Health Finance and Governance Activity

Primary Healthcare Report

Assessment of Supply and Demand Drivers

November 2018

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I. Executive Summary

Recently, the Inter-Ministerial Committee for Health Sector Reform declared PHC as the top priority for health sector reform. Jordan's Health Sector Reform Action Plan 2018-2022 emphasizes the best utilization of PHC services. Planners foresee the need to improve the quality and safety of health care services and ensure their sustainability; to improve monitoring and controlling communicable diseases; to reduce the prevalence of non-communicable diseases; to enhance reproductive health and child services; to enhance the health of school students and the school environment; and to strengthen environmental and vocational sanitation. All these objectives are strongly enabled by cost effective primary care.

Jordan faces familiar and systemic PHC constraints. Based on the National Health Accounts, NHA 2015, only 18% of the total health expenditure (THE) was spent on primary health care, compared with 74% on curative care.

Most Jordanian citizens prefer to bypass primary care in favour of ambulatory care at secondary/tertiary care facilities. The growing non-communicable disease burden requires a reorientation of the system towards preventive and primary care to reduce an expensive curative caseload in the future.

Primary health care is the first point of contact between a community and its country's health system. The World Bank estimates that 90% of all health needs can be met at the primary health care level. Investment in primary health care is a cost-effective investment for UHC – it helps reduce the need for more costly, complex care by preventing illness and promoting general health. Investing to build quality, accessible and equitable primary health care services is the most practical, efficient and effective first step for countries working to deliver UHC.

This report provides a qualitative and quantitative perspective on PHC. It provides a quick and strategic view on the key issues facing PHC in Jordan. The report is valuable for a decision maker or a change leader, as it provides the necessary proof, that change in the PHC system is needed to achieve the right and needed efficiency. The report evaluates several factors such as utilization rates in PHC centers, distribution of PHC centers, and patient's choice. A sample of PHC centers were selected to demonstrate several potential improvements on cost, utilization, distribution and overall system design. We also evaluated a relevant near-by case study which is the Turkish experience in revamping their PHC system. Several strategic interventions could be adopted for the Jordanian context.

We also highlighted a key challenge which is the political and social barriers preventing structured reform and change in the PHC system. The decision of opening a PHC center is occasionally triggered by a social request or pressure from a community, and therefore the decision to close a center is a socially and politically sensitive factor on the decision maker.

To better understand the various factors that influence PHC utilization in Jordan, HFG will examine the following parameters:

I. Distribution of primary healthcare centers based on MOH's criteria.
II. Utilization rates at primary healthcare centers by type and region.
III. Patterns of PHC services that are provided at hospitals (emergency and outpatient clinics)
IV. Selection and choice of patients. An analysis of patients views towards PHC.
V. Analysis of PHC regional models and good practice.

Main findings are summarized as follows:

I. One key observation is that cost per visit varies considerably when comparing facilities of the same type (comprehensive, primary and branch). This indicates inefficiencies in managing resources and their relevant cost. For example, one PHC centre had a cost per visit of 12.8 JDs, while another PHC centre had a completely different cost per visit of 5.4 JDs. These two centres are from the same type, and therefore the variance in unit cost is significant, indicating the need to investigate reasons of variability.
II. Political and social factors are considered significant barriers to reforming primary healthcare.
III. Reflecting on the Turkey example, the enabling environment that made the PHC revamping succeed in Turkey, is not available in the Jordanian context.
IV. Footprint optimization of PHC centers is considered a major initiative contributing to cost reduction, traffic increase, and quality improvement.
V. There should be a holistic strategy that looks at physical structures distribution, manpower productivity, traffic re-engineering, referral systems, compensation and incentive schemes, and proper budget allocations. The analysis of PHC costs suggests inefficiencies with the current funding and allocation of resources.
VI. Public perception of PHC quality and services is a key sensitive area to work on and important in designing interventions to improve utilization. Measuring patient satisfaction and perceptions should be a continuous activity and closely linked to PHC improvements. Medicine availability, waiting times, distance to PHC center and professional capability of staff were among the key factors mentioned by the focus group.
VII. Strict implementation of an improved and optimized referral system that creates disincentives for both physician and patient to break the process is needed to control unwanted visits to outpatient and emergency facilities. It was noted from previous research and studies that there is high tendency to use emergency facilities for cases that could be treated at primary care. Emergency visits as per our top-down analysis is double the cost of a PHC center visit. Therefore, engineering traffic towards the right channel is key to optimize and control healthcare costs.
VIII. The 18% of total expenditure allocated to PHC figure most probably would change as a percentage due to two distinct strategies. A cost reduction and optimization strategy, and a traffic (patient) re-engineering strategy.
IX. The current MOH PHC centers opening criteria needs to be improved, updated and implemented. The criteria should allow for more relevant factors to determine accurately whether an area/district needs a PHC center or not. For example, "Time of Travel" and "Population Density" could be some of the factors to consider, as these take into consideration time, area, and population.

II. Distribution of PHC Centres

The Ministry of Health provides a wide range of preventive and curative care to the population in Jordan through a huge network of health centers that are distributed all over the kingdom; 109 comprehensive health centers, 374 primary health centers, and 186[1] branch health centers. These health centers are intended to provide primary health service to the population in Jordan, which means that on average each one of these centers serve around 17,000 [2]of the population. According to the Ministry of Health, there is a set of criteria to prioritize the need to establish or renew branch, primary and comprehensive health centers. This criterion is based on the population density, distance from other centers and the availability and easiness of transportation to the center. This criterion is described in Table 1, 2 and 3 below.

Table1: Ministry of Health's criteria to establish or renew a branch health center.

Type of Center	Standard	Evaluation points

[1] MOH Statistical Report 2017

[2] Estimated Population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan.

Branch Health Center (building Area not less than 100 $m^{2)}$		**6**	**4**	**2**
	Population Density (branch population to be not less than 500)	750-1000	500-700	500 and less
	Distance from the closest PHC or CHC	More than 10 Km	6-9 Km	2-5 Km
	Availability of Transportation	Public, organized and available	Public, not organized	Not available
	Total	18	12	6
Prioritization to build a branch health center is based on the total points as the following: 1. (6 or less): Not a current priority 2. (7-12): Mid priority (to be re-evaluated in 2 years) 3. (13-18): High Priority (action to be taken within a year if allocated budgets are available.)				

Table2: Ministry of Health's criteria to establish or renew a primary health center.

