

**Strengthening Primary
Health Care in Sudan
Through a Family
Health Approach
Policy Options**

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Sudan

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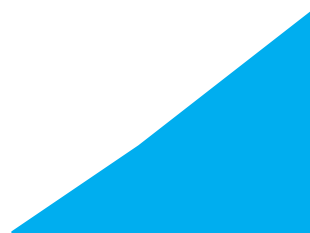


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Abbreviations

EMRO	Eastern Mediterranean Region
FMoH	Federal Ministry of Health
FMoF	Federal Ministry of Finance
FP	Family Physician
FHC	Family Health Center
FHU	Family Health Unit
GP	General Practitioner
CME	Continuous Medical Education
MD	Medical Doctorate
MDGs	Millennium Development Goals
NHIF	National Health Insurance Fund
PAHO	Pan American Health Organization
PHC	Primary Health Care
PHI	Public Health Institute
UoG	University of Gezira
UMST	University of Medical Sciences and Technology
SMC	Sudan Medical Council
SMSB	Sudan Medical Specialization Board
WHO	World Health Organization

Acknowledgement

Health system in Sudan is facing different challenges. In spite of all these challenges, Sudan is aiming to achieve Universal Health Coverage. Therefore, Primary Health Care expansion plan had been developed to ensure full population coverage with quality health care services. In this regards, family health is distinguished as a model to achieve people centered holistic healthcare approach.

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Definitions

A number of terms, like, family medicine, family health, family practice, family physician, family doctor etc. are used to express the comprehensive health care for people of all ages. At least in academic terms it is a relatively recent discipline particularly in the region, even Alma Ata declaration (1978) did not mention it. Mainly developed in the West, it was started with postgraduate training in the 1960s followed subsequently in 1970s and 1980s as an approach to the patients and health problems in their context(1).

Family medicine is defined by WHO EMRO(2) as a “specialty of medicine concerned with providing comprehensive care to individuals and families and integrating biomedical, behavioral, and social sciences; an academic medical discipline that includes comprehensive health care services, education, and research; known as general practice in some countries”.

A Family doctor was defined by WHO EURO as “a medical practitioner who is a specialist trained to provide health care services for all individuals regardless of age, sex, or type of health problem; provides primary and continuing care for entire families within their communities; addresses physical, psychological, and social problems; coordinates comprehensive health care services with other specialists as needed; may also be known as a family physician or a general practitioner in some countries”(3).

Family practice is defined by the World Organization of Family Doctors (WONCA) as “health care services provided by family doctors; characterized by comprehensive, continuous, coordinated, collaborative, personal,

(1) Jan De Maeseneer and Maaïke Flinkenflögel (2010), Primary health care in Africa: do family physicians fit in? *British Journal of General Practice*, April 2010 (Page: 286-292).

(2) WHO, Regional Office for the Eastern Mediterranean. Conceptual and strategic approach to family practice, towards universal health coverage through family practice in the Eastern Mediterranean Region, 2014.

(3) Roberts JL. Terminology. A glossary of technical terms on the economics and finance of health services. Copenhagen, World Health Organization, Regional Office for Europe, 1998. At http://www.euro.who.int/__data/assets/pdf_file/0014/102173/E69927.pdf. Accessed 10 September 2013.

family- and community-oriented services; comprehensive medical care with a particular emphasis on the family unit; known as general practice in some countries” (1)

Family Health is a strategy proposed to reorient the health care model by setting up multi-professional teams at Primary Care Centers.(2)

In this policy document we use the term “Family Health Approach” to denote “health care services provided by a family health team, characterized by comprehensive, continuous, coordinated, collaborative, personal, family-and community-oriented services; comprehensive medical care with a particular emphasis on the family unit; known as general practice in some countries.”The aim of the Family Health Approach” is to strengthen the primary health care services by setting up multidisciplinary teams.

