Investment big bets

Health care and life sciences in the GCC
# Table of contents

**Health care overview in the GCC** 04

**Six big investment bets for health care and life sciences in the GCC** 10

1. Primary care services 2.0 12
2. Development of specialized centers of excellence 16
3. Home health care services 20
4. Long-term and post-acute care rehabilitation 26
5. Unlocking value in biotech 30
6. Manufacturing play in medical disposables 34

**Enablers to support investments in the GCC health sector** 38

**Endnotes** 44
Investment big bets: health care and life sciences in the GCC
Overview

Health care sector in the MENA region has been seeing substantial growth over the past few years, given the need to address health service capacity gaps and improve the quality of health infrastructure. Health care spending in MENA is expected to grow to US$144 billion in 2020 with approximately US$69 billion of this health spending coming from the GCC countries. Though the percentage of health spending when compared to GDP is low in MENA, given that the population size is relatively small and the health sector is underdeveloped compared to the developed nations, sustained growth in health expenditure in the GCC is expected to drive overall MENA health care spending.

Demand for health care in the GCC is driven by the changing demographic and epidemiological trends, including the rise in aging population across the region, significant rise in lifestyle risk factors and prevalence of chronic diseases. Not only has the population growth shown an upward trend owing to improved socioeconomic conditions and a significant decline in mortality rates, the life expectancy has also increased considerably over the past decade on account of improved health services and infrastructure. GCC governments have made substantial investments in health care infrastructure during the past 25 years, and the overall improvements have raised the quality of health services in the region significantly.
**Demographics**

Life expectancy has risen from 62 years in 1970 to 77 years in 2012 – an increase of 24% in four decades; and in the same period, infant mortality fell from 69 deaths per 1,000 live births to less than 9 in 2012. While this is presently at par with most developed countries, it has led to an increase in utilization of health services as the elderly form a big market for health care due to age-related ailments. GCC population predominantly comprises a young population, which is expected to grow but at a much lower rate than that for elderly population. According to BMI forecasts, the pensionable population (65+ years) in the GCC is predicted to grow at 8% CAGR between the period 2014-24, compared to a historical 4% CAGR from 2010 till 2014.
Disease profile

GCC countries continue to rank among the highest in the world on risk factors related to chronic lifestyle ailments such as diabetes, hypertension, cardiovascular conditions and obesity. This is primarily on account of the growing dependence among the population on modern technology, increased spending power, hot climate conditions and physical inactivity.

Table 1: WHO Non-communicable diseases country profile

<table>
<thead>
<tr>
<th>Indicator</th>
<th>UAE</th>
<th>KSA</th>
<th>Qatar</th>
<th>Kuwait</th>
<th>Bahrain</th>
<th>Oman</th>
<th>UK</th>
<th>Australia</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCDs as a causes of mortality (2012), % of death</td>
<td>65%</td>
<td>78%</td>
<td>69%</td>
<td>73%</td>
<td>78%</td>
<td>68%</td>
<td>89%</td>
<td>91%</td>
<td>79%</td>
</tr>
<tr>
<td>Cardiovascular diseases (2012), % of death</td>
<td>30%</td>
<td>46%</td>
<td>24%</td>
<td>41%</td>
<td>26%</td>
<td>33%</td>
<td>31%</td>
<td>31%</td>
<td>29%</td>
</tr>
<tr>
<td>Cancers (2012), % of death</td>
<td>13%</td>
<td>10%</td>
<td>18%</td>
<td>14%</td>
<td>13%</td>
<td>10%</td>
<td>29%</td>
<td>29%</td>
<td>30%</td>
</tr>
<tr>
<td>Chronic respiratory diseases (2012), % of death</td>
<td>3%</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>6%</td>
<td>2%</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Prevalence of diabetes (20-79 years) (2015), % of population</td>
<td>11%</td>
<td>20%</td>
<td>16%</td>
<td>18%</td>
<td>18%</td>
<td>8%</td>
<td>7%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Obesity prevalence (2013) in children (2-19/20+ years) &lt;sup&gt;6&lt;/sup&gt;</td>
<td>12%/29%</td>
<td>12%/36%</td>
<td>17%/47%</td>
<td>20%/49%</td>
<td>10%/36%</td>
<td>12%/27%</td>
<td>8%/25%</td>
<td>7%/29%</td>
<td>3%/4%</td>
</tr>
<tr>
<td>Raised blood pressure (2008), % of population &lt;sup&gt;7&lt;/sup&gt;</td>
<td>19%</td>
<td>24%</td>
<td>25%</td>
<td>20%</td>
<td>28%</td>
<td>25%</td>
<td>28%</td>
<td>21%</td>
<td>27%</td>
</tr>
</tbody>
</table>

*Note. The actual prevalence rate of diabetes in the UAE may be higher because of under-reporting.

In the GCC at present, the percentage of mortality from non-communicable diseases (NCDs) among individuals aged 60 years or younger is the highest in the world. The high rate of premature NCD mortality in the GCC countries is largely due to unhealthy lifestyles, including physical inactivity, high caloric intake, lack of focus on health prevention and chronic disease management, early stage interventions and inadequate treatment options to manage NCDs and their complications. The situation is likely to worsen as the sedentary population in the region ages.

Among GCC nationals in particular, the prevalence of Type 2 diabetes and obesity is unusually high, relative to the rest of the world. The obesity rate for GCC nationals stands at an average of 40%<sup>6</sup>, one of the highest in the world. With a sizable segment of the GCC population comprising nationals, the higher incidence of both diabetes and obesity, along with their related complications, is expected to lead to significantly higher health care costs in the next decade, particularly in Bahrain, Kuwait, KSA and Oman, where nationals form 35% or more of the total population.

Figure 2: Percentage of nationals and expatriates, GCC 2009<sup>9</sup>

Figure 3: Under 60 years NCD deaths as a share of all NCD deaths, 2013<sup>9</sup>

Diabetes, heart disease, cancer, respiratory ailments, and mental health disorders are the largest contributors to the burden of disease in the GCC countries as measured by the composite measure of disability-adjusted life years (DALYs) lost. According to BMI's Burden of Disease Database, NCDs are expected to grow to a cumulative 3.9 million DALYs lost by 2025<sup>10</sup> in the Gulf, with cardiovascular diseases being the leading cause of death. Thus, in light of the GCC's unusual risk factor profile and the growing burden of NCDs, substantial opportunity exists to better manage lifestyle-related risk factors, as well as the life-threatening conditions.
Figure 4: Disability-adjusted life years (DALYs) lost across the GCC (2012A-2025F)¹¹

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
<td>243,515</td>
<td>273,287</td>
<td>2,637,099</td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>580,663</td>
<td>580,663</td>
<td>580,663</td>
<td>580,663</td>
</tr>
<tr>
<td>UAE</td>
<td>610,643</td>
<td>610,643</td>
<td>610,643</td>
<td>610,643</td>
</tr>
<tr>
<td>Oman</td>
<td>114,848</td>
<td>114,848</td>
<td>114,848</td>
<td>114,848</td>
</tr>
<tr>
<td>KSA</td>
<td>8,383</td>
<td>8,383</td>
<td>8,383</td>
<td>8,383</td>
</tr>
<tr>
<td>Qatar</td>
<td>6,914</td>
<td>6,914</td>
<td>6,914</td>
<td>6,914</td>
</tr>
</tbody>
</table>

Improvements in health infrastructure

In the GCC, substantial improvements in health status in the last 20–30 years have primarily been on account of the investment and development of health infrastructure by the public sector. Over the past 5–10 years, driven by insurance reforms in some GCC countries, the private sector has begun to make sizable long-term investments with an expectation to play a greater role in taking a share of the growing demand for health services. The GCC governments are also supporting private sector investment in an attempt to diversify their economies helping the private sector to take a greater share of the growing demand for health services provision in the region. At present, the health expenditure is mostly funded by the government, with the public sector covering around 65%–80%¹² of total health expenditure across GCC countries in contrast to most developed nations and other emerging markets. This is expected to change given that oil and gas prices are 50%–60% of the price levels a year ago, and there is a need to rationalize health care investments and spending while improving access to health services and ensuring quality enhancement in the health sector.

Despite robust growth in the sector, health care systems in the region continue to lag behind international standards. Most GCC countries, in comparison with developed countries trail behind on health infrastructure indicators such as number of beds, physicians and medical staff/1,000 population. This performance gap, and the expected growth of elderly population in the GCC in the coming decades, amplify the need for substantial investments from governments, as well as the private sector to improve availability of and access to health services.

Figure 5: Government share in the total health care spending across GCC and selected developed countries¹³

Figure 6: Global benchmarks for health care infrastructure, 2012¹⁴
Health spending

In view of this growing demand for health care services in the region, the health spending has increased significantly over the past couple of years, with a five-year CAGR (2010-14) of 11%. The growth rate has been further pegged to grow substantively at between 12%-20% for the next 10 years on account of increasing insurance penetration, growing population and current burden of and growing prevalence of lifestyle related diseases. On the other end, highly specialized hospitals and new regulations are paving the way for medical tourism to grow, especially in the UAE. This is expected to grow the level of investment on developing the health care sector, building new communities, hotels and resorts aimed at making the country a preferred destination for medical tourism. UAE, in fact, is expecting the country’s medical tourism to grow by 15% annually, in line with the increase in tourism growth.

Figure 7: Health care spending in GCC (billion US$)

However, despite growing health spending in the GCC, the expenditure as a percentage of GDP lags the developed world by a significant margin. At 3% of GDP, the average health spending for GCC is well below its developed peers.

Figure 8: Health care spending as a percentage of GDP across GCC and selected developed countries

The GCC countries are expected to see considerable growth in health care expenditure given the expectation of growth in utilization of health services. This is mainly due to a change in the population mix toward an older population, a rise in chronic lifestyle diseases, growing medical tourism demand, and a move toward medical technology innovation supported by health insurance reforms. The health sector is expected to see a demand-supply gap for beds, doctors and nurses across the GCC. This provides an opportunity for the private sector to make judicious investments addressing the health service capacity gaps that would help improve quality of care and access for the patient population in the region.

