Deloitte.

Medical Tourism

Consumers in Search of Value

Produced by the
Deloitte Center for
Health Solutions

Audit . Tax . Consulting . Financial Advisory .

Foreword

Medical tourism – the process of "leaving home" for treatments and care abroad or elsewhere domestically – is an emerging phenomenon in the health care industry. The Deloitte *2008 Survey of Health Care Consumers*, a nationally representative, online survey of more than 3,000 Americans, found that outbound medical tourism is expected to experience explosive growth over the next three to five years. Consider the following:

- Health care costs are increasing at eight percent per year – well above the Consumer Price Index (CPI), thus eating into corporate profits and household disposable income.
- The safety and quality of care available in many offshore settings is no longer an issue: Organizations including the Joint Commission International (JCI) and others are accrediting these facilities.
- Consumers are willing to travel to obtain care that is both safe and less costly. In fact, two in five survey respondents said they would be interested in pursuing treatment abroad if quality was comparable and the savings were 50 percent or more.

By contrast, inbound medical tourism and medical tourism across state lines will continue to be an interesting opportunity for specialty hubs with treatments unavailable elsewhere in the world or in a community setting.

This report by the Deloitte Center for Health Solutions, part of Deloitte LLP, examines the growth of medical tourism: the hot spots for outbound and inbound programs, and factors important to the attractiveness of both.

Medical Tourism: Consumers in Search of Value is Deloitte's latest report about innovations that might be considered disruptive to some in the U.S. health care system. Recent reports spotlighting retail clinics, the medical home payment model and other innovations point to a common theme – CHANGE.

The value proposition in a consumer transaction usually involves consideration about price, quality and service. Distinct segments of the market value the three differently based on their needs and wants. In health care, price hasn't been a factor to many since consumer out-of-pocket expenditures are only 19 percent of the total. However, that percentage is increasing and price sensitivity is soaring, especially for those with high-deductible insurance programs. The growth of medical tourism might be a signal as to how consumers calculate their value proposition weighing all three – price, quality and service. Time will tell.

Paul H. Keckley, Ph.D.
Executive Director
Deloitte Center for Health Solutions

Traveling for Care

Many patients are traveling great distances to obtain medical care. Whether the destination is an exotic resort halfway around the world or a health care facility several hours away in a neighboring state, U.S. citizens are increasingly embracing the benefits of medical tourism. Rapid expansion of facilities for patients abroad has helped to spur this industry growth.

Broadly speaking, medical tourism is the act of traveling to obtain medical care. As described in Figure 1, there are three categories of medical tourism: outbound, inbound and intrabound (domestic).

Figure 1: Types of Medical Tourism

Outbound	U.S. patients traveling to other countries to receive medical care
Inbound	Patients from other countries traveling to the U.S. to receive medical care
Intrabound*	U.S. patients traveling within the U.S. to receive medical care outside their geographic area, typically to a Center of Excellence in another state/region

**Data are inconclusive to quantify the intrabound market, so this paper will focus primarily on outbound and inbound medical tourism.*

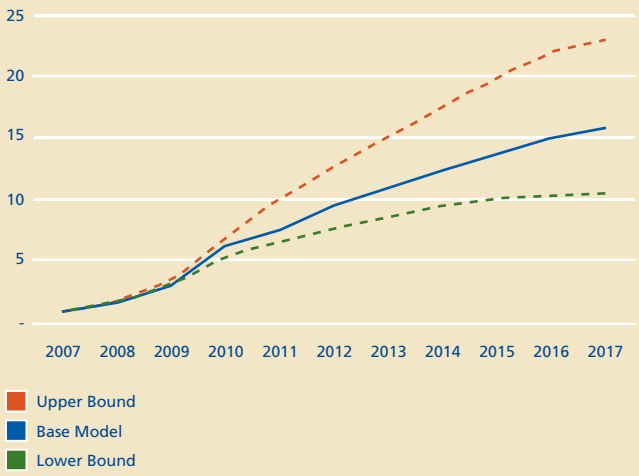
Note: Definition for the study based on review of articles in Appendix I.

Outbound Medical Tourism

In 2007, an estimated 750,000 Americans traveled abroad for medical care. As depicted in Figures 2 and 3, this number is estimated to increase to six million by 2010.[1,2] Accordingly, the base-case estimate for the annual growth rate in outbound medical tourism is estimated at 100 percent from 2007 to 2010. Increases beyond this time, however, could be tempered by several factors:

- Supply capacity constraints in foreign countries
- U.S. health plans' possible decision to not cover services provided offshore
- U.S. providers' possible decision to compete more aggressively with outbound programs
- Potential government policies that might curtail demand.

Figure 2: U.S. Outbound Patient Flow, 10-Year Projection (millions)



Assumptions

- In 2007, approximately 750,000 Americans traveled outbound for medical care. That number will increase to six million by 2010.[1,2] Therefore, the growth rate from 2007 to 2010 is 100 percent for the base case estimate.
- After 2010, the growth rate will begin to fall due to supply capacity constraints in foreign countries.
- Upper/Lower bound estimates assume the growth rate is higher/lower than the base case estimate.

[1] Baliga H. "Medical tourism is the new wave of outsourcing from India," *India Daily*, Dec 23, 2006. Available at: www.indiadaily.com/editorial/14858.asp
[2] Horowitz MD and Rosensweig JA. "Medical Tourism – Health Care in the Global Economy," *The Physician Executive*, Nov/Dec 2007

Figure 3: Patient Demand, Outbound Tourism

Year		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Base Case	Patients (millions)	0.75	1.50	3.00	6.00	7.50	9.38	10.78	12.39	13.64	15.00	15.75
	Growth Rate %	100	100	100	25	25	15	15	10	10	5	
Lower Bound	Patients (millions)	0.75	1.50	3.00	5.25	6.56	7.55	8.68	9.55	10.02	10.32	10.43
	Growth Rate %	100	100	75	25	15	15	10	5	3	1	
Upper Bound	Patients (millions)	0.75	1.69	3.38	6.75	10.13	12.66	15.19	17.47	20.09	22.09	23.20
	Growth Rate %	125	100	100	50	25	20	15	15	10	5	

Assumptions
- In 2007, approximately 750,000 Americans traveled outbound for medical care. That number will increase to six million by 2010.[3,4] Therefore, the growth rate from 2007 to 2010 is 100 percent for the base case estimate.
- After 2010, the growth rate will begin to fall due to supply capacity constraints in foreign countries.
- Upper/Lower bound estimates assume the growth rate is higher/lower than the base case estimate, as shown in the table.

A Timely Option for U.S. Consumers

The impact of dramatically rising U.S. health care costs is felt in every household and by every company. Even consumers with employer-sponsored health insurance are increasingly considering outbound medical tourism as a viable care option: As their plan deductibles increase, many of the services available in outbound settings may be purchased under the deductible limit, thus conserving their Health Savings Account (HSA) balance.

Medical care in countries such as India, Thailand and Singapore can cost as little as 10 percent of the cost of comparable care in the United States. The price is remarkably lower for a variety of services, and often includes airfare and a stay in a resort hotel. Thanks, in part, to these low-cost care alternatives which almost resemble a mini-vacation, interest in medical tourism is strong and positive.

Increased Consumerism Fueling Outbound Trend

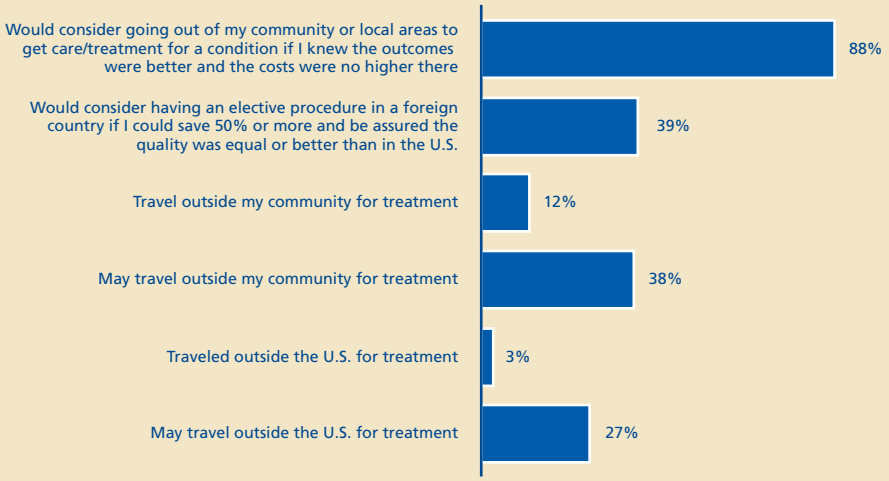
Health care consumerism is premised on the idea that individuals should have greater control over decisions that affect their health and their medical care. Employers, health plans and policy-makers recognize that unless consumers are more engaged in decisions about their health and the costs associated with those decisions, costs will continue to soar. HSAs, high-deductible plans, and higher co-pays are prompting patients to act more like consumers. In addition to providing incentives for patients to take a more active role in their care, many health plans provide resources to help facilitate patient decision making. Furthermore, the Internet has become a significant source of information for patients who want to learn more about their medical conditions, diagnostic results, and treatment options.

[3] Baliga H. "Medical tourism is the new wave of outsourcing from India," *India Daily*, Dec 23, 2006. Available at: www.indiadaily.com/editorial/14858.asp
[4] Horowitz MD and Rosensweig JA. "Medical Tourism – Health Care in the Global Economy," *The Physician Executive*, Nov/Dec 2007

As patients are exposed to greater financial burdens resulting from higher co-payments and price transparency efforts, they are likely to seek low-cost treatment alternatives such as medical tourism. The Deloitte *2008 Survey of U.S. Health Care Consumers* revealed strong interest in outbound medical tourism. The survey also found that respondents weren't overly concerned about quality and safety, as illustrated in Figure 4.[5]

Figure 4: Consumer Interest in Outbound Medical Tourism

Almost 39% say they would go abroad for an elective procedure if they could save half the cost and be assured quality was comparable



% would consider having elective procedure in foreign country	
Gen Y	51.1%
Gen X	41.9%
Boomers	36.7%
Seniors	29.1%
Male	44.5%
Female	33.3%
Hispanic	51.4%
Non-Hispanic	36.9%
Caucasian	37.9%
African American	36.9%
Asian	56.8%
Other	43.7%
Health Status – Top 20%	40.1%
Health Status – Bottom 50%	33.6%
Commercial Insurance	40.6%
Medicare	28.0%
Medicaid	29.9%
Other Insurance	35.4%

U.S. health care consumers may be ready to vote with their feet if they cannot get high-quality outcome assurances at reasonable costs locally. While only 12% have traveled outside their "community" for treatment and only 3% have traveled outside the U.S. for treatment, many more said they may do so in the future.

Consumers who rate their health in the top 20% are more likely than others to consider traveling out of their communities for better care.

Source: Q 25. Which of the following have you done in the last 24 months? Which of the following seem like something you might do in the future?

Q 26. Would you consider going out of your community or local area to get care/treatment for a condition if you knew the outcomes were better and the costs were no higher there?

Q 27. Would you consider having an elective procedure like hip replacement or cosmetic surgery in a foreign country if you could save 50% or more and be assured the quality was equal or better than what you can have in the U.S.?

