



Universidad Popular Autónoma del Estado de Puebla

Centro Interdisciplinario de Posgrados

MOC: Microeconomics of Competitiveness

MEDICAL TOURISM EMERGING CLUSTER

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1. Introduction

1.1 Healthcare Industry

The activity that the Healthcare Industry realizes is not only fundamental for the development of physical and mental wellness of the entire society, but also an important motor in the economic development of a country since it generates employment and its good practice reduces the invest of government in health spent. This sector, like others, facilitates technological advances, research and development investments, specialization, employment creation, enterprise globalization, among others.

The long term goal of the health sector is, without doubt, to leave behind the curative medicine and get to the preventive one. This is achieved with a significant effort of all players of this industry together with a preventive culture which can be accomplished with the diffusion of information on health issues: "The first step for prevention is information". The governments have a key role in this task, due to their responsibility to spread healthcare to the entire population, including that sector that cannot afford health services.

Healthcare sector divides its practice into three great activities:

Assistance: Group of actions realized by the health staff with the purpose of providing the resources needed to maintain health. This activity is done by the health institutes which benefit the patient directly and offer him a better quality of life.

Schooling: Activity of preparation and training for those who practice within the healthcare area. Colleges play an important part in this issue due to their responsibility of training the future human resources, as well as improving their abilities and expanding their knowledge . It is important for these professionals to keep updated with new programs and continued education.

Research: realized on health institutes for the full comprehension of diseases, its diagnostic and treatment.

The activities on this sector provide an important support to society and also to vendors from which it requires numerous inputs to work with.

1.2 Background

In the last years, the concern of healthcare issues has been accentuated worldwide becoming a global priority. This makes the industry very interesting since its dynamics should be motivated. All its participants should work together in order to minimize the problems which affect the sector directly.

The principal players that participate in the health industry are: international organisms, government dependencies, global specialist association, hospitals, clinics, laboratories, pharmacies, among others. The pharmacy industry should be analyzed independently. There are some foundations too which help to finance research and development projects.

The most important international organism is the World Healthcare Organization which depends on the United Nations and that is responsible for providing leadership on healthcare issues global wide. Some of their tasks: regulate, manage and distribute health information all around the world.

Public healthcare provides information which is useful to create consciousness among society by the distribution of it, looking for the society to consider their own responsibility to preserve it.

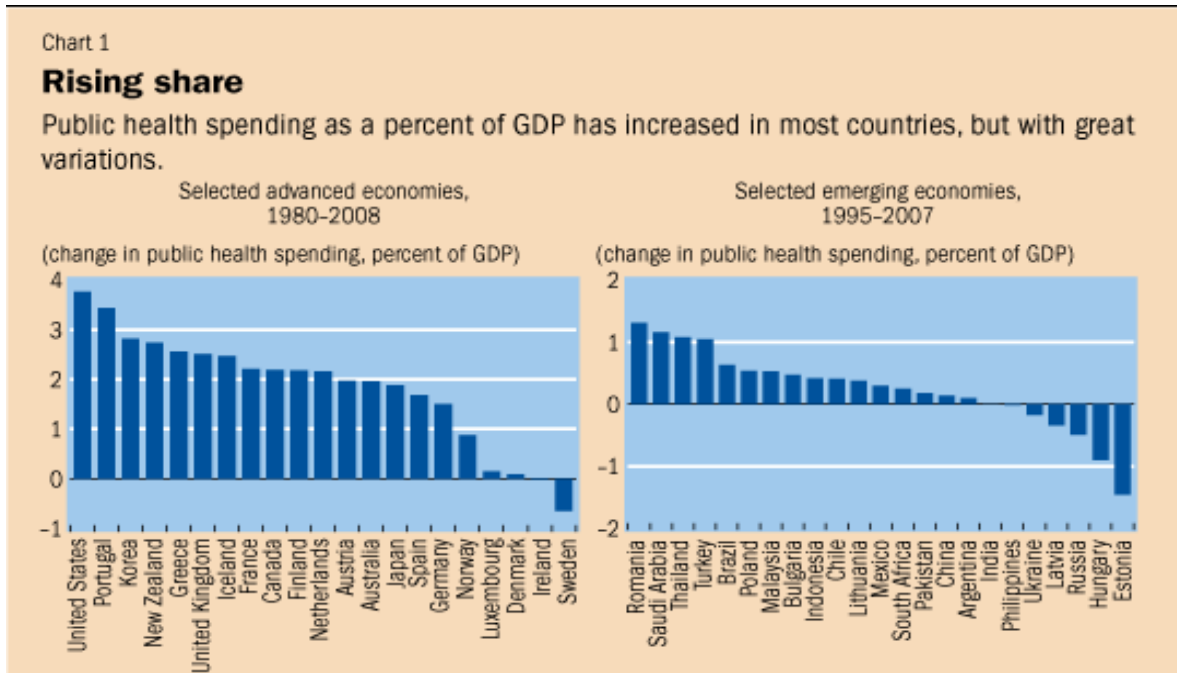
1.3 Current figures

The healthcare industry is one with a great growth globally, some developed countries spend an average of 10% of their GDP (2009) on this issue, and this number, according to some studies will grow 3% in the next 20 years (Benedict Clemens, 2011). Each inhabitant spends an average of US\$855 on healthcare issues and from the total spends on medical services, a 17.6% is paid directly from the pocket of the interested (2009).

The next graphic shows the percent change in invest on healthcare for developed and emerging economies from 1980-2008 and from 1995-2007 respectively. We can appreciate how Mexico's spending has increased less than 1% in that period of time against that of the advanced economies which has increased 2% on average¹.

¹ OECD Health Database; WHO Health Database; Silvard (1974-96); and IMF staff estimates. Note: Only countries for which the data series are complete for the given period are included.

Illustration 1 Rising Share



2. Medical Tourism

The combination of health and tourism is becoming more and more promising and is growing in Mexico. The reasons, among many other factors of competitive advantage we have in relation to other countries that offer this same service are: the proximity to the U.S., quality and humanistic services of mexican doctors, who have studied in the United States and England, national certifications with international standards, certifications of the Joint Commission International (JCI), treatment costs are 70% more affordable than those offered by the northern neighbor and, finally, the crisis in health care of the developed countries.

Now, it is crucial that the more advanced countries, foreign insurance companies and travel agencies that specialize in promoting this alternative, expand their services to provide more options to the Mexican industry.

Additionally, it is important that the ecosystem of health tourism encourages partnerships with the academy, private hospitals, local and foreign investment, as well as with federal and state governments to provide certainty in the services, infrastructure and laws, and to keep up with international quality of medical treatments.

The number of foreigners, not only those in the U.S. but also those in Canada and Europe, is increasing every year. They look for alternatives outside their countries of origin, because the social security costs and waiting times are increasing. Also, the treatment options for chronic degenerative diseases are more limited.

2.1 Global Status of the Industry

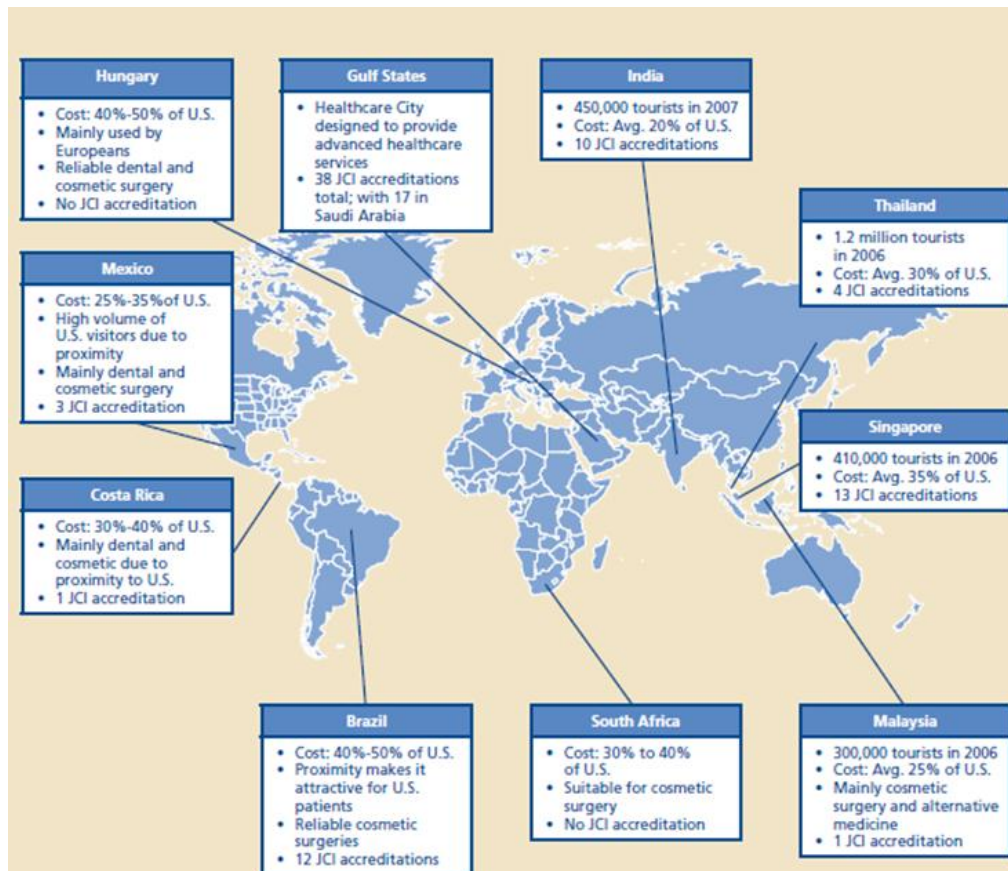
Recent studies show that it is expected that the sector of medical tourism in India will grow 30% each year from 2009 to 2015 (this since more than 180.000 patients visited Indian medical centers during at least the first eight months of the fiscal year 2008.) India is preparing itself for this expected increase, and so far it has not found any restrictions regarding the offer.

