



# MEXICO: Health IT Market Overview

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## SUMMARY

The Mexico Health IT sector is an emerging market as health care institutions have begun identifying technologies to become more efficient and competitive. Currently, the most popular IT applications include patient control, electronic healthcare records, supplies inventory control, pharmacy inventory, services management, and security systems.

The primary clients in the health IT sector are large public and private hospitals with resources to purchase sophisticated technologies to automate patient services, administrative processes and supplies control systems. In the public sector there are 1,169 hospitals of which, 194 are highly specialized medical units. In the private sector, 80 of the 3,140 hospitals have more than 50 beds and offer specialized and highly specialized medical services. Most of the hospitals offering specialized health care services are located in medium to large sized Mexican cities. There are also some medium sized private hospitals that offer specialty services and focus on high income, insured patients. These hospitals also represent potential users of health IT applications.

## MARKET INSIGHT

Although the use of Information Technology (IT) in the healthcare sector is in its infancy in Mexico, healthcare institutions now see IT systems as a necessity to improve patient care and implement effective hospital and resource management. Over the past several years, large public and private hospitals have started looking for options to automate some of their activities, as a way to reduce costs, improve patient services and increase transparency. Currently, all large public and private hospitals have some type of automation system. However, hospitals have realized the limits of these systems and the need for more sophisticated and custom designed systems that can improve operations based on size and patient type and services. Many of the systems available on the market do not address the complex needs of large healthcare institutions.

In the case of medium healthcare organizations, technology requirements are not as complex. These institutions are interested in automating much of their activities, but have been slow to evaluate technology solutions. Hence, this segment has seen very little penetration.

The small healthcare institutions have not invested in sophisticated technologies although most have basic computers and IT systems. However, as large and medium sized organizations become automated, small institutions will need to follow to ensure interoperability.

Based on surveys and market information, the private consulting company **Select** estimated that in 2011, the Mexican healthcare sector invested about US \$ 488 millions in IT systems. This market is expected to grow as deployment of automation technologies continues to increase in the Mexican healthcare sector.

## MARKET TRENDS

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Some of the major trends observed in both the public and private sectors include:

- Reluctance to use cloud computing or remote data centers for storing internal and confidential information
- Use Electronic Health Records (EHR)
- Installation of wireless networks for mobile devices
- Automating administrative procedures and patient control systems
- Use of digital imaging systems
- Use of consultants to evaluate technology needs, design systems and prescribe technologies
- Equipment leasing instead of purchasing it

In the public sector recent trends include:

- Automation of medical appointment scheduling, supplies and inventory control, and human and material resources management by social security institutions
- Use of telemedicine to offer highly specialized medical consultations remotely to patients in small towns and rural areas, where only general medicine practitioners or mobile health care units are available
- Evaluation of technologies to determine how to implement the EHR
- Development of pilot programs to evaluate technologies that could be adopted by the entire public health care sector
- Evaluation of technologies that reduce costs and improve services
- Collaboration among institutes to ensure interoperability of IT systems
- Use of private contractors to develop software

Recent trends in the private sector include:

- Use of EHR and automated systems for patient registration, supplies and inventory control and human material resources management by large hospitals
- Use of wireless internet on all hospital floors and mobile systems (RFID or other) for patient medication control, laboratory testing control, nursing coordination, doctor visit's records, and billing systems by some large hospitals
- Use of telemedicine systems for second opinions, academic exchange and information sharing - few private hospitals are interested in telemedicine systems as they prefer to provide in-hospital consultation services.
- Evaluation of technologies and integrated systems for real-time information and communication between staff and patients.

## END USERS

### Public sector

Public health care facilities are classified according to international service level standards:

- **First level** - general medicine
- **Second level** -specialized medicine
- **Third level** - advanced and highly specialized medicine

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The three most important public health care institutions are the IMSS (Mexican Institute of Social Security), the ISSSTE (Institute of Social Security and Services for Public Employees) and the SSA (Secretariat of Health). In addition to these institutions, each state has health care facilities for employees of state institutions such as state governments and universities. The Mexican oil company PEMEX, the Army and the Navy also have their own health care institutions.