[5] http://www.deloitte.com/dtt/article/0%2C1002%2Ccid%25253D192707%2C00.html

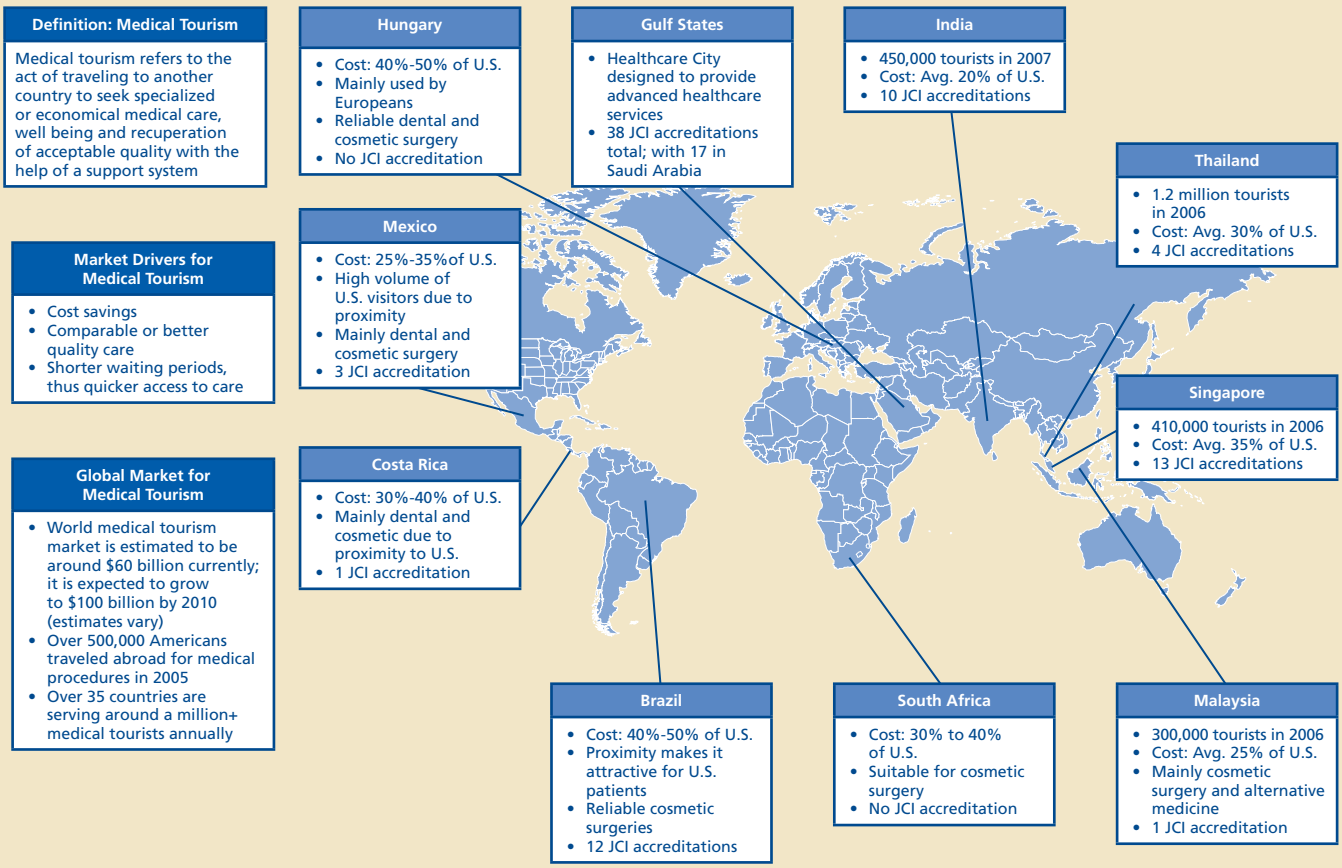
Successful Positioning of Medical Tourism Programs

While medical travel to countries outside the United States has existed for years, its growth potential was hindered by capacity and infrastructure constraints – among them, communications, transportation, water and sewer, electricity and power generation – in developing nations. However, strong economic development in these countries has provided the resources and opportunities to build massive health care centers for patients traveling from all around the world. Some examples:

- The Department of Health in the Philippines has produced a medical tourism guidebook that will be distributed throughout Europe.
- The Korean medical tourism promotion policy has led to the planning of new medical institutions for international patients.
- In Taiwan, the government has announced a $318 million project to help further develop the country's medical services.
- In Malaysia, the government has increased the allowed stay under a medical visa from 30 days to six months.
- The government of Singapore has formed a collaboration of industry and governmental representatives to create a medical hub in Singapore.

In fact, hot spots for medical tourism are prominent around the globe. At least 10 regions now host medical tourism hubs, as depicted in Figure 5:

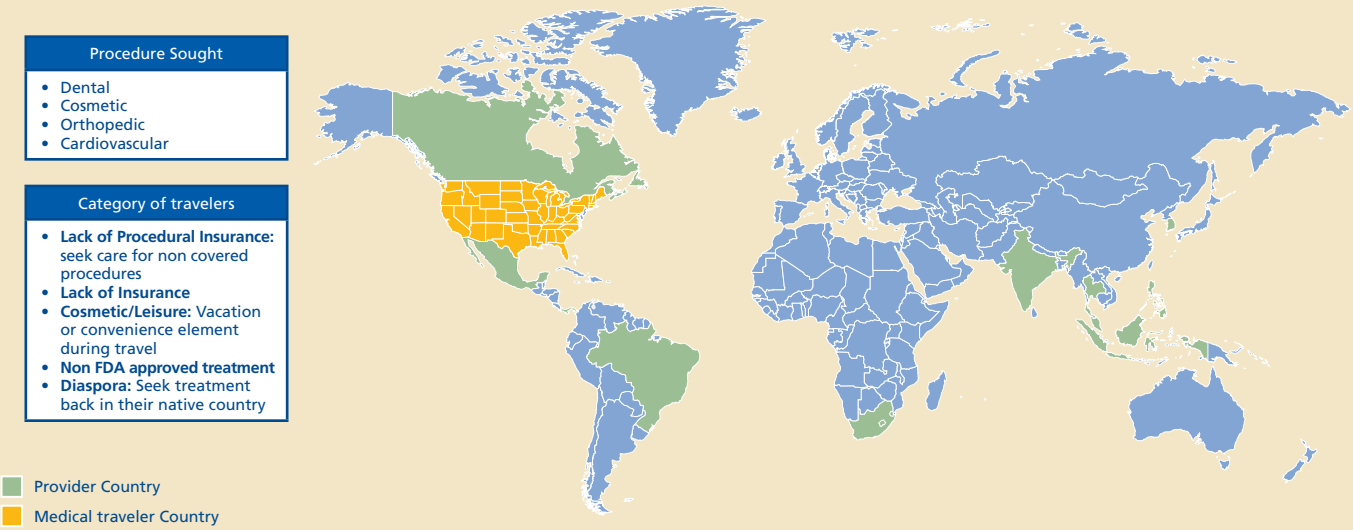
Figure 5: Medical Tourism and Medical Traveling



Note: JCI accreditation details at www.jointcommissioninternational.org/23218/iortiz/.
Other sources and explanation appear in Appendix II.

The list of diagnoses/procedures for which U.S. citizens go elsewhere for care is growing. Most are elective procedures that require follow-up care for a period of weeks and involve a surgical intervention. Figure 6 lists common medical tourism procedures that consumers choose and their reasons for doing so.

Figure 6: Common Medical Tourism Procedures & Reasons for Selection



Note: Insights drawn from articles in Appendix I and the presentation "Medical Tourism an Opportunity for Vietnam," http://investmentmart.gov.vn/Speeches/31st%2011h00%20workshop12%20Jean%20Marcel%20Guillon.pdf

Quality: A Primary Consideration

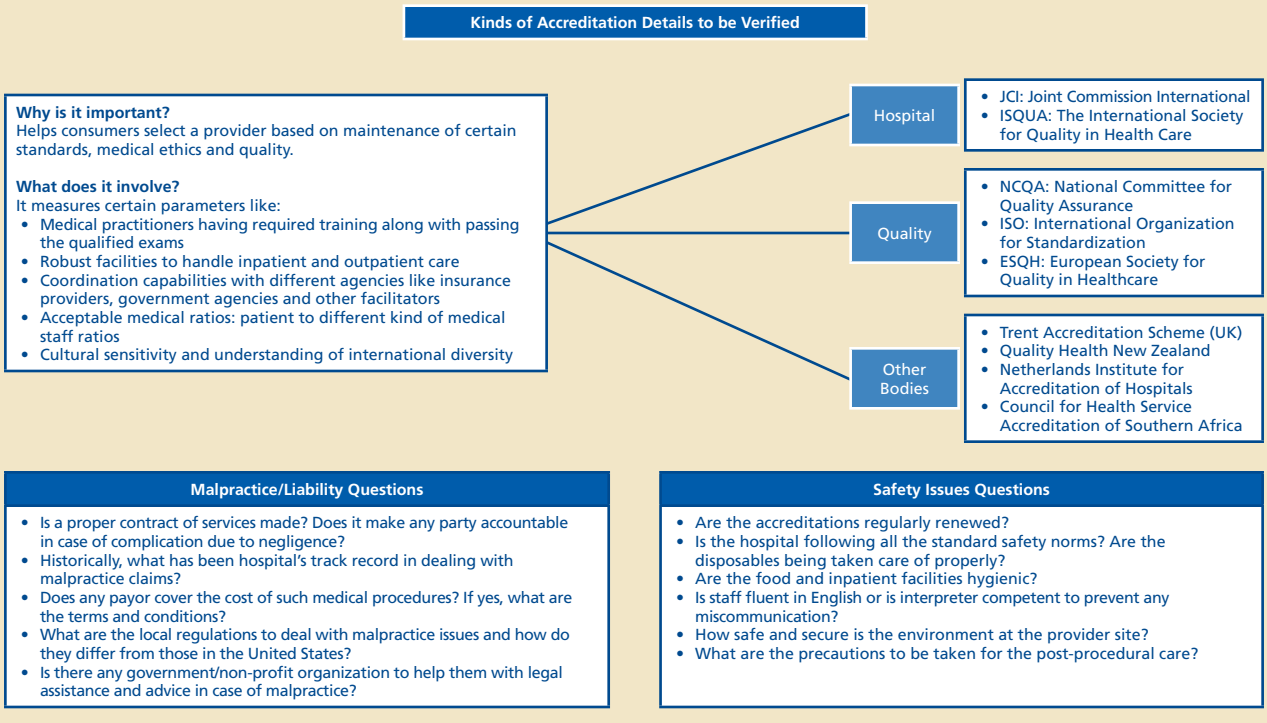
Increased access to report cards about provider safety and effectiveness, and patient satisfaction scores for hospitals and physicians have helped to fuel growing consumer and employer awareness of safety and quality differences. Traditionally, academic medical centers (AMCs) have been viewed as "the best," but these data reflect comparable performance in community-based settings for certain services. AMCs have developed highly specialized Centers of Excellence programs to attract patients from around the world. Not to be outdone, community-based hospitals have collaborated with their physicians to develop centers for sports medicine, heart care, cancer care, and other specialties to compete for patients across state lines and national borders. In both cases, strategic positioning has focused on continuity of care and uniquely packaged price, quality and service features.

Receiving safe and quality care is the primary issue for consumers considering outbound medical tourism as a treatment option. Outbound medical tourism sponsors are responding to consumers' safety and quality expectations, and typically tout these program attributes:

- U.S.-trained physicians and care teams
- Use of clinical information technologies
- Use of evidence-based clinical guidelines
- Affiliations with reputable, top-tier U.S. provider organizations
- Coordination of pre- and post-discharge care
- Provision for adverse events requiring services unavailable in the facility
- Certification for safety and quality by the Joint Commission International or others.

The Joint Commission International (JCI) was launched by the Joint Commission in 1999 after a growing demand for a resource to effectively evaluate quality and safety. There are over 120 hospitals worldwide that are accredited through the JCI.[6] Several other organizations, such as the International Society for Quality in Health Care (ISQUA), the National Committee for Quality Assurance (NCQA), the International Organization for Standardization (ISO), and the European Society for Quality in Healthcare (ESQH), have taken steps to ensure that medical tourism facilities provide the highest-quality clinical care (Figure 7).