(1) Improving health systems: the contribution of family medicine. Singapore, WONCA. 2002

(2) Ministry of Health. Brazilian Government. Family Health. Family Health Strategy.

I. Background

Sudan is a federated republic with powers devolved to states and localities. With a land area of 1.8 million square kilometers and traversed by the Nile and its tributaries, Sudan comprises 18 states and 184 localities. Its total population is 36 million, spread sparsely, is growing annually by 2.5%. On the UN Human Development Index, country ranks 171, with 46.5% of population living below poverty line, while 8% living in extreme poverty. There are variations between states: Khartoum is relatively well off, while North Darfur has the highest proportion of people living in the lowest income quintile.

Burden of disease in Sudan

Sudan is being faced by a double burden of communicable and non-communicable diseases. (Sudan Profile, WHO 2015).

Communicable diseases:

HIV is low. The tuberculosis-related mortality rate is estimated as 25.0 per 100 000 population. The country is considered a high burden and high risk country for malaria. Total confirmed malaria cases decreased from 933,267 in 2003 to 526,931 in 2012. Of the 17 globally-listed neglected tropical diseases, nine are a recognized public health problem in the country. These include: leishmaniasis, schistosomiasis, lymphatic filariasis, onchocerciasis, trachoma, guinea worm, mycetoma, soil transmitted helminthes and leprosy.

Non-communicable diseases:

The burden of non-communicable diseases causes 33.9% of all deaths. Cardiovascular diseases account for 11.6%, cancers 5.2%, respiratory diseases 2.4% and diabetes mellitus 1.8% of all deaths. As a result, 17.0% of adults aged 30–70 have a probability of dying from the four main non-communicable diseases.

Mental Health:

Neuropsychiatric disorders are estimated to contribute 6.5% of the burden of disease and the suicide rate is 17.2 per 100 000 per year.

Violence, Injury and Disability:

The percentage of deaths caused by injuries in 2012 was 13.4%; of this, unintentional injuries accounted for 72.6% (of which 32.3% were due to road traffic injuries and 16.0% were a result of fire, heat and hot substances), while intentional injuries accounted for 27.4% (39.5% as a result of self-harm and legal intervention and 38.1% as a result of interpersonal violence). Disability prevalence is 4.9%.

Nutrition:

The Sudan Household Health Survey 2010 showed that 26.8% of children aged 5 to 59 months had diarrhea, while 18.7% were sick due to suspected pneumonia in two weeks prior to the survey. Protein energy malnutrition and micronutrient deficiencies remain a major problem among children under 5, with 12.6% and 15.7% suffering from severe underweight and stunting, respectively. The most common micronutrient deficiencies are iodine, iron and vitamin A. (Annex Sudan health profile 2015).

Maternal and Child health:

The maternal mortality ratio declined between 1990 and 2013 and the under-5 mortality rate also decreased. The leading causes of under-5 mortality are acute respiratory infection (18.0%), diarrhoea (11.0%), prematurity (14.0%) and intrapartum-related complications (12.0%) (21). The proportion of women receiving antenatal care coverage (at least one visit) is 74.3%. Unmet needs for family planning is 29.0%.

Table (1): Sudan's main health Indicators 2013

Life expectancy at birth	62 years
Infant Mortality	51 deaths per 1,000 live births
Under-5 Mortality	77 deaths per 1,000 live births
Maternal Mortality	360 per 100,000

Health system in Sudan

The challenges facing Sudan are immense and complex. Sudan will need to address the challenges of improving governance, increasing access to basic services, and promoting pro-poor growth to ensure equitable development.

There is an agreement to move towards the “one plan, one budget, one report” approach for the health sector to increase coordination and collaboration between all stakeholders. A primary health care expansion plan 2012–2016 has been developed to extend coverage of quality primary health care services from 86.0% to the whole population. The government has endorsed a national policy for promoting local pharmaceutical manufacturing that emphasizes on increasing the accessibility to medicines and making use of the allowances provided by the Doha Declaration. A health research policy and strategy have been endorsed and a national health observatory website was launched.

