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Economics of primary healthcare: cost estimation of clinical services at primary care facilities in the six countries of the Gulf Cooperation Council

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ABSTRACT

Objective While the Gulf Cooperation Council (GCC) countries have demonstrated a strong commitment to strengthening primary healthcare (PHC), the costs of delivering these services in this region remain relatively unexplored. Understanding the costs of PHC delivery is essential for effective resource allocation and health system efficiency.

Design We used an ingredient-based method to estimate the cost of delivering a selection of services at PHC facilities in the six GCC countries in 2019. Services were categorised into eight programmes: immunisation; non-communicable diseases (NCDs); oral and dental care; child health; nutrition; mental health; reproductive, maternal, neonatal and child health and general practice. The cost estimation focused on two key ingredients: the costs of drugs and supplies and the healthcare workforce cost. The coverage rates of specific types of health services, including screening and mental health services, were also estimated. Data for the analysis were obtained from ministries of health, health statistics reports, online databases, national surveys and scientific literature.

Results The estimated costs of delivering the selected services at public PHC facilities in the six GCC countries totalled US$5.7 billion in 2019, representing 0.34% of the combined 2019 GDP. The per capita costs varied from US$69 to US$272. General practice and NCD programmes constituted 79% of the total costs modelled while mental health ranged between 0.0% and 0.3%. Over 8 million individuals did not receive NCD screening services, and over 30 million did not receive needed mental health services in public PHC facilities across the region.

Conclusions To our knowledge, this is the first study to estimate the costs of services delivered at PHC facilities in the GCC countries. Identifying the main cost drivers and the services which individuals did not receive can be used to help strengthen PHC to improve efficiency and scale up needed services for better health outcomes.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The selection of services and the data collection phase were conducted in collaboration with the Ministries of Health in the six Gulf Countries.
⇒ The study estimated the cost of delivering a limited number of services, which only reflects part of the expenditure incurred at the primary healthcare level.
⇒ Due to variations in terms of services delivered, healthcare structure, public–private balance and population demographics, comparative assessments must be approached cautiously.

INTRODUCTION

Primary healthcare (PHC) refers to the first point of contact for individuals seeking medical care, but it also encompasses health education, prevention and promotion.[1] From an economic perspective, investing in primary care is cost-effective, as its focus on preventive measures and early interventions results in reduced disease burden, which translates into overall population health, increased productivity and lower healthcare costs.[1–3] For instance, early detection and management of chronic conditions, such as non-communicable diseases (NCDs), can prevent costly hospitalisations or visits to emergency departments.[1] Additionally, primary care providers can often provide care for a broader range of conditions than specialists, reducing the need for referrals and associated costs.

In 2018, 40 years after the Alma-Ata Declaration, the Astana Declaration renewed the global commitment to PHC and reaffirmed its importance as the foundation of healthcare systems.[4] The Astana Declaration called for increased investment in PHC to strengthen

health systems, achieve health-related Sustainable Development Goals and attain universal health coverage (UHC).

Global demographics are changing, with ageing populations, population growth, as well as increasing health literacy, greater access to technology and public expectations of health services leading to increased demand for healthcare, both globally and in the Eastern Mediterranean Region.[5] These changes, along with an epidemiological shift from communicable towards NCDs,[6–11] are influencing the transformation of PHC delivery. It is estimated that 90% of all health needs can be met at the PHC level, offering countries a clear path forward in improving health outcomes and health system efficiency.[12]

The WHO Eastern Mediterranean Region has a long history of strengthening PHC, demonstrated by all countries in the region endorsing the Qatar Declaration on PHC in 2008.[12] This commitment to strengthening primary level-based health systems is growing, with a particular focus on family practice as one of the means of achieving UHC. More recently, WHO EMRO has supported its Member States in the development of PHC-oriented models of care.

Understanding the cost of PHC components can help countries identify practical financing and allocation solutions to direct investment towards areas that reduce costs, such as medical supplies and health personnel training, ultimately enhancing the continuity, efficiency and quality of health services to meet increasing demand in the Gulf region.