Figure 7: Safety, Quality and Accreditation Issues Needed to be Asked by the Consumer



Note: Insights drawn from:
- articles from http://www.healism.com/Medical_Tourism_Safety/ and http://www.healism.com/FAQs/FAQs_About_Travel/Medical_Tourism_FAQs_About_Travel/
- "Accreditation: The Facts," *IMTJ (International Medical Travel Journal)*, June 18, 2007

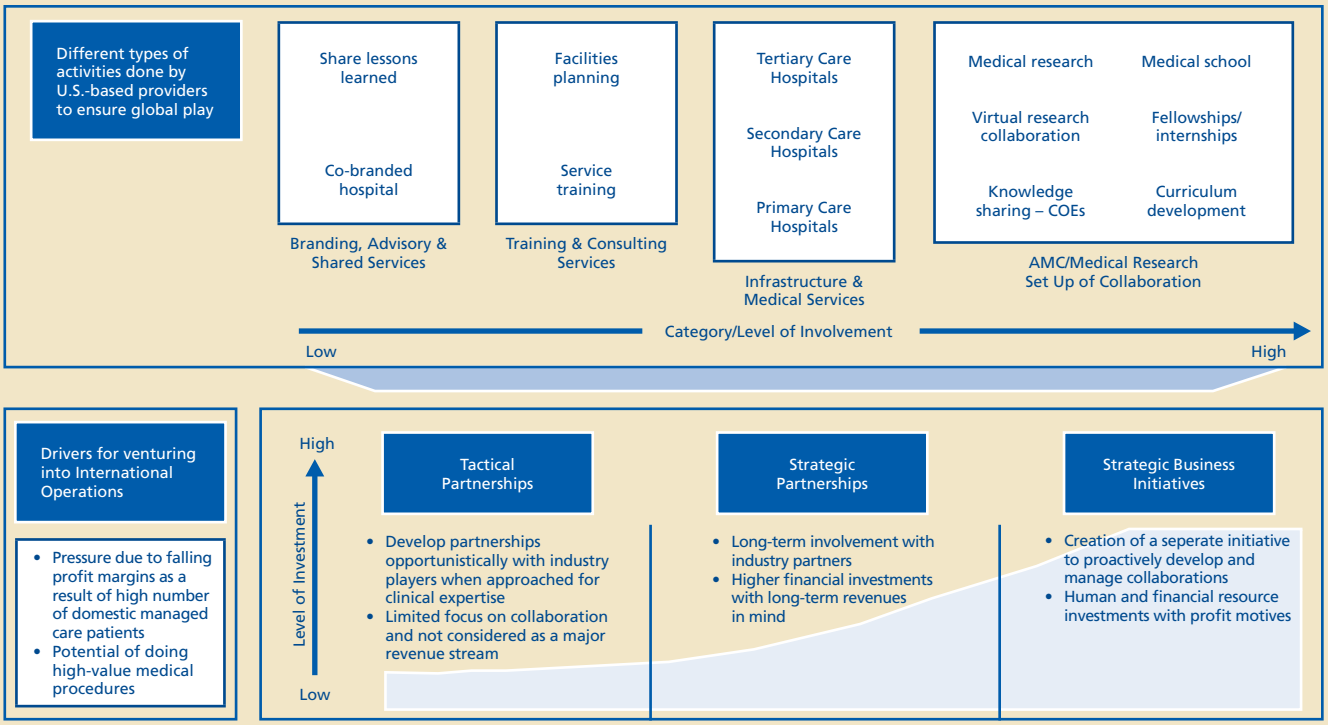
[6] https://www.healthbase.com/hb/pages/hospitals.jsp

Accreditation is particularly important because it can give consumers and employers a level of confidence that the services provided are comparable to those available in the U.S., particularly if accompanied by an affiliation with a reputable, U.S. teaching hospital (Figure 9). As a result, many well-known AMCs have formed international partnerships to support offshore tourism ventures and provide a variety of services, such as:

- Clinical guidelines and order sets
- Care plans for patients to facilitate self-care and adherence
- Electronic medical records and clinical information technologies
- Outcome measurement and reporting
- Root-cause analysis for sentinel events and error reporting
- Physician and nurse recruitment and training
- Patient satisfaction surveys and reporting
- Medical and professional education
- Purchasing programs for diagnostics and prescription drugs
- Data warehousing and performance reporting.

The legal frameworks used in collaborations between U.S.-based provider organizations and host outbound medical tourism programs vary widely. Some focus on work-for-hire for some/all of the services above; others are equity relationships. The framework in Figure 8 reflects the variety of structures that might be considered.

Figure 8: Collaboration Framework Options and Considerations



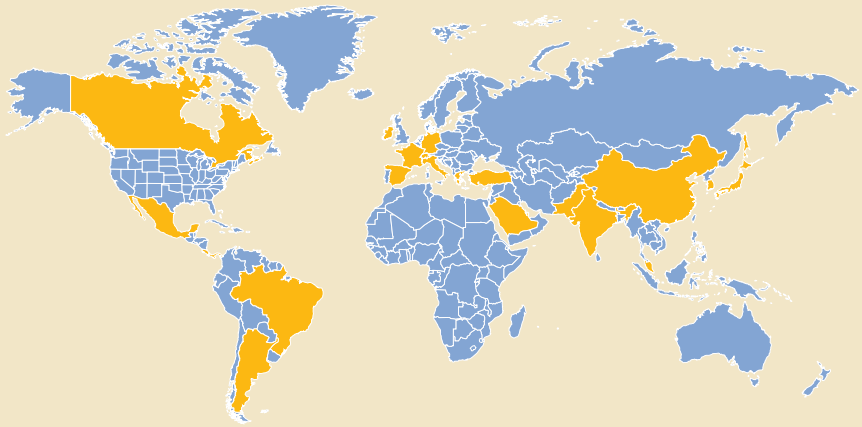
Note: Insights are drawn from review of articles in Appendix I.

Figure 9 lists U.S. health care organizations that are involved in some of the better-known international collaborations.

Figure 9: Outbound patients from U.S. have an option to travel to U.S. providers (at international sites) or their affiliates and partners

U.S. providers	B/T/C	HS	MS	Total
Cleveland Clinic		2		2
Cornell Medical School			1	1
Duke Medical School			1	1
Harvard Medical International	23			23
Johns Hopkins International	11	1		12
Memorial Sloan Kettering	9			9
University of Pittsburgh		3		3
Columbia University Medical School	3		1	4

Note: This is an indicative list (for illustrative purpose)



- HS Hospital Service
- MS Medical School
- B/T/C Branding/Training/Consulting

Country with U.S. provider footprint/tie-up

Enablers

- Large uninsured population
- Growth of the travel industry makes it easier to travel
- Communication improvements allow patients to be in touch with providers much earlier, thus enabling dialogue

Inhibitors

- Patient's personal concerns
- Logistics-related issues
- Lack of clinical support systems for continuity of care once back in the country of origin
- Safety concerns and litigation rules in relation to failed medical intervention

Growth Boosters

- **Out-of-pocket expenses:** 18% of 250M insured Americans, not qualified for certain procedures, which results in huge out-of-pocket expenses
- **Uninsured:** 47M uninsured Americans
- **Cost-cutting:** Health plans and Companies are seeking ways to reduce costs

Note: Insights are drawn from articles and web sites in Appendix III.

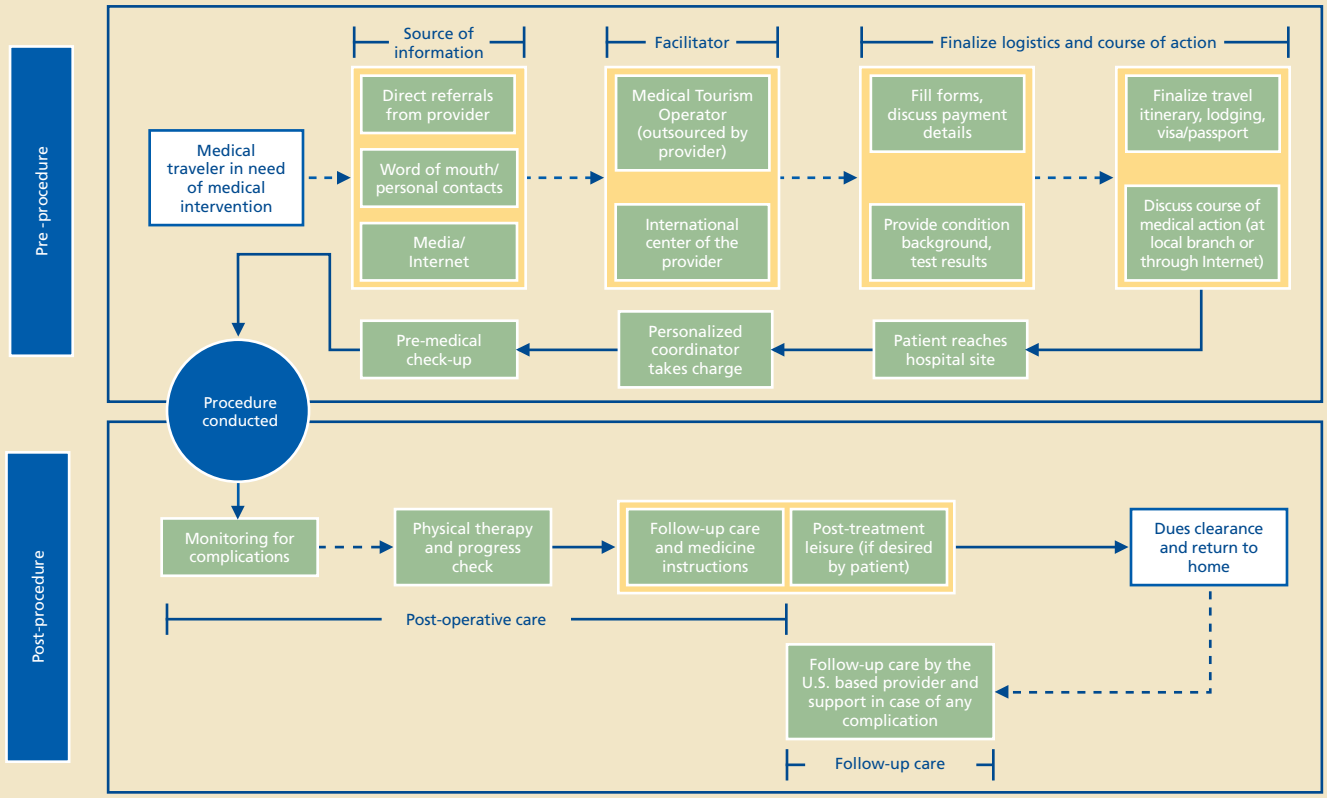
Care coordination for patients returning home is another dimension of quality that is central to a host organization's performance. Many U.S.-based opponents to medical tourism worry that patients who receive treatment abroad do not receive proper follow-up care when they return to their home country. As a result, care plans that facilitate the handoff from overseas providers to providers at the patient's home are critical, since domestic providers are often hesitant to take on complicated and open cases from unknown providers – let alone care from a foreign one.

A final issue related to quality is liability. Although medical tourism offers significant cost savings, it comes with increased risk to consumers.[7] If anything were to go wrong during a procedure in a foreign country, the consumer has to work through the host country's legal system. This can be difficult and burdensome if the consumer lives far away from the place s/he received treatment. Additionally, many of the larger health insurance providers have not yet embraced medical tourism because they are worried about potential lawsuits linked to bad outcomes.[8] As medical tourism increases, insurers must find ways to cope with consumers who look to them for liability.

Facilitating Seamless Coordination of Outbound Programs

The decision-making process for patients considering treatment abroad can be daunting. Figure 10 reflects the typical decisions and actions that take place.