Health service delivery

Health care is organized at three levels: primary, secondary and tertiary levels. The private sector is concentrated in cities and focuses on curative care, reflected in that ‘for profit sector’ has 17 hospitals, while 32 hospitals and 319 health centers are of ‘not for profit sector’. The public sector operates about 4,916 family health centers/units, 380 local/rural hospitals and 55 general hospitals. These are not distributed equitably between states. Primary care is provided through community health workers at community level, family health units (serves 5,000- less than 10,000 population), family health centers (serves more than 10,000- 20,000 population) and rural/local hospitals. (FMOH, 2010) The public sector health services have a three-tiered structure: (i) Federal ministry of health; (ii) State ministry of health in each state; and (iii) Locality health authority in each locality. There is increasing demand of qualified health managers especially at localities due to the migration and rapid turnover. The national health sector strategy (2012-16) is comprehensive and developed after evidence-based situational analysis and an inclusive planning process. But, mechanisms for accountability and change management that underpin successful implementation still need to be brought in place. Likewise, policies are made but often without ensuring availability of

legal and financial resources for their implementation. A high level Inter-sectoral Coordination Committee established to bring together the health and other sectors require reforms for assuring it achieves its objectives.

Financial protection

Out-of-pocket health payments represent a significant share of non-food consumption. Out of pocket expenditure is 70% which is the highest among the regional countries. Almost 19.2 percent of households exceeded the 10 percent of non-food household consumption. Almost 46 percent of the population live below the poverty line.

Efficiency

The leading causes of inefficiencies includes: fragmentation in health system, irrational use of medicines and technologies, mismanagement of human resources, lack of quality indicators and inadequate financial incentives.

Equity

The distribution of the health workforce is uneven; almost 70% of the health personnel work in urban areas, serving 30% of the population, with a third of these being in Khartoum. Only 33% work in PHC while the remainders are in secondary and tertiary settings. There is a continuing brain drain and migration, impacting the availability, quality and skill mix of the health workforce. The number of health workers have expanded in recent years, but still remains below needs based targets (for example below the 2.3 health worker per 1000 population target), particularly in peripheral states and locations.

Access and coverage

Overall, 71% of the population lives within 5 km from their residence to the nearest health facility, but it ranges from 88% in urban to 61% in rural areas and it varies from state to state, with North Kordofan having the least accessibility, i.e. only 53% of the population lives within 5 km of the nearest health facility. This is reflected in urban using outpatient services 25% more than rural dwellers. The share of primary healthcare utilization is nearly 54.3% and ranges from 58.2% for rural to 48.2% for urban inhabitants however only 24% of these facilities provide basic package of services. Richer households use outpatient services more than poor, and the utilization rate increases as the household's per capita income rises. The health care infrastructure and other components of the health system are weak; reflected in low coverage and access to services.

Quality of services

Quality assurance system is weak and there is no system for the accreditation of service providers. No protocols exist to assess whether the services provided are good or not. It was found that 5.5% of all hospital admissions experienced adverse events, 83% of those were preventable while 39% led to permanent disability or death(1).

Health information system is fragmented due to the parallel information generation and reporting by the vertical disease-specific programs. While the private sector hardly reports, the army, police and other institutions operate independent information systems, which seldom get consolidated. The system for financing health sector is weak, fragmented with many financial silos and is a mix of insurance and tax based funding with a complex flow of funds. Households are the main financiers, contributing about 70% while public sector contributes about 1/5th of the total health expenditure.