This study had two aims. First, to estimate and compare the costs of delivering a selection of PHC services in the six countries of the Gulf Cooperation Council (GCC) in 2019: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia (KSA) and the United Arab Emirates (UAE). Second, to estimate the coverage rates of specific types of health services, including screening and mental health services.

METHODS

Scope of the study

This study estimates the cost of delivering a selection of services at PHC facilities in the public sector arranged under eight different programmes: (1) immunisation; (2) NCDs; (3) oral and dental care; (4) child health; (5) nutrition; (6) mental health; (7) reproductive, maternal, neonatal and child health and (8) general practice. The categorisation of services within each programme was initially based on the classification used in the OneHealth Tool Costing Module.[13] However, to ensure relevance to the local context and healthcare priorities of each GCC country, this classification was further refined through collaboration with focal points from the Ministries of Health. General practice was included as an additional programme to better reflect the volume and nature of services delivered at the public PHC level. In this study, general practice refers to general consultations conducted by general practitioners (GPs), which include a wide range of preventive and curative medical services, such as acute pain management, infectious diseases treatment or health promotion and prevention. The scope of the general practice programme was defined based on data retrieved from the annual health statistics reports of each selected country. As a result of this collaborative and iterative approach, the services included in this analysis slightly vary from country to country. The services included for each country can be found in online supplemental material 1.

Patient and public involvement

Patients and/or the public were not involved in the design, conduct, reporting or dissemination plans of this research.

Data sources

Demographic data were obtained from official population censuses or estimates.[14–18] Disease prevalence and incidence were obtained from annual health statistics reports,[19–22] national surveys, international or national databases, and local and regional literature. The number of services delivered was obtained from the focal persons from the health ministry or annual health statistics reports. When unavailable, we used proxy indicators or made assumptions based on regional and international literature. The costs of drugs and supplies and staff time requirements were extracted from the OneHealth Tool Costing Module,[13] except for Qatar, where standard drugs and supplies costs were completed by actual costs provided by the Primary Health Care Corporation (PHCC). However, the costs estimated in this study for Qatar remain lower than those reported by PHCC finance department due to the limited number of services included and the fact that our calculations focus solely on direct service delivery costs. Healthcare providers' annual salaries were obtained from the OneHealth Tool Costing Module[13] or the focal persons from the health ministry. When a clinical service not included in the initial list was added by the country, we estimated the drugs and supply costs and staff time requirements using data from the WHO-CHOICE database, WHO's review of vaccine price data[23] and relevant national reports or guidelines. The assumptions used in the model are presented in online supplemental material 2 and 3.

Cost calculation model

We used an ingredient costing method to estimate the costs of a selection of services delivered at public PHC. This method consists of estimating the cost of producing a healthcare service by breaking down the total cost into the cost of individual ingredients or components, such as labour, equipment, materials and supplies. In this analysis, the cost of one clinical service was calculated as follows: $TC=C_s x N_s$. Where TC is the total cost, C_s is the cost per service and N_s is the number of services delivered in one given year. The two components used in this formula are described below.

The cost per service was obtained as follows: Cs=DSc+Lc. Where DSc is the drugs and supply costs, and Lc is the labour cost. The labour cost was calculated by multiplying the number of minutes spent by each healthcare worker involved in delivering a service by their salary per minute. We estimated the salary per minute using staff time requirements from the OneHealth Tool Costing Module, as well as annual salaries and working time assumptions (working days per year, working hours per day) validated by the focal persons in each country. Using this approach, we only monetised the fraction of time directly employed on delivering the services. Therefore, we did not consider the time spent by the healthcare providers on non-clinical activities, such as training or coordination. Moreover, we accounted for overhead costs such as training, programme management, supervision, monitoring and evaluation, communication, infrastructure and equipment, transportation, and advocacy. Since there was no available information about the overhead costs necessary for running the selected services, an estimate equivalent to 20% of the total costs was agreed on in consultation with the focal persons from the health ministry.