Health insurance

In order to meet the rising demand for health services and to shift the burden of spending on health care to the private sector, some GCC countries have recently introduced Mandatory Health Insurance (MHI) which has ushered in an era of rapid growth of private care facilities, increasing the private sector’s share of health infrastructure capacity and health services utilization significantly in these countries. MHI is expected to be fully implemented in most of the GCC countries by 2020, which would be a significant driver of investment and expansion of health services in the private sector. Abu Dhabi has fully implemented MHI, and MHI implementation is ongoing in Dubai and KSA and is to be followed by Qatar. Bahrain is considering a roll out of its MHI laws with ongoing consultations with private sector providers and health insurers and is expected to implement MHI by 2018, while discussions of implementation have begun for the Northern Emirates in the UAE. Despite discussions in the recent years, the roll out of MHI is currently uncertain in Kuwait and Oman, although insurance penetration has been increasing by over 10% year-on year over the past 3-4 years.

Figure 9: Status of Mandatory Health Insurance across GCC
Upcoming investments

With the growth in health care demand in the GCC, there are currently a number of upcoming investments within the realm of health care provision. Some of the new projects include:

**KSA**
- **King Khalid Medical City, Dammam**: expected to be completed by 2018, this facility will include a 1,500-bed facility with seven centers of excellence with a cost of SAR1.2 billion
- **King Khalid Medical City, Riyadh**: 231-bed, state-of-the-art cancer and proton beam therapy center
- **King Faisal Medical City, Abha**: the facility will include a 500-bed main hospital plus five specialty hospitals, as well as retail outlets, a hotel, a mosque and a housing development at a cost of US$34 million
- **New East Jeddah Hospital, Jeddah**: a 1,000-bed hospital with a special diabetes center expected to be completed by 2018

**UAE**
- **Burjeel Medical City, Abu Dhabi**: The facility will be a medical city comprising a multi-speciality hospital focusing on specialities such as oncology, acute care and long-term care
- **Mediclinic City Hospital expansion – 130 beds and New Mediclinic Parkview Hospital, Dubai**: 220 beds are planned to be completed by 2017
- **University Hospital DHCC**: 400-bed general hospital with academic medical and post graduate programs is expected to come online in 2018
- **Saudi German Hospital in Ajman**: a multi-speciality hospital, with 150 beds, set up to serve patient needs in Northern Emirates
- **Sheikh Moh'd Bin Rashid Trauma Centre**: 220-bed facility being set up in close proximity of Expo 2020 developments
- **Fakeeh Academic Medical center**: A 300-bed University Hospital in Dubai Silicon Oasis, with an associate Fakeeh Medical University. The hospital will specialize in diabetes and endocrinology, muscles, bone and joints, emergency medicine and pulmonary medicine and cardiology

**Qatar**
- **HMC Translational Research Institute** to be completed by 2018 with focused research for cancer, trauma, infectious diseases, neuroscience, diabetes, obesity, cardiovascular disease, and women’s and children’s health
- **Neuroscience Institute in Doha**: A secondary and tertiary care facility focused on neurosciences expected to come online by 2018
- **New trauma hospital in Doha that will be complete by 2022, comprising 1,100 beds
- **Dedicated Rehabilitation Hospital in Doha with 200 beds covering post-acute rehabilitation and post-surgical rehabilitation**

**Bahrain**
- **120-bed Cancer Centre in Bahrain Hospital Muharraq** expected to be completed in 2016
- **150-bed Disability Complex Center to be completed by 2018 covering treatments for disabilities such as down syndrome, autism brain damages and rehabilitation services
- **200-bed Muharraq Hospital focusing on obstetrics and gynecology, diabetes and long-term care
- **150-bed Mohammed Bin Khalifa Cardiac Center in Awali comprising an integrated facility to treat cardiac diseases and conduct heart surgeries**

**Kuwait**
- **Farwaniya Hospital expansion to be completed in 2018 with 955 additional beds catering to all specialties, allied medicine and school health services including dentistry
- **Physical Medicine and Rehabilitation Hospital in Al Andalus with 500 beds
- **Armed Forces Hospital expansion
- **Al-Razi Orthopedic Hospital expansion (under construction) with 240 additional beds
- **Ministry of Public Works – Maternity and Pediatrics hospitals with 1,500 beds
- **New Al Jahra Hospital with 1,200 beds
- **KU Sabah Al Salem University City Hospital with 600 beds**

**Oman**
- **Sultan Qaboos Medical City comprising five major hospitals and supported by a dedicated imaging center and lab facilities
- **International Medical City to be completed by 2020 with a 530-bed multi-specialty tertiary care hospital
- **Duqm Multi-Specialty Hospital with 75 beds
- **50-bed Iranian Hospital to come online by 2017 in Muscat
- **Al Masarra Psychiatric Hospital; 245-bed facility for rehabilitation, diagnostic, rehabilitative, emergency and training programs
- **Medical city in Batnah: Consists of five hospitals, including general, pediatrics, organ transplant hospital, neuroscience and trauma hospitals, expected to be completed by 2020**
Six big investment bets for health care and life sciences in the GCC
Countries across the world are staring in the face of growing health care expenditures driven by rapidly aging populations, associated comorbidities, shortage of experienced and qualified physicians and nurses, and the rising costs of delivering health services. The need to curb the spiralling growth in health care costs has led to the emergence of newer primary care models in the past few years. Innovation and improvements in primary care models have been proposed in recent years, in the wake of advancement in medical technology, mobile applications and the willingness of payors in the health system to reimburse services focused on health prevention and chronic conditions management, which have resulted in success of the newer models. The investment case for newer models of primary health care centers lies in limited success of traditional models to:

- Offer patient centered care at the primary health center level
- Serve as the gatekeeper of the health care delivery system
- Provide specialist care at the primary health center level, to reduce the burden on subsequent levels of care
- Offer continuity of care under the same caregiver
- Establish links with secondary and tertiary care through referral systems
- Effectively diagnose and detect chronic conditions, e.g., cancers and depression
- Actively develop and deploy health screening programs and chronic disease management with some exceptions
Within the GCC countries, integrated technology enabled primary health care centers are the need of the hour. The lag in delivering care expected from them and the growing concern over their ability to survive in the current health care system has led to concerns and spurred an outlook for alternatives. A number of alternatives have emerged in the US in recent years, given the drive to limit the spiraling and unsustainable rise in health spending and continued access issues to essential health services by a large segment of the patient population:

- **Retail care solutions (retail clinics)** – services offered in retail settings; for instance, Walmart. These clinics led by GPs have been innovative alternatives to traditional primary care characterized by long waiting times or has limited outreach. High costs, close proximity to patient population and unsatisfactory outcomes in the traditional model are some of the other drivers that have led to development of these alternatives.

- **Integrated networks that combine treatment services supported with a technology platform to manage population health and wellness at a large scale.** Examples include Truven, which has led initiatives such as The Truven Health Unify™ Enterprise Solution, which brings clinical and administrative data together and enables standardization. It then applies advanced analytical methodologies to some of today’s most important areas of need, i.e., population risk management. CareMore is a Medicare health care company based in Cerritos, California, which is another example.

- **Developing patient-centric clinic profiles, to optimize health and wellness outreach programs.** Redbrick, based in Minneapolis, has over the years provided solutions in the US for engaging healthy and unhealthy individuals using innovative and traditional methods to derive more out of their health plans.

- **Enhancing integration at the level of primary and secondary care through telehealth services;** e.g., Kaiser Permanente, a nonprofit healthcare provider that offers comprehensive, affordable health coverage plans for individuals and families, Medicaid, Medicare, employers and large groups.

- **Delivery of primary care through owned or highly integrated clinics and similar facilities.**

- **Development of patient communities and digital forums that connect patients, allowing an exchange of experiences, insights and support;** e.g., Smart Patients.

- **Employing technology to develop early detection devices, such as, Quantutus which enables continuous blood pressure monitoring through a wrist worn device; and Proteus Digital Health, that has developed an ingestible radio chip that enables tracking of adherence to medication.**

The traditional models that have been conventionally delivering primary care in many GCC countries have not evolved at the pace that was needed, especially with growing health services demand from patients and the growing burden of chronic diseases. The latest research from International Diabetes Federation (IDF) reveals that seven of the top 20 countries
with prevalence of diabetes are from the MENA region, with the GCC countries having among the highest prevalence rates. While Saudi Arabia takes the top spot in the region with an almost 20% diabetic population, Kuwait is a close second with 18% followed by Bahrain (18%), Qatar (16%), while the UAE stands at 11% and Oman at 8%.

**Figure 10: Prevalence of diabetes in the GCC countries, IDF (2014)**

Despite being a critical link within the health system, the industry has struggled to provide high quality services in an effective manner. Hence, in the GCC, it is increasingly becoming difficult to deliver comprehensive and well-coordinated care primarily due to the limitations in its original design. Newer models of primary health care centers need to evolve over the coming years in order to develop a broader range of preemptive, diagnostic treatment services round the clock. These models will be a part of the plan to diminish dependence on secondary and tertiary care. They will facilitate enhanced coordination of care for groups, such as those living with mental health problems and elderly through the intermediate care.