Primary Health Care in Sudan

Sudan has started the PHC approach in 1976 in an attempt to achieve rural extension for the limited urban based health services. The attempt was part of a five-year social development plan. Alma Ata declaration gave additional impetus and clarified the vision towards the universal equitable health services. Since then, Sudan has adopted the principles and the elements of PHC in its health policies and embarked in implementation in various ways and degrees according to its internal political, professional and administrative context. At first the country developed a very enthusiastic and ambitious PHC plan which was strongly supported by the government and involved all concerned sectors, NGOs, and the community. The plan became part of the general country's five-year comprehensive development plan and met an outstanding glamour, political, technical, donors' and community interest. Its implementation was well prepared for, funded, supervised and thus resulted in unprecedented

(1) Federal Ministry of Health. Sudan Health Financing Options Paper. Sudan, June 2015

expansion in health services through the new established health facilities and introduction of community health workers(1).

In spite of all these challenges, the country is trying to achieve universal health coverage as part of its post MDG 2015 agenda. In this regard, the federal ministry of health has embarked on an ambitious plan for the expansion of primary health care network and the national health insurance fund is drawing its agenda for universal coverage.

In this context, family health is seen as a people centered holistic health-care approach with the aim of improving the health of the population and thereby achieving universal health coverage.

Features of Family Practice

Below is the list of essential features of family practice.

- a) Comprehensive and integrated care**
- b) People centered-responsiveness to the peoples' needs**
- c) Continuity of care**
- d) Family-oriented**
- e) Community –oriented**
- f) Coordinated care**
- g) Collaborative team**

a) Comprehensiveness and integration of care

PAHO/WHO (2011) defines integrated care as “the management and delivery of health services such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, through the different levels and sites of care within the health system, and according to their needs through the life course”(2). The main ingredients of this type of care are ‘continuum of care’ and ‘coordinated care’ through health system and the ‘life course’. This definition also incorporates the comprehensiveness, which refers to the provision of an array of services that are tailored to the needs of the population served.

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- (1) Federal Ministry of Health. Primary Health Care Revitalization Strategy. Sudan, 2006.
 - (2) Pan American Health Organization, Integrated Health Services Delivery Networks: concepts, Policy Options and a Roadmap for Implementation in the Americas, 2011, Pan American Health Organization: Washington, DC.

b) People centred– responsiveness to the peoples’ health needs

This is “an approach to care that consciously adopts individuals’, families’, and communities’ perspective as participants in and beneficiaries of the health systems that respond to their needs and preferences in humane and holistic ways. People centred care also requires that people have the education and support they need to make decisions and participate in their own care. It is organized around the health needs and expectations of people rather than diseases”(1). The need and participation of individuals in their care is central to this concept.

c) Continuity of care

Continuity of care is often seen synonymous to relationship between a practitioner and a patient; and in a sense is longitudinal, relational or personal based continuity. In family health however, it is the care of an individual patient and the care delivered over time.

There can be three types of continuity: informational continuity, where information of the past events and personal circumstances are used to influence and make the current care appropriate; management continuity, where a coherent and consistent approach is employed for managing a health condition that is responsive to the patient’s changing needs; and relational continuity, which is on-going therapeutic relationship between a patient)s(and provider(s).

d) Family- oriented

Family practice addresses the health problems of individuals in the context of their family circumstances, their social and cultural networks and the circumstances in which they live and work. It is concerned with the health status of the family as a unit considering the impact of the health of one member of the family on the other members of the family.

e) Community- oriented

The individual’s problems should be seen in the context of the community in which they live. In addition, it ensures community engagement in decision-making about the health and well-being of its members and awareness of the processes of care delivery through a family practice approach

(1) WHO/WPRO, People – centered health care, 2007.

f) Coordinated care

This refers to coordination of care within the PHC team and appropriate timely referral of the patient from family physicians to other specialist services. A well-organized coordinated pathway of referral between the different levels of health care can guarantee the delivery of efficient and effective services.

g) Collaborative team approach

A family health team should be prepared to work with other medical, health and social care providers, delegating to them the care of their patients whenever appropriate, with due regard to the competence of other disciplines. Family physicians have traditionally served as the patient's first contact and point of entry into the health care system.