To determine the number of services delivered in a year, we primarily used data from the focal persons from the health ministry or obtained from annual health statistics reports. When the number of services delivered was unavailable, we used proxy indicators or estimates based on regional and international literature. When a coverage rate expressed in percentage was available, we estimated the corresponding number of services as follows: $N_s=TP_s\,x\,PIN_s\,x\,CR_s$. Where TP_s is the target population, PIN_s is the population in need and CR_s is the coverage rate. The target population refers to the subpopulation eligible for receiving a given service, and the population in need is the percentage of the target population who should receive a service in a year. The coverage rate refers to the percentage of the population in need who effectively received a service in the year. For example, if a population of 1 000 000 are eligible for receiving a service, 50% of them must receive it in a year, but the coverage rate is 70%, the number of services delivered was estimated at 350 000, calculated as follows: 350 000=1 000 000×0.50×0.70.

Finally, when an indicator specified the number of individuals instead of the number of services delivered, we estimated the latter using treatment assumptions from the OneHealth Tool. For example, we assumed that an individual treated for an already established ischaemic heart disease generated an average of six visits annually. The assumptions used in the model are presented in online supplemental material 2 and 3.

Specific coverage rate estimation method

In this analysis, we also estimated the coverage rates for certain programmes (NCDs, mental health), disease types (diabetes, cardiovascular diseases, respiratory diseases) and intervention types (screening services). In this case, the coverage rates were calculated by dividing the aggregated number of individuals who received a set of selected services by the corresponding population in need. The results do not reflect the actual coverage rate at the country level since we did not consider the percentage of people who may have received similar services outside public PHC.

RESULTS

Cost of the selected PHC services

The costs of the selected services delivered at the public PHC level across the six countries were estimated at US$5.7 billion in 2019. Table 1 presents the total costs for each country, as well as the cost per capita and the share of these costs in the current health expenditures (CHE) and government health expenditures (GHE). The highest cost per capita was observed in Kuwait (US$272.16), followed by Qatar (US$199.68). While KSA has the lowest per capita cost (US$68.60), the country has the highest overall cost, with an estimated US$2.3 billion in 2019. Overall, the cost of the selected services represents 0.34% of the six countries' combined 2019 gross domestic product (GDP).

Table 1 Cost of the selected clinical services*

	Bahrain	Kuwait	Oman	Qatar	KSA	UAE
Total costs (US$, million)	159.7	1203.0	298.8	558.9	2347.4	1180.3
Per capita cost (US$)	107.62	272.16	112.55	199.68	68.60	120.83
Total costs (% of CHE)	10.3	16.3	9.6	12.7	5.2	6.6
Total costs (% of GHE)	24.2	18.6	10.9	17.0	8.3	11.8
Total costs (% of GDP)	0.41	0.88	0.34	0.32	0.28	0.28

*The costs presented in this table include the 20% increase in overhead costs.
CHE, current health expenditure; GDP, gross domestic product; GHE, government health expenditures; KSA, Kuwait, Saudi Arabia; UAE, United Arab Emirates.

Table 2 Cost of the selected clinical services disaggregated by programme in 2019 (US$, million)*

	Bahrain	Kuwait	Oman	Qatar	KSA	UAE
General practice	77.7	610.4	130.5	109.1	1445.7	497.1
% of total costs	60.8	63.4	54.6	24.4	77.0	52.7
NCDs	8.8	109.3	36.0	256.5	189.8	187.2
% of total costs	6.9	11.4	15.1	57.4	10.1	19.8
Child health	26.0	162.0	44.8	51.4	79.1	177.9
% of total costs	20.3	16.8	18.7	11.5	4.2	18.8
Immunisation	3.7	10.9	10.1	14.9	75.0	20.6
% of total costs	2.9	1.1	4.2	3.3	4.0	2.2
Oral and dental care	4.5	41.3	6.1	5.0	25.3	30.2
% of total costs	3.6	4.3	2.5	1.1	1.3	3.2
Nutrition	4.5	16.0	6.6	2.2	25.2	3.5
% of total costs	3.5	1.7	2.8	0.5	1.3	0.4
Reproductive, maternal, neonatal and child health	2.5	11.8	5.0	7.7	36.5	25.1
% of total costs	1.9	1.2	2.1	1.7	1.9	2.7
Mental health	0.1	0.8	0.0	0.5	1.2	2.7
% of total costs	<0.01	0.1	<0.01	0.1	0.1	0.3
Total	127.8	962.5	239.1	447.3	1877.9	944.2

*The costs presented in this table do not include the 20% increase in overhead costs.
KSA, Kuwait, Saudi Arabia; NCD, non-communicable disease; UAE, United Arab Emirates.