In the case of Mexico it is expected that by 2015, only in the northern border of the region, 450 thousand visitors will arrive and generate a revenue in the region of nearly 1.350 billion dollars. Meanwhile, it's anticipated that the revenues for 2011 in the state of Baja California will be of 90 million dollars, an increase of 4.27% compared to 2010.

Although the number of foreign medical sites continues to increase, there are still problems on how to supervise quality in a better way. The Joint Commission International (JCI) is the institution of official accreditation of the health care sector. In 2005 has increased the number of approved care places from 76 to over 220 in 2008.

The next chart shows the most important centers for medical tourism worldwide and its best assets. A privileged position acquires Mexico in front of other countries specially US.

Illustration 2 Medical Tourism and Medical Travel ²



This sector starts to attract more interest due to the growing number of sales on the last years. For example in Europe, the figures are follows³:

² *Medical Tourism: Consumers in Search of Value*, Centro de Soluciones para la Salud de Deloitte, 2008.

³ Euromonitor International from official statistics, trade associations, trade press, company research, trade interviews, trade sources.

Table 1 Health and Wellness Tourism Sales by Category Value 2005-2010

Table 2 Health & Wellness Tourism Sales by Category: Value 2005-2010						
MX\$ million	2005	2006	2007	2008	2009	2010
Medical Tourism	15,258.6	16,844.1	18,768.8	19,869.0	19,630.9	20,796.7
Spas	8,172.9	9,530.9	11,299.8	12,008.5	12,387.8	12,240.1
- Destination Spas	1,933.4	2,431.4	2,698.9	2,860.8	2,959.5	2,909.2
- Hotel/Resort Spas	5,448.6	6,321.5	7,784.8	8,290.8	8,554.5	8,451.8
- Other Spas	790.9	778.0	816.1	856.9	873.9	879.1
Other Health & Wellness Tourism	615.2	194.5	250.4	263.0	265.8	267.8
Health & Wellness Tourism	24,046.7	26,569.5	30,319.0	32,140.4	32,284.6	33,304.6

The invest per region on medical tourism is, as shown on the following charts, increasing on the next years especially on the Latin America region. This might catapult Mexico and Puebla to an international level.

Illustration 3 Real Regional Medical Tourism Spending

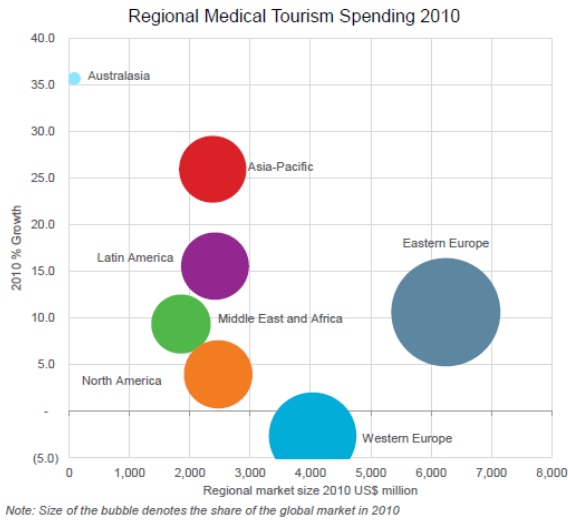
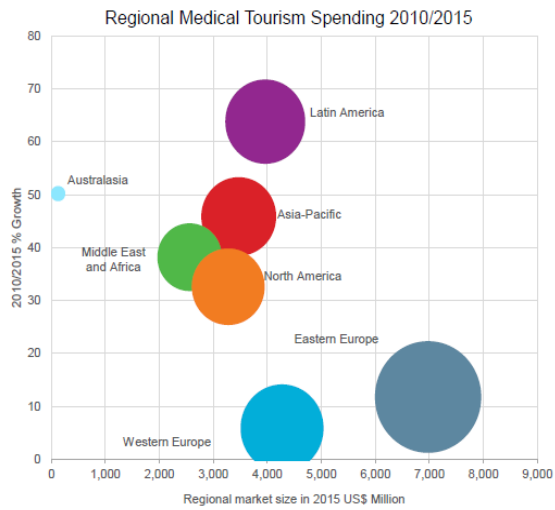


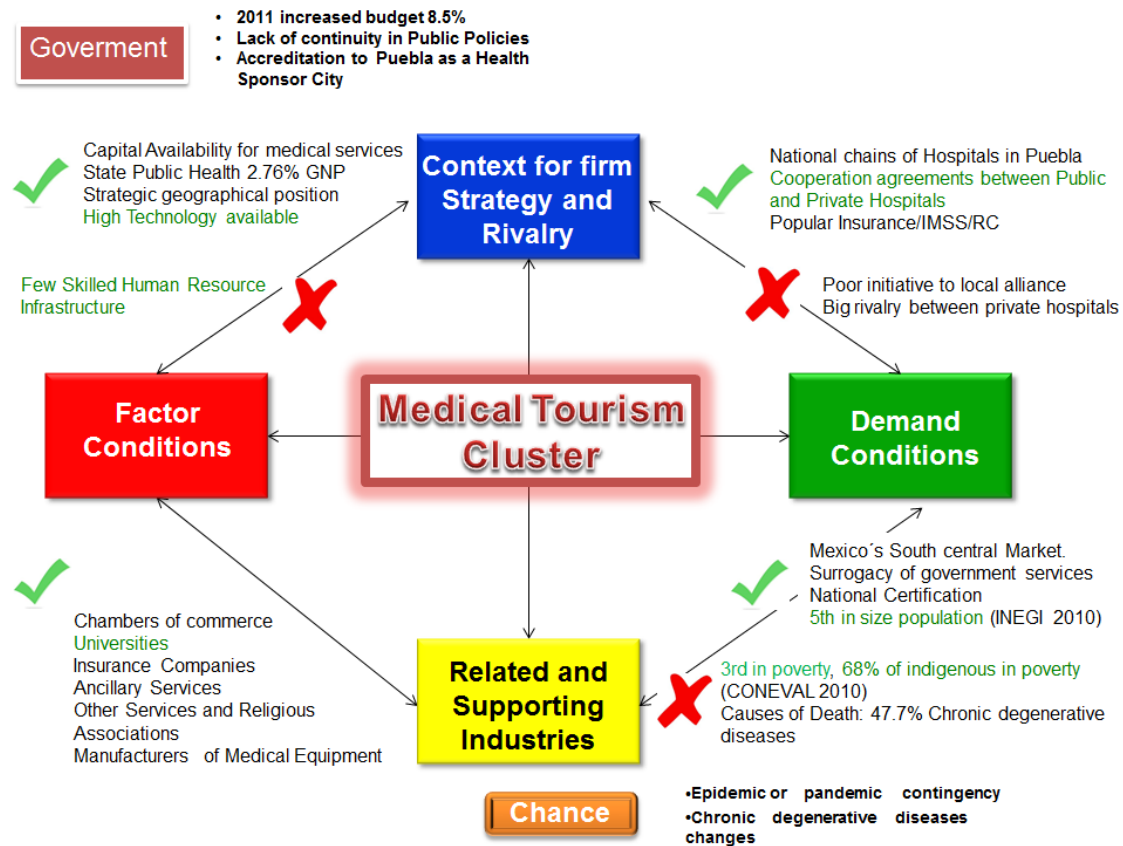
Illustration 4 Projected Regional Medical Tourism Spending



3. Cluster Diamond Analysis

Puebla's medical tourism cluster is an emerging cluster, which is supported by other clusters. The diamond, as shown in Figure 1, mirrors the advantages and challenges faced by the city.