Figure 10: Pre- and Post-procedure Decision-making Process



Note: Insights drawn from various providers treating international patients; from *IMTJ (International Medical Travel Journal)* article, "Financial Focus: Payment options," June 18, 2007; and from the following web sites:
- Taj Medical Group: http://www.tajmedical.com/
- e-medSol: http://www.emedsol.biz/
- Medical Tourism Association: http://www.medicaltravelauthority.com/
- International Medical Travel Association: http://www.intlmta.org/web/imta/home

[7] Van Demark D. "How will the medical tourism industry in the United States develop?" *Consumer Health World*, March 2, 2007. Available online at: http://trusted.md/blog/dale_van_demark/2007/03/02/how_will_the_medical_tourism_industry_in_the_united_states_develop

[8] Allen G. "Employers, insurers consider overseas health care," NPR, November 14, 2007. Available online at: http://www.npr.org/templates/story/story.php?storyId=16294182

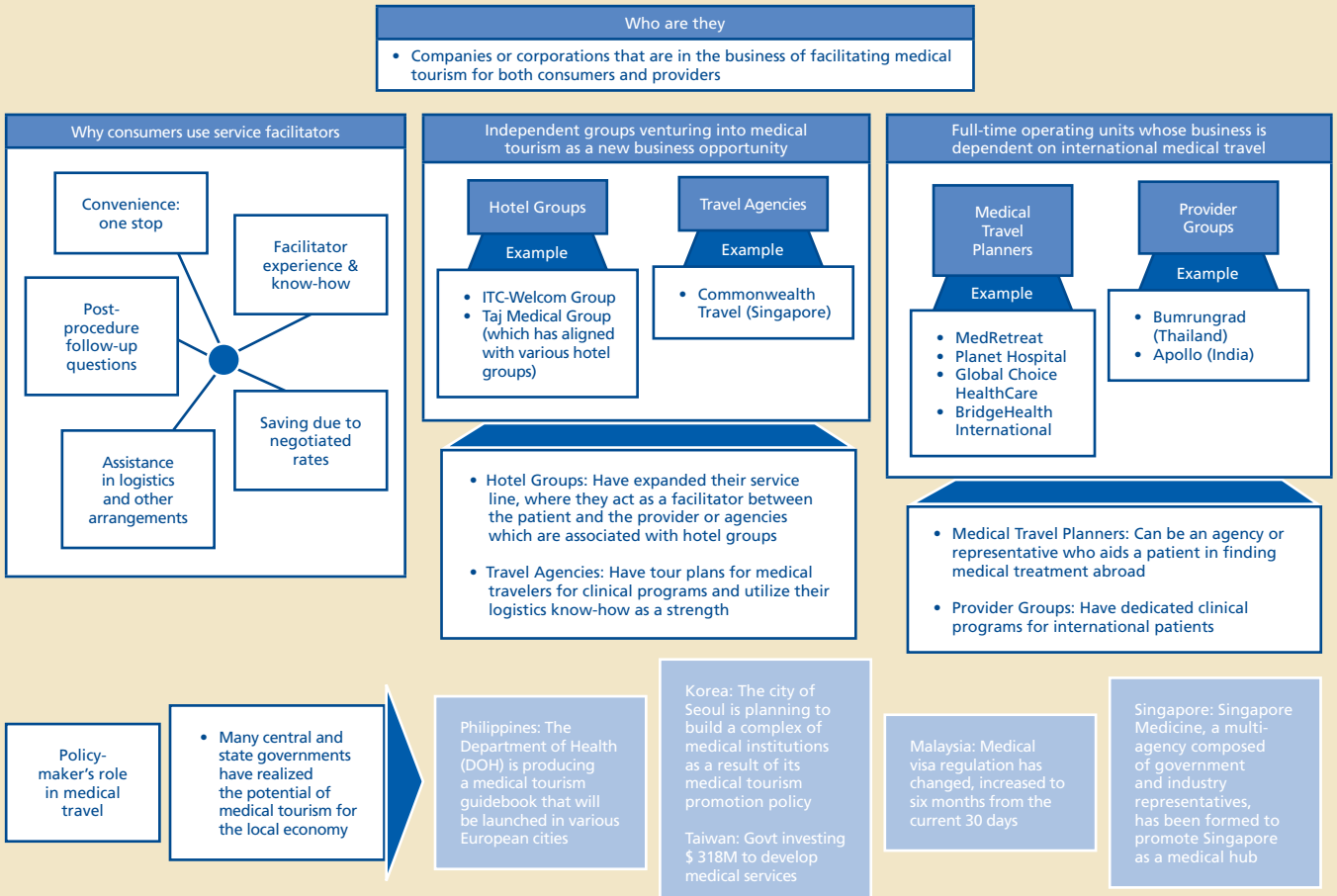
Because of this complexity, many patients look to their health plan or employer to assist in navigating the process. In some cases, these organizations hire medical facilitators to seamlessly coordinate outbound medical tourism programs.

Medical facilitators are companies that guide the use of medical tourism for patients and providers. Many patients find using facilitators to be more convenient and expedient than looking for a program on their own. Facilitators have experience in the medical tourism process and are able to address any concerns or questions that patients might have. They often provide assistance with logistics and travel arrangements. Patients may even be able to get lower rates from medical facilitators than directly from clinical programs abroad.

Medical facilitators can be divided into four groups (Figure 11):

- Hotel Groups, such as the ITC-WelcomGroup in India, have expanded their service line to act as facilitator between the patient and the provider.
- Travel Agencies, such as Commonwealth Travel in Singapore, have tour plans for medical travelers and utilize their experience to organize logistics.
- Medical Travel Planners, such as MedRetreat, Planet Hospital, Global Choice Healthcare, and BridgeHealth International, act as patient representatives in finding treatment abroad.
- Provider Groups, such as Bumrungrad in Thailand and Apollo in India, have dedicated clinical programs solely for international patients.

Figure 11: Medical Tourism Service Facilitator



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- Medical Tourism Association: http://www.medicaltravelauthority.com/
- International Medical Travel Association: http://www.intlmta.org/web/imta/home

(2) "ITC-Welcom hotels plans foray into medical tourism, http://www.thehindubusinessline.com/2008/02/04/stories/2008020451620100.htm, February 3, 2008
(3) *IMTJ (International Medical Travel Journal)* articles:
- "Increased Activity from the Philippines," February 2, 2008
- "Seoul May Build a Medical Travel Complex," February 2, 2008
- "Taiwan to Help Promote Medical Travel by Relaxing Visa Restrictions," June 18, 2007
- "Malaysia: Health Tourist Visas Extended to 6 Months," January 20, 2008
- "Singapore: Targeting the Middle East," March 1, 2008
- "Accommodation During Treatment: Medical Facilities and Hotels," June 18, 2007

Savings Can Be Significant

As illustrated below in Figure 12 and the table, the use of medical tourism programs can save consumers as much as 90 percent, when compared to U.S. costs.

Americans use outbound medical tourism programs primarily for elective surgical procedures. Figure 12 displays the estimated price differences for 15 surgical procedures frequently used in outbound programs. Note that prices vary widely by country, and costs associated with travel to and from the surgical facility – along with required aftercare – can reduce the price differential appreciably. When extraordinary travel and insurance costs are added, the relative cost advantage for medical tourism is 28 to 88 percent, depending on the location and procedure.

Figure 12: Cost Comparison of U.S. vs. Foreign Surgical Procedures[9]

Procedure	U.S. Inpatient Price (U.S.$)	U.S. Outpatient Price (U.S.$)	Average of 3 Lowest Foreign Prices including Travel Cost (U.S.$)
Knee Surgery	11,692	4,686	1,398
Shoulder Angioplasty	6,720	8,972	2,493
Transurethral Prostate Resection	4,669	3,737	2,698
Tubal Ligation	6,407	3,894	1,412
Hernia Repair	5,377	3,903	1,819
Skin Lesion Excision	7,059	1,919	919
Adult Tonsillectomy	3,844	2,185	1,143
Hysterectomy	6,542	6,132	2,114
Haemorrhoidectomy	5,594	2,354	884
Rhinoplasty	5,713	3,866	2,156
Bunionectomy	6,840	2,706	1,682
Cataract Extraction	4,067	2,630	1,282
Varicose Vein Surgery	7,993	2,685	1,576
Glaucoma Procedures	4,392	2,593	1,151
Tympanoplasty	5,649	3,787	1,427

FIGURE 12 Note: U.S. inpatient prices were calculated by adding hospital payments through DRGs, physician fees through CPT codes, anesthesia charges based on the Medicare Claims Processing Manuel and CPT codes, and pharmaceutical charges using Medstat 2005 data for commercial lives with the same procedures.

U.S. outpatient prices were calculated by adding hospital fees through the Medicare Outpatient Prospective Payment System dataset, physician fees through CPT codes, anesthesia charges based on the Medicare Claims Processing Manuel and CPT codes, the minimum adjusted co-payments reported by the Centers for Medicare and Medicaid Services, and pharmaceutical charges using Medstat 2005 data for commercial lives with the same procedures.

Foreign prices were calculated as the average of the three lowest prices and included travel cost. These data were obtained from Vanbreda International, a Belgium-based employee benefits consulting and administration firm, who provided data based on 21 foreign countries. These data were assumed to have the same percentage increase in cost due to pharmaceutical charges as U.S. procedures.

All values are shown in 2008 U.S. dollars. Figures were converted from 2004 to 2008 dollars. Foreign prices were assumed to have the same inflation rate as U.S. prices.

	Weighted Price of a Procedure
U.S.	$10,629
Foreign	$1,410

Note: The weighted price of a procedure was calculated by multiplying the price by the proportion of overall usage. Each of the proportioned prices is then added to total a weighted average price. For example, a procedure priced at $5,000 that contributed to10 percent of all procedures in the data would account for $500, while a procedure priced at $3,000 occurring 50 percent would account for $1,500.

[9] Van Demark D. "How will the medical tourism industry in the United States develop?" *Consumer Health World*, March 2, 2007. Available online at: http://trusted.md/blog/dale_van_demark/2007/03/02/how_will_the_medical_tourism_industry_in_the_united_states_develop

Market Opportunity: Looking Ahead

The following two sets of figures describe the impact of outbound medical tourism on the U.S. health care system. Figures 13 and 14 show that outbound medical tourism currently represents $2.1 billion spent overseas for care. Figures 15 and 16 highlight the opportunity cost of the $2.1 billion spent overseas – $15.9 billion in lost revenue for U.S. health care providers. The projected increase in the number of outbound medical tourists from 750,000 in 2007 to 15.75 million in 2017 represents a potential $30.3 to $79.5 billion spent overseas for medical care, resulting in a potential opportunity cost to U.S. health care providers of $228.5 to $599.5 billion.

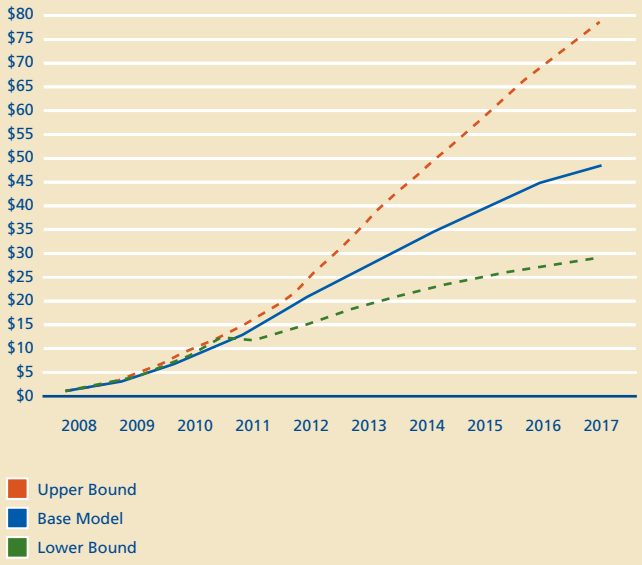
Three factors could help to determine whether the lower or upper limit is realized: the volume of outbound medical tourists, U.S. health care cost increases, and the price advantage enjoyed by outbound programs.