Together, public healthcare institutions account for 70-80 percent of total medical services provided nationwide.

In 2007, public healthcare institutions included:

- 20,664 Healthcare Units
- 19,495 Ambulatory Care Centers
- 1,169 General and Specialty Hospitals
- 80,066 hospital beds
- 57,338 medical consultation offices
- 3,037 surgery rooms, excluding the Army hospital network
- 359 blood banks, excluding the Army hospital network.

In 2008, the public healthcare system provided 283 million medical consultations including 198 million general consultations, 45 million specialized consultations, 24 million emergency cases, and 15 million dental consultations.

### **Mexican Institute of Social Security (IMSS)**

The IMSS is a decentralized public agency, which cares for affiliated private sector employees and their families. It also offers services for people living in small rural areas where no other institutional services are available. IMSS financial resources come from private employer contributions, the federal government and a percentage of salary paid by each affiliated employee. By law, all private companies' permanent and temporary employees must be covered by IMSS.

IMSS offers medical care, social support services, and cultural activities for its affiliated members. It also manages pensions for a significant group of retired private employees.

2011 IMSS facts:

- 52.3 million affiliates
- 1811 healthcare units, including 38 highly specialized centers, 262 specialized hospitals and 1511 general practitioner and family care units
- 1191 surgery rooms
- 45,519 hospital beds
- 434 delivery rooms
- 540 clinical laboratories
- 1,029 radiology cabinets
- 41 blood banks
- 743 pharmacies
- 69,441 doctors
- 96,594 nurses

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From January to November 2011, IMSS provided 114.6 million medical consultations and performed 1.4 million surgeries.

### **Institute of Social Security and Services for Government Employees (ISSSTE)**

ISSSTE is also a decentralized public agency offering medical care, social support services, and cultural activities for public employees.

ISSSTE is financed through federal government contributions, government agencies of affiliated employees, and employee contributions as a percentage of their salary.

2010 ISSSTE facts:

- 12 million affiliates
- 1,176 health care units, including 1,041 family medicine units, 123 general and specialized hospitals, 11 highly specialized hospitals and 1 special health care unit
- 20,207 doctors
- 23,131 nurses
- 5,760 paramedic staff
- 328 surgery rooms
- 6,725 hospital beds and 4,626 “in transit” beds (emergency, intensive care, recovery and birth delivery)
- 58 blood banks
- 177 delivery rooms
- 259 radiology cabinets
- 215 mobile X-ray units
- 6,331 medical consultation offices that provided 25 million medical consultations
- 334 pharmacies
- 400 dentistry cabinets
- 244,498 surgeries performed

### **Secretariat of Health (SSA)**

SSA provides services to those people not covered by other health care institutions. It is also in charge of providing care to patients affiliated with social health programs offered by the federal government such as the “Seguro Popular” (Popular Insurance) and the “Seguro Medico para una Nueva Generacion” (Medical Insurance for a New Generation).

SSA also has some of the most important highly specialized medical and research centers in the country, such as those for oncology, cardiology, nutrition, respiratory care, etc.

2007 SSA facts:

- 109.4 million medical consultations
- 34,158 hospital beds
- 29,174 medical consultation offices
- 1,621 surgery rooms
- 1,203 clinical laboratories
- 172 pathology laboratories
- 4,675 delivery rooms

- 233 blood banks

### **Private sector**

Private health care institutions in Mexico are classified by types of services offered:

**Clinic-** 1 to 14 hospital beds and basic health care services.

**"Sanatorium"-** 15 to 29 beds offering general medical services. These are low-level care hospitals, not psychiatric hospitals.

**Hospital-** 25 to 49 beds offering all types of medical services.

**Medical Center-** more than 50 beds and equipment for advanced specialties.

All private health care institutions need to be authorized by the Secretariat of Health and comply with certain requirements and characteristics according to the type of health care services offered. In 2007, Mexico had 3,140 accredited private health care institutions, with 42,744 hospital beds, and 13,130 medical consultation offices. Of this, only about 2.5 percent had more than 50 beds and the capacity to offer highly specialized medicine.