Global Context of Family Practice

Although the scope of family practice programmes can vary from country to country the principles remain more or less the same. The two most important principles are patient centeredness and comprehensive care. The family physician is expected to serve as an adviser and advocate for individual patients as well as for the health of the community. Family practice is distinguished by two main characteristics that make it unique: its holistic approach and being people-centered.

In the European context, as defined by the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA), family medicine requires six core competencies to exercise its critical elements like clinical tasks, communicating with patients, and managing the practice. Some generic characteristics of western family medicine are; primary care management, person-centered care, specific problem-solving skills, comprehensive approach, community orientation and holistic modeling. Furthermore, the competent family/ GP practice will have three background fundamental features; contextual – using the context of the person, the family, the community and their culture; attitudinal – based on the doctor's professional capabilities, values and ethics; and scientific – adopting a critical and research-based approach to practice and maintaining this through learning and quality

improvement(1).

In the African context, however family medicine is an emerging discipline, such as in South Africa it has been established as a specialty and gained recognition. Botswana, Uganda and Kenya, are beginning to explore the possibility of training and employing family physicians at the district level. However, due to the lack of an overarching conceptual framework of the unique and specific contribution of well-trained generalists its role appears mired in a grey area between the hospital (with its divided specialist-orientated structure and processes, and focus on individual patient outcomes), and the district health system (with its generalist, primary care, public health, and population-orientated approach)". The family medicine as a discipline is seen to 'fill gaps' in the existing delivery and management of healthcare, i.e. as physicians they are expected to have strong district-level clinical and leadership role without however adequate human resources and implementation policies(2),(3),(4). It is financed through a mix of tax/public revenue, insurance and community based systems with the households bearing the major part of the health expenses.

In EMRO region commitment of the countries to the adoption of family practice varies. Countries of the Gulf Cooperation Council have made high levels of commitment towards adopting family practice and they are in the process of implementing different components of it as the fundamental approach to the delivery of primary health care services. Ten middle-income countries (Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Palestine, Syrian Arab Republic, Tunisia) in the region have expressed commitment to family practice; however, implementation is patchy and piecemeal, and there are significant capacity challenges

(1) Steve Field, The story of general practice postgraduate training and education (chapter

10) in Ancient **history of general practice** education, available at: http://www.radcliffehealth.com/sites/radcliffehealth.com/files/books/samplechapter/9230/10_Chap_10-7752f300rdz.pdf (accessed on 19 July, 2014).

(2) ShabirMoosa et al (2013) Understanding of family medicine in Africa: a qualitative study of leaders' views, *British Journal of General Practice*, March 2013.

(3) Bob Mash (2008), The definition of family medicine in sub-Saharan Africa, *SA Fam-Pract* 2008, Vol 50 No 3 page: 58-59.

(4) Bob Marsh et al, 2008, Exploring the key principles of Family Medicine in sub-Saharan Africa: international Delphi consensus process, *SA FamPract* 2008 Vol 50 No 3, page: 60-65.

related to human resources, financing and organizational aspects of family practice programmes. Major challenges facing implementation of family practice program in the region include limited political commitment, no clear FP strategy with roadmap, absence of comprehensive FP approach (elements), no coordination with private sector and weak community awareness(1).

The Iranian primary health care network established in 1980s and 1990s exhibits several elements of family medicine. The system used community health worker, namely 'Behvarz'. S/he received basic training for carrying out job, employed by the government, and based in rural health houses. The Behvarz's services were supported and supervised by general physicians, based in rural health centres. Access to such physicians is possible via referrals from the Behvarz. However, it was inadequate in that the presence of doctors in rural health centres was not universal and there was no functioning pathway for referring patients to secondary care. This structure was transformed to family medicine/physician system in 2005. Accordingly, doctors acted as gate-keepers (referral) and were made responsible guardians of the wellbeing of their assigned community. This initiative was funded through 'Behbar'-a model of social insurance-or universal health insurance coverage (AmirhosseinTakian et al, 2013).