Costs distribution

Table 2 shows the distribution of the costs disaggregated by programme. The costs related to general practice were the most prominent in five of the six countries (52.7%–77.0%) while in Qatar the NCDs programme made up the largest share of total costs (57.4%). In the five other countries, the share of the NCDs programmes varied from 6.9% in Bahrain to 19.8% in the UAE. The child health programme is another significant cost driver that accounts for between 4.2% (KSA) to 20.3% (Bahrain) of the total costs. Taken altogether, these three programmes represent 88.0%–93.3% of the costs modelled in the six countries. The mental health programme had the lowest costs across all six countries, with between 0.0% (Bahrain, Oman) and 0.3% (UAE) of the costs modelled in the study.

Non-communicable diseases

The costs of the clinical services related to diabetes, cardiovascular diseases and chronic respiratory diseases (asthma and chronic obstructive pulmonary diseases) were estimated at US$676 million in 2019 across all six countries (table 3). As these diseases are three of the major NCDs, we sought to understand the cost burden associated with managing and treating them. Based on the coverage rates and populations in need, we estimated that 14 911 170 individuals did not receive the services they needed at public PHC facilities in 2019.

NCD screening services

Table 4 shows the costs and coverage rates of seven NCD screening services (screening for risk of cardiovascular diseases and diabetes, clinical breast examination, pap smear, faecal occult blood test and screening for diabetes complications). The total cost of these screening services across all six countries was estimated at US$18.1 million in 2019. In all countries, these costs account for less than 1% of the total costs modelled. Based on the coverage rates and populations in need, we estimated that 30 435 980 individuals did not receive the screening services they needed at public PHC facilities in 2019.

Mental health services

The total cost of mental health services was estimated at US$5.3 million in 2019 across all six countries (table 5). These costs made up between 0.0% (Bahrain, Oman) and 0.3% (UAE) of the total costs modelled. Based on the coverage rates and populations in need, we estimated that 8 724 160 individuals did not receive the mental services they needed at public PHC facilities in 2019.

DISCUSSION

This study aimed to estimate the cost of selected clinical services provided at public PHC facilities in the six countries of the GCC. By assessing the costs of delivering multiple programmes, including general practice, child health, immunisation, oral and dental care, nutrition, reproductive, maternal, neonatal and child health and

Table 3 Cost of clinical services provided and estimated number of patients who did not receive services needed at the public PHC level for diabetes, cardiovascular and respiratory diseases

	Cost (US$, million)*	% of total costs	Estimated number of patients who did not receive the services needed at the public PHC level
Bahrain	5.03	3.9	284 410
Kuwait	102.75	10.7	947 920
Oman†	32.27	13.5	376 910
Qatar‡	254.44	56.9	1 458 590
KSA	108.07	5.8	9 950 800
UAE	173.16	18.3	1 892 540
Total	675.72		14 911 170

*The costs presented in this table do not include the 20% increase in overhead costs.
†Coverage rate was calculated considering Omani nationals only.
‡In Qatar, costing data were directly provided by the Primary Health Care Corporation. Services delivered by other providers, such as the Red Crescent, were not included in the study.
KSA, Kuwait, Saudi Arabia; PHC, primary healthcare; UAE, United Arab Emirates.