Private health care institutions treat about 25-30 percent of the Mexican population, including 32 million people with private medical and accident insurance. This also includes patients that are affiliated with social security institutions, but prefer using private hospitals and doctors through private insurance provided by their employers, or paid independently. This causes a sort of duplication in medical coverage for a selected group of patients with the option to use health care services in both public and private institutions. Some of these patients use private facilities for some medical care and go to public institutions when the cost exceeds their private insurance coverage.

The most important private healthcare institutions are ABC Hospital, Amerimed Hospitals, Grupo Angeles, Grupo Christus Muguerza, Grupo Star Medica, Hospital Español, Hospital San Jose, and Medica Sur.

### **ABC Hospital**

The American British Cowdray Hospital or ABC, was founded in 1941 by the merger of two important hospitals in Mexico City, Hospital Americano founded in 1886, and the Sanatorio Cowdray which was established in 1923.

Today, the ABC operates two general acute care facilities: one 200 bed hospital in the south of Mexico City, and a suburban 60 bed hospital, on a 16 acre campus in the rapidly growing Santa Fe district on the eastern side of Mexico City. Both offer practically all the medical and surgical specialties with the most modern technology. They also have emergency and intensive therapy units for adults and newborns, specialized laboratories, blood banks, gift shop, pharmacy, cafeteria, church, heliport, and parking lot working 365 days a year.

The hospital has an international referral center for patients needing treatment outside of Mexico and offers translation services in 11 languages for their international patients. The hospital also has agreements with many institutions to provide patients with additional treatments, second opinions, tests or treatments not available at the ABC. It is affiliated with the Methodist International of

Houston, and has adopted this hospital's standards and best practices to ensure same level of quality service and care.

### **Amerimed Hospitals**

AmeriMed is a network of medical facilities in Mexico that provide full medical services based on U.S. health care standards. The group is part of the Amerimed network based in Phoenix, Arizona. The network started operations in Mexico in 1996 with the opening of a health care center in Puerto Vallarta, Jalisco. In 1999 it opened a second health care unit in Cancun, Quintana Roo, and now has hospitals in Cabo San Lucas and Los Barriles (an hour North of San Jose del Cabo). AmeriMed hospitals are staffed 24 hours a day with bilingual, in-house physicians who are specialized in emergency medicine.

### **Grupo Angeles**

Grupo Angeles is the largest private health care group in Mexico. The owner of the group, Mr. Olegario Vazquez Raña started in the health care business in 1986, when he purchased the hospital that the American group Humana, Inc. had in Mexico City and named Hospital Angeles del Pedregal. Now, the group owns 21 of the most important hospitals in Mexico, nine located in Mexico City and 12 in other important cities. It is also in the process of building 10 new hospitals that will start operations in the next two years.

Together, Grupo Angeles hospitals have 11,000 doctors in 55 specialties, 200 surgery rooms, 2,000 hospital beds and over 9,000 employees that provide care to about seven million patients per year, including two million inpatient treatments and five million outpatient treatments.

Grupo Angeles has an internal TV circuit to keep its staff informed of group policies, new projects and technologies. It also has divisions for continuing education and clinical and diagnostic laboratories; an internet service for medical consultations; a foundation to support underprivileged communities, a drugstore chain; and an Institute of Biomedical Sciences that conducts clinical trials for pharmaceutical products and medical devices in Mexico.

Grupo Angeles seeks best-in-class technologies for their hospitals. Technologies are selected based on each hospital's needs, such that not all hospitals in the group will have the same medical or IT technologies. This may vary according to the hospital location, specialties offered, and patient needs. Currently, Grupo Angeles has wireless internet in all of its hospitals and is evaluating IT systems to be installed in the next 2-3 years. The group does not use EHRs yet.

### **Grupo Christus Muguerza**

Grupo Christus Muguerza opened in 1934 with the Hospital Muguerza in Monterrey. In 2001, it formed a joint venture with the group Christus Health.

