patients. The whole concept of medical tourism is very new and is a growing concern to the policy makers and here lies its importance. The academic project is simply to understand the trend, importance of the phenomenon of medical tourism especially in Kerala.
The interviewee can contact CDS for any sort of information regarding myself.

Soumi Roy Chowdhury
M.Phil. 2010-2012, CDS (JNU)
Prasanthnagar , Ulloor, TVM

Would you like to participate in the survey?	Yes	No

1.Name of the hospital*			
2.Address			
3.City			
4.State			
5.Telephone no.			
6.Fax			
7.Website			
8.Email			
9.Designation of the respondent			
10.Type of the hospital			
Whether they encourage trade in health services?			
11. Mode 1	12. Mode 2	13. Mode 3	14. Mode 4
Yes/ No	Yes/ No	Yes/ No	Yes/ No

If 11. is Yes : (Hospitals practicing telemedicine)			
(11. a) When Telemedicine started?	< 1 year	1-5 years	5-10 years
(11. b) To which country?	USA	UK	Other European (mention the names)
	Maldives	Middle East	Others
(11.c) Type of service through telemedicine			
(11.d) No. of cases treated in the last year			

If 12. is Yes : (Hospitals are practicing medical tourism)	
(12.a) Since when they are tracing foreign patients?	> 10 years / > 5 years / Recently
(12.b) Have the foreign patients increased over the years	Yes / No
(12.c) How many patients they have dealt in the last year?	< 100 /100-500 / 500-1000/ > 1000 / >5000
(12.d) Do the foreign patients contribute to the revenue earning of the hospital? (Mention the percentage of the total)	
(12.e) What are the specific treatments they seek for?	Cosmetic Surgery / Dental / Cardiology / Oncology / Ophthalmology / *Ayurvedic* treatments / Others
(12.f) If for Dental treatment , then specify	Tooth Whitening / Tooth canal / etc etc
(12.g) Efforts of the hospital in promoting medical tourism	
(12.h) Whether the hospital is having a separate cell for medical tourists?	Yes / No
(12.i) Whether the hospital is having any tie up with any foreign institution? (If yes, name the foreign institution)	Yes/ No
(12.j) Whether the hospital is having any foreign insurance company in their panel? (If yes, name the insurance company)	Yes / No
(12.k) Whether the hospitals are having any help desk for patients at the airport?	Yes / No
(12.l) Whether the hospital is having any health packages for the medical tourists?	Yes / No
(12.m) Whether foreign patients are charged a differential price in comparison to the foreign patients?	Yes / No
(12.n) Whether the hospitals are crowding out the domestic patients for the foreign patients?	Yes/ No
(12.o) Whether the hospitals are getting any help from the Government in realizing the potential?	Yes/ No
(12.p) Whether the hospitals are facing any problem in treating the foreign patients?	Yes/No

If Yes, then specify the problem	Language barrier / Accreditation / Lack of medical personnel / Visa Complications/ Infrastructure / quality of the medical professionals
(12.q) Do you want to promote medical tourism?	Yes / No Explain:
(12.r) Why do you think medical tourists are coming to your hospital?	

If 13. is Yes : (Hospitals have Foreign Direct Investment)	
(13.a) Whether their hospital has some kind of foreign collaboration?	Y/ N
(13.b) If Yes, in what form?	In terms of doctors / In terms of investment / Others
(13.c) With which country?	

If 14. is Yes : (Medical professionals move to other countries)	
(14.a) Whether their doctors move to another country?	Y/ N
(14.b) If Yes, to which country?	
(14.c) Do they feel the shortages of medical professionals?	Y/N
(14.d) Is shortage of manpower is limited to specific kinds of treatments?	Y/N

* Clinics used instead of hospitals for surveying the dental clinic centres.