Figure 13: Cost Estimate for Spending by Outbound U.S. Medical Tourists

Year		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Base Case	Spending (billions U.S.$)	2.1	4.4	9.0	13.9	21.4	27.6	34.1	40.4	45.7	49.5
Lower Bound	Spending (billions U.S.$)	2.1	4.4	7.9	12.1	15.6	19.3	22.9	25.9	28.0	30.3
Upper Bound	Spending (billions U.S.$)	2.4	4.9	10.1	15.6	24.1	37.2	47.9	59.2	70.2	79.5

Note: The weighted price of a procedure in a foreign country was multiplied by the flow of outbound U.S. patients. Inflation-adjusted using a rate of three percent.

Figure 14: U.S. Spending Abroad, 10 Years



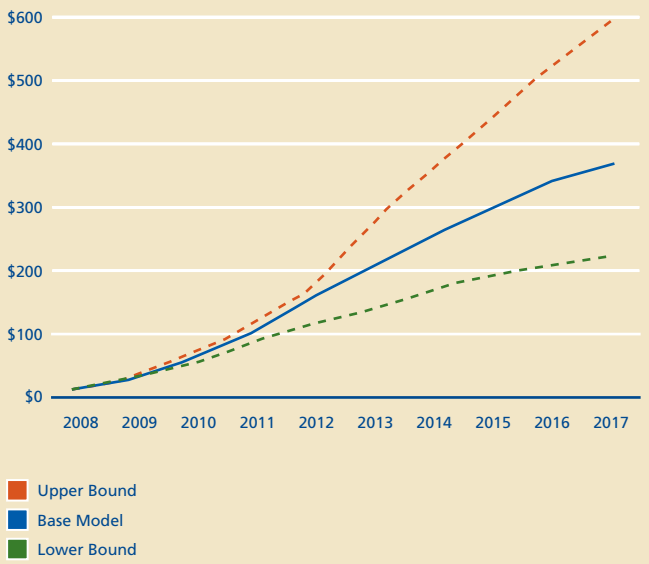
Note: The weighted price of a procedure in a foreign country was multiplied by the flow of outbound U.S. patients.Inflation-adjusted using a rate of three percent.

Figure 15: Lost Domestic Spending in U.S. by Outbound U.S. Medical Tourists

Year		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Base Case	Lost Spending (billions U.S.$)	15.9	32.8	67.7	104.5	161.5	207.9	257.0	304.4	344.9	373.0
Lower Bound	Lost Spending (billions U.S.$)	15.9	32.8	59.2	91.5	117.8	145.5	172.4	195.3	211.2	228.5
Upper Bound	Lost Spending (billions U.S.$)	17.9	36.9	76.1	117.6	181.7	280.7	361.4	446.7	529.1	599.5

Note: The weighted price of a procedure in the U.S. was multiplied by the flow of outbound U.S. patients. Inflation-adjusted using a rate of three percent.

Figure 16: Lost U.S. Domestic Spending, 10 Year Projection (billion U.S.$)



Note: The weighted price of a procedure in the U.S. was multiplied by the flow of outbound U.S. patients. Inflation-adjusted using a rate of three percent.

Leading U.S.-based Partnerships for Outbound Tourism

University of Pittsburgh Medical Center Offers integrated health care delivery system & health plans	**Description**	• Employee strength: 43,000 employees • Number of patients: More than 3 million outpatient visits & more than 167,000 inpatient visits
	Key focus area (international)	• Research and education for all specialty medical care
	Partners/ members	• Has partnered with Italy's region of Sicily to develop a hospital in Palermo; also has a medical center in Qatar and a cancer center at Dublin
Harvard Medicine Third-oldest medical school in the U.S. Its not-for-profit subsidiary focuses on international operations	**Description**	• Employee strength: 10,458 faculty members in clinical departments of affiliated hospitals and institutions with a total of over 3,000 beds • Number of patients: Offers services to over 2 million people in the Boston region
	Key focus area (international)	• All specialties; training, medical consulting, infrastructure planning
	Partners/ members	• Has developed more than 50 programs in over 30 countries across five continents • Dubai Healthcare City is launching University Hospital, a 400-bed tertiary care teaching hospital
Memorial Sloan-Kettering Cancer Center One of the world's premier cancer centers	**Description**	• Employee strength: 9,000 employees • Number of patients: About 21,000 inpatients and more than 431,000 outpatient visits annually
	Key focus area (international)	• Advisory services for a wide spectrum of cancers
	Partners/ members	• Has established relationships with institutions around the world: Hong Kong, Barcelona, Geneva, Athens, Sao Paulo, Seoul, Istanbul, Singapore and Philippines
Cornell Medical School Weill Medical College of Cornell University was founded in 1898; affiliated in 1927 with New York-Presbyterian Hospital	**Description**	• Employee strength: 240 full-time, 265 voluntary and 775 network faculty members • Number of patients: Nearly 2 million patient visits per year, including more than 230,000 visits to its emergency departments (New York-Presbyterian Hospital)
	Key focus area (international)	• Research and education, with all specialty medical care
	Partners/ members	• Has opened a medical school in Qatar and a research and advisory institute in Seoul • Maintains affiliations with Memorial Sloan-Kettering Cancer Center, Hospital for Special Surgery and many other metropolitan-area institutions
Duke Medicine Integrates the Duke University Health System, the Duke University School of Medicine, and the Duke University School of Nursing	**Description**	• Employee strength: 8,648 employees • Number of patients: More than 1.4 million outpatient visits & more than 60,000 inpatient visits
	Key focus area (international)	• Education, training, biomedical research
	Partners/ members	• Has partnered with NUS to open Duke-NUS Medical Graduate School Singapore

Leading U.S.-Based Partnerships for Outbound Tourism (cont.)

Johns Hopkins Hospital Teaching hospital in Maryland founded by Johns Hopkins	**Description**	• Employee strength: 25,000 • Number of patients: 60,000 admissions each year and more than 500,000 outpatient visits
	Key focus area (international)	• Collaborative research, education, training for physicians and other technical staff, policy planning, medical services
	Partners/ members	• Has ties with reputed institutes in Japan, Singapore, India, UAE, Canada, Lebanon, Turkey, Ireland, Portugal, Chile and Panama City
Cleveland Clinic One of the largest health centers in America. It integrates clinical and hospital care with research and education	**Description**	• Employee strength: Over1,400 physicians • Number of patients: 3 million outpatients and 68,000 surgical cases a year
	Key focus area (international)	• All specialties; clinics, preventive health program and wellness
	Partners/ members	• Cleveland Clinic Abu Dhabi in partnership with government of UAE is scheduled to be operational in 2010 • Has opened satellite campus in Canada
Columbia University Medical Center Has four schools: College of Physicians & Surgeons, College of Dental Medicine, School of Nursing, and Mailman School of Public Health	**Description**	• Employee strength: 2712 full time faculty • Number of patients: NA
	Key focus area (international)	• Education and skill in primary care and community, preventive, and population-based medicine • Collaborative medical research; clinical consults; training for physicians ,etc.
	Partners/ members	• The Medical School for International Health (MSIH) is a collaboration between Ben-Gurion University of the Negev and CUMC. Also has affiliated American Hospital, Paris; Florence Nightingale Hospital, Istanbul; and St. Luke's Medical Center, Philippines

Note: This is an indicative table for illustrative purposes.

Provider web sites and:
- www.upmc.com/Pdf/AnnualReport.pdf
- http://residency.dom.pitt.edu/
- http://www.upmc.com/Communications/MediaRelations/BusinessandInternational/Articles/ItalianBST.htm
- http://www.upmccancercenters.com/news/upci_news/2008/022508_dublin.html
- http://hms.harvard.edu/hms/facts.asp
- www.gtnspa.com/preseseminarioalma/Role%20of%20e-Learning%20Holliday.pdf
- http://www.hmsdc.hms.harvard.edu/affiliations.html
- http://www.hmiworld.org/hmi/issues/jan-feb08/feature-uh.php
- http://www.mskcc.org/mskcc/html/511.cfm
- http://cancercenters.cancer.gov/cancer_centers/mskcc.html
- http://www.mskcc.org/mskcc/html/5263.cfm
- http://www.cornellmedicine.com/abo_us/?name1=Chairman%27s+Message&type1=2Active
- http://news.med.cornell.edu/wcmc/wcmc_2008/06_06_08.shtml
- http://www.med.cornell.edu/affiliations/affiliations.html
- http://www.dukemedicine.org/AboutUs/FactsAndStatistics
- http://www.dukemedicine.org/Initiatives/Singapore/view
- http://www.hopkinsmedicine.org/about/statistics/hr.html
- http://www.hopkinsmedicine.org/admissions/innovat.html

Non-U.S.-based International Providers

Bumrungrad Hospital, Thailand
- Bumrungrad is the largest private hospital in Southeast Asia, with 554 beds and over 30 specialty centers. Recently, it made medical tourism its focus
- International patients: 400,000
- Patients treated: 1,000,000

Procedures

Apollo Hospitals, India
- Apollo is the largest private health care provider in Asia, with over 8,000 beds in more than 41 hospitals. It was the first hospital in India to receive JCI accreditation
- The Apollo Group and Johns Hopkins Medicine International have tied-up to undertake a study on heart diseases in India

Procedures

National Cancer Center, Singapore
- National Cancer Center Singapore (NCCS) offers treatment for a range of cancer problems. It has the largest number of cancer specialists in Singapore and serves as a referral center for the East Asia region
- NCCS regularly sends its physician abroad to learn new technologies

Procedures

Ivo Pitanguy Clinic, Brazil
- The renowned Ivo Pitanguy Clinic was founded in 1963 by Professor Ivo Pitanguy , who is in charge of the medical surgical staff
- A 14-bed private clinic, it also includes a Cosmetology Department for state-of-the-art procedures and general skin treatments
- Not accredited by JCI

Procedures

CIMA Hospitals, Costa Rica
- CIMA Hospital is affiliated and integrated as a teaching hospital with the Baylor University Medical Center of Dallas, Texas
- The hospital is operated by the International Hospital Corporation
- It is the only hospital in Central America that is accredited by the Department of Veterans Affairs. It has applied for JCI accreditation

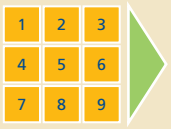
Procedures

American Hospital, U.A.E.
- American Hospital Dubai is a 143-bed, acute-care, general medical/surgical private hospital with 60 U.S. Board-certified physicians for multi-specialty group practice
- First hospital in the Middle East to be awarded JCI accreditation
- Has Centers of Excellence and specialized clinics for a number of diseases

Procedures

St. Luke's Medical Center, Philippines
- St. Luke's Medical Center is one of the most prominent hospitals in the Philippines and Asia
- The 650-bed hospital is home to nine institutes, 13 departments, and 19 centers
- It has signed an affiliation agreement with Memorial-Sloan Kettering Cancer Center

Procedures



1. Orthopedic procedures
2. Neurosurgery/neurology
3. Weight loss/liposuction
4. Cosmetics/plastic surgery
5. Dental procedures
6. Cardiovascular procedures
7. Oncology
8. Fertility/sex reassignment
9. Wellness

Not Present Present Specialized

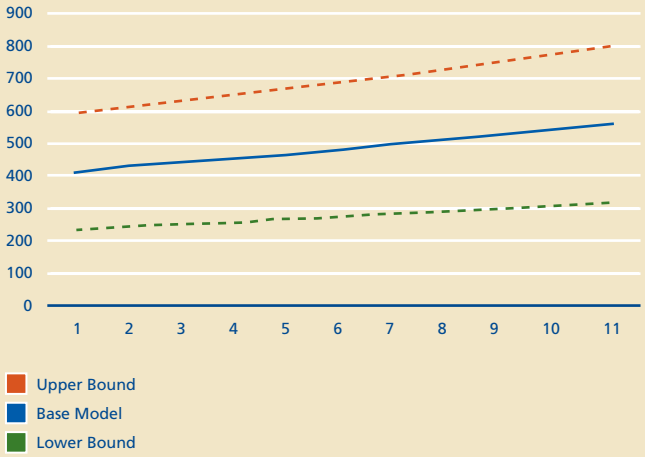
Note: Insights drawn from company web sites: www.bumrungrad.com; www.apollohospitals.com; www.nccs.com.sg; http://www.hospitalcima.com/; www.ahdubai.com; www.stluke.com.ph; http://www.pitanguy.com/ and the book "Patient Beyond Border" by Josef Woodman.