The following needs can be addressed by the private sector by developing propositions around these services:

- Developing primary health centers with advanced diagnostic capabilities for health screening
- Improve upon existing referral systems (and investing in building new ones), linking primary care providers to specialists, tertiary care centers and other resources (e.g., pharmacy, enablement of remote monitoring) that can potentially help it function more effectively
- Focus on developing more integrated multidisciplinary teams to deliver care efficiently, for instance by introducing nurse practitioners, referrals to specialists through telehealth programs, disease management clinics (obesity clinics, diabetes clinics, etc.)
- Adopt innovative platforms to deliver primary advice and care round the clock to reduce burden on prospective levels of care, i.e., through employing advancements in telehealth and improving accessibility. Initiatives such as Doc in a Box (US), 30 are innovatively tapping into benefits of retail and offer a limited range of services such as sale of drugs for common infections and wounds, tests, and vaccinations. They are generally staffed by nurse practitioners, have varying degrees of oversight by physicians and follow established clinical practice guidelines. Subject to the success of patient education programs, chronic disease management could be enabled through the use of technology and implanting wireless devices to enable remote monitoring of their chronic conditions. Successful implementations have included usage of implantable devices, RM-enabled pacemakers and ICDs that can continuously communicate a patient’s clinical status as well as a device’s functional status, e.g., battery life and lead integrity – increasingly critical benefits in light of continued industry challenges with lead reliability. When needed, a physician can pre-program the device with instructions to signal the computerized service center to generate an event notification when clinically relevant changes occur. Thus, the physician receives an event alert via email, SMS or fax, enabling the physician to act expeditiously. To complete the cycle, if a patient needs therapy the service center automatically sends the patient an alert (pre-programmed by the physician) or the physician notifies the patient with instructions. All told, advancements in the ability of remote monitoring ICDs to capture functional status and clinical values have been proven to deliver significant value to physicians and patients alike. 31

Expenditures allocated to preventive health care services is one of the determinant of the quality and extent of care delivered in a country. It drives what will be offered to most patients at the primary health care centers. UAE allocates approximately 6% of their health care expenditure to preventive services. This averages to an estimated US$90 spent (per capita) on preventive health care services vs. an estimated average of approximately US$400–US$500 (per capita) being spent in developed countries such as Germany, France and Netherlands (based on an average spend of 8%-9% allocated to preventive care activities). This allocation is expected to grow in the coming years and can be supported by development of technology enabled primary health centers using mobile services in prevention, diagnosis, treatment and monitoring.
Hence, the health care needs that create the opportunity for private sector providers to develop innovative mobile services supporting primary health centers are based on:

- Rising risks associated with growing prevalence of chronic diseases, such as growing obesity rates, which have grown especially among children to reach 6.3% globally and most increase has been recorded in GCC countries. Additionally, the highest levels of inactivity were recorded in the Eastern Mediterranean Region (EMR – which includes the GCC) which have been said to reach 88%.32
- Growing burden of chronic diseases, i.e., prevalence of conditions such as congenital and cardiovascular conditions, diabetes, cancers, depression, etc. For instance, the highest prevalence of diabetes is recorded at 14% in the EMR region as quoted by WHO. Centers as the likes of Dubai Diabetes Center and Imperial College of London Diabetes Center, have been leading with high-quality management of their patients suffering with diabetes, in line with international clinical guidelines to improve detection and management of the disease. The private sector could focus on developing personalized programs along the lines of CDC, a 12-month, intensive lifestyle intervention program that has reaped successful results of helping reduce risk of developing Diabetes up to 58%.33 HealthPlus in Abu Dhabi has set up Diabetes and Endocrinology clinics offering a full spectrum of primary care services from early detection and screening to nutrition services and diabetes management
- Unsustainable rise in health care expenditures, which are due to rise in demand for health care services, results in most spend being allocated to curative services. UAE is set to experience a rise of 10%-12% y-o-y34 on health care spending and other GCC countries are facing similar pressures in an economic environment of lower oil prices. The spend is expected to shift from curative to preventive services in the near future, due to the above-mentioned factors. This can result in focus on better outcomes and prognosis of disease due to early intervention, with achievement of the ultimate goal of cost savings. Examples of the same recommendation have been recorded in the US by TFAH (Trust for America’s Health), which found that reducing the average body mass index by just 5% in the United States could lead to more than US$29 billion in health care savings in just five years, due to reduced obesity-related costs. The analysis concluded that the country could save US$158.1 billion in 10 years and US$611.7 billion in 20 years by focusing on reducing BMI and preventing the development of chronic diseases such as diabetes, cardiovascular disorders, etc.35 Similar savings are possible in the GCC as a significant proportion of health spending is on surgeries and other inpatient services.
- Improving private sector participation driven by mandatory health insurance. Currently, the government foots 73% of the health expenditure on an average. To weather their motivation of growing the health care sector, several GCC governments have begun to consider public-private partnerships to enable private sector participation. It is estimated that the private sector’s share in the health care Services market will rise to 33% by 2020.36

- The early success of some propositions with a focus on prevention could lead to similar models being rolled out and adopted within the GCC, and the helps deploy advanced diagnostics to deliver patient-centered care. Marina health promotion center, a dedicated screening center setup by VPS Health care, in partnership with Seoul St. Mary’s Hospital (SSMH), Korea37 – is a premium medical care provider focused on early detection of cardiovascular diseases and cancer. Such centers are aimed at early detection and thus timely treatment of these non-communicable diseases to reduce morbidity in the long run. Dubai is encouraging the development of mobile enabled services and health solutions as a part of “the smart government” initiative launched by H.H. Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of UAE and Ruler of Dubai.

Most countries are increasing their spending on disease management programs and preventative health services. New Zealand has led the way, with 7% allocation of total health expenditure, followed by Canada at 5.9% (OECD 2013), and have been recorded as the highest preventive care spenders in the world. We believe, in order to achieve similar metrics and indicators that most developed countries experience, GCC countries should allocate a higher percentage (8%-10%) spend on preventive services given the sizable young population with high risk factors for cholesterol and obesity.

Figure 12: Forecasted percentage health care expenditure (US$b) in the GCC38

Hence, we can expect the proportion of spending on primary care-led or supported propositions is expected to rise significantly as new models emerge and as technology enabled bridging the gap between traditional health care models and the existing service offerings.
Development of specialized centers of excellence

Future investments in the health sector in the GCC are expected to be driven primarily to fill the quality gap in health service delivery as opposed to just a demand-supply gap in physical infrastructure, where significant investments have already been made in most GCC countries. We have seen a visible shift in some GCC countries where a large portion of upcoming projects are in specialized facilities focusing on one or a limited number of specialties with the aim to develop centers of excellence (CoEs). CoEs are health care facilities focused on providing high-quality care through multidisciplinary teams. They have the ability to charge premium prices compared to their general hospital counterparts, given the superior quality and technologically advanced services that they are able to provide. A CoE proposition also helps create differentiation in the market, as it ensures provision of end-to-end patient care maintaining the continuum and could result in improved clinical outcomes in the specialties and services the center is focused on.
A large number of health care facilities have been established over the last couple of years in order to meet the increasing demand of non-communicable diseases and other high volume specialties in the GCC region. For instance, the number of hospitals in KSA has grown from 354 in 2008 to 404 in 2013. Similarly, hospitals in UAE have increased from 62 in 2008 to 72 in 2013. With increasing competition among private sector providers to attract the same patient pool, it becomes critical to sustain being provider of choice. A hospital must be able to distinguish itself from the competition on quality of care and patient outcomes, and providing sub-specialties and services led by highly experienced clinical professionals and multidisciplinary teams, which is integral to the model of care at a primary, secondary and tertiary level. Implementation of this would ensure continuum of care and could help target specific patient segments. A CoE proposition could be potentially successful in the GCC, due to the growing need for chronic disease-based management of medical conditions and the increasing need to demonstrate patient-centric and high-quality care with superior outcomes.

**CoE as an opportunity in health care**

The various benefits of establishing a CoE include:

- **Quality of care** – Integrated care using multidisciplinary teams helps improve availability and accessibility to specialized services and sub-specialties.

- **Chronic disease management** – In 2015, the diabetic population in MENA is estimated to be 37 million, which is expected to increase to 68 million by 2035.\(^{39}\) In 2014, non-communicable diseases (NCD) accounted for 60% of deaths in the GCC, with Bahrain and KSA having the highest NCD related deaths at 78%.\(^{40}\)

- **Aging population** – Population in the GCC region is expected to age considerably, with the percentage of population over 65 years to rise to 4% of the total GCC population by 2025 from 2% in 2014.

- **Shift of burden of health care demand from public to private sector** – Most public hospitals in the GCC are functioning at over 80% bed capacity utilization, and these overcrowded and overburdened public health care facilities could benefit from specialized centers of care where patients can be referred. This would be particularly beneficial for tertiary care services, which typically have six months to one year waiting lists for a large proportion of elective surgeries in the public sector.

- **Reduction in outbound health spending** – Due to lack of specialized services in GCC, the GCC governments spent approximately US$12 billion in 2012 on sending patients abroad for treatment. This relates to the treatment of complex cases related mainly to oncology, orthopedics and trauma, rehabilitation and pediatric services.\(^{41}\)
• Attracting inbound medical tourists – CoEs ensure continuum of care of services with better clinical outcomes, higher success rates of procedures and higher patient satisfaction, thus increasing the potential to attract inbound medical tourists in the GCC region particularly in Dubai, Abu Dhabi, Doha and Bahrain.

• Attract and retain clinical talent – Facilities adopting international best practices and delivering higher quality of patient care would attract highly experienced and qualified physicians, surgeons and support staff from across the world to practice medicine in a work environment that enables learning and growth.

• Positioning and differentiation – CoEs leverage their quality driven, patient-centric care focus and thus have the ability to price services at 15%-25% premium on surgeries compared to most general hospitals.

• Reduction of health care costs – by streamlining and standardizing care and patient pathways by offering integrated health care services in CoEs, costs can be lower given scale on similar services and higher volumes of a limited slate of health services and procedures.

Examples of specialized CoEs in GCC

Recently set up CoEs in the GCC have grown in profile and are seeing high patient volumes and capacity utilization.

Burjeel Hospital for Advanced Surgery, Dubai, UAE – Focused on knee and hip replacements. Approximately 60% of the patients are medical tourists mostly from the GCC region, making it a regional hub for joint replacements.