mental health at the public PHC level, this study underscores the importance of strengthening the public PHC and provide policy-makers with crucial cost estimates to inform resource allocation and strategic planning for achieving improved health outcomes. This research, the first of this kind in the region, also highlights the significance of conducting tailored assessments that take into account the diverse healthcare landscapes of countries. Furthermore, our findings offer a foundation for future comparative analyses, fostering a deeper understanding of global variations in PHC financing. The findings indicate that the cost of selected services across eight programmes exceeded US$5.7 billion in 2019. While these costs represent 0.34% of the combined GDP in 2019, WHO recommends that countries allocate at least 1% of their GDP to PHC.[24] It is crucial to note that the estimated costs in our study do not encompass the entirety of PHC expenditures, making it challenging to assess our results in relation to WHO's recommendation. We observed significant variations in per capita cost, with KSA having the lowest (US$68) and Kuwait having the highest (US$272) cost. We attribute these variations to different reasons. First, each country has a unique health system, which includes varying proportions of private care delivery and different healthcare delivery organisation.[25–30] According to the latest data from the World Bank, the percentage of domestic general GHE relative to total CHE varied markedly across the six countries in 2019, ranging from 61% in the UAE to 90% in Oman.[31] Second, the differences in population structure may also affect the costs of these services. The diverse demographic profiles of the six countries may influence the prevalence of certain health conditions, the demand for specific services and the overall utilisation of PHC. For instance, Saudi Arabia has a higher proportion of its population aged less than 19, while the UAE has a larger working-age population.[32] These variations in population structure have implications for healthcare demand, notably regarding NCDs.

Table 4 Cost and coverage rate for services provided and estimated number of patients who did not receive services needed at the public PHC level for screening services

	Cost (million, US$)*	% of total costs	Coverage rate (%)	Estimated number of patients who did not receive the services needed at the public PHC level
Bahrain	0.9	0.7	6	1 058 870
Kuwait	1.1	0.1	6	3 184 360
Oman†	0.2	0.1	7	953 920
Qatar‡	2.0	0.5	4	1 445 050
KSA	5.8	0.3	5	18 912 380
UAE	8.1	0.9	5	4 881 400
Total	18.1			30 435 980

*The costs presented in this table do not include the 20% increase in overhead costs.
†Coverage rate was calculated considering Omani nationals only.
‡In Qatar, costing data were directly provided by the Primary Health Care Corporation. Services delivered by other providers, such as the Red Crescent, were not included in the study.
KSA, Kuwait, Saudi Arabia; PHC, primary healthcare; UAE, United Arab Emirates.

Table 5 Cost and coverage rate for services provided and estimated number of patients who did not receive services needed at the public PHC level for mental health services

	Cost (million, US$)*	% of total costs	Coverage rate (%)	Estimated number of patients who did not receive the services needed at the public PHC level
Bahrain	0.1	0.0	2	206 090
Kuwait	0.8	0.1	8	267 310
Oman†	0.0	0.0	0	142 890
Qatar‡	0.5	0.1	2	430 720
KSA	1.2	0.1	1	6 993 490
UAE	2.7	0.3	4	683 660
Total	5.3			8 724 160

*The costs presented in this table do not include the 20% increase in overhead costs.
†Coverage rate was calculated considering Omani nationals only. Mental health services are not provided within primary care in Oman.
‡In Qatar, costing data were directly provided by the Primary Health Care Corporation. Services delivered by other providers, such as the Red Crescent, were not included in the study.
KSA, Kuwait, Saudi Arabia; PHC, primary healthcare; UAE, United Arab Emirates.

Another element to consider is the differences in the proportion of non-nationals across the six countries.[33] In the UAE and Qatar, the population is predominantly composed of non-nationals, whereas KSA has a majority of nationals. To address this particularity, countries have established unique health coverage mechanisms, creating variations in PHC utilisation.[34] Lastly, these variations also result from differences in what interventions are delivered at the PHC level as opposed to other healthcare system levels, as well as coverage rates. While these factors demonstrate the complexity of comparing the cost of clinical services delivered at PHC facilities, this study allowed us to identify the main cost drivers and make recommendations. A study conducted in Indonesia in 2020 shares some methodological similarities with this one.[35] This study aimed to estimate the costs of reaching national health targets at the PHC level between 2020 and 2024 using the OneHealth Tool. Nevertheless, a direct comparison between the two studies remains challenging due to significant variations in interventions and programmes, and the more comprehensive costing approach used by the Indonesian study. These differences highlight the nuanced nature of PHC costing, emphasising the need for context-specific assessments tailored to the unique healthcare landscapes of individual regions or countries.