Type of Center	Standard	Evaluation points		
		6	4	2
Primary Health Center (building Area not less than 350 $m^{2)}$	Population Density	3000 and more	1000-3000	1000 and less
	Distance from the closest PHC or CHC	More than 10 Km	6-9 Km	2-5 Km
	Number of Branch health center covered by suggested PHC	More than 5 centers	3 to 4 centers	1 to 2 centers
	Availability of Transportation	Public, organized and available	Public, not organized	Not available
	Total	24	16	8
Prioritization to build a primary health center is based on the total points as the following: 1. (8 or less): Not a current priority 2. (9-16): Mid priority (to be re-evaluated in 2 years) 3. (17-24): High Priority (action to be taken within a year if allocated budgets are available.)				

Table3: Ministry of Health's criteria to establish or renew a comprehensive health center.

Type of Center	Standard	Evaluation points		
		6	4	2
Comprehensive Health Center (building Area not less than 350 $m^{2)}$	Number of people benefiting from the center at minimum, 15,000	More than 25,000	20,000-24,000	19,000 and less
	CHC distance from the closest Hospital	More than 15 Km	10-15 Km	Less than 10 Km
	Number of Primary health center covered by suggested CHC	More than 6 centers	3 to 5 centers	1 to 2 centers
	Availability of Transportation	Public, organized and available	Public, not organized	Not available
	Total	24	16	8
Prioritization to build a primary health center is based on the total points as the following: 1. (8 or less): Not a current priority 2. (9-16): Mid priority (to be re-evaluated in 2 years) 3. (17-24): High Priority (action to be taken within a year if allocated budgets are available.)				

To analyze the current situation and examine whether the current health centers are matching the criteria set by the MOH, we chose a small sample of PHC centers in the 3 high and less condensed areas in Amman, and in Jerash governorates, as in Table 4.

Table4: Total number of health centers per governorate and per population

Administrative Divisions	Population*	Health Centers**				Avg Population/ Health Center
		Comprehensive Health Centers	Primary Health Centers	Branch Health Centers	Total Number of Health centers	
Amman governorate						
Marka District	1,008,400	3	10	1	14	72,029
Amman Qasabah District	902,770	4	16	0	20	45,139
Al- Jamaah District	784,670	3	2	2	7	112,096
Na'oor District	136,740	2	6	5	13	10,518
Jizah District	124,460	2	13	11	26	4,787
Muaqqar District	88,980	1	6	5	12	7,415
Jarash governorate						
Jarash Qasabeh District	250,000	3	17	6	26	9,615

* Estimated Population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan
**Health Centers numbers from the Jordan MOH website.

To conduct an effective distribution evaluation, we chose one primary health center and one comprehensive health center in each governorate. This is an explorative sample that provides us with an idea of the geographic distribution of PHC centers. The objective is to evaluate the current MOH criteria for opening new clinics and compare this criterion with actual implementation on the ground. In other words, we are evaluating "Design" effectiveness of the MOH PHC opening criteria and the "Implementation" effectiveness based on this criterion. Several findings will be shown below demonstrating significant room for improvements when it comes to distribution decisions concerning PHC Centers.

Amman Governorate:

Sweileh Comprehensive health center is one of the largest health centers in Amman, and it serves around 159,275 population according to the new Estimated Population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan.

If we consider the highest priority for establishing a center, then this center is supposed to serve no more than 25,000 people. Nevertheless, this number as mentioned in the criteria is not clear, as it does not specify the maximum number of people a comprehensive health center can serve. (i.e. is 50,000, 100,000, 200,000). In addition, it doesn't specify the population coverage per area (i.e. 25,000 per 1 KM^2). So, for the criteria to be effective, it should include other factors such as population density, area, and time of travel. These factors would improve the evaluation criteria for opening new PHC centers. Of course, weighting factors or scoring should be in place when designing a new PHC criteria. It should also be taken into consideration that there are other health providers serving these areas such as the Royal Medical Services, UNRWA, NGOs and other private clinics and hospitals.

On the other hand, the center is only 3.5 kilometers away from the closest hospital, which is Jordan University Hospital, and the closest primary health center to Sweileh CHC is Um Hussein PHC which is 2.49 Km away, with good transportation to the center according the MOH map in the MOH website updated in 2007.

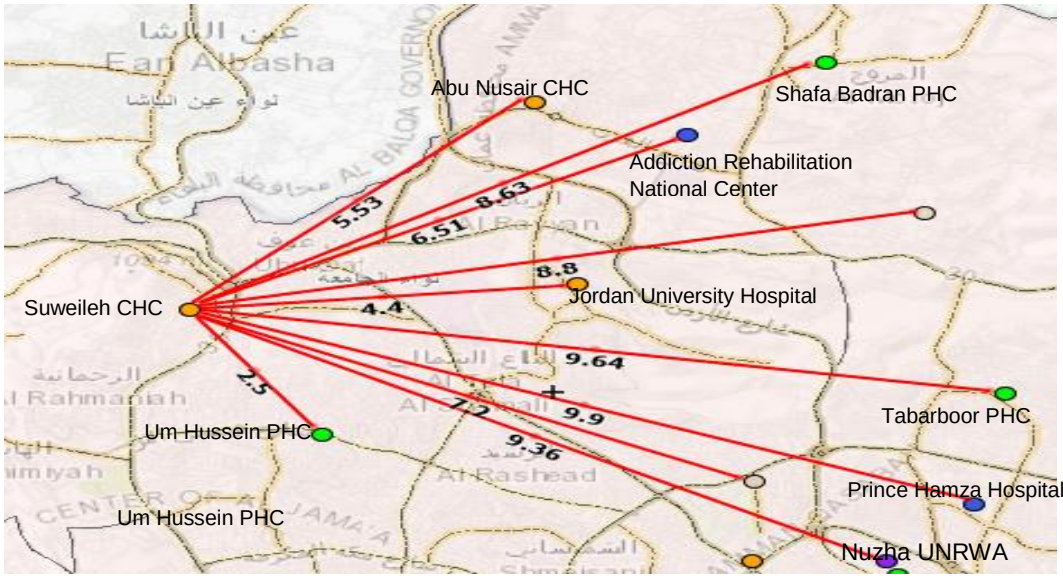
Although this center is surrounded by 3 primary health centers, but there are 2 comprehensive health centers that are very close to it and only 5 Km away. The criteria only consider the number of primary

health center covered by suggested CHC, however these 3 PHCs are covered by the 3 different CHCs as the image below.