Wooridul Spine Center, Abu Dhabi, UAE – part of Healthpoint, the dedicated center is focused on disorders of the spine and procedures such as fusion surgeries and open laser discectomies.

Cleveland Clinic, Abu Dhabi, UAE – a fully digital hospital focused on lifestyle-related conditions such as obesity, diabetes and heart disease. It has infrastructure for minimally invasive robotic surgeries.

Aspeter, Doha, Qatar – a well-reputed center of excellence in sports medicine and rehabilitation that is recognized globally as a FIFA accredited CoE. It has a multidisciplinary team of specialists, surgeons, nutritionists and physiotherapists providing specialized care supported by advanced research for renowned football and tennis players, as well as professional athletes in other competitive sports.

Danat El Emarat Hospital, Abu Dhabi, UAE – 117 beds, dedicated women and children hospital managed by Parkway Health offering comprehensive services in a purpose built, luxurious setting with a focus on maternity, neonatology and pediatrics along with a breast cancer screening program and plastic and aesthetic surgeries for women.

Other examples of CoEs in GCC include Imperial College of London – Diabetes Center in Abu Dhabi focused on diabetes management and the recently set up Sidra Medical & Research Center in Qatar focused on maternity and pediatrics, Sidra aims to utilize an all-digital platform such as RFID patient tracking and EMR integration leading to enhance accuracy, safety and continuity of care and is expected to attract patients from within the GCC and other countries in MENA.

Attractive propositions for specialized CoEs in GCC

We believe there exists an opportunity to set up CoEs in the GCC in the following specialties:

• Oncology – Over 2,160 patients were sent overseas for oncology treatment by the GCC governments in 2012, which comprised 17% of the total volume of patients sent abroad by Ministries of Health in GCC alone.

• Orthopedics and Cardiology – In 2011, cardiology and orthopedic patients represented approximately 15% and 13%, respectively, the total volume of patients sent overseas for by GCC government. Growing demand for services given the high risk factors, e.g., metabolic syndrome is prevalent in 39% of men and 42% of women in the GCC. These specialties have seen high demand and double-digit growth with obstetrics and gynecology inpatient volumes being among the highest in the GCC region. UAE has seen the opening of dedicated women’s hospitals such as NMC owned, Brightpoint Royal Women’s Hospital and Danat El Emarat Hospital (managed by Parkway) with capabilities to manage complex deliveries and offer a wide spectrum of services. Multi-specialty Hospitals such as Mediclinic City Hospital in Dubai and Burjeel Hospital in Abu Dhabi are well-reputed in managing complex cases in maternity and neonatology.

• Obstetrics & Gynecology – Qatar and KSA have relatively high fertility rates of 2.04 and 2.7, respectively; (fertility rates for nationals are higher) when compared to USA and UK at 1.88 and 1.9, respectively. These specialties have seen high demand and double-digit growth with obstetrics and gynecology inpatient volumes being among the highest in the GCC region. UAE has seen the opening of dedicated women’s hospitals such as NMC owned, Brightpoint Royal Women’s Hospital and Danat El Emarat Hospital (managed by Parkway) with capabilities to manage complex deliveries and offer a wide spectrum of services. Multi-specialty Hospitals such as Mediclinic City Hospital in Dubai and Burjeel Hospital in Abu Dhabi are well-reputed in managing complex cases in maternity and neonatology.

• Pediatrics – The total pediatric population (<15 years) in the GCC region was 12.5 million in 2014. The size of the population under 15 along with risk factors such as high obesity rates and lipid profiles predisposes the pediatric population to cholesterol-related diseases, hypertension, and cardiovascular diseases. In addition they are more predisposed toward chronic respiratory conditions and skin allergies and conditions, given environmental factors.

• Endocrinology (diabetes) – In 2014, the cost of care for diabetes patients in UAE was approximately US$16.8 billion and is estimated to increase to US$24.7 billion by 2035. This increase can be attributed to an increase in the number of diabetic patients, which is estimated to triple in UAE by 2035.
Investment big bets: health care and life sciences in the GCC
Home health care services have emerged as an attractive opportunity for health investment over the past five years, particularly due to reforms in insurance regulation and the growing acceptance of m-health applications and services globally. The home health care market includes services that can be categorized into two broad areas; the first relates to provision of medical services in a patient’s home with the help of doctors, nurses, home health aids and attendants, and the second relates to medical services provided through the use of telehealth services, in which a patient can connect virtually through applications or devices for remote consultations or monitoring of a patient’s condition.

Examples of the services provided in a patient’s home include:

- **Geriatric care**: Elderly care particularly for the disabled and/or with chronic health conditions
- **Post-trauma and post-surgical nursing care**: Care given during the immediate post-operative or post-trauma period
- **Physiotherapy**: The treatment of disease, injury or deformity by physical methods such as massage, heat treatment and exercise, rather than by drugs or surgery
- **Occupational therapy**: Use of particular activities as aids to recuperate from physical or mental illness
- **Speech therapy**: Training to help people with speech and language problems that could arise post stroke or trauma from road accidents or workplace injuries
- **Rehabilitation**: Treatments designed to facilitate the process of recovery from injury, illness or disease to as normal a condition as possible
- **Pediatric home care**: Provided to children with illnesses and special needs
Telehealth uses information technology to enable the treatment or diagnosis of a patient by a physician or nurse over large or short distances.  

Figure 13: Global expected homecare market, 2016

Based on recent market reports, the global home health care equipment market has shown high growth potential with a CAGR of 15.5% and is expected to occupy a 22% market share by 2016. This is primarily due to new service developments and innovations with the growth trend shifting from developed to developing nations as well as higher adoption rates of the health services in homecare.

With aging boomers, shortage of physicians and nurses and inefficiency and quality issues at hospitals, the home health care expenditure has grown significantly in the US because of a higher burden of health care expenditure per capita. This is a part of series of reforms to improve access, quality and efficiency of health service delivery. Currently, home care services expenditure in the US is estimated to be US$68 billion, which accounts for 3% of national health spending and is growing at 9% CAGR.

There are currently 35,000+ home care health service providers in the US with approximately 12 million patients and more than 428 million patient visits each year. Of these about 70% are 65 years and older with heart disease, diabetes and cerebral vascular ailments. Globally, it is projected that the industry will reach ~US$300 billion by 2020, growing at a CAGR of 8% from 2013. In North America alone, the home health and wearables spending is expected to reach nearly US$160 billion by 2023, with expected margins of 15% yielding US$35 billion in profit.
Globally, advancement of technology and adoption of smartphones, rising aging population in developed countries and an unsustainable increase in health care expenditure are the leading drivers of growth for home care services. These services provide convenience of care and have the potential to reduce the burden on hospitals, not just in developed countries, but in emerging markets like the GCC as well, particularly given the shortage of skilled doctors and nurses. In more developed markets, home care has seen the evolution of innovative models to improve house-call training, education, practice and the use of telemedicine and other technologies that could have a significant impact on the future of the health care services industry.

Some leading global providers for home health care services and telemedicine as of 2014 include:

**Home health care providers**
- **Australian Home Care, Australia:** Grown to be one of Australia’s largest private providers of in-home support, care and respite services to people with disabilities, aging people and their families
- **Community Health Systems, USA:** At US$13 billion in annual revenue, one of the US’s largest publicly traded hospital owner-operators
- **Lincare, Germany:** Extensive services that include oxygen, respiratory, home infusion supported with medical devices
- **VITAS, USA:** A division of publicly traded Chemed, one of the largest hospice providers in the US

**Telehealth providers**
- **AliveCor, USA:** Smartphone ECG app in which a patient can immediately distinguish a severe heart condition
- **Cellscope, USA:** Smartphone-enabled device for detection of health issues leading to improved delivery and expansion of access of care
- **Glooko, USA:** Combining fitness tracking with diabetes management, Glooko provides a mobile app that integrates Fitbit, Jawbone, iHealth and Withings to allow patients to regulate their blood sugar, glucose levels and step count and be able to adjust their insulin levels accordingly
- **Teladoc, USA:** a pioneer in this space and the largest telehealth provider in the US including online video consultations for patients with American board-certified doctors
- **American Well, USA:** Similar to Teladoc, American Well connects patients and doctors through secure video consultations through a mobile application
- **WellDoc & BlueStar, USA:** Mobile app used to monitor blood sugar and detect risk factors and markers for diabetic patients, decreasing the need for hospital visits and improving blood-glucose levels
- **Chunyu Yisheng, China:** A Chinese start-up with a mobile app that connects patients to doctors related to minor ailments

Given early adoption and positive results of improved patient outcomes, the use of telehealth applications in providing home care services have proved to be cost effective, and leading health care providers, such as Kaiser Permanente in USA and Medanta in India, have integrated these services successfully within their medical service programs. Using telehealth applications in home care services has helped reduce the cost of transferring patients to emergency departments and physician offices. Studies have shown that the use of telehealth can reduce spending by 7.7%-13.3% (US$312-US$542) per patient per quarter. Studies also indicate that the use of telehealth applications such as monitoring of chronic care patients or allowing specialists to provide care to patients over a large geographic region have resulted in significantly improved care and high patient satisfaction.

However, there exists potential risk and concerns with telehealth services as it provides a fragmented and uncoordinated approach in a market that is shifting toward an integrated health model as best practice. Also, telehealth applications require software integration of the medical practitioner’s notes and patient’s medical history that is not completely trusted yet. The IT skills of a certain segment of patients may not be adequate enough to use the applications and devices. Another issue is the lack of physical examination, which makes telemedicine more prone to missing some symptoms required for a proper diagnosis. Nevertheless, in cases of follow-up and recurring treatment care, telehealth enabled services can be very beneficial.
In the past five years, the GCC has seen the emergence of home health care service providers such as:

- **Manzil Home Services, Abu Dhabi**: Services include physiotherapy, post-operative care, pediatric care, post-discharge care and doctor visits to the homes of patients. Also has presence in Dubai.
- **Home Care Center (HCC), Qatar**: Provides individualized and comprehensive medical and health care services. Services include mother and baby care, child care, elderly care travel care and skilled nursing.