Generally, the services classified under general practice were the main drivers of the total costs in all countries, followed by services related to preventing, treating and managing NCDs. The large share of general practice in the total costs can be explained by the many services included within this programme. Costs of services related to NCDs are likely due to the substantial per-patient costs associated with managing these diseases, their chronic nature and their high prevalence, particularly diabetes, cardiovascular and respiratory diseases, in the six countries. A previous study found that NCDs killed nearly 43 000 people in the Gulf countries in 2019 and generated an economic burden estimated at around US$50 billion, equivalent to 3.3% of the GDP.[36] We observed noticeable differences in the proportion of NCD-related costs in the six countries. These differences may stem from various factors, such as the varying proportion of individuals receiving these services in the private healthcare sector or a form of overlapping between the services provided in specialised clinics and general practice. We also observed that the share of costs associated with these services is significantly higher in Qatar (57.4%) than in the five other countries, where it ranges from 6.9% to 19.8%. This factor could be attributed to Qatar being the only country where actual drugs and supplies costs were used in this analysis. Indeed, the actual unit costs provided by Qatar were significantly higher than those extracted from the OneHealth Tool, which was used for the remaining five countries. This suggests that the overall costs for these countries may have been underestimated. However, this could not be verified with the other countries. The substantial contribution of NCD-related services to the total costs modelled also reflects a shift of healthcare demands towards NCDs that countries have been experiencing over the past decades. The GCC countries have made significant strides in the prevention and control of NCDs, most of them having multisectoral coordination mechanisms, comprehensive strategies and targeted programmes.[36] For example, the UAE launched 42 NCD clinics between 2017 and 2018 and trained PHC staff in the early detection and management of NCDs.[37] Our findings also indicate that mental health services made up between 0.0% and 0.3% of the costs of the selected services. A few countries have taken commendable steps to respond to the increasing prevalence of mental health conditions, such as Bahrain, which established school mental health clinics, implemented a training programme for family physicians (FPs) and upgraded its guidelines for mental health.[6] However, these programmes did not reach the same level of maturity as other NCD programmes, and ensuring better access to mental health services and reducing the stigma surrounding mental health conditions remain key challenges in the region.

In terms of coverage, the study estimated that approximately 15 million people did not receive necessary NCDs-associated services, and around 9 million people did not receive necessary mental health services at the public PHC level across all six countries in 2019. As the analysis only modelled the cost of services delivered at the public PHC level, individuals could have received these services in the private sector or at the secondary or tertiary level of the public sector. For example, around 67 000 mental health visits were recorded in Oman through extended healthcare centres in 2019,[20] but none were included in our costing model.

We estimated that, across the six countries, around 30 million people did not receive the NCD screening services they required in public PHC. This includes screening for cardiovascular diseases, cervical, breast and colorectal cancers, diabetes and diabetes complications. Additionally, we found that the coverage rates for these seven services were consistently low across the countries, ranging from an average of 4% in Qatar to 7% in Oman. While these results show relatively low access to screening services, they should be qualified by the consideration that screening and awareness-related activities are rarely directly captured in health statistics records and health surveys, making them difficult to estimate accurately.

Limitations

This study had some limitations which must be considered when interpreting the results. First, the list of services included in this study did not include all PHC services. It is also important to note that the selection of services may inadvertently introduce a bias towards NCDs because of the greater representation of these services among those available in the OneHealth Tool Costing Module. To mitigate this potential risk, we actively engaged with the six Ministries of Health during the selection process, allowing them to include additional services. Even if a risk of bias remains, we considered the greater representation of NCD-related services to reflect the current activity and priorities of the public PHC in each country. Second, it is important to note that services included in the general practice programme could potentially overlap with other programmes. Challenges related to clearly delineating this programme in each of the six countries introduce uncertainty regarding the distribution of the costs per programme. Third, the drugs and supply costs for each clinical service were estimated using cost assumptions from the OneHealth Tool Costing Module, except for Qatar where primary data were collected. Fourth, service coverage data were not always available, which required making assumptions based on similar interventions or available data from neighbouring countries. The coverage rates must be interpreted with caution as they only reflect the number of services delivered at the public PHC level, and some services may also be delivered at other levels of the public health system and/or in the private sector. Moreover, without detailed information on the proportion of individuals using private care instead of public care, it becomes challenging to fully contextualise and evaluate the coverage rates. Fifth, the study did not have information on overhead costs such as training, programme management, supervision, monitoring and evaluation, communication, infrastructure and equipment, transportation and advocacy, and an estimation of 20% of the total costs was agreed on to account for this. Finally, comparisons between countries and with other published estimates of PHC spending should be made with caution due to differences in the number and nature of the clinical services included for each country, variations in the healthcare system and population structure, and different data sources used.