Illustration 5 Cluster Diamond



With a large number of patients demanding high quality medical service and a very clear focus of medical services needed, **demand conditions** are quite strong. **Factor conditions** are good with clear capital availability for medical services and Puebla's strategic location in the country helps for its development. Similarly, medical tourism enables Puebla to diversify out its existing strengths in **related and supporting industries** – tourism, education and financial services. In the **context for firm strategy and rivalry**, Puebla has an intense medical competition, making current players upgrade their services and technology.

3.1 Factor (Input) Conditions

As described earlier, Puebla is strategically located in the heart of México and has good climate all year around along with many tourism attractions. Puebla is the fourth city in terms of population in the country.

The state's Healthcare investment is 2.76% of GDP, and represents 10'478,816,000 pesos.

In terms of physical infrastructure, Puebla has 6169 beds, 156 hospitals, 56 clinical laboratories and 255 operating rooms⁴. Hospitals in Puebla utilize modern medical technology such as positron emission tomography-computed tomography equipment. However, the use of modern medical technology, especially high-tech medical equipment, is confined to usage of the hospital that owns it. 35% of hospitals share information among themselves.

In relation to human resources management, Puebla has 0.4 general practitioners by each 1000 people, (27th national place) and 0.5 specialist doctors by each 1000 people, (29th national place). They are few skilled human resources

3.2 Demand Conditions

Puebla has a representative number of patients due to its large population of 5'779,829 inhabitants in 2010², having the fifth place in Mexico. In addition, there's a big phenomena of immigration registered, especially from the south-central area of Mexico; therefore the initial focus of the cluster will be this market.

As stated previously, 47.7% of causes of death in Puebla are attributed to chronic degenerative diseases⁵. This represents a much focused demand that needs to be satisfied by coordinating efforts in order to develop treatment and improve patients' life quality.

Because of the growing demand, federal government has being asking for surrogacy services to private hospitals; this has increased collaboration and sophistication from those receiving these services. Another aspect that had increased demand sophistication is the national certification from most of the hospitals in Puebla. In order to continue this growth, international certification is needed to accomplish global quality.

In some areas though, sophistication is very low due to poverty factors. Puebla is the third poorest state in Mexico where 59% of families live in poverty⁶. This factors increase on indigenous regions where 68% live in poverty⁴. To guarantee the access to healthcare of this people as well becomes an important issue to accomplish.

⁴ INEGI Perspectiva Puebla 2011 <http://www.inegi.org.mx/>

⁵ INEGI Information per state, Puebla 2010

⁶ INEGI Vital Statistics Report, 2008

3.3 Context for Firm Strategy and Rivalry

The cluster diamond emphasizes the cooperation agreements between Public and Private Hospitals, because actually the hospitals work in an independent way; that means that there are big rivalries between them.

The hospitals must exchange the human capital and technology to improve the quality of life of the patients avoid the hospitals acts in a joint way, the cluster pretends eliminate the poor initiative to local alliance and change it in National chains of hospitals.

Integrating hospitals promote competitiveness, because they will improve certifications, medical training and diminishes the health problems, so, it's important to promote International Accreditation for public and private hospitals that have already achieved the Certification of "Consejo de Salubridad General" (approved by JCI).

3.4 Related and Supporting Industries

Puebla's Medical Tourism benefits from the strengths of supporting Industries:

- a) Education: The universities are teaching healthcare professions such as: UPAEP, UDLA, BUAP, IBERO, UVM and they have accredited their professional studies.
- b) Tourism: the emerging tourism cluster in Puebla has a great importance as it provides supporting services such as travel arrangements, restaurants, transportation (car rental, airlines, and business services) and hotel accommodation. After medical treatment; patients can go shopping and promenade during the recovery period.

Puebla has an important government support, government has played an important role in prosecuting the collaboration of different institutions such as Chambers of Commerce (CANACO ⁷Cámara Nacional de Comercio, CANIRAC⁸ Cámara Nacional de la Industria de Restaurantes y Alimentos Condimentados ,CNEC ⁹ Cámara nacional de empresas de Consultoria .)

While government has been a major key to route to different sectors, there are some of them that are already working for the sector, such as clinical labs¹⁰ (56), pharmacies,

⁷ www.canacopuebla.org.mx

⁸ www.canirac.org.mx

⁹ <http://www.cnec.org.mx>

¹⁰ www.inegi.org.mx

doctor offices, ambulance services companies, national mortuary services; insurance companies, which somehow influence the market price; manufacturers of medical equipment and religious associations.

3.5 Government

The role of government and its active participation is fundamental. There are some actions that government should be taken into consideration to develop the health care sector, to be

- Facilitator of a healthy economy that provides basic necessities (food, housing, health, education among others)
- Manager of the health care policies and of the social security systems which should warranty them (IMSS, ISSSTE, Popular Security, etc.)
- Allocator and manager of reasonable funds o provide people public with the adequate medical attention and the medicine needed.

In addition, government should work on the cluster development of related industries such as the education which provides the human resources and keeps it refreshed; the construction for the development of the infrastructure needed; the communications, for the concurrent means needed. Government should also assure that the public health care system reaches every corner of the country and all its population. According to INEGI figures (XII General Population and Housing Census in 2000) 39% of population is a social security user, 34% is a private services user and 27% is population without access to any health care service. 58% of the total expense on health in Mexico is directed to private services. As a comparison, in other countries such as England, Sweden and Japan this percentage is above 80% and Mexico is above other countries like Costa Rica (32%), Argentina (45%) and Colombia (44%).

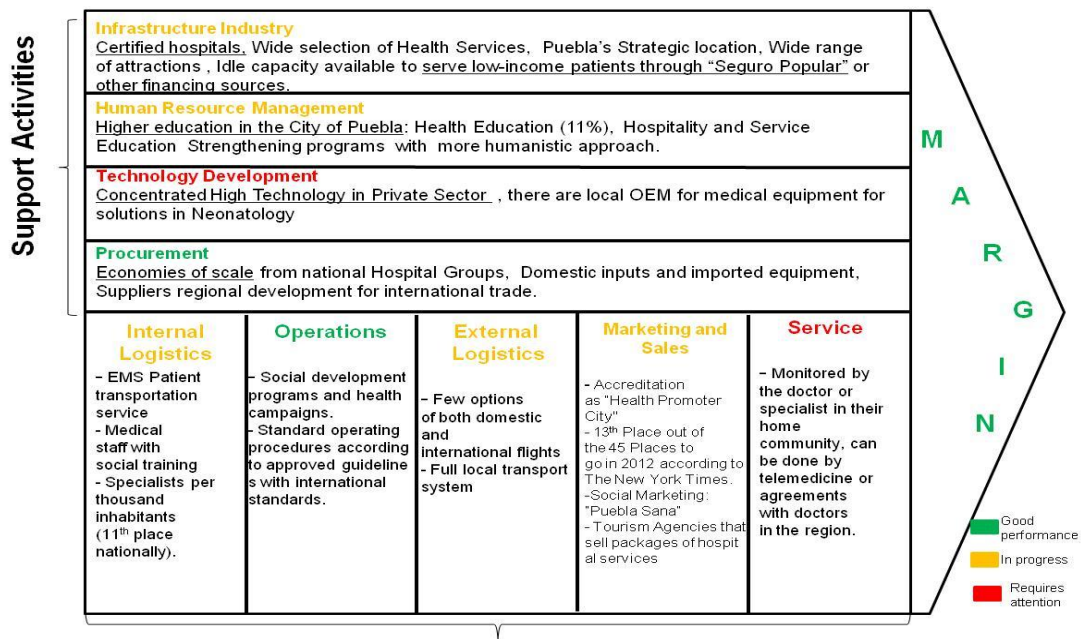
3.6 Chance

Puebla using each of the sectors each day is better prepared to know how to face and embrace the changes, opportunities or causalities that it can influence, the medical tourism cluster of factors that would represent an opportunity would be

- Epidemic or pandemic contingency
- Chronic Degenerative diseases changes

4. Puebla's Value Chain

Illustration 6 Value Chain



4.1 Health Infrastructure

Puebla has a high technological medical infrastructure of 6,169 beds¹¹, , certified hospitals and health centers, human resources and service processes in order to achieve a successful recovery of patients.