This segment is also seeing growing M&A activity, as leading providers are working toward developing an integrated network of facilities offering different types of health services. Rochester Wellness Center, recently acquired by Al Noor Hospital Group, is present in Dubai and Muscat. The center provides homecare services along with long-term rehabilitation services. Other emerging service providers, Beverly Hills Home Health care in Dubai has been acquired by Al Masah Capital, while Americare Home Health Services in Abu Dhabi has been acquired by NMC Hospital Group. These three facilities, among others in the GCC, provide home services that cover rehabilitation and long-term care, pediatric care, geriatric care, dementia, arthritis and osteoporosis care, skilled home-care nursing, skilled therapy, surgery patient care, medical laboratory services and emergency on call doctors.

Despite the recent set up and growth of a few home care health service providers, the GCC home health care industry is only beginning to develop, and the demand for these services is expected to grow, especially given that the 60+ years population segment expects to grow at approximately 8% CAGR from 2014 till 2024. By 2024, the growing aging population in the GCC is expected to have 2.5 million people over the age of 60.

The population mix in GCC is shifting toward an older population who have a higher prevalence of chronic diseases. There is an expected rise in the burden of diseases given the lifestyle risk factors in GCC, due to which the population will require improved quality of care and better access to health care, particularly for chronic disease management and lifestyle management, a need that home health care services could fulfill. Given that there are a number of planned health care investments in the Middle East that are currently on hold for various reasons, investments in home health care is a good opportunity. Home health care is cost effective, more convenient for the patient's families, provides a greater degree of freedom and privacy and is useful for those living in remote locations with limited access to health care facilities, particularly in places like Saudi Arabia, Kuwait, Oman and the Western region of Abu Dhabi. These places, despite having a sizable population, have areas with limited access to quality care and dedicated health centers, given the difficulty to attract and sustain clinical talent. Research done globally also suggest that home health care is preferred by 95% of patients over 75+ years.

A well-established home care market in the GCC will add value in improving clinical outcomes and result in cost savings for the health care system which is seeing an unsustainable rise in health expenditure. Some of the key advantages of homecare health services in the GCC include:

- **Patient convenience**: Home care enables the elderly members of society to receive treatments and rehab in the comfort of their own homes, also reducing the financial burden on the caregivers.
- **Patient savings**: New medical-technology devices could help keep patients at home rather than in expensive hospitals and nursing homes through use of internet-enabled home monitors, apps for mobile health and telemedicine.
• **Access to quality care**: Delivery of health diagnostics or therapeutics and treatment of chronic illnesses through consultations and monitoring in a patient's home vs. a hospital setting would allow people with poor proximity to health care facilities to access quality care from their homes.

• **System efficiency**: A number of public hospitals report that a significant percentage of patients occupying beds in public hospitals are ready to be discharged if continuum of care can be provided through home care services. Thus it eases the availability of resources including acute-care beds and medical staff that are currently being used by patients in public hospitals who are not discharged due to lack of skilled nursing care and a support system outside the hospital setting. This ranges from 20%-30% of the hospital beds in the public sector.

However, it is noteworthy that high penetration of home care services and technologies would largely depend on the health insurance reimbursement framework that would support investment in and provision of these services. The Health Authority of Abu Dhabi has made some progress in this regard, while other GCC countries need legislation and policies to enable the provision of home health care services particularly on remote consultations, use of health care apps and medical prescriptions delivered through a remote consultation or health app service. The security concerns around the confidentiality of patient data also needs to be addressed to enable the use of mobile health applications and devices in the GCC region.

There is a growing buzz around the use of wearable technology, which could be disruptive and bring about a change in how health care services are delivered. With Apple and Google making significant investments in developing and testing new applications, and investing in tech start-ups promising innovative solutions, anticipation is growing for innovation and solutions that can transform health care. IBM’s new set up, Watson Health, uses patient medical data, symptoms and risk factors, and has the potential to generate appropriate recommendations for treatment that are confidence scored.

With GCC’s aging population, the growing number of investments in home health care facilities within the region are increasing, therefore there is significant opportunity in the home health care market. By 2020, the GCC health care market is expected to reach US$69 billion, of which 5%-7% of the estimated health spending – US$3.5-US$4.8 billion – could potentially be on home health care services that includes the use of mobile health apps and solutions, and home based diagnostic and physiotherapy services.
Investment big bets: health care and life sciences in the GCC
The development of ambulatory services and acute care in the GCC region has had significant effect on the overall health of the population. The average life expectancy has increased by 14%, and the average mortality rate of children under five has declined due to a reduction in infectious diseases and congenital anomalies by 83% from 1980 to 2013. However, these improvements present the countries with new challenges to their health care system, including accommodating the growing demand for long-term and post-acute care for people living with disabilities or patients requiring sub-acute care and rehabilitation.

**What is LTPAC?**

Long-term and post-acute care (LTPAC), collectively, refers to wide array of services ranging from complex care in a long-term, acute-care hospital to personalized home care assistance. However, individually, long-term care (LTC) and post-acute care (PAC) are quite distinct.

Long-term care (LTC) is described as comprehensive medical and personal care services required by terminally ill patients, or by individuals with physical limitations from a disability, chronic disorder or simply old age. These services include nursing care, rehabilitation and assistance with typical daily activities. They are provided over an extended period of time (from 1-2 weeks to 1-2 years, or more) and could be delivered in a medical facility sitting or can be home-based.

Post-acute care (PAC) is defined as the type of medical and support services required by patients post hospitalization due to injury or acute or chronic episode of illness, to aid in patient’s recovery or management of condition. These services consist of physician oversight, nurse care and continuous monitoring, rehabilitation
and assistance with daily activities. Based on the severity of the patient's condition, the appropriate mix of services is provided at home or in a medical facility.

The current LTPAC continuum of care in the GCC region consists of the following facilities/services:

- **Inpatient rehabilitation facilities** – Mainly for patients who require intensive multidisciplinary rehabilitation post their hospitalization (mainly major surgeries and trauma patients)
- **Long-term-care hospitals** – Primarily for individuals who require prolonged medical and personal care whether preceded with hospitalization or not
- **Nursing homes** – These residential facilities are for the elderly population and people with crippling medical conditions or disabilities
- **Home care services** – Medical and/or personal care tailored to the individual's needs and are provided in their home
- **Outpatient rehabilitation services** – Related to physical, speech or other kinds of therapy for patients who require rehabilitation in an outpatient setting, and the services are offered in general acute care hospitals, outpatient rehabilitation clinics and health centers

**Demand drivers**

The demand for these inpatient and outpatient services is of a particular interest for three segments of the population, namely elderly individuals – 60 years and above, disabled individuals (physically or psychologically) incapable of living independently and individuals who had a major surgery or are expected to have one due to their predisposition to develop a specific condition.

WHO statistics confirm that the rates of disability are increasing due to aging of population and the rising prevalence of chronic disorders. Accordingly, the U.S. Department of Health and Human Services states that around 70% of people reaching the age of 65 will require some form of long-term care, given that they suffer losses from hearing, seeing and moving, and the prevalence of chronic diseases is the highest in this age group. Also, as a result of an ever-improving acute care system, the mortality rate due to birth defects or major injuries has significantly decreased. Consequently, the number of people living with incapacitating medical conditions or disabilities has risen, and therefore require long-term care.
According to a report published by the American Hospital Association, patients getting discharged from an acute hospital to an LTPAC facility had better health care outcomes than patients discharged to their homes. The identified outcomes include the following:

- Reducing the percentage of readmissions
- Reaching greater functional capabilities and recovery
- Improving survival rate among patients

**LTPAC in the GCC region**

While the health care providers in many of the developed countries successfully address the demand for LTPAC, the provision of these services is considerably underdeveloped in the GCC region to meet the growing demand. The need for infrastructure to support the provision of these services has been discussed in various press reports and capacity planning studies in some parts of the GCC.

In addition to the issue of limited availability of LTPAC dedicated facilities, GCC countries are facing a problem with regards to the existing setting in which most LTPAC services are offered. Currently, the majority of patients who require LTPAC are cared for in an acute-care hospital occupying beds dedicated for acute cases, thus becoming bed blockers in public hospitals for extended periods of time.

According to a study done on trauma care systems in Saudi Arabia, 20% of the beds in the Ministry of Health Hospitals are occupied by road traffic patients, who mainly have residual disabilities and require long-term rehabilitation care. This concern is not unique to one country in the region. Based on a capacity plan report published by DHA on rehabilitation centers, the high occupancy of geriatric care facilities at DHA resulted in the allocation of some long-term geriatric patients to acute medical facilities.

This imbalance is causing a negative impact from two dimensions; the first being reduced availability of beds for true acute cases and potentially the cost of lost opportunity (in private hospitals), and the second is the high cost of providing sub-acute services to the patients in an acute hospital settings.

A study published by the Department of Medicine at McGill University, Canada, on long-term care provided in acute facilities vs. LTC facilities revealed that both settings were similar in terms of the number of adverse events. However, the annual cost per patient in the acute care facility was higher than the LTC facility. This is mainly due to the costly pattern of acute care that requires very specialized clinical expertise with higher frequency of consultation, observation, and laboratory tests and diagnostics.

Some GCC governments have recognized the benefits of LTPAC facilities and modified their future health care plans to account for the growing demand for such services. In Dubai's Clinical Services Capacity Plan for years 2015 to 2025, rehabilitation and long-term patient services have been considered a priority for health care investments. Unfortunately, the available supply of services is not adequate to provide the appropriate LTAPC services to all patients who require it.