Inbound Medical Tourism

In 2008, more than 400,000 non-U.S. residents will seek care in the United States and spend almost $5 billion for health services. (Figure 17).

Inbound medical tourism represents two percent of the users of U.S. hospital services. Inbound tourists are primarily from the Middle East, South America and Canada. The motivations behind inbound medical tourism vary. For example, affluent consumers from emerging countries come to the U.S. for services unavailable in their native countries. Some medical tourists want to avoid extended waiting times at home. Other consumers combine business or leisure travel with a specialized medical need. Most come for a medical or surgical specialty program requiring hospital-based care (Figure 18).

Figure 17: U.S. Inbound Medical Tourism Patient Flow, 10 Year Projection (thousands)



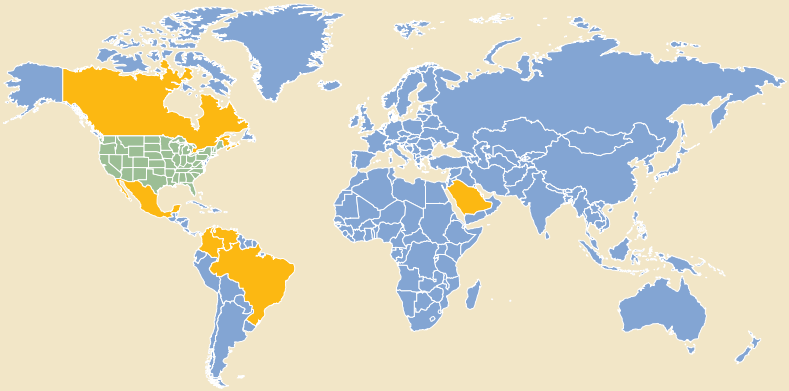
Assumptions
- In 2005, there were 44.95 million inpatient procedures performed in the United States.[10]
- Assumes that 25 percent of procedures are conducted in a hospital with international patients.
- International patients represent approximately 3.5 percent of inpatient procedures with a range of 2-5 percent for the lower and upper bound.[11]
- The annual procedure growth rate is 3 percent.
- Assumes one procedure is equivalent to one patient.

Figure 18: Inbound Tourism

Insights
- The number of patients has fallen from 2001; especially, from Middle Eastern nations, pursuant to delay in visa procurement and other external environmental factors
- Many providers are currently making efforts to get more international patients because they do not have the constraints of managed care in terms of costs

Procedures Sought
- Cancer/oncology
- Orthopedic
- Cardiovascular
- Cosmetic

Category of Travelers
- Emerging countries: Seek quality care or critical treatments
- Developed countries: Seek treatment due to waiting time or criticality issues
- Cosmetic/leisure: Vacation or convenience element during travel



Provider Country
Medical Traveler Country

Note: Insights are drawn from the following articles:
- "Report: A Study of the Impact of International Patients on the John Hopkins University of Medicine," CPT Robert A. Harris, USAF MSC, February 1999
- "The Best Money Can Buy: Medical Tourism in the U.S.A.," New America Media, News Feature/Analysis, Hilary Abramson, posted February 2, 2006
- "Challenges and Opportunities in the Care of International Patients: Clinical and Health Services Issues for Academic Medical Centers," Don R. Martin, MD, Acad Med. 2006; 81:189–192

[10] Advance data from Vital and Health Statistics, Centers for Disease Control, July 12, 2007. Available at: http://www.cdc.gov/nchs/data/ad385.pdf
[11] © 2008 Deloitte Development LLC. All rights reserved.

Inbound medical tourism is modest in terms of volume (Figure 19), but it is still important to a hospital's bottom line. Inbound medical tourists tend to pay commercial charges or higher for medical services, and tend to be more affluent than general patient populations.

Figure 19: U.S. Inbound Demand

Year		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Base Case	Patients (thousands)	417	430	443	456	470	484	498	513	529	544	561
Lower Bound	Patients (thousands)	238	246	253	261	268	276	285	293	302	311	320
Upper Bound	Patients (thousands)	596	614	632	651	671	691	712	733	755	778	801

Notes:
- In 2005, there were 44.95 million inpatient procedures performed in the United States.[12]
- Assumes that 25 percent of procedures are conducted in a hospital with international patients.
- International patients represent approximately 3.5 percent of inpatient procedures with a range of 2-5 percent for the lower and upper bound.[13]
- The annual procedure growth rate is 3 percent.
- Assumes one procedure is equivalent to one patient.

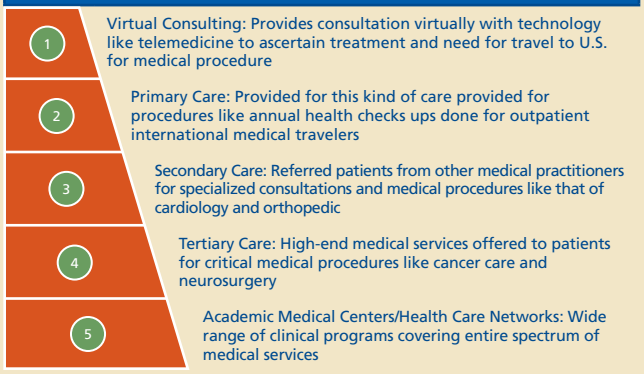
Several initiatives have helped to promote clinical programs related to U.S. inbound medical tourism. The establishment of international partnerships and the formation of international health care projects have increased awareness of the opportunities for foreign patients to travel the U.S. for care. Also, many U.S. medical centers have listed their services in international medical directories. Foreign physicians and U.S. physicians training abroad have helped to increase the number of referrals to the U.S. In addition, many U.S. medical centers have made an effort to serve embassy contacts and the relatives of ethnic groups within their community.

A significant source of medical tourism into the United States is the bordering countries of Canada and Mexico. While Canada has a universal health care system, patients are hampered by long waiting periods for many specialized procedures. Some Canadian patients travel to the United States to avoid these excessive waiting periods and to access the high-quality care at major medical centers. In Mexico, some medical tourists have entered the United States hoping to receive emergency care without having to endure high medical costs, or to obtain U.S. citizenship for their babies.

Characteristics of Inbound Medical Tourism Programs

Most U.S. inbound medical tourism programs provide five categories of care (Figure 20). The primary focus, however, is on acute programs that require an inpatient stay for a major medical condition or surgical intervention. In most cases, virtual consulting and primary care services are secondary dimensions of these efforts rather than standalone offerings.

Figure 20: Types of Medical Facilities and Services Provided



Note: Definitions were self-defined and developed from articles in Appendix I.

[12] Advance data from Vital and Health Statistics, Centers for Disease Control, July 12, 2007. Available at: http://www.cdc.gov/nchs/data/ad385.pdf
[13] © 2008 Deloitte Development LLC. All rights reserved.

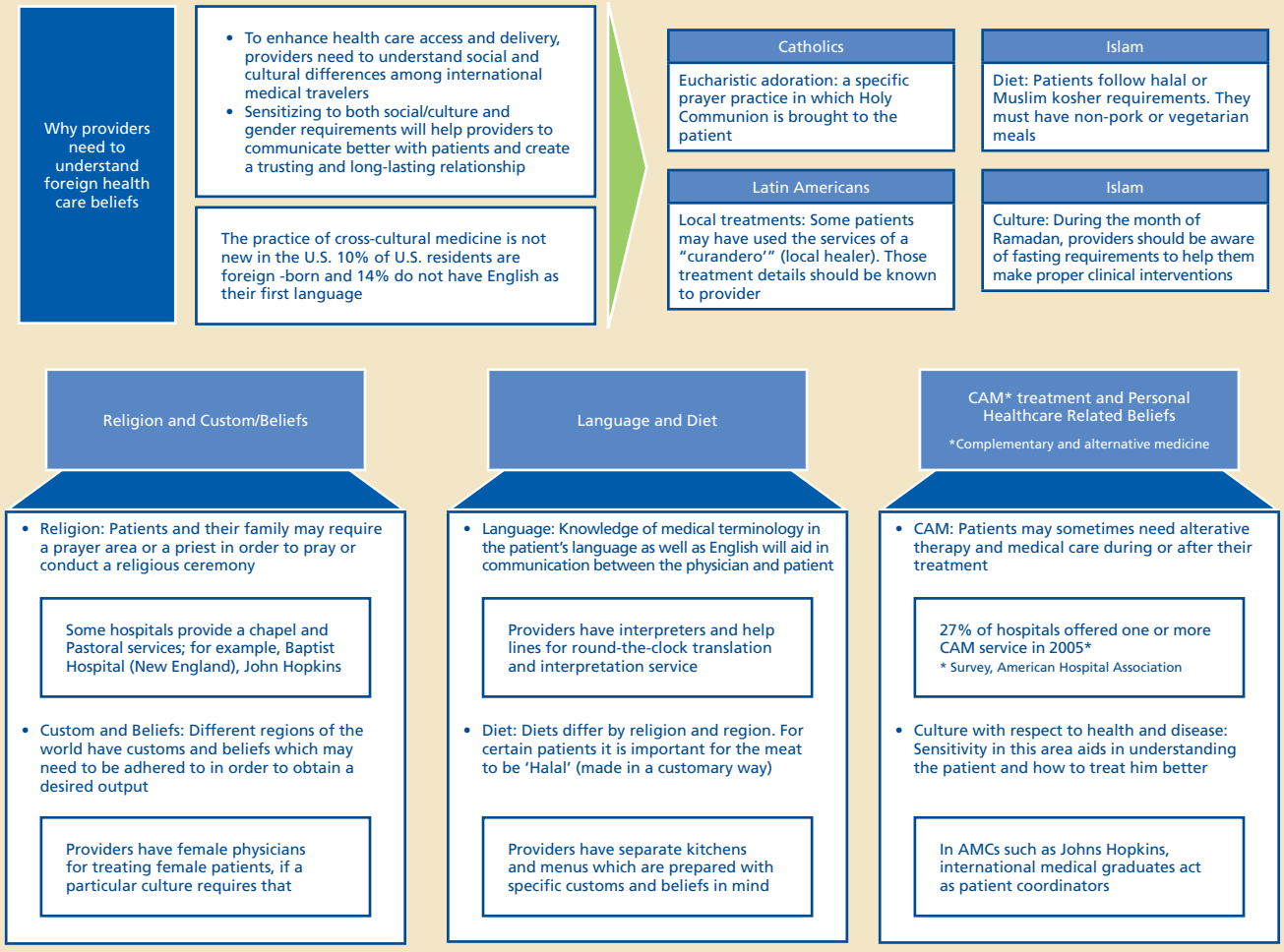
Cultural Sensitivity Important

The heterogeneity of inbound patient populations is a critical consideration for U.S. program sponsors. As detailed in Figure 21, differences in nutritional habits, religious practices, family interactions and other customs must be recognized, understood and addressed.