Puebla's total expenditure in health care and social assistance in 2009 was 2.76%¹², representing the sum of public and private health expenditures as a ratio of total population. It covers the provision of health services, family planning activities, nutrition activities, and emergency aid designated for health, but does not include provision of water and sanitation.

Table 2 Health Infrastructure availability in Puebla 2011¹³

Indicators	Puebla	National
Hospitals (per 100,000 people)	1.2	1.1
Assigned Hospital beds (per 1,000 people)	0.6	0.7
Non-assigned Hospital beds (per 1,000 people)	0.4	0.5
Medical Practice (per 1,000 people)	5.1	5.5
Operating Rooms (per 1,000 people)	2.7	3.1
Surgical procedures per Operating Room	2.2	2.9

¹¹ Perspectiva Puebla 2011, www.inegi.org.mx

¹² INEGI, Serie anual 2005-2009 www.inegi.org.mx

¹³ Servicios de Salud del Estado de Puebla

Table 3

**Main material resources of medical units in service institutions of the public health sector by institution
At December 31, 2010**

Concept	Total	IMSS	ISSSTE	ISSSTEP	PEMEX	SEDENA	HNP	IMSS-Oportunidades	SSEP	HU-BUAP	SEDIF
Assigned Hospital beds	3,633	1,197	194	187	4	ND	66	236	1,622	127	0
Non-assigned Hospital beds	2,536	533	92	113	2	ND	55	679	992	70	0
Incubators	245	66	13	12	2	ND	12	25	110	5	0
Medical Practice	2,864	490	165	223	20	ND	23	379	1,475	58	31
Ambulance	148	43	27	7	6	ND	2	6	54	2	1
Emergency Rooms	107	42	4	5	2	ND	1	6	45	2	0
Intensive care	26	5	2	2	0	ND	2	0	12	3	0
Laboratories	98	19	6	1	1	ND	2	6	59	4	0
Cabinets of radiology	48	21	12	3	1	ND	4	6	0	1	0
Operating rooms	158	48	8	8	1	ND	4	8	76	5	0
Boards of expulsion	635	18	5	3	1	ND	0	311	296	1	0
Blood banks	18	1	1	1	0	ND	1	6	7	1	0
Pharmacies	625	54	8	18	2	ND	1	311	230	1	0

In Puebla there are five hospitals, four private and one of the ISSSTE¹⁴, 2 units of hemodialysis and 2 units outpatient who have the Certification of Establishments of Health Care, process in which the registration is voluntary, where the General Health Council recognizes that the standards necessary are met to provide good quality services in health care and patient safety recommended by the World Health Organization (OMS).

¹⁴ <http://www.csg.salud.gob.mx/>

Hospitals:

- Clínica Hospital Teziutlán
- Operadora de Hospitales Ángeles, S.A. de C.V. Hospital Ángeles Puebla
- Fundación Tamariz Oropeza Hospital Betania
- Christus Muguerza Hospitales, S.A. de C.V. "Christus Muguerza Hospital UPAEP"
- Hospital Sociedad Española de Beneficencia de Puebla

Hemodialysis:

- Fresenius Medical Care de México, S.A. de C.V. Clínica Puebla
- Fresenius Medical Care Clínica Puebla II

Outpatient:

- Clínica de Medicina Familiar San Martín Texmelucan
- Clínica de Medicina Familiar Atlixco

In process:

- Clínica de Medicina Familiar + CECIS + CE + MR Puebla
- Clínica de Medicina Familiar de Acatlán de Osorio
- Hospital General de Zacatlán "Lic. Luis Cabrera"
- Hospital General Zona Norte de Puebla
- Promotora Poblana de la Salud, S.A. de C.V. Hospital Puebla

In 2004, the "Seguro Popular"¹⁵ was created in order to assist the population that, regardless its employment status, geographic location or affordable situation, was not affiliated to any social security institution like IMSS, ISSSTE, Armed Forces, PEMEX, among others.

The services that Seguro Popular covers are medical practice in health center, specialists medical practice, surgery and hospital care, medicines, laboratory and imaging studies, all included in the Universal Catalog of Essential Health Services (CAUSES for its acronym in

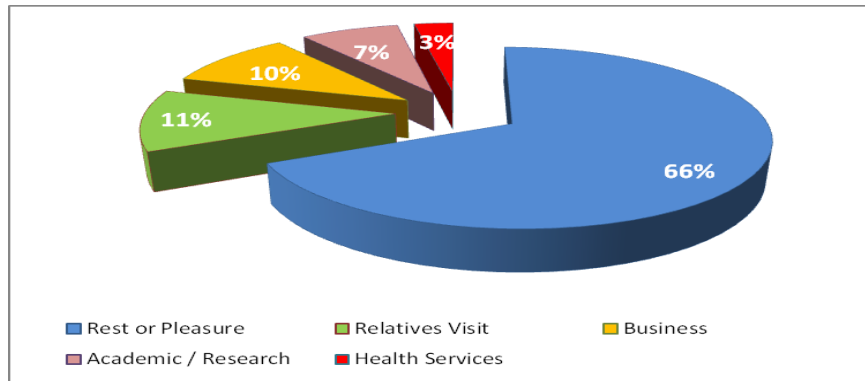
¹⁵ <http://www.seguropopularpuebla.gob.mx/?que-es-el-seguro-popular.html>

Spanish). CAUSES currently covers 90% of usual medical care, and 66% of major diagnostic and therapeutic procedures; offers 275 interventions and a total of 357 key essential medicines. In 2012 are over 3.1 million members.

4.1.1 Tourism Figures

Landing on more regional info, the state of Puebla in Mexico already represents a great touristic region in which almost 3% of the people come for medical reasons.

Illustration 7

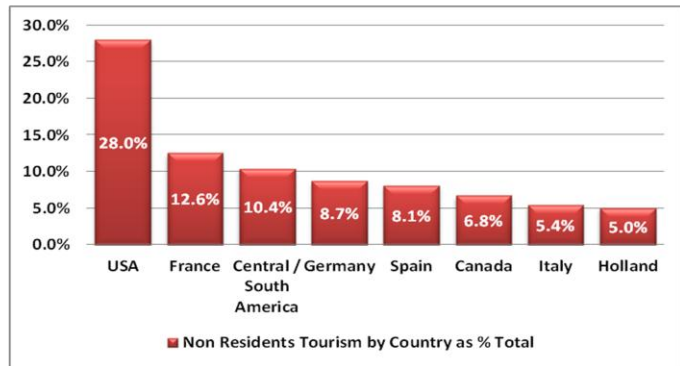
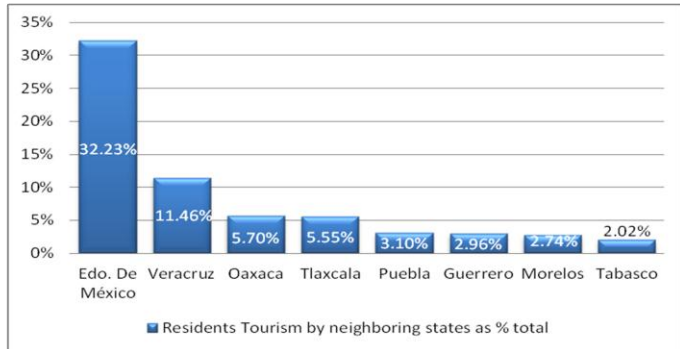


The next charts show the total of internal and external tourism and its origin¹⁶.

¹⁶ Ministry of Tourism of the State of Puebla, Tourism indicators 2010

Illustration 8

ORIGIN	% source
Residents	84.10%
Nonresidents	15.90%
Male	52.70%
Female	47.30%
Average Age	37 años



4.2 Human Resources Management

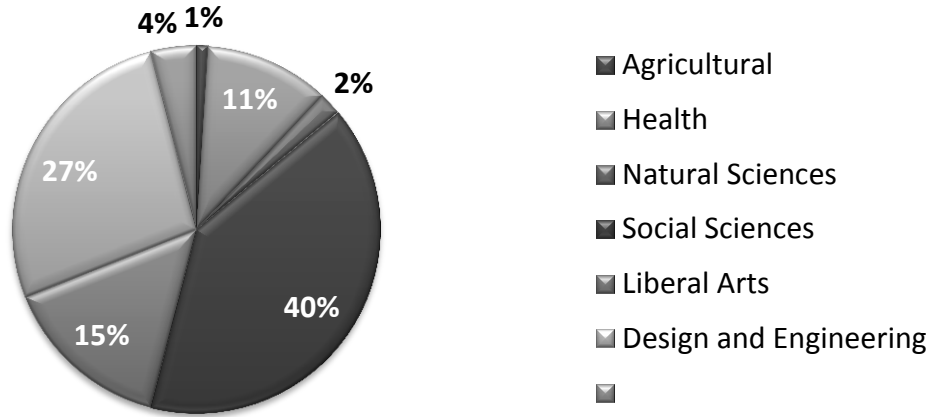
Education

In Puebla there are over 150,000 students between 18 and 24 years of age with higher education¹⁷. There are six main fields of study in which the population of students are distributed, for example in 2010, 11% of students chose to study in the field of Health (Figure 2).