Another example is that of Brazil. The Brazilian government launched the Family health program in 1994 and in 1998 the program was adopted as a public policy. The FHP provided employment opportunities for family physicians in the public sector so the specialty could expand to other cities and institutions. There are 33 420 family health teams (covering 55% of the population), 256 847 community health workers (covering 65% of the population), oral health teams and 1250 family support core units operating nationwide. Each family health team is ideally responsible for between 3000 and 4000 people, according to the socioeconomic profile of the population, or fewer where the population is more socially vulnerable. Family Health in Brazil has the main attributes that differentiate it from primary health care. These are the multidisciplinary teams that are responsible for geographical areas and their populations, with the task of identifying operational,

(1) WHO Regional office for Eastern Mediterranean. Family Countries of the eastern Mediterranean region: A preliminary assessment. October 2014.

organizational or social problems in an appropriate manner. Also, the presence of community health workers and the inclusion of oral health in the public health system feature in this model. A number of studies revealed that introduction of family health in Brazil have led to reduction in infant mortality, reduction in the number of hospital admissions for conditions treatable at the primary care level, and the improvement in the socio-economic indicators of the population.

II. Family Health in Sudan – Problem statement

PHI conducted a situational analysis in June 2015 on practicing family physicians and trainees in different institutions in Khartoum state. Information was collected from various sources and through different methodologies; firstly a desk review of the ministry reports, a literature review of countries experiences, a survey conducted for family physicians and students and finally key-informant interviews with leaders of educational institutions and policy makers at ministries of health. Multiple data sources were used to ensure triangulation and cross validation of data.

The main findings of the study are reported below according to the framework that was adapted from WHO health system model; Governance, Resources and Capacity building, Financing and Organization.

Governance of family health practice

The Five training institutions that offer a family medicine degree are all located at Khartoum and Gezira states. Five states have trainees enrolled in PHI master program as part of PHC expansion project, managed by FMOH and funded by FMOF and donors. The PHI offers training for trainees at Khartoum state and also offers a partly distance learning for trainees at four states (Red sea, Blue Nile, White Nile, North Kordofan) outside Khartoum. Trainees from the four states attend the theoretical lectures and examinations at PHI while all the clinical part of training is conducted at their states.

It was found that in Khartoum and Gezira states, there was strong political commitment to support implementation of family medicine program. In addition, other stakeholders in Gezira and Khartoum state, FMOH, PHI and trainees have further expressed their full support to the development of family health model in the country.

There is no written policy to govern and to provide directions to the current efforts of implementing family health practice. Job description for FPs as well as other paramedics at PHC level was developed by FMOH, although

formal endorsement and dissemination was not done properly. Gezira state ministry of health has designated a department for family medicine program. Its role is focused on managing and coordinating the training of family medicine students at family health centers, and not extended to address the service provision at PHC level in holistic and comprehensive way. This assumed to be the responsibility of PHC department, but the degree of reform in this directorate to undertake its new role in managing PHC services through family practice approach is not clear. Also the role of localities is not clear. In Khartoum state it is the responsibility of local health system department as part of its role in managing PHC facilities. Localities are responsible for distribution of FPs to FHCs and supervision of FHCs. In the other states which have students enrolled in PHI, there is no clear role for states ministries of health, and there are only coordinators to communicate with PHI at federal level and facilitate the training process.

Reform in health information is underway to be more integrated and to improve reporting and quality of information at levels of health system including PHC level. However adopting family practice approach and reforming finance of PHC will have implications on set of indicators including quality and performance indicators to be adopted by health information system, which is not considered in the current reform. Except Gezira state family folders are not developed for the population in the catchment areas of the FHCs. In Gezira state electronic family folders were developed, but still not completed for all catchment areas. Adoption of family practice is not accompanied by accreditation or any other measures to ensure and improve the quality of PHC services.