One of which is Jubeiha health center, that was established recently in July 2017, and is only around 8 Km away from Sweileh comprehensive health center.

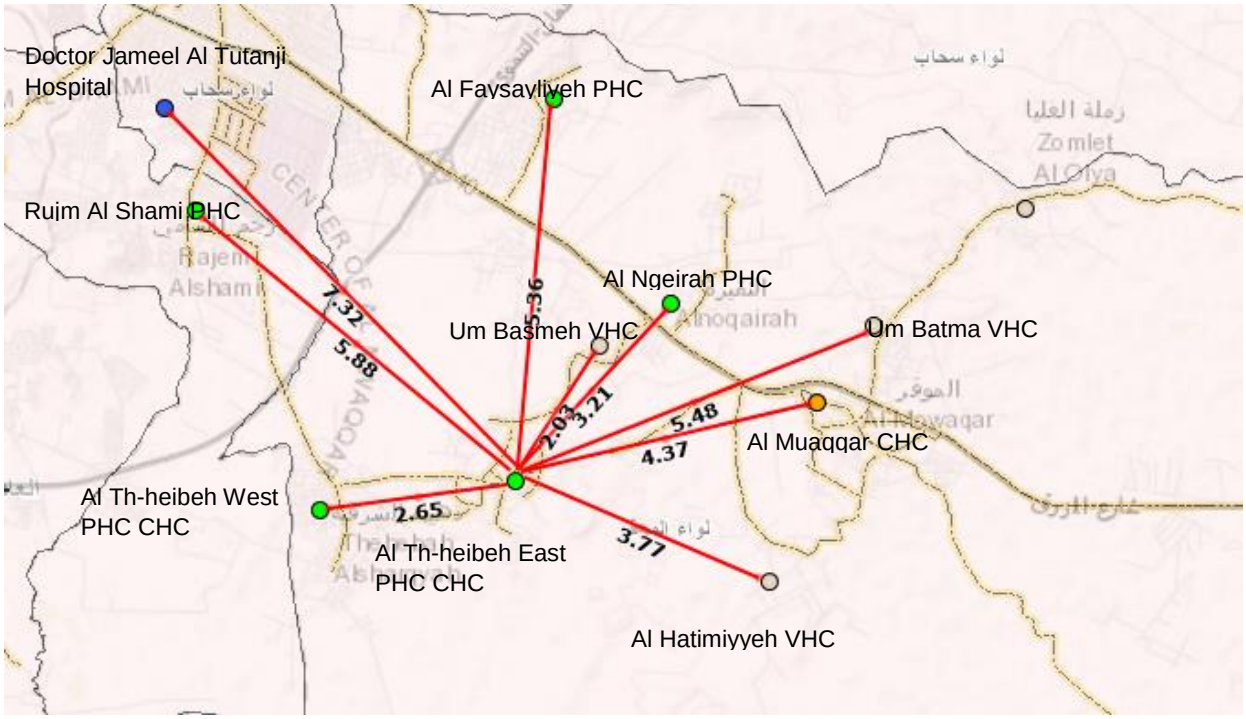
Jubeiha health center serves a population of 207,943 according to the new estimated population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan, which is larger than Sweileh area, and indicates the need of a comprehensive health center, and also by following MOH criteria, and pointing system, as both centers will get a score above 17, which implies that both centers are important, and are a priority, but what this criteria is not able to answer is the following:

1. Identification of the maximum number of people that a PHC center serves
2. The number of PHC centers that are supposed to serve under a comprehensive health center.



Al Th-heibeh East primary health center in Al Th-heibeh East area/Muaqqar with a population of 6,619 population according to the new estimated population of the Kingdom by governorate, locality, sex and household, 2017- Department of Statistics-Jordan.

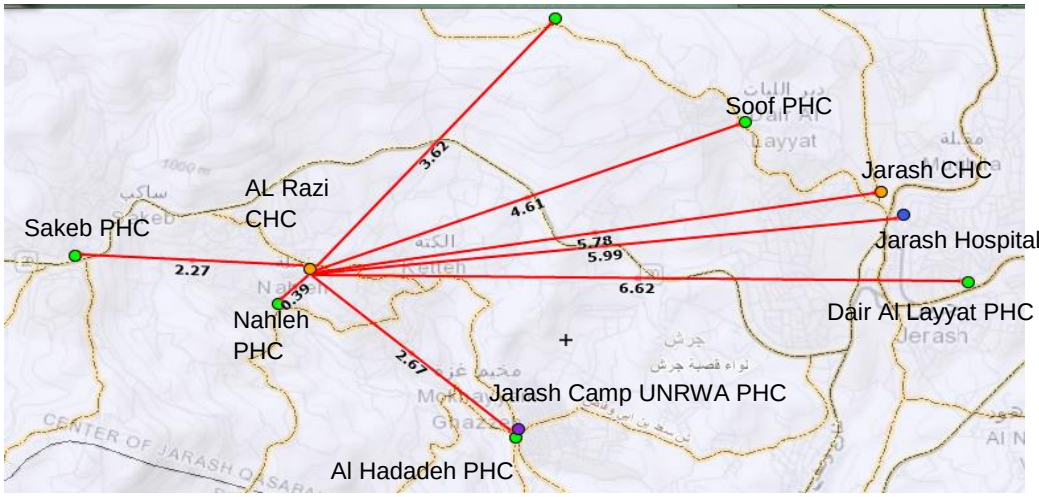
The center serves 2,000 people, the closest health center to it is Um Batma Branch center (2.03 km), followed by Al Th-heibeh West Primary Health Center which is 2.65 KM away, with good transportation to the center according the MOH map in the MOH website updated in 2007. Moreover, the number of Branch health centers covered by this PHC is 3 as in the image below, so this PHC will get 16 points score, using the PHC criteria in table 2. This indicates that it was not a highest priority according to MOH criteria.



Jarash Governorate:

Al Razzi Comprehensive Health Center close to the Al Kitteh Area, with a population of 8,351 population according to the new Estimated Population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan.

