



GCC Health GAP Analysis Report - 2015



Introduction

Forecasting is an important element of strategic planning and the determination of gaps within any given sector is the cornerstone of a complete and accurate future forecast.

There is no doubt that healthcare is a top priority for all GCC governments and there has been a tremendous level of development regarding the physical infrastructure needs of the population. However, increasing attention must be placed on the human capital needs of the healthcare system, both in terms of maintaining existing full time equivalents (FTE) levels as well as the future needs.

For the purposes of this report, we have divided the GCC Healthcare industry into the following four major stakeholders:

- 1) *Regulators* – these include the policy makers of the healthcare system such as the Ministry of Health, Regional Health Councils such as the Makkah Regional Health Council or Abu Dhabi Health Authority as well as accreditation bodies such as the Saudi Commission for Health Specialties and the Saudi Food and Drug Administration
- 2) *Health Service Providers* – these includes hospitals (both general and specialized), polyclinics (medical centres) or clinics (primary health centres). They are further classified as public (such as the Ministry of Health), semi-public (Oil Company, Military, University, etc.) and private
- 3) *Payors* – these include all government agencies and private (insurance) companies that are involved in the financing and reimbursement of healthcare services. Further stakeholders in the Payor subsector includes TPA's or Third Party Administrators, Insurance Consultants and Insurance brokers that work as a middle men between private insurance companies and the providers of healthcare services
- 4) *Medical Supply Companies* – these includes corporate entities that are involved in the manufacturing or distribution of medical equipment, pharmaceuticals or health IT services including both hardware and software

The report will now systematically cover all six GCC countries and then summarize the results on the regional level at the end of the report.

Current State of the Healthcare Sector in the GCC

The following is a compilation (Table 1) of the current number of healthcare stakeholders within each of the subsectors in the GCC:

Country Name		KSA	UAE	Kuwait	Qatar	Oman	Bahrain
Healthcare regulator(s)	Total	6	5	1	2	1	1
Healthcare providers	Total	3,368	3,304	813	276	1,110	445
Hospitals	Total	435	107	30	12	64	27
	Govt	298	33	18	8	50	9
	Pvt	137	74	12	4	14	18
Primary Healthcare centers	Total	2,259	150	96	24	246	123
	Govt	2,259	150	96	24	221	27
	Pvt	-	-	-	-	25	96
Clinics	Total	674	3,047	687	240	800	295
	Govt	328	120	337	-	-	-
	Pvt	346	2,927	350	240	800	295
Pharmacies	Total	6,942	1,500	500	250	400	141
Payors	Total	59	98	39	29	34	53
Health Insurance Companies	Total	49	82	34	24	29	48
Third Party Administrators	Total	10	16	5	5	5	5
Medical Suppliers	Total	587	201	110	81	45	34
Medical device distributors	Total	527	141	54	39	21	22
Pharmaceutical distributors	Total	50	52	55	41	22	11
Pharmaceutical factory	Total	10	8	1	1	2	1

Table-1

Gap Analysis Calculations for the GCC

The report calculates the future requirements of the major GCC health stakeholders by adding the total number planned projects to the existing number of key industry indicators and ratios such as the numbers of hospitals, beds/000, physicians/000 and nurses/000 thus maintaining a fairly conservative value for the GCC market.

The report does not include any potential large scale projects that have only been announced and not implemented. Instead the report aims to be as conservative as possible and limit the focus with respect to only projects that have started implementation within each of the potential subsectors.

In terms of the end state, we have used the following ratios based on the OECD and GCC average for 2015:

Health resource indicator/000	Beds	Physicians	Nurses	Pharmacist	AHP
OECD ₁ Average	5.2	3.2	8.8	N/A	N/A
GCC Maximum	2.1	2.6	5.6	0.6	2.9
GCC Average	1.6	2.1	4.6	0.6	2.5

Table-2, *where there is no OECD average, we considered maximum ratio/value of within the GCC countries.