¹⁷ http://archivos.ceneval.edu.mx/archivos_portal/3217/21_Puebla.pdf

Illustration 9

Population 18 years and over with higher education and its distribution by area of study (Puebla, 2010)



18

Since May 2011, Puebla is considered "Capital University of Mexico," seeking to combine efforts with the 12 institutions of higher education with the greater impact on the City and its metropolitan area, to promote the education offered by the city to position it as one of the most important academic destinations in Latin America, and link universities with business organizations to generate economic development.

Puebla Capital University of Mexico concentrates institutions such as:

- Benemérita Universidad Autónoma de Puebla (BUAP)
- Universidad Anáhuac
- Universidad de las Américas Puebla (UDLAP)
- Universidad Popular Autónoma del Estado de Puebla (UPAEP)
- Universidad Iberoamericana (UIA)
- Universidad Madero (UMAD)
- Universidad del Valle de México (UVM)
- Instituto de Estudios Universitarios (IEU)
- Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
- Universidad Tecnológica de Puebla

¹⁸ INEGI Censo de Población y Vivienda 2010

- Instituto Nacional de Astrofísica, Óptica y Electrónica
- Instituto Tecnológico de Puebla.

These twelve institutions work in coordination with the Municipal Government under the strategic areas of: University, Governance, Culture and Recreation, Business and Science and Technology¹⁹.

Of these twelve institutions of higher education, 3 of them impart a degree in Medicine: BUAP²⁰, UPAEP²¹ and UDLAP²². This degree has a period of approximately 6 years including Internship and Social Service. Their study plans are completely focused on acquiring theoretical and methodological knowledge, forgetting a bit the Human and Social Responsibility, from an average of 82 subjects in the curriculum only 5 are focused on the Ethics and Human.

4.3 Technology Development

Many hospitals and health institutions in Puebla have state of the art technology equipment in order to prevent a wide range of diseases and to detect on time chronic degenerative diseases such as cancer. Some of these instruments are Positron Emission Tomography (PET-CT), 1.5-T MRI and Imaging digitized and Hemodynamic Monitoring. Puebla has one of the best rooms of Digital Hemodynamics in Latin America.

Positron Emission Tomography (PET-CT)²³: It is a non-invasive study that uses a variant technique of radiology and imaging to obtain functional imaging of biological events that occur in our inner. Is based on the detection of positrons which are small particles emitted by radioactive substances that are administered to the patient.

The PET / CT helps to make an early diagnosis of cancer (lung, mama, colon, lymphoma, melanoma, head and neck tumors), making the treatments applied to be more effective. It

¹⁹ http://www.pueblacapital.gob.mx/wb/pue/refrenda_ayuntamiento_convenio_puebla_capital_univ

²⁰ http://www.minerva.buap.mx/MUM_PlanesEstudio/LICENCIATURA%20EN%20MEDICINA.pdf

²¹ <http://www.upaep.mx/>

²² <http://www.udlap.mx/ofertaacademica/planestudios/>

²³ <http://www.hospitalangelespuebla.com/servicios>

is also indicated to evaluate the effects of oncological therapy, as assessed biochemical changes characteristic of these diseases.

At heart level is useful for determining coronary artery pathology. It is also used to diagnose neurological diseases, for example when there is an increase in memory loss in elderly people, PET can distinguish between Alzheimer's disease and other dementias. It is also effective in Parkinson's disease and epilepsy.

This study can be taken in Hospital Angeles, Hospital Christus Muguerza (UPAEP) and Laboratorios Exakta.

Digitized Imaging: In Puebla there are three, of a small number of health centers nationwide, that have fully digitized Imaging services, Hospital Betania, Hospital Christus Muguerza (UPAEP) and Imagen Exakta; the latter being the only one that offers this technology in 3 centers. This magnificent service of both institutions allows remote image transmission (teleradiology) with the highest quality amongst its units and other institutions around the world. Digitized Imaging services mainly comprise the following areas: echocardiography, endoscopy, Hemodynamics, fluoroscopy, Mammography, X-Ray, , ultrasound, densitometry, MRI, CT SCAN, PET CT

1.5-T MRI: MRI staff, with high capacity and technological advancement of medicine for the accurate diagnosis of many diseases, even in early stages, allows reducing the time of the studies to a quarter. The procedure for these studies is simple and painless, so the patient can go back to his normal activities immediately after the test.

The equipment can perform functional dynamic studies of central nervous system, heart, skeletal muscle apparatus of the great vessels and peripheral circulatory system, as well as noninvasive, virtual navigation and reconstruction in three dimensions. Among the advantages is that you can get clear pictures from inside the human body without the need for radiation or radioactive substances injected because MRI uses magnetic fields and radio frequency signals.

Properties: Clarity and accuracy of imaging in the study of the brain and spinal cord, which in most diseases cannot be diagnosed by Computed Tomography some examples are Multiple Sclerosis, Mesial Sclerosis and more. To study the arteries that nourish the brain, MRI does not necessarily require the use of contrast media used by the patient's

vein. Functional studies that reveal problems not seen in Computed Tomography are the use of Bold, Spectroscopy, Diffusion, dynamic imaging of cerebrospinal fluid circulation. Study of arteries and veins of the brain, neck, thorax, abdomen and extremities. In issues Pituitary (Pituitary Gland), magnetic resonance is more sensitive than Computed Tomography.

The Hospital Betania and Hospital Beneficencia Española, they both offer an 1.5-T MRI scanner.

Unfortunately, hospitals and health institutions are using their technology tools on their own patients and do not offer in a wide way its services to other institutions in order to cooperate and diagnose as many patients as possible.

4.4 Procurement

Economies of scale, from National Hospital Groups, for the supply side. Four of the competitors are clearly supported by economies of scale agreements, whose strengths vary according to the firm size. Grupo Ángeles Salud owned by Grupo Empresarial Angeles, which buys for hospitality industry, for its hotel division (Camino Real) and health division (Hospital Ángeles). CHRISTUS Muguerza Group, part of Grupo CHRISTUS Health. Beneficencia Española, part of the Grupo Español de Beneficencias and Hospital Betania with his business deal with Sistema de Salud ABC. The most important economies of scale are manifested in the supply chain, technology information, best practices and advertising in the media.

4.5 Internal Logistics

There are more than 10 EMS patient transportation service in Puebla offering private ambulance service and intensive care ambulance with an average response time of 15 minutes.

Puebla has 50.7 medical staff per thousand inhabitants in direct contact with the patient

(13th national place) and 40.8 medical specialists per thousand inhabitants (11th national place)²⁴. In most Institutions medical staff has social training.

4.6 Operations

Social Health Campaigns

As part of the “Proyecto Gran Visión 2040”, the prevention of chronic degenerative diseases and overweight care and obesity have been strengthened. This by incorporating an intersectional program between the Health Services of the State of Puebla (SSEP) and the Secretariat of Public Education (SEP), called the Program of Action in the School Context which promotes a new culture of self-care and the creation of healthy environments.

The prevention of overweight and obesity focuses on two strategic lines of action: 1) proper feeding and 2) physical activity, which fulfilled the Strategy against Overweight and Obesity, derived from the National Agreement for Health Food. One of the first actions to be performed, together with the SEP was the measurement of weight and height in 747,698 students, of 700 schools, who were applied screening tests (early identification of a disease) and detection of obesity and overweight to make a strategy for monitoring the population of basic education in the state. In addition, 1,719 food handlers were trained members of school boards and teaching staff of 1,416 schools.

The program “Puebla Sana sin Diabetes”²⁵ was also initiated allowing the registration of 6,200 persons who were detected risk because of high levels of cholesterol and blood glucose, and thus began an immediate preventive or curative treatment.

For the first time in the state a massive campaign was conducted for early detection of Diabetes Mellitus in commemoration of the "World Day to Combat Diabetes," performing 23,190 detections, 33,440 tests of blood pressure and 46,543 detections of obesity.