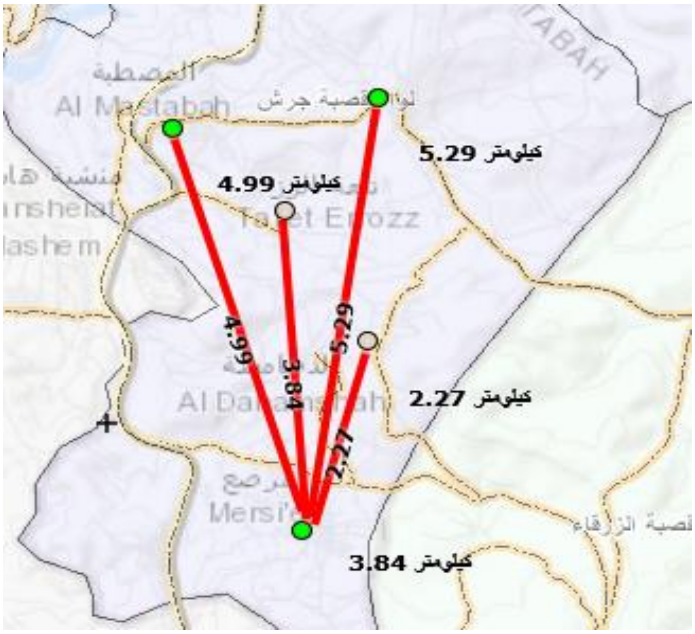
The center is intended to serve around 10,000 of the population, while the priority to establish a CHC is to have a population of 25,000 or more. The closest hospital is around 7Km away, and the closest health center is to it is Nahleh PHC which is 0.244 Km away, the number of PHCs covered by this PHC is 6, with good transportation to the center according to the MOH map in the MOH website updated in 2007. All of this gives a score 16, which also proves that MOH is not following its own prioritization criteria and guidelines. Adding to that the presence of Jarash CHC that is around 6 Km away and is also covering 3 PHCs covered by Al Razzi CHC.



Marsaa Primary Health Center in Marsaa' Area, with a population of 4,815 population according to the new Estimated Population of the Kingdom by Governorate, Locality, Sex and Household, 2017- Department of Statistics-Jordan.

The center is intended to serve around 3,290 of the population. The closest health center to it is Al Rayah VHC which is 2,27 Km away, with poor transportation to the center according to the MOH map in the MOH website updated in 2007, and the number of Branch health center covered by suggested PHC is 2 VHCs.

The total scores this center would get based on the PHC criteria in table 1, is 12, which indicates as well that this center is not a high priority according to the criteria.



It is worth mentioning that MOH doesn't always follow the prioritization criteria when establishing the centers which indicates that this criterion is not comprehensive and indicative. Reasons for not adopting the criteria relates to the criteria design itself, but also political and social pressures could be attributed to opening of PHC centers. The criteria design needs an update and reflecting factors of significance such as "Population Density" and "Time of Travel". As for the social/political barriers, we got feedback from MOH officials that the community puts great pressure on opening new facilities, even though they might not be needed or there are close by alternatives. Politicians on the other hand, feel pressured in many cases, to either open new PHC centers to please certain community demands, or even avoid the hard decision of closure of some facilities, in order to not face resistance.

In addition, there needs to be clear instructions how to calculate the number of primary health centers covered by a comprehensive health center. As seen in the examples above, a comprehensive health center needs to serve a certain number of PHCs, while we find in less than 10KM^2 two or three comprehensive health centers serving the same primary health centers. This makes it unclear why these centers were established in the first place, if there are already primary health centers and one comprehensive health center serving the area. And the same applies for the primary health centers and branch health centers they serve.

All of the above indicates that the current MOH set of criteria needs to be revised, and it needs to include other factors, like the current situation; the map of the health centers at the time, the presence of other centers around the center they are planning to establish, the maximum number of patients this center should be serving combined to with the surrounding centers, the population coverage per area needs to be taken into consideration as well, and many other factors before taking the decision of establishing new health centers. HFG will continue to link progress points and integrate any improvements in the health map

and resource allocation tool. Our objective is to create steady progress and link theory with practice by doing incremental improvements in the system and its tools.

It is also important to mention that the referral system needs a complete holistic review. To understand the referral between primary health care centers, and referrals from PHC to Secondary. Similar to the analysis on "Distribution", an analysis that covers both "Design criteria for referrals" and "level of implementation of referral criteria" would provide enough insights on the gap and potential improvements needed on PHC referral system.

III. Utilisation of PHC Centres

To provide primary healthcare services in a widespread and efficient manner, Jordan's Ministry of Health (MOH) uses a total of 673 health centers (HC) throughout the country. This number is made up of 109 comprehensive HCs, 377HCs primary, and 194 branch HCs that implement and provide the services to the population. During 2017, the total number of visits was 10,676,838, resulting from patients attending the GP clinics only in all the PHC facilities. This means that the average number of visits per HC is around 16,000 visits annually. (Nota bene, visits are different from the number of patients.) This paper focuses on the data collected from 6 clinics in the cities of Amman, Jerash, and Balqa. (source of the new figures : MOH statistical yearbook 2017)

Table 5 Operational Costs & Utilization KPIs*

#	Expenditure Type	Swalieh Comprehensive Health Center	Al-Razi Comprehensive Health Center	Al-Thehaibeh Al-Sharqyeh Primary Health Center	Marsa' Primary Health Center	Shafa Badran Primary Health Center	Abu Nusair Primary Health Center
1	Landline	696	156	156	180	158	158
2	Water	1,856	666	367	500	858	364
3	Electricity	8,934	5,556	2,028	2,706	5,568	5,712
4	Cleaning Services	21,896	8,244	5,828	6,691	14,352	14,352
5	Fuel	7,043	2,500	3,250	3,850	7,318	4,531
6	Security Services	12,240	12,240	12,240	8,160	8,160	8,160
7	Salaries	435,425	138,804	91,546	79,045	210,672	155,322
8	Total	488,090	168,166	115,415	101,132	247,087	188,441
9	Visits	108,956	39,685	9,052	18,566	23,972	11,898
10	Total cost per visit	4.5	4.2	12.8	5.4	10.3	15.8
11	Payroll per visit	4.0	3.5	10.1	4.3	8.8	13.1
12	Contracted Services per visits	0.3	0.5	2.0	0.8	0.9	1.9

* Note that all costs in Table 5 are considered variable costs. Fixed costs were not assessed in this study.

From a utilization point of view, comprehensive health centers (CHC) are more economical than primary health centers (PHC). At the Swalieh Comprehensive Health Center in Amman and Al-Razi Comprehensive Health Center, the total cost is 4.48 JOD and 4.24 JOD per visit, respectively. This is an average cost of 4.36 JOD per visit at CHCs. In comparison to PHCs, the cost is sometimes almost three times that of at a CHC. For instance, at Al-Thehaibeh Al-Sharqyeh Primary Health Center in Amman, Marsa' Primary Health Center Jerash, the Shafa Badran Primary Health Center in Amman, and the Abu Nusair Primary Health Center in Baqla, the total is cost 12.75 JOD, 5.45 JOD, 10.31 JOD, and 15.84 JOD per visit, respectively. This calculates to an average of 11.09 JOD per a visit, almost double that at a CHC.