Recommendations

The significance of robust PHC in establishing effective and efficient health systems is well acknowledged by all six GCC countries. They have made commendable strides in strengthening PHC by adapting to the evolving disease burden of their populations, as evident from the allocation of substantial costs to NCD services in this study. The comprehensive costing analysis presented in this report sheds light on specific areas where further enhancements in PHC services and resource allocation across the GCC countries can be made. To reap substantial health and economic advantages, the following recommended actions deserve consideration:

1. Strengthen the PHC workforce: To address the shortage of skilled healthcare professionals in the primary care sector, the GCC countries should focus on increasing investment in training, attracting and retaining local FPs and GPs. This can be achieved through incentivising primary care training programmes, such as providing scholarships for nationals pursuing careers in primary care professions. Scaling up the PHC workforce will involve initial and ongoing training and remuneration costs, but the potential health and economic gains justify this investment.
2. Expand NCD prevention and screening services: Investing in disease prevention and routine screening services at the public PHC level is vital for strong PHC. The GCC countries have an opportunity to scale up their screening services for NCDs in public PHC, as over 30 million people in the region did not receive the required NCD screening services in 2019. To assess coverage fully, further research into private sector service provision and primary care coverage in the GCC countries is recommended. Scale-up of PHC services should be done with a focus on accessibility, equity and achieving UHC.
3. Scale-up mental health services: Despite progress in ensuring access to mental health services and reducing stigma, the majority of mental health services are still delivered at the secondary or tertiary level in the GCC region. Integrating mental health screening and care services into public PHC, especially in general practice, can improve accessibility and lead to better health outcomes compared with treatment at higher-level fa-

cilities. Scaling up mental health services at the PHC level aligns with a people-centred approach to PHC that addresses health and disease comprehensively.

4. Enhance regional collaboration and policy coherence: The GCC countries share common challenges and opportunities in strengthening PHC. Establishing a GCC PHC Coordination Committee with regular meetings to share best practices, lessons learnt and promote legislative action will support regional collaboration. The committee should focus on NCD prevention, screening and treatment at the PHC level and consider establishing a database to track progress and emerging challenges in NCD-related targets and indicators. Regional strategies and action plans should be developed to further promote policy coherence and collaboration.
5. Invest in research and monitoring of PHC: To improve the efficiency and health outcomes of PHC systems in the GCC region, there should be a focus on research and monitoring. By integrating an effectiveness perspective into this research, GCC countries could identify quick wins, as well as areas and services that require more resources or could be run more efficiently. Scaling up research and monitoring into PHC will provide a stronger evidence base and enable assessment of the impact of potential changes in PHC service delivery. Additionally, defining UHC health benefits packages will facilitate modelling costs associated with the included services.

By implementing these recommendations, the GCC countries can strengthen their PHC systems, leading to improved health outcomes and more efficient resource allocation. These actions will contribute to building effective and robust health systems that effectively address the changing disease burden of the population.

CONCLUSION

To our knowledge, this study is the first that aimed to estimate the costs of services delivered at PHC in the GCC countries. The findings indicate that general practice, child health and NCDs, particularly diabetes, cardiovascular and respiratory diseases, were the main cost drivers. This study also shows that, in all countries, a significant number of individuals did not receive essential services, such as screening for NCDs or mental health services, at the public PHC level. Based on these results, we recommend actions to increase the availability and accessibility of prevention and screening services, integrate mental health screening and care services into primary care, and expand research and monitoring efforts on PHC investment, both in the public and private sectors.

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