Key Industry Indicators and Ratios for 2015:

There are five important key indicators are considered as most important sources for healthcare industry gap analysis. These key indicators include the following: number of beds, physicians, nurses, pharmacist and allied health professionals (AHP) which include assistant pharmacists, lab and imaging technicians. These health indicators or ratios have been calculated with respect to the population of the GCC countries. According to population statistics the current population (up to 2014) of GCC is 52.08 Mn, of which 60% population is in Saudi Arabia, 18% in UAE, 8% in Kuwait, 8% in Oman, 5% in Qatar and 3% in Bahrain.

GCC population growth has been calculated with an average and conservative Compound Annual Growth Rate (CAGR) of 2% and is expected to reach 58.04 Mn by 2020.

GCC Population	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Population (Mn) in 2015 ₂	30.70	9.45	4.10	4.14	2.35	1.34	52.08
Population (Mn) in 2020	34.82	10.80	4.46	4.57	2.67	1.52	58.84

Table-3

As a compilation, the total number of Beds 90,426, Physicians 110,039, Nurses 224,509, Pharmacist 27,502 and AHP 127,023, with a further breakdown by country as follows:

GCC Health Indicators 2015	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Beds	61,028	10,953	8,119	5,600	2,226	2,500	90,426
Physicians	71,518	16,047	9,145	5,292	4,613	3,424	110,039
Nurses	139,701	31,119	22,234	14,550	10,615	6,290	224,509
Pharmacist	15,572	5,750	2,400	2,050	980	750	27,502
Allied Health professionals(AHP)*	76,759	21,500	10,600	9,200	6,241	2,723	127,023

Table-4

With respect to each health indicator ratio per 000 population, the GCC ratio for beds/1000 is 1.6 compared to 5.2 beds/000 in the OECD, for physicians/000 is 2.1 compared to 3.2 in the OECD, for nurses/000s is 4.6 compared to 8.8 in the OECD, for pharmacist/000 is 0.6 and allied health professional/000 is 2.5. Among GCC countries, highest & lowest health indicator ratio for beds is KSA 2.1 and Qatar 1.0 respectively, for physicians Bahrain 2.6 and Oman 1.5, for nurses Kuwait 5.6 and UAE 3.4, for pharmacist almost equal ratio with 0.6, for AHP Qatar 3.0 and Bahrain 2.3

GCC Health indicators per 000s population in 2015	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC Average
Beds	2.1	1.2	2.0	1.5	1.0	1.9	1.6
Physicians	2.5	1.7	2.3	1.5	2.1	2.6	2.1
Nurses	4.8	3.4	5.6	4.0	4.9	4.7	4.6
Pharmacist	0.5	0.6	0.6	0.6	0.5	0.6	0.6
Allied Health professionals (AHP)*	2.7	2.3	2.7	2.5	2.9	2.0	2.5

Table-5.0, *The Allied Health Staff include the number of Asst. pharmacists, imaging and lab technicians.

The report also calculates each health indicator with respect to the number of beds, the GCC average of bed to physician ratio is 1.4, bed to nurse ratio is 3.0, bed to pharmacist ratio is 0.4 and bed to AHP ratio is 1.7. The highest & lowest ratio for bed to physician is Qatar 2.1 and KSA 1.2 respectively, for bed to nurses is Qatar 4.8 and KSA 2.3, for bed to pharmacist is UAE 0.5 and KSA, Kuwait, Bahrain 0.3, and bed to AHP is Qatar 2.8 and Bahrain 1.1

Health indicator ratios per bed	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC Average
Physicians	1.2	1.4	1.1	0.9	2.1	1.4	1.4
Nurses	2.3	2.8	2.7	2.6	4.8	2.5	3.0
Pharmacist	0.3	0.5	0.3	0.4	0.4	0.3	0.4
Allied Health professionals(AHP)	1.3	1.9	1.3	1.6	2.8	1.1	1.7

Table-6

Volume and Value of Planned Mega Projects:

In this section, the report only included projects above 100mn USD and focused on both Healthcare Service Providers and Suppliers

Health Service Providers:

The GCC healthcare provider subsector still trails international benchmarks even though it has been growing rapidly over the past few years. Supported by larger healthcare budgets, the GCC countries have embarked on ambitious healthcare infrastructure building programs. Such large medical cities and complexes, with billions of dollars of investments lined up, is expected to not only raise the supply of medical infrastructure but also raise the quality of healthcare services in the region.