Consequently, a large number of patients are being sent abroad to utilize these services, which could have a negative effect on patients given the limited social and psychological support, especially for elderly patients. Some of the main reasons for sending patients abroad include the following:

- Lack of availability of beds for patients awaiting major surgeries
- Absence of specialized centers or medical staff for particular rehabilitation needs
- Lack of academic resources and availability of GCC-trained clinical talent

**Prominent global LTPAC providers**

Highly skilled staff, unique specialization, outstanding facilities and superior quality are some of the various reasons for the growth of medical tourism to Germany, US, UK, Singapore and other destinations. LTPAC is not an exception to that notion. A number of facilities have positioned themselves as pioneers in the LTPAC sector of care.

One of the facilities that was successful in building their brand and placing their name as a destination for patients seeking LTPAC services is The Rehabilitation Institute of Chicago (RIC). It is the largest physical rehabilitation hospital in the US, and has won numerous top honors in the highest ranking in the health care industry for over a decade. Another renowned institute is Highlands Lake Center, a nursing home and rehabilitation center in the US.

In Europe, VAMED in Austria is one of the reputed LTAPC service provider. Within their range of services, they have facilities dedicated to specific patient profile, including nursing homes for patients with dementia and rehabilitation centers for orthopedics, oncology and neurological patients.
LTPAC facilities in GCC

While a few GCC governments have taken steps to invest in LTPAC services, a number of private health care operators have taken the initiative to provide these services both in a stand-alone setting and in times integrated with services of an acute hospital.

In the UAE, some of the reputable examples include Cambridge Medical & Rehabilitation Center (CMRC), ProVita (recently acquired by NMC Health care), Amana Healthcare and Rochester Wellness (recently acquired by Al Noor Hospital Group). These centers are specialized facilities offering short- and long-term inpatient care with a focus on rehabilitation for adults and children, with some having affiliation with leading international providers. Medcare Center Physiotherapy and Rehabilitation is an example of a dedicated center supporting the Medcare Orthopedic & Spine Hospital. KSA represents an attractive opportunity in LTPAC services, especially with Amanat Fund taking a 35% stake in Sukoon, an extended care services provider based in Jeddah with planned facilities in Riyadh.

Based on regional benchmarks, the current estimated bed gap for LTPAC patients in the GCC is between 2,000–2,400 beds, and more than 50% of the capacity gap exists in KSA.

It is estimated that in the years ahead, the demand for LTPAC services is expected to grow significantly, given the expected rise in elderly population and increased proportion of people living with lifestyle disorders and disabilities. Also, with the developments in the health sector and the establishment of specialized surgical hospitals and surgical centers for excellence in cardiology and orthopedics in UAE and other GCC countries, the demand for inpatient LTPAC is likely to grow significantly.

The role of LTPAC in the continuum of care will continue to evolve, encouraging new entrants with plans to provide comprehensive care to their patients with better health outcomes in an efficient and financially favorable operating model.
One of the most prominent emerging trends in life sciences is the surge in the demand for biotechnology based pharmaceutical products. The sales for biological drugs, or the biopharmaceuticals, are growing at a significantly higher rate compared to the global pharmaceutical industry growth rate. As shown by Figure 17, while the pharmaceutical industry grew at 4.1% and the conventional products grew at 2.6% from 2006 to 2014, the biopharmaceuticals grew at 10.9% in the same period. Future growth in biopharmaceuticals is expected to be as promising as their historical performance. From 2014 to 2018, the biopharmaceuticals are forecasted to beat the industry growth rate registering a 7% CAGR, while the conventional drugs are expected to grow at a 2.9% CAGR in the same period. On the back of this growth rate, the contribution of the biopharmaceuticals to the global pharmaceutical sales is estimated to increase from 14% (at US$78 billion) in 2006 to 26% (at US$235 billion) in 2018. Moreover, biopharmaceuticals are progressively featuring in the top 100 drugs list by global sales value. As noted in Figure 18, the biotechnology drugs contributed to 44% of top 100 product 2014 global sales, which demonstrates their commercial success in the market.
Figure 17: Global pharmaceutical sales by product type, US$b, 2006-2018F

The growing demand for the biopharmaceuticals is because of their considerable value addition to the patients, based on outcomes across all major therapeutic areas. The therapeutic areas where biopharmaceuticals have been developed and are predominantly being used include oncology, infectious diseases, immune and inflammatory diseases. Characterized by large sized protein molecules, the biopharmaceuticals effectively bind to their target site offering added pharmacological advantage in terms of focused therapeutic benefit. This targeted approach not only ensures higher efficacy but also diminishes the chances of side effects to the patients, leading to higher patient compliance and eventually delivering a superior patient experience. The industry is now moving away from the “one size fits all” approach with the biopharmaceuticals playing an important role in the transition toward personalized medicine.
The rise of innovative biopharmaceuticals, known as biologics, has also opened channels for their generic counterparts – biosimilars. Despite a modest commercial success initially, the biosimilars are expected to increasingly penetrate the biologics market just as the generics picked up after a lukewarm response in their introductory stage. The introduction of biosimilars is expected to address the looming pricing concerns posed by strong biologic brands across the globe. It is estimated that the biosimilars will deliver to the patients an approximate savings of US$44.2 billion from 2014 to 2024.

As the regulatory framework evolves, the pharmaceutical players in the region could consider evaluating the biosimilar opportunity. The GCC region has a strong foundation of a sizable pharmaceutical manufacturing base. The local production of generic medicines in the region has grown at 16% CAGR from 2010 to 2014. As noted in Figure 19, the strong growth contribution of domestic consumption and exports demonstrates the robustness of the local production growth. The pharmaceutical players in the region could leverage current manufacturing capabilities and logistics infrastructure on manufacturing biosimilars. As the exports from the region continue to increase, the biosimilars manufactured in the region will be expected to cater to the demand within the region and outside GCC as well. Owing to the geographic proximity of the GCC countries to both Western and Southeastern markets, the regional manufacturers could cater to the demand on either sides of the gulf. The GCC governments and investors possess the investment appetite needed for commissioning biotech manufacturing plants, which require higher investments than a typical pharmaceutical manufacturing unit. The high infrastructure and logistics competence index rankings for GCC countries, more notably UAE and Saudi Arabia, demonstrate their capabilities in setting up the required logistics and supply chain infrastructure, which is crucial for sensitive pharmaceutical products like biosimilars. The introduction of courses such as Biomedical Engineering, Biomedical Science and Biotechnology in the leading universities in the GCC will ensure a steady supply of trained professionals. Moreover, by developing dedicated biotechnology platforms and incubator programs like Dubiotech, Jeddah Biocity Park and Badir for biotechnology, the GCC region is creating an ecosystem for biotechnology and its supportive industries to monetize innovations in the biotechnology space. Coupled with minimal competition and nascent yet fast evolving ecosystem, the GCC region is well poised to develop as a biosimilar manufacturing hub for the pharmaceuticals industry.

Provided the focus is on manufacturing drugs conforming to international quality standards, investment in an early-stage R&D and dedicating adequate resources to continuing medical programs to develop the market, may produce a well-evolved, supportive regulatory environment. The result is the GCC biopharmaceutical market could grow at 10.9% CAGR, which is similar to the growth rate of the global biopharmaceutical market in its formative years of 2006-14.

The biosimilar journey in the GCC region will come with its own business risks that may require changes across the pharmaceutical value chain. The human resource, equipment and the technical competence needed for the research and development of biologics is very different than that of conventional drugs. Biologics are often as much as 1,000 times the size of the small molecule drugs, which makes them significantly more complex drugs to manufacture. The analytical procedures used for characterization, structural and functional analysis of these large molecules requires investments in advanced technology and state-of-the-art machinery. The front-end operations need specialized sales representatives who are highly trained to share advanced scientific knowledge with the physicians. More importantly, firms need to invest in the design and implementation of robust pharmacovigilance programs to safeguard patients’ safety. Biopharmaceuticals also come with a risk of triggering a reaction
in the patient against the drug protein. It is imperative that any such patient risks are identified, reported and analyzed to closely monitor the adverse effects among the patient population. In addition, the regulatory environment around biopharmaceuticals is in the nascent stage. Although, with the recent launches of first biosimilars in the US and Europe, the regulatory agencies around the world are expected to formulate a detailed framework around biosimilars. Despite the challenges across the value chain, there are strategies that can help the regional players to enter the biotech market.

Taking cues from the global trends, strategic partnerships across the value chain will play a vital role in enabling diversification of GCC pharmaceutical players to biopharmaceuticals and in particular biosimilars. Historically, the big pharma firms have either taken the inorganic route to start riding the biotech wave or formed alliances with niche biotech players to internalize the “biotech DNA.” These strategic partnerships have created a symbiotic ecosystem where the niche biotech firms, often run by a small group of highly specialized biochemists, thrive on the brand name and sales and marketing expertise of established names. On the other hand, the big pharma players build upon the scientific expertise and fill up their pipeline with more promising biotech opportunities. The Roche-Genentech alliance, for instance, is hailed as one of the most successful ones in the industry. In 1990, when Roche picked up 10% of the then entrepreneurial Genentech, it gave the target much needed capital to grow and in turn gained company ownership and access to Genentech's promising pipeline. Given the economic diversification agenda in the GCC, the time is opportune for the pharmaceutical players and investors to leverage the partnership model as an approach toward developing the biotechnology market in the region. It will require an open-ended approach to manage joint decision-making process while maximizing synergies and mitigating business risks at every stage of the partnership. As the GCC pharmaceutical industry prepares itself for the next wave of growth, the pursuit of winning the biotech bet could play a crucial role in realizing the growth potential of the industry in the GCC region.
Manufacturing play in medical disposables

The global medical disposables market is valued at ~US$52 billion and represents 15% of the total global medical equipment, devices and suppliers (MEDS) market (~US$340 billion) in 2014. The MEDS market is expected to accelerate its growth till 2023, with a projected growth of 7.3% between 2014 and 2023, compared to 4.7% growth between 2008 and 2013. Within the MEDS market, the growth is driven by the medical disposables segment, whose share within the MEDS market is expected to increase by 2% over the coming 10 years. The global market is expected to remain dominated by US, China, Japan, Russia, Germany, Brazil, India, Italy and UK, which will account for two-thirds of the global market sales by 2018. The US is expected to remain the largest market for medical disposables, with Europe as close second (Germany being the leading market).