Costs and Reputation

Inbound tourists do not travel to the United States to obtain less expensive medical care. Most are willing to pay higher costs because they regard U.S.-based medical care as offering higher quality and shorter waiting times. Because of this perception, hosts of inbound medical tourism programs primarily have been large teaching institutions that enjoy positive national and/or international reputations.

Figure 21: How do U.S. institutions account for foreign cultures and health care beliefs?



Note: Insights developed from:
(1) Hospital web sites:
- Mayo Clinic: http://www.mayoclinic.org
- New England Baptist Hospital: http://www.nebh.org/sites/nebh/home.asp
- John Hopkins: www.hopkinsmedicine.org

(2) http://nccam.nih.gov/news/newsletter/2006_fall/hospitals.htm
(3) Sources of information about different religious practices
- en.wikipedia.org/wiki/Eucharistic_adoration
- www.stmarys-hospital.com/Services/Pastoral.aspx
- www.public.asu.edu/~squiroga/leigh.HTM
- Health Care Delivery to the Arab American Community; April, 1999; http://erc.msh.org/provider/arab_excerpt.pdf
- Preventing Ethical Dilemmas from Pediatric Nursing:The Muslim People http://www.medscape.com/viewarticle/457485_2

Major Centers for Inbound Medical Tourism

Texas Medical Center Has the largest air ambulance service and a successful inter-institutional transplant program	**Description**	• Employee strength: 73,600 (more than 26,000 registered nurses, LVNs, clinical caregivers, technicians & medical support staff and 13,000 volunteers) • Number of patients: 5.5M patient visits
	Key focus area (international)	• All specialties are covered • Largest number of heart surgeries performed in the world
	Partners/ members	• 46 institutions of the Texas Medical Center include 13 renowned hospitals and two specialty institutions, two medical schools, four nursing schools, and schools of dentistry, public health and pharmacy
University of Pittsburgh Medical Center Offers integrated health care delivery system & health plans	**Description**	• Employee strength: 43,000 employees • Number of patients: More than 3 million outpatient visits & more than 165,000 inpatient visits
	Key focus area (international)	• All transplantations, cancer, neurosurgery, psychiatry, rehabilitation, geriatrics, women's health and many others
	Partners/ members	• Comprises 19 hospitals, and a network of other care sites across western Pennsylvania • Has partnered with Italy's region of Sicily to develop a hospital in Palermo
Harvard Medicine Third-oldest medical school in the U.S. Its not-for-profit subsidiary focuses on international operations	**Description**	• Employee strength: 10,458 faculty members in clinical departments of affiliated hospitals and institutions with a total of over 3,000 beds • Number of patients: Offers services to over 2 million people in the Boston region
	Key focus area (international)	• All specialties are covered
	Partners/ members	• In addition to affiliated institutes, has 100 Primary Care Centers • Has developed more than 50 programs in over 30 countries across five continents • Dubai Healthcare City is launching University Hospital, a 400-bed tertiary care teaching hospital
Johns Hopkins Hospital Teaching hospital in Maryland founded by Johns Hopkins	**Description**	• Employee strength: over 25,000 • Number of patients: 60,000 admissions each year and more than 500,000 outpatient visits
	Key focus area (international)	• Collaborative research, education, training to physician and other technical staff, policy planning, medical services
	Partners/ members	• Has ties with reputed institutes in Japan, Singapore, India, UAE, Canada, Lebanon, Turkey, Ireland, Portugal, Chile and Panama City
Cleveland Clinic Offers both clinical and hospital care with research and education (fifth-largest research institute in U.S.). Ranked #1 in heart care by *U.S. News & World Report*	**Description**	• Employee strength: 1,400 physicians • Number of patients: More than 3 million outpatient visits & 68,000 surgical cases per year
	Key focus area (international)	• Over120 medical specialties and sub-specialties
	Partners/ members	• In addition to the main campus and hospitals, has eight more clinic hospitals • Cleveland Clinic Abu Dhabi in partnership with government of UAE is scheduled to be operational in 2010
Mayo Clinic The largest integrated group practice in the world	**Description**	• Employee strength: Employs more than 2,500 physicians & scientists and over 42,000 allied health staffs • Number of patients: 135,000 patient visits & 10,000 international patients
	Key focus area (international)	• All specialties are covered
	Partners/ members	• Has four major clinics: Rochester (MN), Jacksonville (FL) and Phoenix and Scottsdale (AZ) • Operates in many smaller clinics and hospitals in Minnesota, Iowa & Wisconsin (Mayo Health System)

Major Centers for Inbound Medical Tourism (cont.)

Cornell Medical School Weill Medical College of Cornell University was founded in 1898; affiliated in 1927 with New York-Presbyterian Hospital	**Description**	• Employee strength: 240 full-time, 265 voluntary and 775 network faculty members • Number of patients: Nearly 2 million patient visits per year, including more than 230,000 visits to its emergency departments (New York-Presbyterian Hospital)
	Key focus area (international)	• Research and education, with all specialty medical care
	Partners/ members	• Has opened a medical school in Qatar and a research and advisory institute in Seoul • Maintains affiliations with Memorial Sloan-Kettering Cancer Center, Hospital for Special Surgery and metropolitan-area institutions
Duke University School of Medicine (DUMC) Has been voted the best-quality hospital in the Durham-Chapel Hill area	**Description**	• Employee strength: 8,648 full-time employees • Number of patients: More than 1.4 million outpatient visits & 60,000 surgical cases per year
	Key focus area (international)	• All specialties, with eminence in cardiac and organ transplant care
	Partners/ members	• DUSM has partnered with NUS to open Duke-NUS Medical Graduate School Singapore
Memorial Sloan-Kettrering Cancer Center One of the world's premier cancer centers	**Description**	• Employee strength: 9,000 • Number of patients: About 21,000 inpatients and more than 431,000 outpatient visits annually
	Key focus area (international)	• Advisory services for a wide spectrum of cancers
	Partners/ members	• Has established relationships with institutions around the world: Hong Kong, Barcelona, Geneva, Athens, Sao Paulo, Seoul, Istanbul, Singapore and Philippines

Note: This is an indicative table for illustrative purposes.

Provider web sites and the following web pages:
- http://www.texmedctr.tmc.edu/root/en/GetToKnow/FactsandFigures/FactsAndFigures.htm
- http://www.texmedctr.tmc.edu/root/en/GetToKnow/AboutTMC/About+the+TMC.htm
- http://www.texmedctr.tmc.edu/root/en/GetToKnow/AboutTMC/About+the+TMC.htm
- http://health.usnews.com/usnews/health/partners.htm
- http://www.mayoclinic.org/mcitems/mc0700-mc0799/mc0710-2007.pdf
- http://www.washingtondiplomat.com/04-02/c5_04_02.html
- http://www.mayoclinic.com/health/AboutThisSite/AboutMayoClinic

A Word about Intrabound Medical Tourism – Domestic Centers of Excellence

A less significant form of medical tourism occurs when patients travel to non-local facilities or Centers of Excellence within their home country to receive medical treatment. Drivers include the availability of a physician who performs a complex or specialty procedure, decreased waiting times, higher quality of care, lower costs, and inclusion of the facility under coverage provisions of the individual's insurance program.

While data about intrabound medical tourism is sparse, its prevalence is widely assumed. The patient volumes of leading cancer centers (e.g., Mayo, Hutchinson, MD Anderson, Hopkins), research hospitals (e.g., Washington University St. Louis, Massachusetts General, Stanford, Mt. Sinai) and many other specialty hubs are impacted by individuals who are self-referred or physician-referred based on perceived and/or demonstrated specialized expertise. In addition, health plans have supported medical tourism: United Healthcare's United Resource Network and Aetna's Centers of Excellence for transplants and bariatric surgery are examples.

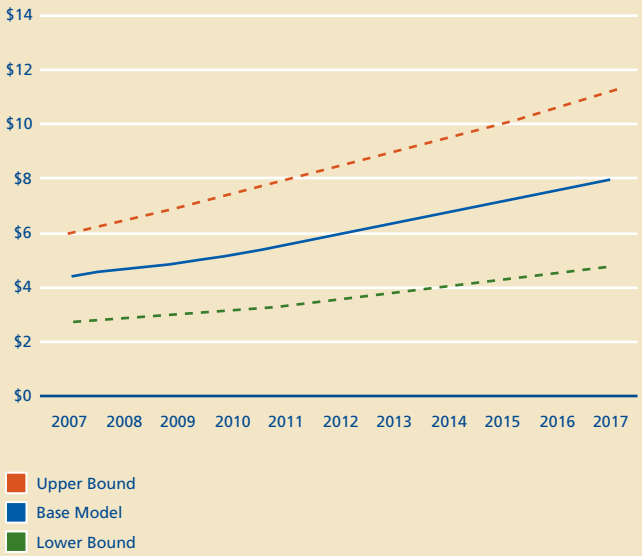
Intrabound medical tourism is likely to grow with consumerism and the resulting demand for transparency in prices and clinical performance (Figure 23). However, it is currently difficult to measure the trend because data are not available.

Looking Ahead

The growth of medical tourism is driven by cost, consumerism, quality, and foreign economic development. Outbound medical tourism is expected to increase as health care costs in the United States continue to rise. In addition, consumerism and higher out-of-pocket expenses are prompting individuals to seek lower-cost alternatives to U.S.-based treatments. Inbound medical tourism is primarily driven by the search for high-quality care without extensive waiting periods. Foreign patients are willing to pay more for care within the United States if these two factors play a large role. Finally, economic development abroad and the growth of U.S.-based international programs should help to meet medical tourism's capacity demands, at least in the short term.

Outbound medical tourism is likely to experience explosive growth over the next three to five years, followed by continued slower growth due to capacity constraints. The availability of lower-cost, offshore treatment options could save U.S. patients billions of dollars and reduce spending within the U.S. health care system. Inbound medical tourism is also expected to grow, but at a much slower and steadier rate than outbound medical tourism (Figures 22 and 23). Academic medical centers and major health systems with partnerships abroad are likely to lead the way in this sector. Intrabound medical tourism may expand as health insurers and consumers begin to leverage cost and performance data to take advantage of regional differences in pricing, quality, customer satisfaction and waiting times. However, it is not expected to be a major component of medical tourism until this data becomes more transparent.

Figure 23: U.S. Inbound Medical Tourism Spending, 10 Year Projection (billion U.S.$)



Assumptions
- In 2005, there were 44.95 million inpatient procedures performed in the United States.[14]
- Assumes that 25 percent of procedures are conducted in a hospital with international patients.
- International patients represent approximately 3.5 percent of inpatient procedures with a range of 2-5 percent for the lower and upper bound.[15]
- The annual procedure growth rate is 3 percent.
- Assumes one procedure is equivalent to one patient.

Figure 22: Spending by Inbound Medical Tourists

Year		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Base Case	Spending (billions U.S.$)	4.7	5.0	5.3	5.6	6.0	6.3	6.7	7.1	7.6	8.0
Lower Bound	Spending (billions U.S.$)	2.7	2.9	3.0	3.2	3.4	3.6	3.8	4.1	4.3	4.6
Upper Bound	Spending (billions U.S.$)	6.7	7.1	7.6	8.0	8.5	9.0	9.6	10.2	10.8	11.4

Note: The weighted price of a procedure in a foreign country was multiplied by the flow of outbound U.S. patients. Inflation-adjusted using a rate of three percent.

[14] Advance data from Vital and Health Statistics. Centers for Disease Control. July 12, 2007. Available at: http://www.cdc.gov/nchs/data/ad385.pdf
[15] © 2008 Deloitte Development LLC. All rights reserved.