Country	No.	Selected Hospital Project Name	No. of Bed	Value \$ mn	Cost per bed	Completion Year (Est)
KSA						
	1	Security force medical complex (Riyadh & Madina) ₃	3,000	7,000	0.43	2020
	2	King Abdullah medical city, Makkah ₄	1,500	1,200	1.25	2015
	3	King Faisal medical city ₅	1,350	1,200	1.13	2018
	4	Prince Moh Bin Abdul aziz in jouf ₆	1,000	310	3.23	2016
	5	King Fahad expansion ₇	550	430	1.28	2017
	6	King Khaled ₈	500	1,200	0.42	2017
		Total	7,900	11,340	0.70	
UAE						
	1	New Rashid Hospital, Dubai Creek, UAE ₉	900	490	1.84	2017
	2	Sheikh Khalifa Medical City (Expansion) ₁₀	868	680	1.28	2017
	3	Mafraq Hospital, Abu Dhabi, UAE ₁₁	690	870	0.79	2015
	4	Expansion of Al-Ain Hospital, UAE ₁₂	688	720	0.96	2017
	5	Burjeel medical city(1.5\$bn plan in 3 years) ₁₃	400	380	1.05	2017
	6	Cleveland Clinic, Al-Maryah Island, Abu Dhabi ₁₄	364	1,500	0.24	2017
	7	Fakeeh Medical University-Teaching hospital @DSO ₁₅	300	270	1.11	2019
	8	Aster DM healthcare ₁₆	275	400	0.69	2015
	9	Al Amal Hospital ₁₇	272	220	1.24	2015
	10	Medanta (India) at DHCC ₁₈	250	100	2.50	2017
	11	Al Jalila Children's Super Specialty Hospital ₁₉	200	220	0.91	2015
	12	Danat Al Emarat ₂₀	190	380	0.50	2016
		Total	5,397	5,850	0.92	

Kuwait						
1	Jahra ²¹	1,200	1,000	1.20	N/A	
2	Farwaniya ²¹	955	850	1.12	2019	
3	Al Adan ²¹	637	740	0.86	N/A	
4	Kuwait Cancer Center ²¹	618	550	1.12	2018	
5	Sabah ²¹	617	570	1.08	2019	
6	Kuwait university ²¹	600	100	6.00	N/A	
7	Ibn Sina ²¹	427	120	3.56	N/A	
8	Amiri ²¹	415	320	1.30	2017	
9	KOC ²¹	350	330	1.06	N/A	
10	Razi ²¹	240	100	2.40	2015	
11	Infectious diseases hospital ²¹	224	170	1.32	N/A	
		6,283	4,850	1.30		
Oman						
1	Muscat General Hospital (ROP) ²²	600	550	1.09	2018	
2	International Medical City (21 tertiary specialty divisions) ²³	530	1,000	0.53	2016	
3	Sultan Qaboos Medical City (5 tertiary specialty divisions) ²⁴	400	1,500	0.27	2020	
4	Suwaiq ²⁵	300	220	1.36	2018	
5	Al Masarra Psychiatric Hospital ²⁶	245	130	1.88	2018	
6	Khasab ²⁷	150	105	1.43	N/A	
7	Samail ²⁷	150	105	1.43	N/A	
8	AL Najat ²⁷	150	105	1.43	N/A	
9	AL Falah ²⁷	150	105	1.43	N/A	
	Total	2,675	3,820	0.70		
Qatar						
1	Sidra Medical and Research Centre ²⁸	653	2,400	0.27	2015	
2	Al khor hospital expansion ²⁹	500	130	3.85	2018	
3	Hamad general hospital ³⁰	150	150	1.00	2018	
	Total	1,303	2,680	0.49		
Bahrain						
1	New cardiac center ³¹	150	110	1.36	2018	
	Total	150	106	1.41		