The World Diabetes Day (WDD)²⁶ is the most important awareness campaign of diabetes in the world. It was established by the International Diabetes Federation (IDF) and the World Health Organization (WHO) in 1991, in response to the alarming increase in cases

²⁴ Perspectiva Puebla 2011, www.inegi.org.mx

²⁵ <http://www.pueblasana.puebla.gob.mx/pueblasana/>

²⁶ <http://www.fundaciondiabetes.org/diamundial/index.asp>

of diabetes worldwide. In 2007, the United Nations celebrated for the first time this day after the adoption of Resolution in December 2006 World Diabetes Day, which made the existing World Diabetes Day an official day of the ONU.

For the attention of Diabetes Mellitus, there were one million 636,417 detections in a population over 20 years, of which 532,531 were captured through intensive search of people with this disease.

The SSEP ranked 8th in control of the patient with diabetes mellitus, which puts the entity above the national average.

4.7 External Logistics

Traveling to Puebla is fairly straightforward and it can be accomplished by bus or flight. For example, there is a continuous bus service between Mexico City and Puebla throughout the day and night from the TAPO terminal (also known as Terminal Oriente, located beside the San Lázaro Metro station), from Benito Juárez International Airport and from Tasqueña terminal, which is located in the south

There are two bus terminals in Puebla: the Central de Autobuses de Puebla (CAPU), the main bus terminal, and Estrella Roja's 4 Poniente bus terminal (only Estrella Roja buses and routes are allowed). Both ADO and Estrella Roja run buses to the much larger CAPU. If you've never visited Puebla before, CAPU is your safest bet to get you to your final destination; there are secure taxis and CAPU is a major intersection of several public transportation bus lines (known as combis or camiones, micros).

Alternatively, Hermanos Serdán International Airport²⁷(AIP) is another way of reaching the City. Puebla's International Airport is located in the town of Huejotzingo, 25 km (20 minutes) from the City of Puebla, and just 90 miles from Mexico City (1 hour), and has significant ground transportation by road network which converges in the State.

²⁷ <http://www.aeropuertopuebla.com/qs.html>

Illustration 10



It only has 4 national destinations to Cancun, Tijuana, Guadalajara and Acapulco, and one international destination to Houston. The airlines that operate these flights are Continental Airlines, Aeromar and Volaris.

The AIP seeks to expand its flight offer to the most popular national destinations as well as the principal hubs in the U.S., and achieve significant international air connectivity.

4.8 Marketing and Sales

Since 2011, and because of the 150 Anniversary of the Battle of Puebla, the city has had a significant number of marketing campaigns that had not existed in the past years. In the beginnings of 2012, Puebla appeared as the 13th Place out of the 45 Places to go in 2012 according to The New York Times²⁸. The 150 Anniversary of the “Battle of Puebla”

²⁸ <http://travel.nytimes.com/2012/01/08/travel/45-places-to-go-in-2012.html?pagewanted=all>

celebrated on May 5, 2012, is also a highlight of this marketing, due to a cultural and culinary festival that will take place on that important date.

Puebla is also seeking its accreditation as “Health Promoter City”²⁹, where all its citizens, institutions, organizations and private sector work together to ensure the health, welfare and quality of life for its inhabitants. It is part of the 2011-2014 Municipal Development Plan.

The main goals of the plan are: establish locally effective strategies of health promotion, improving the quality of life for residents of the city having an impact on the determinants of health; direct health action’s promotion to preventive rather than curative medicine; respond to the legitimate expectations of the population; protect, enhance and restore the health of individuals; strengthen community action; establish and ensure public policies and healthy environments as well as the maintenance of the environment and promote healthy lifestyles. The accreditation will reduce the determinants of health and disease; transform the demands of the population; produce evidence of the use of public resources and disseminate alternately; allow competition to federal and international funds; it helps empower people to gain better control over their health and improve health determinants and gives sustainability and continuity to the project.

4.9 Service

Monitored by the doctor or specialist in their home community, can be done by telemedicine or agreements with doctors in the region.

²⁹ http://www.pueblacapital.gob.mx/wb/pue/certificacion_de_puebla_como_municipio_promotor_de

5. Five Forces Model

This chapter aims to explain the five market forces based on the model of Michael Porter.

5.1 Threat of New Entrants

Because it is a capital intensive and a high skilled labor industry, the threat of entry of new competitors is relatively low for the service chain, whose investment in civil works and equipment is reduced by half than it would to any other competitor. However, the agreement between the AMIS (Asociación Mexicana de Instituciones de Seguros) and ANHP (Asociación Nacional de Hospitales Privados) in relation to direct payment to hospitals for major medical expenses or certificates in the accreditation process of CSG (Consejo de Salubridad General) creates a barrier to providing services to patients insured by members of AMIS

The experience in 2008 with the opening of the Hospital Angeles Puebla and 2009 with the opening of Puebla Hospital, confirms the fact that entrants to the market in these periods of time remarkably affected the profitability of private sector health care.

Analysis of Barriers to entry

1. Economies of scale for the supply side. Four of the competitors are clearly supported by economies of scale agreements, whose strength varies according to firm size, Grupo Ángeles Salud owned by Grupo Empresarial Angeles, who buys for hospitality industry for its hotel division (Camino Real) and health division (Hospital Ángeles), CHRISTUS Muguerza Group, part of Grupo CHRISTUS Health, La Beneficencia Española part of the Grupo de Español de Beneficencias y Hospital Betania with his business deal with Sistema de Salud ABC. This gives those competitors lower costs per unit, the most important economies of scale are manifested in the supply chain, technology information, best practices and advertising in the media.
2. Benefits of scale on the side of demand. Traditionally health services are three types of customers (patients) who are part of programs entitled (health services, state or municipal), those who pay for their own account (pure private) and those who are responsible for health spending either by an insurer, health administrator

or other legal. The Administrator of Health may be the same hospital through membership or association programs such as La Beneficencia Española. The insurance program can be individual or collective coverage and these companies in turn can be private (members of AMIS) or public (Seguro Popular). The composition or customer mix varies according to each bidder and is part of the strategy of individual fish or groups. Additionally in private hospitals without a health system administrator client is actually the doctor-patient binomial making it more complex, since it is a combination that has a part less constant (the doctor) whose preferences vary over time and the conditions of their practice and knowledge and a variable part (the patient) who is clearly influenced by the doctor to select the health care provider. In public health systems the doctor is employed and is part of the service value chain.

3. Costs for customers to switch suppliers. In practice pure private patients are free of charge for changing supplier because they make the decision for personal or family economy but always influenced by the doctor to integrate the customer binomial above. The customer who has an accredited public service, such as a trade at IMSS employee acquires the right to be treated at the Institute and the change of provider leaves implicit tripartite contributions (employee, employer and government) is the cost of change provider, a small group belonging to two or more types of customer as even taking the public service, insurance policies have medical expenses and also pay their own non-hospital services, regularly do not consider relevant the cost of change provider. For new competitors is relatively easy to get to customers of a private nature pure and depending on their trade agreements can go into other types of customers.
4. Capital requirements. The healthcare industry has capital intensive investments with specialized facilities that must follow strict architectural requirements, highly specialized equipment, consumer credit, product build up inventories that are valid for operating profit which revocation may cause losses and working capital needed to fund losses, which are generated at the beginning of operations, create barriers to entry of new competitors, although there is the possibility of fully inventory on consignment so the cost of storage is the only cost. Investment returns are variable and some highly profitable services (diagnostic aids) within the sector have many competitors in those segments.

5. Benefits of established players regardless of size. In Puebla over the past 5 years, established hospitals focused on promoting benefits for the quality, price and tradition over potential rivals. However, the effect of novelty influence clients effectively in the players who entered in 2007 and 2008, particularly the location of both in the area of greatest population growth and increased purchasing power
6. Unequal access to distribution channels. Only one of the incoming competitors was not strong on distribution channels, but for convenience in price in the market segment served could compete in the market in the region Angelópolis
7. Restrictive government policies. No government policies that hinder the entry of competitors if you follow all the steps to obtain health permits for construction and operation. For reasons of public services the state government has concluded and put into operation at the regional hospitals were built in the previous government. There are no patents or complex regulatory restrictions that allow the entry of new competitors. On the other hand there are not subsidies or tax benefits that favor the entry of competitors, but the deductibility of medical expenses for individuals. Nor are expected reprisals or conspiracies among market players against a potential entrant and the experience of 2007-2008 was an adjustment to falling prices in the industry and movement of skilled personnel in search of better working conditions, increasing the cost of workmanship for the retention of talent.

5.2 Bargaining Power of Costumers

Patients as clients of health facilities have a low incidence even in acute conditions, lobbying for best possible price, due to the presence of new competitors in the same market. Insurance companies take advantage of the presence of a more competitive market negotiating best rates and decrease in prices.