Resources and Capacity building

The current undergraduate training is generally clinical oriented and scarcely addresses other dimensions of the holistic approach of health as defined by WHO. Family medicine training programs are relatively new in Sudan. The training had started by scattered non-coordinated efforts by different institutions. There are five institutions that currently offer a degree of family medicine. Four of these institutions are located in Khartoum and one located in Gezira; these five institutions currently harness around 406 candidates in the pipeline. The faculty of medicine in university of Gezira is recognized as the pioneer institution in family medicine, it introduced

the discipline through one-year diploma program that commenced in the year 2007 and ended in 2008, and then it developed a master degree program in the year 2010.

The FMOH in collaboration with the PHI adopted a family medicine master training program in year 2012. The Sudan Medical Specialization Board (SMSB) also provides a four- year family medicine training and awards an MD degree for trainees; the program was established in year 2010. University of Medical Sciences and technology (UMST) is also considered the pioneer institution that started the family medicine program by a one-year diploma in 2006, however the candidates were sent to work in Saudi Arabia upon completion of the program. Alzaem Alzahari University has recently established a family medicine program in 2014. Despite of all these program initiatives in a relatively short period of time, family medicine specialty is still considered in its infancy and it requires a great deal of effort and attention to grow and flourish. One of the biggest challenges is the fact that the majority of family medicine graduates migrate to the gulf and elsewhere leaving an exceptionally small number of physicians in the country to lead this profession. Another challenge is the ability to build a critical mass of family physicians and increase the physician patient ratio so that it is feasible for the family physician to provide the coverage needed and to be the gatekeeper. As stated in the document of standards and specifications developed by FMOH every FHC and rural hospital should have at least one family physician. According to the PHC mapping survey in 2012 the total number of functioning FHCs reached 2078 and the gap is 339 FHCs need to be constructed, while rural hospital amount to 380 hospitals i.e. a minimum of 2417 FPs are needed. For this critical mass to be built, an innovative strategy is needed to provide the critical mass of FP in the shortest time possible; as well as prevent the current massive brain drain to neighboring countries(1).

University of Gezira and PHI use various modern technologies to conduct the training through distant learning style. For instance, UoG provides all educational material by means of a cloud- based electronic library to be easily accessed by students from wherever they are. PHI provides

(1) WHO Regional office of EMRO, Family practice in the countries of the Eastern Mediterranean region: A preliminary assessment, October 2014.

theoretical lectures through video conference for students in five different states; Khartoum, White Nile, River Nile, Red Sea state and Northern Kordofan, and the practical training is conducted at PHC facilities in their states under supervision of contracted consultants.

Sudan Family Medicine Association was formulated in 2014 as professional body to advocate for the new discipline, but it is not well functioning.

Also as part of PHC expansion project, extensive training program for allied health workers especially medical assistants and vaccinators and nutritionists are being implemented. The main aim of this program is to consolidate the concept of integrated and multidisciplinary service delivery, which is an important dimension in family practice, although other components of the approach should be injected on the ongoing training.

There are major gaps in the current implementation of the family health service model within the health system in Sudan including; financing of the family health services, making the discipline attractive, retention of family physicians, building relations of the family health teams, referral and continuity of care and other organizational issues.