To further cut costs, it is suggested that the PHCs, as well as CHCs, revise its operational expenses, especially the salaries from the MOH, and services contracted at each centre. For example, salaries at PHCs make up almost 82% of expenditures on average, and 88% at CHCs. Further adjustments in the salaries of MOH employees (reallocation of staff and optimizing headcount based on facility need) could allow for greater savings, and the reallocation of money to improve the quality of primary health care services, as well as to make said services more affordable particularly at PHCs.

Other adjustments in the operational expenses could also include revising the cost of contracted services. The average cost of contracted services (i.e., security and cleaning services at the facilities) is 0.415 JOD at CHCs and 1.41 JOD at PHCs per visit. Although contracted services do not make up as high of a percentage of total expenditures for centres, revisions to the cost of contracted services could also provide an alternative opportunity to further economize and improve the breadth and quality of services provided.

One clear discrepancy from the datasets is the variation in the number of visits at each health center, and merits discussion at length. At CHCs, the average number of visits is 69,271 which is more than the total number of visits at Al-Razi Comprehensive Health Center in Jerash alone. At PHCs, the average number of visits is 14,920 which is, again, more than the total number of visits at both the Marsa' Primary Health Center in Jerash, and the Abu Nusair Primary Health Center in Baqla. The variation in number of visits could be explained by the improper location of centers (i.e., the proximity to other health centres or unavailability of public transportation), the lack of services provided, low population densities in center areas, and the low quality of services provided.

Overall, to improve utilization, a dual strategy of cost reduction and maximization of patient traffic is needed. Cost of manpower, contracted services and other expenses needs continuous critical review to ensure cost rationalization and competitiveness. In the other hand, increasing the number of visits to each PHC center is critical to cost optimization, since the objective is to achieve a rationalized relative cost, rather than an absolute cost improvement. Maximizing traffic to each PHC would require adopting important interventions, such as footprint optimizing of PHC centers, improving quality of service, adjusting shifts and work hours, and enforcing a strict referral system to secondary hospitals which will increase PHC utilization.

Table 6 Analysis of Visits per Governorate

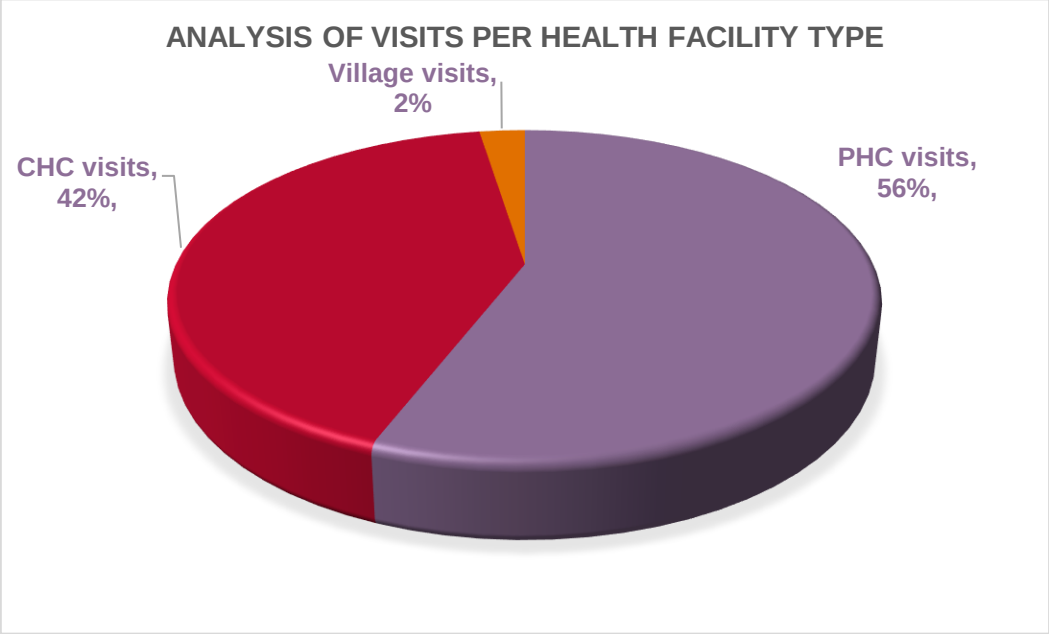
KPI	National	Amman	Zarqa	Balqa	Madaba	Irbid	Mafraq	Jerash	Ajloun	Karak	Tafileh	Ma'an	Aqaba
number of visits per PHC	5,877,329	1,450,262	611,853	399,869	209,721	1,806,690	293,679	317,129	187,873	298,289	45,448	112,652	143,864
PHC: % of visits per governorate		25%	10%	7%	4%	31%	5%	5%	3%	5%	1%	2%	2%

KPI	National	Amman	Zarqa	Balqa	Madaba	Irbid	Mafraq	Jerash	Ajloun	Karak	Tafileh	Ma'an	Aqaba
number of visits per comprehensive centers	4,374,466	1,779,144	527,611	237,910	174,921	483,311	407,358	140,023	128,043	156,317	136,397	124,403	79,028
CHC: % of visits per governorate		41%	12%	5%	4%	11%	9%	3%	3%	4%	3%	3%	2%

KPI	National	Amman	Zarqa	Balqa	Madaba	Irbid	Mafraq	Jerash	Ajloun	Karak	Tafileh	Ma'an	Aqaba
number of visits per village clinic	260,782	41,705	12,680	40,440	3,044	53,524	34,256	18,246	20,103	18,692	609	8,194	9,289
village: % of visits per governorate		16%	5%	16%	1%	21%	13%	7%	8%	7%	0%	3%	4%

There are several analytical points that can be deducted from the table above:

I. First; Amman and Irbid have majority of visits (more than 50%) which is due to the reason that most Jordanians live in these governorates.
II. Second; the remaining 12 governorates receives the remaining 50% of the total visits. Some governorates have a share of visits ranging between 1-5%
III. Third; branch centres' visits out of the total visits is 2%. On the other hand, Comprehensive & Primary Centres' receive 98% of total kingdom's visits.
IV. Fourth; on a national level, Comprehensive Health Centers (CHC) receive 56% of total national visits, while Primary Health Centers (PHC) receive 42% of total national visits. (as per the graph below)



The table below sheds light on the areas in the kingdom where it is either over-served or under-served by PHC centres. The red cells in the table shows the over-served governorates where too many PHC centers are opened serving a lower population. On the other hand, the Amman and Irbid average visits per PHC center are too high (higher than the national average of 15,574 per center). The below table provides the initial proof that a PHC Center footprint optimisation is needed, to save costs and better serve the population based on real needs.