Table-7

Medical Supply Companies:

Country Name	Pharmaceutical Industry Projects	Value USD \$ mn
KSA	Neo Pharma Mfg. plant & Hospital	265
UAE	Abu Dhabi international pharmaceuticals	300
Bahrain	Gulf biotech -Insulin Plant	93
	Total	658

Table-8

Manpower Requirements for Existing Planned Mega-Projects:

There are 37 mega hospital projects in the GCC that are in active stages of development and are worth over 100 mn USD. These projects are expected to be completed in 2020. The total investment cost of these projects is calculated as **USD 28.2 Bn**, and are expected to add a total of 22,558 beds. The calculated average cost per bed is USD 1.28 Mn.

GCC Hospital Projects Under Development	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
No. of Hospitals	6	12	10	5	3	1	37
Value of projects in \$ Mn	10,638	6,132	4,853	3,821	2,680	106	28,230
No. of Beds	6,750	5,397	6,283	2,675	1,303	150	22,558
Cost per bed in USD Mn.	1.58	1.14	0.77	1.43	2.06	0.71	1.28

Table-9

For existing mega projects in GCC, significant additional manpower resources are required for to fulfil the quality healthcare services.

The region will require at least 30,460 doctors, 66,711 nurses, 8,157 pharmacist and 37,654 Allied health professionals to staff these projects in order to maintain the similar GCC ratios calculated above.

Resources Required	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Physician	9,115	7,288	8,484	3,612	1,759	203	30,460
Nurses	19,962	15,961	18,581	7,911	3,853	444	66,711
Pharmacist	2,441	1,952	2,272	967	471	54	8,157
AHP	11,267	9,009	10,488	4,465	2,175	250	37,654

Table-10

Furthermore, the region will require around 3.6 million hours of continuous medical education (CME) in order to maintain the basic training needs for quality healthcare services, as it is mandatory to provide healthcare related training required for healthcare professionals such as physicians as well as nurses, pharmacist and AHP in some GCC countries. The total training hours required per country are calculated as follows:

Training hours required	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Physician - 30hrs/year	273,438	218,628	254,520	108,362	52,784	6,076	913,808
Nurses - 15hrs/year	299,427	10,794	12,566	5,350	2,606	300	45,116
Pharmacist - 15hrs/year	36,611	29,273	34,078	14,509	7,067	814	122,353
AHP - 15hrs/year	169,008	135,132	157,315	66,977	32,625	3,756	564,813

Table-11

Gap Analysis:

Next, the report will calculate the gap analysis for all health indicators (bed, physician, nurses, pharmacist and allies health professional) for current year (2015) and future (2020) based on three standard sets of indicators including:

- Based on current OECD Average – Aggressive Case
- Based on current GCC Maximum – Improved Case
- Based on current GCC Average – Base Case

These three standards can be thought of as different scenarios for a sensitivity analysis. The base case would be for the GCC to maintain its healthcare indicators according to the current GCC Average Scenario, this scenario will have a limited impact on most of the GCC countries as the ratios are fairly close to one another however the gap would be significantly improved. The same can be expected of the GCC Maximum Scenario as there is a limited difference between the leading GCC country and the average.

However, due to the increasing disparity between the OECD and the GCC, the OECD Average Scenario is the most aggressive one and will require the most amount of financial and human resources to address the gap.

Based on OECD Average – Aggressive Case Scenario

The gap value is derived by the difference between the health indicator ratio of the OECD average and the respective GCC country's value. This value of difference is then multiplied by current population as well as the forecasted population in 2020. The future gap in 2020 also assumes that the number of hospital projects under construction are completed within the next five years and are staffed accordingly. We also assume the average hospital size to be 200 beds to calculate the gap in the number of hospitals.