Implications

Provider Organizations

As inbound medical tourism expands, the majority of growth will be at the major academic medical centers which have established partnerships with international programs. These medical centers will look to expand their capacity to accommodate the growth in foreign medical tourists looking to obtain quality health care without having to wait extended periods of time.

Health Plans

The expansion of medical tourism creates several opportunities for health insurers. The low-cost alternative of receiving care abroad enables insurers to develop plans that provide incentives for patients willing to travel for various procedures. As the cost of health care continues to rise in the United States, leveraging low-cost care abroad can help health insurers to increase profitability.

Employers

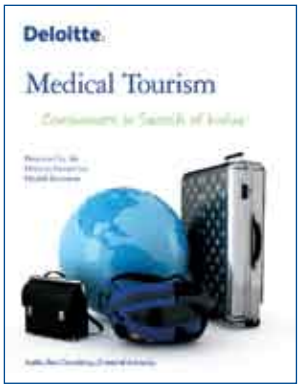
Employers are seeking less-costly care options for their employees. Medical tourism will capture employers' interest, but they will need to sell it to their employees. A partnership with health insurers that offer medical tourism to U.S. patients can help to reduce the financial burden of offering health insurance among all employees.

Regulators and Policymakers

Medical tourism provides considerable opportunities for regulators and policymakers to create initiatives that will enable greater access to health care. However, the U.S. government may be cautious when considering the promotion of an industry that will likely create a loss of potential spending in the U.S. Also, assurance of quality care abroad will likely be a growing concern of policymakers.

Impact of Outbound and Inbound Medical Tourism

Stakeholder	Impact
Provider Organizations	• Inbound medical tourism could spawn academic medical (AMC) growth opportunities. Specifically, AMCs may need to expand capacity to manage the influx of inbound patients. • Outbound medical tourism means that the concept of "offshoring" will now hit physicians and hospitals, industries never thought to be at risk for global competition. For example, West Virginia recently passed a bill to send state employees abroad for treatment. • Intrabound medical tourism will create intense competition between winner and loser organizations. Competition will be based on demonstrable value propositions (price, quality, service) mitigated by consumer/employer/government-sponsored insurance programs.
Health Plans	• Inbound medical tourism's impact will be minimal unless foreign patients buy certain critical illness policies to pay for their condition. Opportunity exists for health plans to create products targeted to inbound medical tourists to facilitate price negotiation and care coordination. • Outbound medical tourism provides health plans additional network options for cost-effective care that can be incorporated as features in group and individual products. Health plans may need to decrease premiums for employers who send their employees abroad for major, non-urgent surgeries. Risks could include exposure to a foreign country's medicolegal system; nurses and other staff might not be as qualified as those in the U.S. • Intrabound medical tourism likewise will be driven by health plan product design. It offers potential for customization of insurance programs for individuals and groups.
Employers	• Inbound medical tourism – n/a • Outbound medical tourism will become an interesting option for employers as a cost-management hedge for services that are safe, effective and less costly. Self-insured employers will need to consider the risk of malpractice suits. • Intrabound medical tourism will also be of interest to employers, if they are given the opportunity to narrow physician networks to high-performing, efficient and less-costly providers. However, tension with local community providers is a likely result if employers direct employees out of the immediate community.
Regulators and Policymakers	• Inbound medical tourism – n/a • Outbound medical tourism is a complex regulatory issue: Medical liability, risk management, oversight of devices and prescription drugs, credentialing of providers, et al, are more complicated offshore. It is not likely that the government will direct enrollees (Medicare, Medicaid, FEHP) in the direction of outbound medical tourism, but it is plausible that barriers will not be created for commercial plans, employers and individuals. • Intrabound medical tourism to high-quality specialty hubs might be attractive to policymakers where demonstrable quality and efficiency gains are achievable.



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Appendix I

The following articles provided insights:

- Devon M. Herrick, "Medical Tourism: Global Competition in Health Care," NCPA Policy Report No. 304, November 2007
- Martha Lagace, "The Rise of Medical Tourism, Q&A with Tarun Khanna," published December 17, 2007
- "An Emerging Healthcare Solution to Exorbitant Healthcare Costs for Uninsured and Underinsured Americans," Medretreat, accessed at http://www.medretreat.com/ 12/23/07
- CPT Robert A. Harris, USAF MSC, "Report: A Study of the Impact of International Patients on the Johns Hopkins University of Medicine," February 1999
- Hilary Abramson, "The Best Money Can Buy: Medical Tourism in the U.S.A.," New America Media, News Feature/Analysis, posted February 2, 2006
- Don R. Martin, MD, "Challenges and Opportunities in the Care of International Patients: Clinical and Health Services Issues for Academic Medical Centers," Acad Med. 2006, 81:189–192
- "A Feasibility Study for a Yukon Health and Wellness Tourism Industry," Whitehorse, Yukon, May 2005
- Stuart Altman, David Shactman and Efrat Elat, "Could U.S. Hospitals Go the Way of U.S. Airlines? A 'Darth Vader' Scenario," presentation to Hospital Payment Symposium, Washington, DC, July 15, 2005
- Katrien Kesteloot, PhD, "Health Care Market Reforms & Academic Hospitals in International Perspective," Achtergrondstudie, Zoetermeer, 2003
- Sara Caballero-Danell and Chipo Mugomba," Medical Tourism and its Entrepreneurial Opportunities – A Conceptual Framework for Entry into the Industry," School of Business and Economic Law, Goteborg University, January 2007
- Olivia F. Lee, MBA and Tim R. V. Davis, PhD, "International Patients: A Lucrative Market for U.S. Hospitals," *Health Marketing Quarterly*, Vol. 22(1), 2004
- William Bies, Lefteris Zacharia, "Medical Tourism: Outsourcing Surgery," Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, PA, Department of Medicine, University of Pittsburgh, Pittsburgh, PA; Received November 28, 2006; accepted March 14, 2007
- *IMTJ (International Medical Travel Journal)* articles:
  - Insurance and Medical Travel, September 24, 2007
  - Premium Service, November 1, 2007
  - USA: the Cost of Healthcare, June 18, 2007

Appendix II

The following web sites provided insights:

- http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2234298
- "Some Companies, Insurers Mull Sending Americans Abroad for Surgery," November 4, 2006. *Westchester Journal News*, downloaded from: www.bcbshealthissues.com
- Various reading and sites:
  - http://www.project-management.in/
  - http://en.wikipedia.org/wiki/Medical_tourism#History
  - http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2234298
- http://www.discovermedicaltourism.com/hungary/
- http://www.treatmentinhungary.net/
- http://www.discovermedicaltourism.com/hungary/
- http://www.treatmentinhungary.net/
- http://www.arabmedicaltourist.com/
- http://timesofindia.indiatimes.com/articleshow/2924252.cms
  - Over 150,000 medical tourists travelled to India in 2002 alone... number of such travelers has been increasing by at least 25% every year
  - 150,000 (2002); 25% growth rate till 2007
- Cost: Avg. 20% of U.S.:
  - See table "Figure 5 Costs" below for details
- http://www.thaiwebsites.com/medical-tourism-thailand.asp
- Cost: Avg. 30% of U.S.
  - See table "Figure 5 Costs" below for details
- http://en.wikipedia.org/wiki/Medical_tourism#Singapore
- Cost: Avg. 35% of U.S.
  - See table "Figure 5 Costs" below for details
- http://www.eturbonews.com/2692/malaysia-worlds-top-five-medical-tourism-dest
- Cost: Avg. 25% of U.S.
  - See table "Figure 5 Costs" below for details
- http://www.eturbonews.com/2692/malaysia-worlds-top-five-medical-tourism-dest
- http://www.discovermedicaltourism.com/malaysia/
- http://www.project-management.in/malaysia.php
- http://www.traveldailynews.com/new.asp?newid=27041&subcategory_id=69
- http://www.traveldailynews.com/new.asp?newid=27041&subcategory_id=69
- http://www.brazilmedicaltourism.com/mostrar_post.php?id=17&cat=6
- http://en.wikipedia.org/wiki/Medical_tourism
- http://www.brazilmedicaltourism.com/mostrar_post.php?language=En&id=151&cat=5
- http://www.project-management.in/costa_rica.php
- http://www.articlesbase.com/destinations-articles/medical-tourism-in-costa-rica-canada-and-cuba-396305.html
- http://en.wikipedia.org/wiki/Medical_tourism#Mexico
- http://en.wikipedia.org/wiki/Medical_tourism#Mexico
- http://www.medicaltourismco.com/medical-tourism/low-cost-gastric-sleeve-abroad-price-advantage-of-mexico-costa-rica-india/
- http://en.wikipedia.org/wiki/Medical_tourism#Mexico
- http://www.medicaltourismco.com/medical-tourism/low-cost-gastric-sleeve-abroad-price-advantage-of-mexico-costa-rica-india/
- http://www.project-management.in/mexico.php

Table: Figure 5 Costs

Major medical procedures w/average total medical/hospital cost in a western-level hospital

$U.S. Costs from "Patient Beyond Border" by Josef Woodman. Details below									
Procedure	Countries					Cost as a % to U.S.			
	U.S.	India	Thailand	Singapore	Malaysia	India	Thailand	Singapore	Malaysia
Heart Bypass	130,000	10,000	11,000	18,500	9,000	8%	8%	14%	7%
Heart Valve Replacement	160,000	9,000	10,000	12,500	9,000	6%	6%	8%	6%
Angioplasty	57,000	11,000	13,000	13,000	11,000	19%	23%	23%	19%
Hip Replacement	43,000	9,000	12,000	12,000	10,000	21%	28%	28%	23%
Hysterectomy	20,000	3,000	4,500	6,000	3,000	15%	23%	30%	15%
Knee Replacement	40,000	8,500	10,000	13,000	8,000	21%	25%	33%	20%
Spinal Fusion	62,000	5,500	7,000	9,000	6,000	9%	11%	15%	10%

"Patient Beyond Border" by Josef Woodman. The table used in this book is available from *ABILITY Magazine* at http://www.abilitymagazine.com/pbb.html.

Note: Costs are for surgery, including hospital stay only.

Costs assumptions taken for India (20%); Malaysia (25%); Thailand (30%); Singapore (35%).

Appendix III

The following sources provided insights:

- http://www.cumc.columbia.edu/health/hw_affiliates.html
- http://www.upmc.com/AboutUPMC/International/Locations/
- http://www.pittsburghlive.com/x/pittsburghtrib/news/specialreports/italy/
- http://www.mskcc.org/mskcc/html/5263.cfm
- http://www.jhintl.net/glo/projects/
- http://my.clevelandclinic.org/library/places_locations.aspx
- http://www.ameinfo.com/132239.html
- http://www.nyp.org/news/hospital/cornell-medical-qatar.html
- http://inside.duke.edu/article.php?IssueID=178&ParentID=17120
- http://www.hmi.hms.harvard.edu/about_us/global_presence/index.php
- "The Biggest Challenges Facing Medical Travel and Tourism," *IMTJ (International Medical Travel Journal)*, September 24, 2007 (Note: *IMTJ* asked Dr, Jones and Dr, Keith for their opinions on a number of important issues facing the medical travel industry.)
- "An emerging Healthcare Solution to Exorbitant Healthcare Costs for Uninsured and Underinsured Americans," Medretreat, accessed at http://www.medretreat.com/ 12/23/07
- Greg Allen, "Employers, Insurers Consider Overseas Health Care," http://www.npr.org/templates/story/story.php?storyId=16294182
- Patrik Jonsson, "Companies Explore Overseas Healthcare," *The Christian Science Monitor*, August 16, 2006, http://www.csmonitor.com/2006/0816/p03s03-usec.html

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Acknowledgements

Thanks to the following colleagues for their contributions and participation: Mitesh Patel, Vibhor Sahare, Sudeep Krishna and Suraj Prasad.

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