The Capital received one third of the visits in 2017, while Irbid received one fifth of the visits in the same year. Aqaba, Maan, Tafila, and Ajloun received 9% of national visits, yet they have 18% of PHC centres. The difference in average visits per PHC centres (see table below) indicates that there's an issue in balancing supply with demand. A proper footprint optimisation exercise is needed to balance supply and demand.

Table 7 Analysis of Visits per Governorate

KPI	National	Amman	Zarqa	Balqa	Madaba	Irbid	Mafraq	Jerash	Ajloun	Karak	Tafileh	Ma'an	Aqaba
number of visits per gov.	**10512577**	3271111	1152144	678219	387686	2343525	735293	475398	336019	473298	182454	245249	232181
% of visits per governorate	100%	31%	11%	6%	4%	22%	7%	5%	3%	5%	2%	2%	2%
Total Number of Health Centers	675	114	45	71	28	122	87	26	31	63	22	42	24
Average visits per health center	15574	28694	25603	9552	13846	19209	8452	18285	10839	7513	8293	5839	9674

IV. PHC in Emergency Setting

Using a sample of secondary hospitals, we have investigated the relative number of visitations that are primary health care. This involves looking at emergency room visits. This should allow us to better define patterns of primary health service use that are outside the clinic/comprehensive centre environments. This will help guide us in defining interventions to shift utilization patterns and potentially reduce cost.

Normally, emergency room patients receive one of the five levels of care; level 1 is for minor problems; such as earache, level 2 may be for a cut wound that needs stitches; while level 5 is for severe problems like a broken bone. Level of care exist for critically ill patients that are even higher. In the United States, it is estimated that more than $ 18 billion could be saved annually if those patients whose medical problems are considered "avoidable "or non-urgent were to take advantage of the primary or preventive health care and

not rely on ERs for their medical needs (source: Emergency room vs. urgent care: Americas Dept Help Organization)

Emergency visits at MOH hospitals for the year 2017 (the total number of emergency visits is 3,522,359 for all MOH hospitals) indicated that the ratio of emergency visits to the total visits, ranges from zero % at Ruwaished hospital, up to 100% at Al Rumtha hospital. Generally speaking the average comparison between emergency visits and non-emergency visits as published in MOH statistical book in 2017 is 40.1% vs 59.9% respectively.

To be more rational; we selected 3 hospitals based on their classification as: general, or teaching and tertiary care hospitals and found the following:

- For South Shuna hospital the ratio of emergency cases is 67.3% of the total cases; meaning that the non-emergency cases' rate is 32.7%
- For Princess Basma hospital the ratio of the emergency visits / cases is 30%; meaning that 70% of the visiting cases are non-emergency cases.
- For Al Bashir hospital as the largest pool for the emergency cases in Jordan; most of the visiting cases were emergency cases totalling around 70% (69.7%) of the total visiting number. This indicates the huge burden on the Emergency department at Al Bashir hospital despite the good triaging system practiced there.

  (Source of information: Annual MOH statistical yearbook 2017).

40% of the total emergency visits with some variations among MOH hospitals are considered emergency visits; while around 60% of them are non -emergency visits. According to "The cost and financial impact CIP expansion to vulnerable Jordanians and Syrian refugees "conducted by UNICEF and based on a study on Cost of services provided at MOH facilities in 2013; it is estimated that the average cost per PHC visit is 7.14 JDs, and the average cost per ER visit is 14.74 JDs meaning this is doubling the cost. A lot of money could be saved and more than 60% of the visits could be directed to the primary health care centres to receive their care there. It is worth mentioning that the high cost per visit at ER compared to a visit to a PHC centre makes complete sense, as the ER at a hospital would have other overhead costs such as management, support functions and specialists. This is not the case at a small PHC centre, where these costs are not occurring at a small facility.

Among important daily activity that ensure providing adequate medical care to patients is the referral care from primary care centers to hospitals. To improve the quality of patient care, building and improving a sound referral system should be the main objective.

It is common in Jordan to seek specialized care at a hospital instead of visiting primary health care clinic for the first visit. Overuse of secondary care due to the bypassing of PHC centers is a widespread problem in Jordan. There is a general perception that primary health care facilities are of inadequate quality.

Jordan's burden of disease is dominated by noncommunicable diseases (NCDs). There is overall recognition that improving the provision of promotive, preventive, and curative health services through a sound primary health care system can reduce the excessive costs associated with providing services (outpatient and inpatient care) at secondary / tertiary care hospitals.

Several initiatives could reduce the flow of patients from primary to secondary such as strengthening the referral system, adopting appointment systems for the outpatient care, introducing a cost-conscious culture in the health system and among health professionals, raising public awareness to promote the use of cost-effective primary health care and improve the quality of the provided services by adopting the family medicine specialty as a Gate keeper and primary point of contact and through support to the continuing professional development. Also, investing in initiatives that promote the preventive measures aiming at reducing the prevalence of NCDs by working on combating the risk -taking behaviours and through the application of WHO Best -buy approach in dealing with risk factors leading to major NCDs in Jordan.

V. PHC Choice

Over the course of August 2018, HFG conducted 6 focus groups in the cities of Amman, Karak, and Irbid with participants coming from all three cities. The focus groups covered groups for females and others for males with a total of 50 participants. The objective of these focus groups was to better understand the experiences of Jordanian men and women at Ministry of Health (MOH) hospitals versus primary healthcare centres (PHC), and to determine which of the two women most typically preferred and why. The responses of session participants were divided into two major categories with some flexibility: (1) participants who favoured MOH hospitals, and (2) those who favoured PHCs. The results showed that the overwhelming majority of participants favoured MOH hospitals over PHCs for a variety of reasons, most notably including its larger array of services provided. However, some participants did prefer PHCs, too, because of their affordability.