Local competitors focus on processes to improve quality standards and the gap between them will force the old and new hospitals to respond to doctors and insurers, the majority of patients will be the winners by the widespread availability of services and alternative technologies and quality available. Keeping the customer's attention is key, because the power of physicians increases compared to that in other less competitive markets.

Powerful market customers are insurers with higher market share recognition and medical high-volume regional detention, both force down prices, demanding better quality and competitive services, making face-sector participants. Theoretically insurers are buyers of large volumes that are pushing transactions to fixed cost regardless of the complexity of the case, or by keeping an average revenue control. This forces to standardize services and seek to use clinical guidelines or best practices.

Due to the decentralization of the market, buyers have alternatives for change of service provider practically very low cost (the offset).

The power of insurers is compensated by the weight of the groups that play in the domestic market and the size of the offering thereof. Given the steady decline in the sale of insurance policies in turn compensated by increasing the cost thereof, restricting access to selected suppliers based on price and pressuring them to reduce them

Although a small segment of less price-sensitive customers, all customers will always be comparing and asking for second opinions. The quality aspect at this time not a factor for the decision to purchase, although the emphasis in this is made by market participants as a means of differentiation, although for most customers this issue is one aspect inherent in service delivery.

A group of intermediaries that start to operate as small health administrators who maintain pressure on the players in the sector through the promise of addressing customer, theoretically controlled by these firms. The tendency of the groups is to eliminate these middlemen and reduce the cost of powerful buyers such as insurance, supplementing phases of the value chain with its own staff of the hospital.

5.3 Threat of Substitutes Products

Substitutes decrease as there is pressure for second opinions which makes the retention of key medical and most talented members working in the hospital. Public health services will be forced to improve their quality of care. The substitute more latent is the loss of pure private patient customer convenience join the Seguro Popular. The growing acceptance of generics leads to an intrinsic savings in service users in hospitals and sometimes generates higher returns to bidders

5.4 Bargaining Power of Suppliers

The power of suppliers' decreases due to new competitors that force business opportunities and no one of these players wants to stay away, or lose customers. Due to the presence of new technologies competition focuses on features and capabilities of these technologies to be incorporated into the hospitals to remain competitive. The same market tends to regulate prices on medical supplies and medicines, particularly by the rapid growth in demand for substitutes medicines with proven bioequivalence and the presence of first contact services in national chain drug stores as an extension to the sale of drug services retail.

Powerful suppliers such as wholesalers of medicines (Nadro, Marzam, etc.) and global manufacturers of medical equipment (GE, Philips, Siemens, etc.) have a direct effect on sales prices, but the economy of scale market players and the possibility of switching without such a high cost for change, help to offset these effects.

5.5 Rivalry among Existing Competitors

The rivalry that is seen occurs due to the segmentation of the metropolitan area of Puebla and because of its size and proximity, the private health services have a major influence from Mexico City, local competitors understood from 2007 that competition would be stronger with better facilities and more sophisticated technologies, is a reaction as previously experienced during the nineties, both La Beneficencia Española and the Hospital Betania, when CIMA project was announced and the opening of the Pabellón Garcia Pineda en Hospital UPAEP , made sweeping changes in its operations and facilities.

The competitive environment resulting from the division of markets among competitors has created a more intensive price war service and of course movement of human talent, services have been divided into two zones:

Competitors in Angelópolis area have already integrated a new private medical pole in that region of the City and the North Central area.

Private hospitals in Puebla have a very heterogeneous composition of customers, but there is a clear tendency to segment depending on the region a hospital is located, the

new hospitals are in the area looking Angelópolis segments with higher income patients and classic Hospitals North Central area has a greater volume of lower and middle class patients.

Each region is consistent with the degree of rivalry identified by hospitals. Market share by income levels also resulted in a redistribution between the local market and those who historically use to get assisted in Mexico City.

The rivalry among competitors is given by the fact that there is not a unique leader hospital. Industry growth is slow and there is an oversupply of private beds and lack of capacity in the public sector.

Productivity is not necessarily high, exit barriers keep companies on the market even when they could be generating low or negative returns. The idle capacity of the private sector is usually modulated low, but all the competitors are highly committed to the business and strive to be leaders.

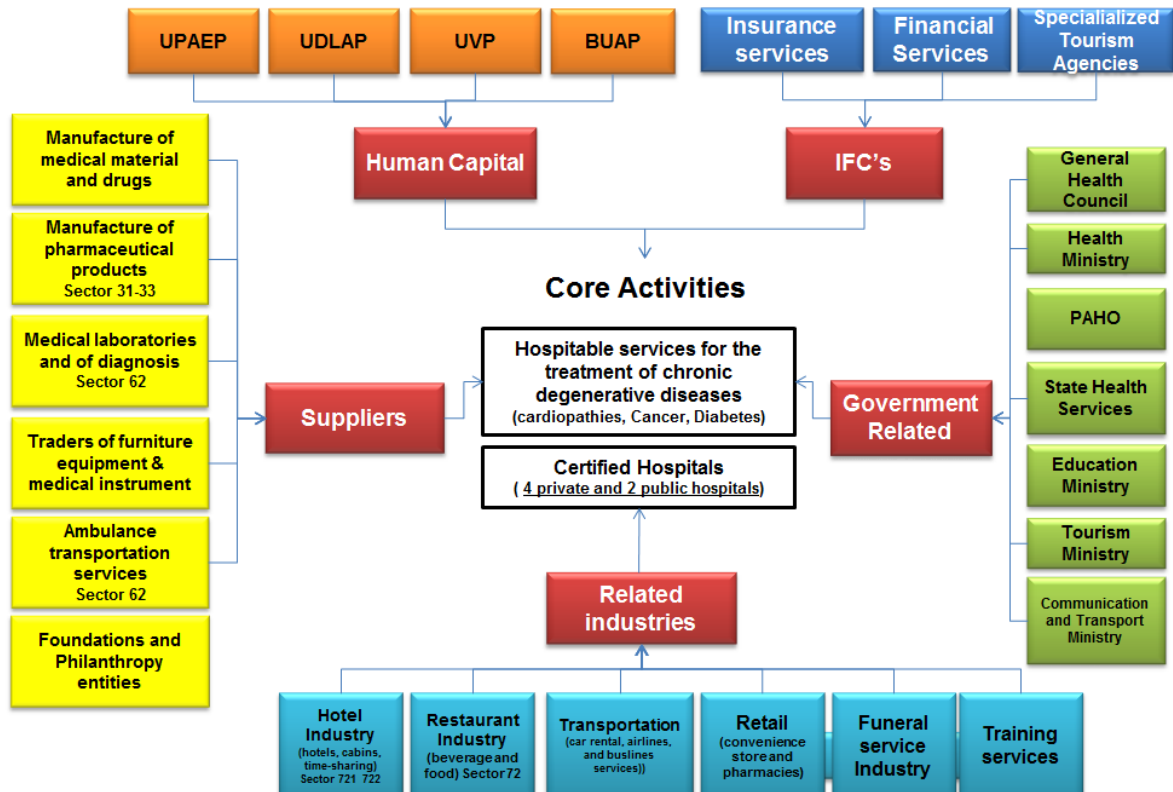
6. Cluster Map

As mentioned before, Puebla has a strategic location in the heart of Mexico and is considered the leading state among southern states. Puebla shows high indexes of mortality caused by chronic degenerative diseases (cancer, diabetes, etc.), for its treatment the city has hospitable services and certified health institutions (4 private hospitals and 2 public hospitals).

Puebla has its human capital health support form 4 Universities, 7 government related ministries and councils, 6 main related industries, 3 Institutions for Collaboration and many health services suppliers.

Illustration 11

MEDICAL TOURISM (EMERGING CLUSTER)



6.1 Human Capital

Human capital is one of the most important elements to create specialized workforce. There are five universities in Puebla that offer study programs directly related to the health and hospitality industry: Universidad Popular Autónoma del Estado de Puebla (UPAEP), Universidad de las Américas Puebla (UDLAP), Benemérita Universidad Autónoma de Puebla (BUAP) Universidad Iberoamericana (UIBERO) and Universidad del Valle de Puebla (UVP). Four of them are ranked with the highest education quality³⁰.