Needles, catheters and syringes are the top three product categories in terms of value for the global medical disposables market with sales of ~US$31 billion and representing 58% of the medical disposables segment. The sales are being driven by the growing demand and high volume requirements of these products by primary care centers, clinics, diagnostic centers and hospitals. Improved diagnostics, growing incidence of chronic diseases, along with an aging global population are leading to an increase in the volumes of hospital admissions and inpatient/outpatient surgical procedures, thereby driving the growth of the medical disposables market globally.
Historically, the GCC medical disposables segment has been growing faster than the global market (between 2009-2013), i.e., 11% CAGR vs. 7% CAGR respectively, a trend that is strongly correlated to the improving health care systems, improved diagnostics and development in health care infrastructure in the developing countries vs. the developed countries (e.g., in KSA, the number of hospitals grew by 1.5 times over a five-year period from 2005 to 2010).\(^{99}\)

### Table 2: Top global medical disposables companies supplying to GCC\(^{96}\)

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Top medical disposable products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baxter</td>
<td>USA</td>
<td>Dialyzers, needles, syringes, medical dressings and tapes</td>
</tr>
<tr>
<td>Becton Dickinson</td>
<td>USA</td>
<td>Needles, infusion devices, syringes, catheters, connectors</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>USA</td>
<td>Sutures, needles, gloves, masks</td>
</tr>
<tr>
<td>Smith &amp; Nephew</td>
<td>UK</td>
<td>Gloves, masks, medical dressings</td>
</tr>
</tbody>
</table>

The GCC MEDS market was valued at ~US$3 billion in 2013, with the medical disposables segment representing 19% (~US$594 million) of the total MEDS market, 4% more than the global medical disposables share. The largest contributor is KSA, which represents 63% of the GCC market and is leading the growth for the GCC segment with an increase of 18% between 2009 and 2013. The medical disposables segment is expected to grow in line with the MEDS market at a predicted growth of 9% CAGR from 2013 to 2018F.\(^{98}\)

Figure 20: GCC MEDS market US$m, 2013-2018F\(^{98}\)
However, as seen in Figure 21, the medical disposables segment is highly import driven, with only 7% of the total GCC medical disposables sales being contributed to by local production.

Figure 21: GCC medical disposables market, country-wise US$’000, 2013

<table>
<thead>
<tr>
<th>Country</th>
<th>Imports</th>
<th>Local production</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSA</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>UAE</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>Qatar</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Oman</td>
<td>89%</td>
<td>11%</td>
</tr>
</tbody>
</table>

The remaining sales are accounted for by imports, with USA, China, Europe and UK being the leading suppliers for the GCC markets. The imports for medical disposables for GCC were ~US$532 million in 2013, with USA, China, Europe and UK accounting for ~80% of the total imports. International companies are selling products at higher prices in the GCC region vs. developed markets, based on lower volumes being sold in the GCC, as well as import and distribution costs incurred by them, as a majority of them have not set up manufacturing plants in the GCC. With the improvements in health care infrastructure and expected increased in beds per 1,000 population in the GCC, the prices for medical disposables are expected to decrease in the coming years. Therefore, potential local manufacturers would be an advantage, as they would be able to sell at lower prices than the international players.

Figure 22: Leading suppliers of medical disposables, GCC US$m, 2013

- USA: US$443
- China: US$65
- UK: US$65
- Europe: US$51

The medical disposables segment is starkly different from the other segments in the MEDS market, which are highly technologically driven requiring high investment in equipment and technical capabilities and are research intensive (e.g., electro diagnostic apparatus, radiation apparatus, imaging apparatus). On the contrary, the medical disposables market requires a lower investment, less qualified manpower, less time to market, and offers a flexible and adaptable business model (i.e., one manufacturing line can easily and quickly be adjusted to produce different products or variations of a product, not limited to the health care and life sciences sector).

Despite these favorable factors, there are a limited number of local companies focusing on production of medical disposables, and the majority of these are either working in partnership with international companies or catering only to the local market needs. Local production of medical disposables is an opportunity that has not been fully maximized, as the market remains to be an import driven one and dependent on the top global companies. There is little reason for the GCC not to capitalize on the medical disposables market and to become a global player in the medical disposables arena.

The medical disposables manufacturing proposition is an opportunity that could positively contribute to the GCC economic growth and differentiation and could bring improvements in the development of the health care and life sciences ecosystem in the region. Potential local manufacturers could capture the opportunity to enter the medical disposables market and leverage the opportunity of being strategically located in the GCC:

- Synergies with the petrochemical industry (i.e., bi-products of the petrochemical industry being used as the raw material for production of medical grade plastic products, such as syringes and catheters)
- Lower cost of manufacturing (i.e., lower labor cost compared to the developed markets, easy access to raw materials, geographic location providing a gateway to the Eastern and Western markets)
- Government requirement for local producers to reach international quality standards, improving the accessibility to the regional and global tender market

In addition to the above mentioned advantages for potential local manufacturers, there are some key enablers that can be leveraged by the future local manufactures:

- Active measures being taken by the government to enhance and develop the health care and life sciences sector, especially in the UAE and KSA (i.e., financial benefits, ease of doing business and favoring local producers in tender selection)
- Free zones dedicated to health care and life sciences providing world-class infrastructure and tax incentives for attracting domestic and international companies
There are strong synergies between the global and local market product mix. Owing to similar requirements of products in health care facilities globally, the largest products in terms of value in the GCC medical disposables segment are aligned to the global market, thereby building a stronger case for potential future local manufactures to enter the medical disposables market and win share in the global market.

There are two key elements that are critical for future local manufacturers to consider in order to be successful: becoming a key player in the global arena and in the tender market.

Focusing on the bigger picture in this market is vital, since the medical disposables market is a volume driven market. An important milestone for success is winning in the global arena by building the right relationships and establishing a global network. This will allow local manufactures to leverage economy of scale for improved profitability and competitive pricing. The broader MENA region and the potential to export to African market could bring significant returns.

Another core target is winning in the tender market, in the GCC as well as the developed markets. Potential local manufacturers would be at an advantage over the global manufacturers, as a key criteria for the tender market is competitive pricing. If the future local manufacturers are able to overcome these challenges, they will be able to unlock the opportunity and not only eliminate the dependency on imports of medical disposables in the GCC, but also become a leading supplier of medical disposables in the global market, thereby contributing to economic growth and diversification in the GCC region.
Enablers to support investments in the GCC health sector
Driven by the information revolution and unprecedented access to medical information through internet and mobile, patient populations in the GCC countries expect significantly better quality of health services. Globally health service provision is transforming, with a greater focus on improving patient pathways, coordination, and customized patient-centric service. To deliver on the personalized medicine vision, GCC-based health care providers and investors need to invest on improving and enhancing the health infrastructure enabled and supported by government regulations and health system improvements.

With the aim to develop a more stable health eco-system, most GCC governments are supporting greater private sector participation to ensure that health service delivery improves and matches the best international standards. Some of the improvement will come from growing consolidation between specialized clinics and general hospitals, offering patients a model of comprehensive medical services within an integrated health network. Many of the GCC countries have rolled out initiatives relating to mandatory health insurance that has led to a significant increase in health insurance penetration and is attracting sizeable investments from the leading private sector health providers and PE funds. This is essential for shifting the burden of health spending from GCC governments, who contribute to a higher portion of the health spending when compared to other regions in the world. There are a few key enablers that could enhance the quality and efficiency of health services and drive greater private sector participation through investments in services that could go a long way in improving the quality of GCC health care and strengthen the health eco-system. These are:

**Health education**

The GCC’s dependence on expatriates for staffing in its health care infrastructure represents an opportunity to expand medical institutions, create a local clinical talent pool and also enable growth of talent in health administration, health economics, health regulations and health informatics. In 2013, approximately 65% of the total health care workforce in GCC countries were expatriates (this is over 90% in the private sector while the public sector has 50% expatriates) when compared to UK, which has 11% non-British health care workforce. Given the global shortage of specialized and skilled health care talent, developing a local talent pool, particularly for clinical services, has become a major concern of almost all GCC countries. The GCC countries are currently going through major labor reforms to reduce the dependence on expatriates by establishing more education facilities, while also supporting and funding the education of students abroad in health care specializations.

The GCC needs to invest greater effort to promote job opportunities and careers in the health sector among nationals. Medical and health sciences student enrolment in UAE universities represent 7.3% of the total student population of both private and public universities. We see similar enrollment ratios in KSA and other GCC countries, however, this is significantly lower when compared to North American and Western European countries (average of 15.8%) and to the global average of 11.8%.

Countries with well-developed health systems and with reputed centers of excellence, such as Singapore and Germany, and those who have succeeded in receiving sizeable volumes of medical tourists, such as Turkey, Germany, Czech Republic, Thailand and Hungary, have done this on the strength of well-developed health care education systems and a large pool of local health care talent. In order to bridge the talent gap, there is a need to invest in creating local talent pools in health care, which could also be a huge boost for job creation among GCC nationals. One approach to do this is by setting up universities through strategic alliances with foreign well-renowned universities, e.g., Weil Cornell in Qatar, Royal College of Surgeons in Ireland (RCSI) with Medical University Bahrain, New York University (NYU) Abu Dhabi, etc. Another approach would be to support investments in academic programs and medical colleges and university hospitals through PPPs where the strengths of the private sector can be leveraged to improve and enhance health education infrastructure.