The most common reason participants preferred MOH hospitals was because of its great number of available services and the high quality of services provided. Almost all participants who shared their preference for the MOH hospitals demonstrated in the sessions that the treatment they were provided at the MOH hospitals was most typically incomparable in quality to what they would have received, should they have visited a PHC. One participant from Irbid shared her disappointment in PHCs for their lack of services provided. She expressed her frustrations with the MOH hospitals for their over crowdedness and long wait times but admitted that the alternative was even more frustrating for its complete lack of services like dentistry.

In addition to its lack of services, two participants told the group about the lack of organization and structure within PHCs, especially its lack of professionalism and timing. For instance, one participant explained, "When you go to the health clinic [i.e., the PHC] at 1:00 PM and then again [on another day] at 12:00 PM, they tell you that the clinic is closed. So, you wait in front of the clinic for an hour or two, and then they tell you the same thing; that they are closed."

Despite some participants preferring MOH hospitals over PHCs, they admitted that the cost of such was unaffordable. This was especially true of those participants who personally did not have health insurance or whose family members and/or relatives did not have health insurance. They explained that receiving even the most menial of services at the MOH hospitals without any health insurance was not affordable. A handful of the participants from across cities and sessions, especially those who were uninsured, considered it more worth their money to visit a private or RMS hospital because of the superior quality of services and greater number of services available.

In a similar way, most of those participants who did prefer the PHCs over MOH hospitals did so because of the cost thereof. They compared in detail the cost of previous visits to MOH hospitals versus PHCs and demonstrated that the difference in the treatments or procedures they received at the MOH hospitals were marginally better than what they received at the PHCs. Some recognized, however, that while the PHCs may be more affordable, they were limited in their capacity to provide extensive and high-quality services like an MOH hospital would be able to do.

A few several other participants who stated their preference for PHCs also shared their frustration in previous visits to MOH hospitals. They explained that the MOH hospitals were overcrowded typically causing long wait times. A handful of participants also shared that because of the hospital's high density, the hospital staff were less likely to be friendly and personable with patients. In further comparing the two, participants shared experiences in which the staff of PHCs were particularly respectful and hospitable with their patients.

Several initiatives would meet patient's choice and preferences such as adopting appointment systems for the outpatient care to avoid long waiting times, ensure that medicine is available and minimise out of stock, ensure the availability of key health services as needed by the population, and conduct regular training and accreditation of professionals to ensure the highest quality standards. The below table summarises and highlights key decision drivers for patients going to PHC centres. The below drivers were captured during our focus group discussions.

Table 8-Major Drivers of PHC Choice

#	Major Drivers of PHC Choice
1	Availability of Medicine
2	Location & distance from a PHC Centre
3	Professional & technical capability in addition to people soft skills of physicians and communication skills with the public
4	Waiting and que time at the PHC Centre and implementing the referral system
5	Availability of key services (comprehensiveness of the Centre)

VI. PHC Models

Jordan's PHC system has several challenges similar to Turkey's challenges in 2003. Challenges can be compartmentalised into 6 categories: Manpower, Location of Facilities, Perception of PHC, Performance-Compensation System, Governance and Budget Allocations. These are key areas Jordan needs to work on, therefore Turkey's experience will benefit any future transformation plans focusing on PHC.

Turkey started in 1990 to transform its healthcare system. The Health Transition Plan (HTP) overhauled health care financing, delivery, and insurance in Turkey. The World Health Organization (WHO) wrote, Turkey's experience shows that "it is possible to achieve major improvements in health system performance in a relatively short period of time under the right conditions"

Before the "Health Transition Plan", Turkey's healthcare system was highly fragmented. Two separate ministries held responsibility for governance, three separate insurance schemes provided funding, and 40% of healthcare spending was private. The satisfaction was low amongst patients and providers. Overall quality of care was low, especially in primary healthcare. Wide disparities in the quality of care and distribution of health care professionals also existed. Low life expectancy, high infant mortality, and low patient experience existed.

Turkey's Minister of Health created the Health Transformation Plan in 2003 with the aims of ensuring health as a right for all, providing universal health insurance coverage and financial risk protection, and increasing satisfaction of patients and providers. The reform included several strategic intervention's covering PHC and other parameters:

A. The Green Card Program was created, which consolidated state insurance schemes and extended insurance coverage to all Turkish citizens.
B. Due to increased government remuneration, a significant number of physicians voluntarily switched to solely public practice. Today most physicians are contracted employees of the government
C. State hospitals were unified under the Public Hospital Institute so that they could be more efficiently managed, and a pay-for-performance finance scheme was also adopted in hospitals to improve quality.
D. The role Ministry of Health was restructured to transition the Ministry away from direct service provision towards a regulatory and leadership role, as captured by the saying "more steering, less rowing"
E. Turkey launched the Family Medicine program, which mandated all primary care paid for by state insurance had to be provided in a Family Medicine Center. Family Medicine centers are typically led by a physician with a team of one nurse and one or two medical assistants; each team is responsible for providing care for 1,000 to 4,000 people.
F. Financial incentives were introduced to support the family medicine program. FM physicians received a set amount of money per patient they treat. The capitation payment was designed to increase physicians' wages by 10% more, which attracted more physicians to the specialty. FM practices are eligible for additional payments or subject to payment penalties based on the quality of their practices.
G. Redistribution of physicians from urban areas with a high physician density to rural areas with a scarcity of physicians to create a more equitable physician distribution across the country.
H. Turkey implemented a training program for practicing general medicine and required physicians to recertify as FM physicians. The reform mandated that to receive compensation from state insurance

plans, all physicians providing primary care services needed to be recertified as FM physicians. The training was an intensive ten-day program where physicians learned the basics of FM practice.