³⁰ Ranking of Scientific Production published by the Consultative forum Technological Scientist 2011, and the National Association of Universities and Institutions of Top Education 2010

→UPAEP is a particular institution with Catholic Inspiration that offers 43 undergraduate programs and over 34 graduate degrees in areas like Health Sciences, Liberal Arts, Social Sciences and Management and Engineering and Technology. Its mission “Create currents off thought and leaders to transform society”. The educative offer related with the cluster is Medicine, Nursing, Culinary and Institutional Management³¹

→ Universidad de las Americas Puebla is a private University that offers 54 undergraduate programs and more than 26 graduate degrees. Its study programs related to the health and hospitality industry are Surgeon, Nursing, and Hotel and Restaurant Administration.³²

→ Benemerita Universidad Autónoma de Puebla is a public and autonomous University offering 47 graduate degrees and 73 undergraduate programs, such as Medical Surgeon, Culinary and Tourist Administration, which are related to the medical tourism cluster.³³

→ Universidad Iberoamericana, part of “Jesus Company”, seeks to form competent, free and compromised professionals with themselves and the society, underpinned by academic excellence and human. Its academic offer related to the cluster is the Hospitality and Tourism Management.³⁴

→ Universidad del Valle de Puebla promotes an educational alternative compromised with the institution and the students. It offers study programs related to the cluster, such as Nursing, Culinary and Tourism Management³⁵

It is important to enhance the health and tourism industry to create development programs with more humanistic approach, and strengthen education in ethical and human formation.

6.2 Related Industries

Michael Porter in his book “The Competitive Advantage of Nations” (1990) explains that “A cluster is an interconnected concentration of companies, specialized suppliers, services,

³¹ www.upaep.mx, History, mission and vision

³² www.udlap.mx, History, mission and vision

³³ www.buap.mx, History, mission and vision

³⁴ Universidad Iberoamericana.History

³⁵ www.uvp.edu.mx, Educative offered

related industries and associate institutions”³⁶. According to this, the medical tourism emerging cluster is related to the following industries: Training Services, Retail (convenience store and pharmacies), Transportation (car rental, airlines, and buses service), Funeral Service Industry, Restaurant (beverage and food) and Hospitality (hotels) Industry. The Hospitality Industry in Puebla is integrated by 173 hotels.

6.3 Government Related

The Medical Tourism Cluster needs the relation between the Public and Private Government Organization, since it takes quality human capital, support of strong suppliers, services, certificates, increased technology.

Health Ministry

Its objective is sustainable human development, through the promotion of health as a shared social good, integration of high quality services to satisfy and meet the expectations of the Mexican population, through the promotion of private sector participation focused on health and disease prevention.

The Health Ministry is integrated by Federal Hospitals (Hospital de la Mujer, Hospital General de Mexico, Hospital Juárez de Mexico, Hospital Juárez del Centro, Hospital Nacional de Homeopatía). Regional Hospitals of High Speciality (Centro Regional de Alta Especialidad de Chiapas, Hospital Regional de Alta Especialidad de Ciudad Victoria, Hospital Regional de Alta Especialidad de la Península de Yucatán, de Oaxaca y del Bajío)³⁷

³⁶ The Competitive Advantage of Nations (1990), On Competition, Michael Porter

³⁷ <http://new.paho.org/mex/> -Organización Panamericana de Salud

Panamerican Health Organization

The work of OPS is to reach the development of health institutions for high-level scientific, to support national and local efforts to control and eliminate infectious diseases more prevalent.

OPS contributes to the health response that occurs with aging of the population, the increase in diseases that are not transferable and the risks associated with healthy living habits..

The current work of WHO and APS is focused on making technical cooperation more efficient and effective cooperation between countries in response to the needs and interests, taking into account the global and regional mandates that the organization has as its resolutions management.

The health system in Mexico is a dual situation in the first place is a country with clear potential to contribute to technical cooperation in the international arena; second collaboration is needed to strengthen the response to old problems and emerging health.

OPS has challenges with Mexico over the next 5 years, which are: improving access to health, migration and health, the health of indigenous peoples, inadequate allocation of resources, emerging diseases, chronic diseases, mental health, smoking and addiction³⁸

State Health Services

The Seguro Popular is a decentralized institution of the Secretaria de Salud, with technical autonomy, administrative and operational, which is responsible for providing health services to the target population of the System of Social Protection in Health. It works in coordination with State Social Protection Schemes in Health (REPSS) and service providers of private and public health

The Regímenes Estatales de Protección Social en Salud (REPSS) Tare in charge of promoting the protection and management of health services, management of resources, oversee service providers and the payment thereof and the Membership to be a

³⁸ <http://new.paho.org/mex/> -Organización Panamericana de Salud

beneficiary of Seguro Popular, the affiliation to Seguro Medico for a New Generation and Embarazo Saludable through Modules and Orientation.

The Commission intends to reach the population without social security, aims to access a system of financial protection which protects the health and wealth of families, this also protects the heritage of the population that lacks safety social spending on health by incorporating historical voluntary and equitable system of social protection in health. It is intended that the population has access to surgical services, pharmaceutical and hospital.³⁹

Education Ministry

The system and the quality is internationally recognized and are the cornerstone of cultural, scientific, technological, economic and social development of the Nation, the SEP is intended to create the conditions for the Mexican people have access to quality education the level and modality that should be necessary and where it is demanded.

Tourism Ministry

The Institute develops policies, strategies and actions that promote tourism therefore generates an economic evaluation that raises living standards.

Secretaria de Turismo provides training programs, tour guide, financing programs, certifications such as:

Moderniza Program (Distintivo "M"), Moderniza Program is a Management System to improve the quality of tourism enterprises (Micro, Small Tourism Businesses and Medium Enterprises). This promotes more competitive with modern forms management models and meet customer expectations

Distintivo "H", was implemented in Mexico as a National Health Food Management Cleaning for all food and beverage establishments, and was created to reduce the incidence of diseases transmitted by food, caused in domestic and foreign tourists, and improving the image of Mexico in relation to food safety.

³⁹ www.ss.pue.gob.mx

The Distintivo "H", is a recognition by the Secretaria de Turismo y la Secretaria de Salud for the food and beverage industry (general restaurants, hotel restaurants, cafes, hotels, etc.) that need to comply with cleaning standards which marks the Mexican Standard NMX-F605 NORMEX 2004.

Punto Limpio, a program to encourage the strengthening of the idea of "Quality of Security and Cleaning" in providing tourist services in Mexico, in order to protect the health of visitors, workers and members of the receptors communities.

The program searches:

- To avoid sanitary risks in the tourist destinations of Mexico.
- To offer confidence to the national and international tourists.
- To recover the competitiveness of the tourist destinations.
- To generate competitive advantages in the destinations across the recognition of the quality

Communication and Transport Ministry

The Communication and Transport Ministry ensure the functioning of transport efficiency with quality and efficiency and quality services established under devices and contribute to the modernization and the establishment of an integrated transport system. This allows to regulate and monitor the operation and provision of services both public and private car on the roads of federal jurisdiction services.⁴⁰

6.4 Suppliers

The Medical Tourism aims to integrate medical tourism providers for their importance in the value chain, so the goal is to work on increasing the quality of medical equipment and medicines, pharmaceutical manufacturing, medical and diagnostic laboratories, furniture traders medical instruments and equipment, ambulance transportation, foundations and philanthropic organizations.

⁴⁰ <http://www.sct.gob.mx/> Secretaria de Comunicaciones y transportes

6.5 Institutions for Collaboration (IFC's)

Financial and Insurance Services, Banking services and Specialized Medical Tourism Agencies are important are very important organism because of its great influence as they can provide plans for the treatment of chronic disease in Puebla

7. Relevant Shared Value Projects

7.1 Support Community Health Centers

Replicate transcendence commitment to operate Support Community Health Centers in remote locations through public-private agreements, using telemedicine to link abandoned or idle facility with certified Cluster Hospitals for referrals and practice remotely.

7.2 Medical Innovation and Excellence Center

Innovation and Excellence Medical Center, pursue its development in conjunction with Universities, Department of Health Sciences to leverage its infrastructure in laboratories, workshops and experimental theater, and complement it with the Specialists Degree or Master Degree in Health Systems and Health Services Quality Systems.

7.3 Create with Private and Public Hospitals

Create, along with private and public hospitals, a "Group Purchasing of Medical Equipment and Technology Organization"(GPMETO), drawing on existing experience of the developed group "National Association of Private Hospitals," and starting in Puebla with the currently affiliated hospitals: Beneficencia Española, Hospital Angeles, Hospital Betania y Hospital Christus Muguerza Hospital UPAEP

7.4 Citizens Board of Health

Transform the “State Board of Health”, recently formed, into a “Citizens’ Board of Health” searching for lasting development in the State and leading the Board to Medical Tourism as one of development highlights.

7.5 Accreditation

Promote International Accreditation for public and private hospitals that have already achieved the Certification of “General Health Council” (approved by JCI).

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The Organización Mundial de la Salud with the Organización Panamericana de Salud: have established an agreement with Mexico which consists that in the next 5 years one tries to improve the quality of life of the inhabitants who suffer from chronic degenerative diseases

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