Gap based on OECD Average	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Number of Beds							
Current Gap 2015	94,654	37,800	12,998	15,141	9,809	4,449	174,851
Future Gap 2020	116,078	44,820	14,870	17,377	11,473	5,385	210,003
Number of Physicians							
Current Gap 2015	22,083	14,175	3,746	7,212	2,524	838	50,580
Future Gap 2020	35,267	18,495	4,898	8,588	3,548	1,414	72,212
Number of Nurses							
Current Gap 2015	121,398	51,030	13,290	19,838	9,184	5,455	220,195
Future Gap 2020	157,654	62,910	16,458	23,622	12,000	7,039	279,683
*Total estimated cost of beds in USD Mn.	148,579	57,370	19,034	22,243	14,686	6,893	268,804
No. of Hospital Projects (200 bed) Needed by 2020	580	224	74	87	57	27	1,050

Table-12.0

In this scenario, the GCC will thus require over 1,000 new hospitals by 2020 at an estimated cost of 26.8 Bn USD in order to maintain the current OECD average. These hospitals will require over 72,000 physicians and 280,000 nurses to staff the 210,000 beds that need to be added in order to maintain the OECD average. According to a compilation of the current mega-projects, the 22,558 beds planned across the GCC will only meet 10.7% of the future beds that will be required by 2020 to maintain the current OECD average.

Based on GCC Maximum – Improved Case Scenario

The gap value is derived by the difference between the health indicator ratio of the maximum value of GCC's countries and the respective GCC country's value. This delta is then multiplied by current population as well as the forecasted population in 2020.

Gap Based on GCC's Maximum Ratio	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Number of Beds							
Current Gap 2015	98	8,694	370	2,390	2,571	322	14,445
Future Gap 2020	8,832	11,556	1,133	3,302	3,250	704	28,776
Number of Physicians							
Current Gap 2015	3,663	8,505	1,286	4,728	1,114	34	19,332
Future Gap 2020	14,375	12,015	2,222	5,846	1,946	502	36,908
Number of Nurses							
Current Gap 2015	23,158	20,790	170	6,590	1,664	1,167	53,539
Future Gap 2020	46,230	28,350	2,186	8,998	3,456	2,175	91,395
Number of Pharmacists							
Current Gap 2015	1,838	-	-	146	349	48	2,381
Future Gap 2020	4,310	5,535	1,476	1,909	1,661	786	15,677
Number of AHPs							
Current Gap 2015	7,292	5,675	1,025	1,513	56	1,143	16,705
Future Gap 2020	19,240	9,590	2,069	2,760	984	1,665	36,309
*Total estimated cost of beds in USD Mn.	11,305	14,792	1,451	4,226	4,160	901	36,833
No. of Hospital projects (200 bed)	44	58	6	17	16	4	144

Table-13

In this scenario, the GCC will thus require around 150 new hospitals by 2020 at an estimated cost of 26.8 Bn USD in order to maintain the current GCC Maximum level. These hospitals will require over 37,000 physicians and 91,000 nurses to staff the 28,766 beds that need to be added in order to maintain the OECD average. According to a compilation of the current mega-projects, the 22,558 beds planned across the GCC will meet 78.4% of the future beds that will be required by 2020 to maintain the current GCC Maximum level.

Based on GCC Average – Base Case Scenario

The gap value is derived by the difference between the health indicator ratio of the GCC average and the respective GCC country's value. This delta is then multiplied by the current population as well as the forecasted population to be in 2020. Negative numbers should be interpreted as an oversupply.