Currently the group has:

- 1 highly specialized hospital in Monterrey that has been certified by the Joint Commission International and by the American College of Pathologists
- 6 highly specialized hospitals located in Monterrey, Chihuahua, Reynosa, Saltillo, Puebla and Tuxtla Gutierrez.
- 4 Centers of Medical Attention (CAMS) in Monterrey, Chihuahua, Reynosa and Saltillo
- 2 rehabilitation centers in Monterrey
- A sophisticated ambulance service

- 7 community services clinics in small towns in Mexico

### **Grupo Star Medica**

Grupo Star Medica began operations with one hospital in Morelia, Michoacan in 2002. Since then, it has developed two brand names, Hospitales VIVO that offers high quality health care for low income patients and Hospitales Star Medica that offers services in 36 specialty areas for middle and upper income patients. There are currently three VIVO hospitals, two in the state of Mexico and one in San Luis Potosi; and eight Star Medica hospitals in the cities of Aguascalientes, Acapulco, Ciudad Juarez, Mexico City, Merida, and Morelia. The Hospital Infantil Privado in Mexico City is part of the group.

On average, each hospital has 80 beds and offers highly specialized medical care. The founders' vision is to build at least 11 more hospitals in the next five years and become the largest private healthcare chain in Mexico.

The Star Medica hospital in Ciudad Juarez treats many patients from the U.S., especially those looking for gastric band surgery.

The group has been gradually installing IT systems and is currently evaluating systems cost savings and efficiency gains. The group is not using EHRs.

### **Hospital Español**

Hospital Español belongs to the Foundation of the Spanish Beneficence in Mexico. It was founded with the purpose of providing services to the Spanish community in Mexico. Today, Hospital Español is a chain of seven hospitals. The one in Mexico City is the largest and most modern private hospital in Mexico. It has 6 more hospitals in Puebla, Tampico, La Laguna Torreón, Pachuca, San Luis Potosi and Veracruz.

Over the past several years, Hospital Español Mexico City has carefully automated most of its operations, including: wireless internet on all hospital floors, medication dispensers, radio frequency devices for patient identification, medication control, patient services, imaging management, inventories, invoicing, administrative services, pneumatic delivery of products and medicines. The hospital has its own staff software developers but outsources technology maintenance and integration services.

Hospital Español is currently looking for systems to automate surgery rooms and monitor and control medical equipment and instruments. It is not yet using EHRs.

Hospital Español is seeking Joint Commission International Certification.

### **Hospital San Jose**

Hospital San José Tec de Monterrey is accredited by the Joint Commission International and offers highly specialized medical services in the north of Mexico. Since 1969, it has focused on quality patient care and advanced medical technology treatments. It is sponsored by the internationally recognized Tecnológico de Monterrey and located in Monterrey, only 150 miles from the US border.

Hospital San Jose is part of a group managed by Tec de Monterrey that also includes the School of Medicine, the Center for Innovation and Technology Transfer, and the Institute of Cardiology and Vascular Medicine.

## Medica Sur

Medica Sur was founded in 1981 by a group of doctors interested in offering high quality hospital services in Mexico.

Medica Sur consists of three integrated health care units: Clinica Medica Sur Pedregal, Clinica Medica Sur Polanco, and Clinica Medica Sur Monterrey. All of these clinics offer highly specialized medical services including cardiology, gynecology, family medicine, internal medicine, nutrition, dentistry, ophthalmology, orthopedics, pediatrics, psychology, and emergency services. The group also has imaging and clinical laboratories, pharmacies, and healthcare check up units.

The main Medica Sur complex is located in the south of Mexico City and has 120,000 square meters of construction, including 134 hospital rooms, 26 suites, 514 doctor offices and 17 medical units for specialized medical treatments for smokers, sleeping problems, nutritional problems, obesity, diabetes, menopause, climacteric, physical therapy, rehabilitation, neurophysiology and gamma knife surgery.

The group also has real estate services, home care services, education and social services and a medical research foundation. "Fundacion Medica Sur" is one of the 11 medical academic and research centers certified by the National University of Mexico (UNAM) offering continuing education programs in 10 specialty areas. Medica Sur participates in a telemedicine program with public health care institutions to provide specialized consultations remotely to patients in small communities in Mexico.