**Clinical research**

Research is an integral part of any developed health care system and has traditionally lacked support and investment in GCC countries. To improve health standards and quality of clinical talent, it is important that GCC countries invest and support medical research programs that could help combat the burden of chronic diseases and improve health service delivery to the patient population. According to the Institute of Scientific Information (ISI) Web of Science between 1996 to 2013, “KSA contributed 40,797, Kuwait – 1,666, United Arab Emirates – 3,045, Qatar – 4,265, Bahrain – 1,666 and in Oman – 4,848 research papers. However, in medical education only Saudi Arabia contributed 323 (0.79%) research papers, Kuwait 52 (0.03%), United Arab Emirates 41 (0.01%), Qatar 37 (0.008%), Bahrain 28 (0.06%) and Oman 22 (0.45%) research papers in in ISI indexed journals.”

The UAE Ministry of Health hosted the “First Consultative Meeting for the GCC countries on the Priority of Medical Research” in 2013. The meeting identified the lack of funds allocated for medical research and highlighted the importance of increasing investments for medical research in the region.
Investing and supporting medical research will help attract highly skilled and experienced clinical talent to the region who are motivated in using their innovative techniques and capabilities to develop the health care system. Greater focus and allocation of funds to medical research could improve clinical outcomes, support centers of excellence that require research-supported clinical programs and drive innovations and investment in the health sector.

**Health care regulations**

The forecasted growth in aging population, growing patient utilization rates driven by insurance reimbursements and lifestyle risk factors prevalent in the region, form the leading health care demand drivers in the GCC. Given the demand for high-quality clinical outcomes and improved patient services, GCC governments need to focus on standards, policies and regulation of health care providers and insurance companies as Abu Dhabi and Qatar have done, while letting health care management companies within the public sector and the private sector focus on health care service delivery. To improve quality of health services and to ensure sustainability, governments are required to improve and harmonize health standards across the region, including improving the licensing and credentialing process for doctors and nurse practitioners that could help attract GCC national talent to pursue careers in medical services and could create efficiencies in the health system. The governments also need to set clear and transparent accreditation standards and guidelines, inspection processes and policies, effective complaints management systems, e-health strategy for the health system, certificate of need policies and fast tracking of priority health care investments, health insurance regulations to oversee insurance providers, pricing policies and enable provision of post-surgical rehabilitation and post-acute rehabilitation, regulatory reforms for home care services, health screenings and telehealth services as a part of the insurance packages.

Abu Dhabi has fully implemented mandatory health insurance, which has led to 70% of outpatient utilization in the private sector. MHI implementation is expected to be complete in Dubai, KSA and Qatar by the end of 2016. Oman, Kuwait and Bahrain are reviewing their approach for MHI implementation. MHI is expected to help improve access to health services in the GCC countries, reduce waiting times in public hospitals, increase private sector participation and increase overall utilization of health services.

**Data and informatics**

Legislation is also required by the GCC governments on standardizing procedures of data recording and reporting to ensure accuracy in published health information. Developed countries including UK, US, Australia, and Singapore have implemented continuous monitoring systems to regulate the standardization of data reporting. Australia has one of the most efficient health systems in the world. One of the key reasons is their reporting standards and procedures that they regularly use for performance measurement and improvement. They have developed a framework in which the government, private sector and other health bodies are under one agreement to contribute in regular reporting and analyzing data using performance indicators. The regulatory body then undertakes extensive validations on receipt of data, and corrections and resubmissions are made in response to these queries.

In the GCC, published data in the health statistical reports is usually two years old and lacks accurate information on patient volumes and specialty mix reported for the private sector. Lack of real data does not allow potential health care investors to assess capacity utilization in health sector, and it could lead to the risk of creating over capacity. Publishing patient volumes and trends will enable patients to make more informed decisions when choosing a health facility in the region (mostly based on word of mouth, advertising and promotions by health facilities).

Moreover, it will provide the health providers assistance with performance improvements in service delivery by highlighting quality improvements, innovative alternatives and examples of poor performance that can be improved. It will enable current and new providers of health care to use data and informatics and focus on selecting the right specialty mix, thereby setting up specialized hospitals based on the needs/requirements of the population.

**Publishing outcomes/rankings**

Patients have a right to make an informed decision when it comes to selecting the most appropriate medical facility for their health requirements. Without effective regulations from the governments on quality standards of hospitals, it is difficult for patients to distinguish between health facilities offering similar services. Introducing a hospital ranking system in the GCC countries will raise the bar for hospitals and encourage competition that will lead to improvements in efficiency and quality.

The health authorities in the US (CMS) implemented a rating system related to patients’ experience of care at almost 3,500 acute-care hospitals across the country. The aim was to make it easier for consumers to choose a hospital, understand the quality of care they deliver and enhance the health care system to deliver better care, ultimately resulting in a healthier population. Not only did this increase consumer awareness, but also encouraged hospitals and clinicians to continuously improve quality of care delivered to patients.
Health Authority Abu Dhabi (HAAD) has revealed that they have developed a ranking system for hospitals based on criteria such as quality of care, hygiene level and infection control, however, it is not yet in place and/or revealed to the public. The Dubai Health Authority has also announced plans for introducing a ranking system for hospitals and services to create international standards in medical tourism. Apart from facility rankings, the criteria will also include performance, qualification and experience of doctors. These are expected to be publically available and the initiative would assist patients to independently choose the service, staff and facility accordingly.

Public private partnerships

GCC governments are the largest contributor to the health care system in the region and have been investing heavily to bring it to par with international standards. Despite large health care budgets and governments, efforts in improving regulations, standards and the overall efficiency of the health system, the region’s health care still face issues in terms of shortage of skilled medical staff, inconsistent quality of care, lack of tertiary care capabilities and capacity gaps.

Governments around the world have adopted PPP models successfully and by doing so, have improved efficiency and reduced their costs. With shifting demographics, urbanization and increasing levels of chronic diseases in the GCC, it is becoming an increasingly costly priority for governments to develop adequate resources and access to health care for the population. The governments of GCC countries are therefore actively exploring private sector involvements not only in secondary, tertiary and quaternary health care, but even in primary-care facilities, however the process is still in its nascency.

More common models being implemented currently in the GCC are operator management agreements that are for a short term and renewable after every 3-5 years. In these models, the government brings in expertise of the private players for clinical and administrative support services to operate facilities more efficiently. While the operator model helps in quality and efficiency improvements, it limits the private operator in bringing innovation to the project, e.g., changing the design and overall concept of the facility, restrictions on hiring or removing clinical or non-clinical staff. Therefore, the future governments need to consider risk sharing operator models or concession arrangements that are longer term (25-30 years) and require capital investment from the private players. For example, the UK has implemented Private Finance Initiative (PFI) legislation, whereby the private sector finances and constructs a hospital building and then delivers the service and maintenance functions over a period of around 30 years. This model is also in use in Spain, Italy, Mexico, South Africa, France and Australia.

The UK was the first to introduce PPP models for health care and currently have around 130 health care PPP projects completed, underway or approved since 2011, with a capital value of ~12 billion pounds. Turkey has been undergoing a major health transformation with the aid of one of the largest PPP programs in the world. Dubai and Qatar are working on PPP legislations to unlock value in the health system and increase private sector involvement and investment in health care.

With the forecasted stabilization or fall in oil and gas prices and the urgent need to diversify GCC economies while improving health services and health infrastructure, there is a window of opportunity for GCC governments to proactively address the need for reform in the health sector. This could unlock value and result in a sizable flow of health investments from the private sector providers, which could help improve quality of and access to health services that are most needed.
Investment big bets: health care and life sciences in the GCC
Endnotes

1. World Bank Group, “Shaping healthier societies and building higher performing health systems in the GCC countries”, April 2015
2. Frost & Sullivan, 2012 report
3. BMI database
6. International Diabetes Federation
7. Health Intelligence data by country 2013
10. BMI DALY’s database
11. BMI historical and forecasted DALYs
12. BMI database
13. BMI data on GCC government health spending
15. BMI forecasts for health care spending in GCC 2014-24F
16. Gulf News
17. BMI data for health care spending in GCC 2014-24F
19. BMI data on GCC health spending
20. EY expert analysis
21. walmart.com/cp/Walmart-Clinics/1078904
22. 100tophospitals.com/studies-winners/15-top-health-systems
23. caremore.com/
24. home.redbrickhealth.com/
25. healthy.kaiserpermanente.org/html/kaiser/index
26. Staking your claim in the Health care Gold Rush, strategy &
27. Sensors offer new power to improve health, by Joseph Kvedar, Forbes Magazine middle east 2015
28. Sensors offer new power to improve health, by Joseph Kvedar, Forbes middle east
29. International Diabetes Federation (IDF), 2014
30. walmart.com/cp/Walmart-Clinics/1078904
31. Remote Monitoring for Cardiac Arrhythmia: Its Legacy and Growing Importance in Advancing Clinical and Economic Outcomes, By Don McDaniel, Chris DeMarco, PhD, Dan D’Orazio
32. Dubai Chronicle – UAE ranked 22nd most obese nation in the world
33. Creating a gold standard for diabetes prevention, Forbes middle east
34. Emirates 24/7 – UAE health care spending seen rising 10% to DH66 billion this year
35. Health Affairs Blog; Prevention for a healthier America, by Jeffrey Levi, 1 March 2012
About EY
EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

The MENA practice of EY has been operating in the region since 1923. For over 90 years, we have grown to over 5,000 people united across 20 offices and 15 countries, sharing the same values and an unwavering commitment to quality. As an organization, we continue to develop outstanding leaders who deliver exceptional services to our clients and who contribute to our communities. We are proud of our accomplishments over the years, reaffirming our position as the largest and most established professional services organization in the region.

© 2016 EYGM Limited.
All Rights Reserved.

EYG no. GC0013
ED None
This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

ey.com/mena