Gap Based on GCC's Average Ratio	KSA	UAE	Kuwait	Oman	Qatar	Bahrain	GCC
Number of Beds							
Current Gap 2015	(15,866)	3,780	(1,762)	237	1,349	(375)	(12,637)
Future Gap 2020	(9,274)	5,940	(1,186)	925	1,861	(87)	(1,821)
Number of Physicians							
Current Gap 2015	(11,687)	3,780	(764)	2,658	(61)	(636)	(6,708)
Future Gap 2020	(3,035)	6,615	(8)	3,561	611	(258)	7,488
Number of Nurses							
Current Gap 2015	(7,542)	11,340	(3,930)	2,450	(686)	(173)	1,459
Future Gap 2020	11,410	17,550	(2,274)	4,428	786	655	32,555
Number of Pharmacists							
Current Gap 2015	1,838	-	-	146	349	48	2,381
Future Gap 2020	4,310	5,535	1,476	1,909	1,661	786	15,677
Number of AHPs							
Current Gap 2015	(4,988)	1,895	(615)	(143)	(884)	607	(4,127)
Future Gap 2020	5,312	5,270	285	932	(84)	1,057	12,773
*Total estimated cost of beds in USD Mn.	-	-	-	1,184	2,383	-	-
No. of Hospital projects (200 bed)	-	30	-	5	9	-	-

Table-14

In this scenario, most GCC countries will not require any new hospitals by 2020 with the exception of the UAE, Oman and Qatar. Most GCC countries however, will require an increased number of physicians and nurses with the exception of Saudi Arabia (physicians) and Kuwait (nurses) who currently have the highest number of physicians and nurses/000s respectively.

Conclusion – An Emphasis on New Models of Care and Prevention

The GCC certainly lags the OECD in terms of these key healthcare infrastructure indicators an important mention of preventative measures in healthcare must be made. According to the most recent data from the NHS, the UK has decreased its current bed capacity by 51% in the past 25 years, as more efficient operations of existing hospital facilities and increased reliance on new treatment methods such as single day surgery centres as well as preventative medicine methods. Therefore, there needs to be more focus on more

efficient management of the existing GCC clinical capacity as well as an increased investment in new alternative and preventative models of healthcare.

About Kuwait Life Sciences Company (KLSC):

KLSC focuses on healthcare innovative concepts and demanded services which have a clear and unmet need in the Middle East and North Africa (MENA) region. KLSC has been designed as an integrated healthcare company building unique projects and is considered one of the pioneer venture capitalist and private equity companies in the Middle East that invests globally and operates regionally seeking to advance healthcare services and systems within the region. KLSC supports both public and private sector stakeholders to access emerging technologies, establish unique projects and adapt best practices prevailing in today's healthcare field. KLSC operates in healthcare investment, life sciences training, medical technology and pharmaceutical distribution.

Kuwait Life Science Company (KLSC) was established in 2010, with a paid up capital of 15 million Kuwait Dinars (KD) which is equivalent to approximately \$53 million US Dollars. KLSC is fully owned by National Technology Enterprises Company. National Technology Enterprises Company (NTEC) was incorporated in November of 2002, by the Kuwait Council of Ministers as a fully owned company by the Kuwait Investment Authority (KIA), the sovereign wealth fund of the State of Kuwait. Capitalized at 100 million Kuwait Dinars (KD) which is equivalent to approximately \$350 million US Dollars, NTEC aims to play a vital role in servicing major stakeholders in Kuwait and the Middle East region with their technology requirements.

About the Author:

Dr. Razouki is the current Chief Business Development Officer of Kuwait Life Sciences Company (KLSC) where he is responsible for identifying new business opportunities for all KLSC subsidiary companies as well as sourcing investments opportunities for KLSC. An Oral and Maxillofacial surgeon by training, Dr. Razouki has completed clinical rotations at the world's top hospitals including New York Presbyterian Hospital of Columbia University Medical Center, Harlem Hospital, Cleveland University Hospital of Case Western Reserve University and Mass General Hospital of Harvard University.

A graduate of Columbia Business School, Dr. Razouki is the first ever Arab national to receive an MBA with a focus on Healthcare Management and Finance.

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