Medica Sur is in the process of purchasing IT systems for the Pedregal Hospital and is also evaluating technologies for EHRs.

## BEST PROSPECTS

- Automation hardware and software
- Billing systems
- Data protection systems
- Electronic Health Record (EHR)
- EPR systems (Enterprise Resource Planning)
- Green IT-systems to reduce energy consumption
- Hands-free and wireless communication mobile devices
- Imaging transferring systems
- Medical data exchange solutions
- Mobile devices for medical use
- Nursing systems
- Patient tracking systems
- Real-time database update accessible from multiple devices

## COMPETITION AND MARKET OPPORTUNITIES

There are many domestic and foreign companies offering IT solutions for the health care sector in Mexico, including software, videoconferencing systems, 3D imaging, HER systems, medical data

exchange solutions, digital media systems, cloud computing, patient control systems and administrative systems.

Corporations like CISCO, Motorola, Microsoft, Oracle, SAP, Siemens, Alert, DELL, and IBM, are all well entrenched in their niche subsectors and are working with public and private institutions to implement their own IT systems and conduct pilot programs to determine viability of certain systems in particular institutions. In order to determine which technologies are best for their organizations, some institutions ask potential suppliers to work with them in piloting technologies to assess in real life situations. Some hospitals may run concurrent and competing pilot projects for the same contract. Competing for a contract may also involve technical presentations and training for different levels of technicians and decision makers. However, this is a growing market and is expected to create numerous opportunities for companies with innovative solutions.

Niche markets can be found with the small hospitals and clinics, as they do not receive much attention from the big IT companies. Other opportunities include technology for home care organizations and medical insurance companies that need to be connected to hospitals and other healthcare institutions.

Although most technology providers offer training for the installation and use of their systems, there is still a big demand for IT education and training in the healthcare sector. This is especially true for doctors and nurses that are sometimes reluctant to learn about and apply new technologies. So, courses that are practical, focused and applied for healthcare practitioners are expected to see an increase in demand in Mexico.

### **DISTRIBUTION CHANNELS**

Most large international corporations have branches in Mexico and use mixed marketing strategies to target clients according to their size and needs. They usually approach large institutions directly, but use partners to customized systems and provide training and maintenance. When clients are large enough, a specific dedicated account executive is assigned.

Medium sized companies may have branches in Mexico or work with local partners with the capacity to provide the technical support and after sales services. Small foreign companies usually work with distributors that represent other non competing products.

### **REGULATIONS**

The Federal Government is trying to establish common parameters that both public and private hospitals can adhere to, in order to ensure IT interoperability and maintain the highest levels patient care. This is particularly relevant as many doctors work for both public and private hospitals.

Consequently in September 2010, the Mexican Secretariat of Health published NOM 024-SSA3 2010, a technical regulation for Electronic Health Records. In this regulation the Secretariat of Health established the requirements and characteristics for IT systems interoperability, health information confidentiality, and information processing for public policy and statistical purposes.

Although the use of the EHR is not obligatory in Mexico, all health care units that use EHR must comply with the NOM 024, including private doctors, ambulatory care centers, hospitals, ERs, pharmacies, laboratories, imaging cabinets and surgery rooms.

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Some government institutions are currently developing regulations for telemedicine services and mobile devices.

### USEFUL LINKS

For public institutions

[www.salud.gob.mx](http://www.salud.gob.mx)

[www.imss.gob.mx](http://www.imss.gob.mx)

[www.issste.gob.mx](http://www.issste.gob.mx)

For private hospitals

[www.grupoempresarialangeles.com](http://www.grupoempresarialangeles.com)

[www.starmedica.com.mx](http://www.starmedica.com.mx)

[www.hsj.com.mx](http://www.hsj.com.mx)

[www.abchospital.com.mx](http://www.abchospital.com.mx)

[www.beneficenciaespanola.com.mx](http://www.beneficenciaespanola.com.mx)

[www.amerimed-hospitals.com](http://www.amerimed-hospitals.com)

[www.christusmuguerza.com.mx](http://www.christusmuguerza.com.mx)

[www.medicasur.com.mx](http://www.medicasur.com.mx)

### For More Information

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