I. To address the primary care physician shortages, Turkey increased the number of public medical school seats available for students.
J. Field coordinator teams served as bridges between the central office of the Ministry of Health and service delivery centers, to facilitate the two-way flow of information from frontline providers and centers to decision makers.
K. Several important contextual factors supported the reform, including sustained political commitment, strong leadership and the growth of Turkey's gross domestic product (GDP). Political commitment was achieved through single-party control of the legislature, political stability, frequent reference to and support of the HTP by the prime minister, and widespread support of the HTP budget.
L. Turkey underwent a simultaneous increase in GDP during the first decade of the 21st century. This allowed for an increase in health expenditure from $9 billion in 2002 to $34 billion in 2012, while only increasing the percent of GDP allotted to health from 3.9% to 4.3%
M. Health system inputs and processes have also improved over the course of the reform. The number of family medicine consultation rooms has increased from approximately 6,000 in 2000 to more than 16,000 in 2008, a measure of increased primary health care system capacity.
N. Physician absenteeism, a major problem before the reform, has fallen and utilization of health care services increased from 2.4 physician visits per capita per year in 2000 to 6.3 visits per capita per year in 2008

It is worth mentioning that the MOH has adopted many initiatives that are in line with Turkey's Health Transformation Plan such as:

- Expansion of health insurance coverage in an effort to reach universal health coverage
- Increasing wages and incentives within the Ministry's capacity
- Implementing hospital autonomy, decentralization in decision making and expanding the managerial and financial authorities
- Work on the family medicine program and attracting specialists to work at the MOH
- Putting an incentive program for staff working in remote areas
- Training GPs on PHC and family medicine topics

VII. Main Findings and Recommendations

The report provides a wealth of knowledge covering several challenges and opportunities that the PHC system in Jordan faces. Three strategic parameters are of significance:

A. Variance in Utilization. The report showcased significant unit cost variances between PHC clinics and even clinics from the same type. This indicates variances in management of resources and their respective costs. Reasons for variances vary but could include factors such as accessibility of location, headcount, quality of service provided, opening hours, and population density. It is essential to reach a point where there are common cost averages or ranges that identify and clarify the optimal cost per unit for a certain type of PHC center taking into consideration issues related to serving remote populations.

B. Variance in Distribution. The report showcased several clinics where their geographic location could be improved to maximize healthcare outputs. To achieve the right and optimal distribution levels, a footprint optimization exercise is required, where the cost-benefit of each PHC center is evaluated based on several metrics such as traffic, population density, and availability of alternatives such as private sector clinics. We believe that an evaluation of the nearly 700 clinics in Jordan is needed to have a master view and understanding of the current situation and the To-Be design of the geographic distribution of clinics.

C. Variance in Strategy. It is clear from the Jordanian context and especially when compared to the Turkey case study on PHC, that there is no common consistent strategy on dealing with PHC. All strategic interventions should be documented and agreed upon. For example strategic interventions could include review and optimization of the referral system, updated MOH criteria for opening a PHC center, accreditation PHC facilities, relicensing of physicians, linking performance to compensation, footprint optimization exercise to reach a geographically sound distribution strategy of PHC centers, revamping all laws and regulations supporting PHC as a first barrier to health

improvement and prevention of NCDs, incentivizing physicians to practice family medicine, and lastly political commitment and leadership to revamp the PHC system. It is essential to develop strategic interventions to address PHC for Jordan that takes into consideration the Jordanian context and optimizes cost and utilization.

As a result of this study, we have identified the following key areas to consider when designing interventions to improve PHC:

I. Political and social factors are considered significant barriers to reforming primary healthcare. This has been a common feedback received during our research and discussions with MOH officials. The current distribution of PHC centers and clinics was driven by both clinical and population need as well as political and social factors. This has resulted in inefficiencies and has placed added burden on the health system. It is understood that these social and political influences have had and will likely continue to have an impact on decision makers. Scientific methods should be more broadly applied to optimize the distribution and coverage of PHC centers. Nevertheless, these methods conflict with realities on the ground (i.e. people wants, preferences and political decisions). The same scientific approach applied to improve and optimize utilization of PHC faces the same political and social barriers. (i.e. in many cases PHC centers are over staffed; MOH are aware. Yet due to social and political pressures, staff reduction or relocation tactics are not applied). Without significant political will and leadership to face the challenges head-on, we believe it's hard to conduct distribution and utilization improvements.

II. Reflecting on the Turkey example, the enabling environment that made the PHC revamping succeed in Turkey, is not available in the Jordanian context. Several enabling environment parameters need to be in place such as budget allocation for PHC improvement, encouraging of GP/ Family medicine specialization, encouraging relocation to rural areas, linking physician compensation with performance, and most importantly the need for the MOH to adopt its regulatory and leadership role rather than provision of services. (Refer to Turkey's Case Study)

III. Footprint optimization of PHC centers is considered a major initiative contributing to cost reduction, traffic increase, and quality improvement. A holistic costing study to evaluate the financial performance of each PHC will shed the light on the highest performing and least performing PHC centers (see table 5). From that point, decision makers will be able to make more informed and objective decisions concerning relocation, merging and even closure of some PHC centers. These decisions are significant as they will free valuable human resources needed in other areas and would allow for extending work shifts to meet population demands. It is worth mentioning that a footprint optimization exercise would evaluate also equity among different population groups and different geographies to ensure fairness.

IV. Improving utilization rates requires the detailed evaluation of headcount and staff productivity. This should be part of a holistic strategy that looks at physical structures distribution, manpower productivity, traffic re-engineering, referral systems, compensation and incentive schemes, and proper budget allocations. We believe that utilization rates should be tackled from a strategic holistic perspective, rather than a tactical manpower only perspective. The Turkey example provides good information on the collective group of initiatives under the "*Health Transformation Plan*", launched in 2003. A MECE approach (Mutually Exclusive Collectively Exhaustive) is needed.

V. Public perception of PHC quality and services is a key sensitive area to work on and important in designing interventions to improve utilization. Measuring patient satisfaction and perceptions should be a continuous activity and closely linked to PHC improvements. Accordingly, a well-planned ATL (Above the line) and BTL (Below the line) campaigns are needed at a point where PHC has improved from a distribution and service delivery perspectives. PR and Marketing Campaigns would only work if the public could sense actual and real improvements on the ground.

VI. Cost of treatment at emergency unit at hospitals, as highlighted in the report, is much more expensive than primary. Strict implementation of an improved and optimized referral system that creates

disincentives for both physician and patient to break the process is needed to control unwanted visits to outpatient and emergency facilities that could be easily handled at primary healthcare facilities.

VII. The current 18% of total expenditure allocated to PHC most probably would change as a percentage due to two distinct strategies. One is a cost reduction and optimization strategy. In other words, removing the waste and streamlining the operations. The other is an investment strategy in PHC, which means allocating more funds to support good quality PHC delivered to a larger population. How this percentage will change (increase or decrease) will depend on the set of strategic initiatives and their respective capital and operational expenses.

VIII. The current MOH PHC Centers opening criteria needs to be improved and updated. The criteria should allow for more relevant factors to determine accurately whether an area/district needs a PHC center or not. For example, "Time of Travel" and "Population Density" could be some of the factors to consider, as these take into consideration time, area, and population.