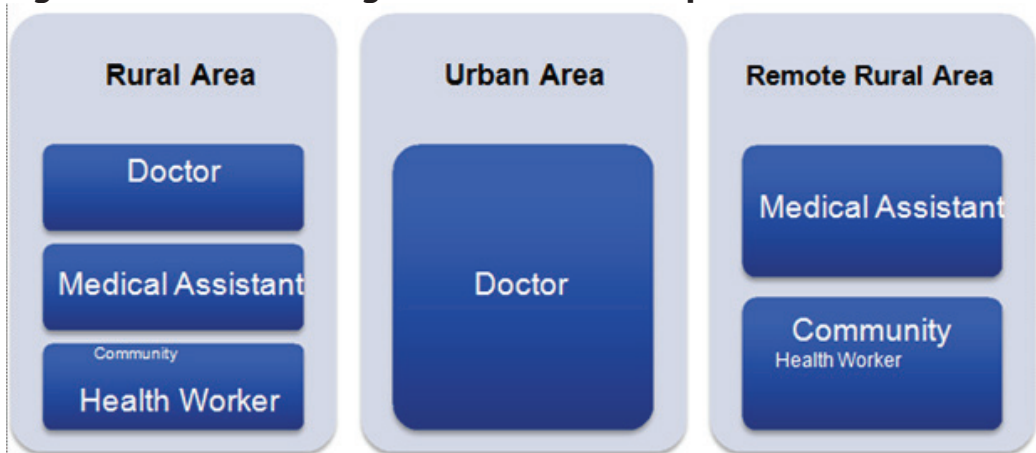
Financing of family health services

Financing of the PHC services is mainly input based. Ministries of health mainly at federal level (through vertical programs funded by donors and expansion of PHC services project recently) and also to some extent at state level construct health facilities and provide equipment and supplies to PHC facilities. Although localities are supposed to take responsibility of all issues relating to PHC services, the current practice reveals minimal role of localities in this respect. Part of PHC services (mainly the promotive and preventive part and some curative services like malaria, TB and HIV) are provided free of charge, while for the remaining user fees is applied. Provider payment is mainly through salaries paid by state ministry of finance. With introduction of family medicine program, no changes had been made with regard to financing system and provider payment of PHC services as a result, The majority of physicians were not satisfied with their income (79.4%), their payment relative to their work (85.3%) and relative to other specialists (76.5%).

Organization of family health services

As mentioned above the network of PHC service delivery system consists of community level (provided by community health worker and village midwife), family health unit, family health centre (FHC) and rural or local hospital. The current programs of family health are based on posting family physicians at FHCs mainly beside rural hospitals, while for the FHU the medical assistant will continue as the main care provider after receiving the integrated training in PHC.

Figure 1: Different Categories of Health care providers



The linkages and relationship between FHUs and FHCs are well established. A part from Gezira state, introduction of catchment area system and registration of population is not implemented. Gate keeping is not implemented and patients can contact health system at any point. Continuity of care is not address, and referral system is weak with no clear implemented guidelines.

In conclusion the current family health programs focus only on the training component. In spite of that neither training programs are regulated nor the curriculum is unified. Arrangements to prepare the health system for effective implementation of the program are rarely addressed and financing is rather weak.

III. About the Policy

Policy Vision

A nation of healthy individuals, families and communities where universal health coverage is achieved for all

**Family Health Approach is implemented
across all states of the Sudan by the year 2025**

Policy mission

The availability of efficient people centered high quality integrated care, which is accessible to all population through life course equitably across the regional, racial, and ethnic and socioeconomic groups without financial hardship

Policy Objectives

1. Strengthen PHC service delivery system to enable provision of efficient and equitable quality health services, which are responsive to population expectations
2. Improve recognition of family medicine discipline, and enhance attraction, recruitment and retention of family physicians
3. Ensure production of adequate and competent family physicians and allied health worker to provide integrated people centered health services at PHC level

Policy values

Equity

The policy will focus on equitable distribution of resources according to need, and geographical location and irrespective of ability to pay. It will also enable primary health care services as the first contact with the health system.

Efficiency

The policy will assure attainment of both technical and allocative efficiency. It will ensure the maximal utilization of the scarce resources available and cost minimization.

High quality

The policy will be adapted to the Sudanese context and accordingly, high quality in healthcare encompasses seven elements: safe, effective, timely, efficient, equitable, people centered and integrated(1).

Excellence

The policy aims at flawless implementation of the contents. It will actively contribute to the efficient use of all available resource to deliver the best, sustainable results.

Respect

To build mutual trust and respect with community and partners.

(1) Institute of Medicine, Crossing the Quality Chasm: A New Health System for the 21st Century, 2001, National Academy Press: Washington, DC.

IV. Policy Options

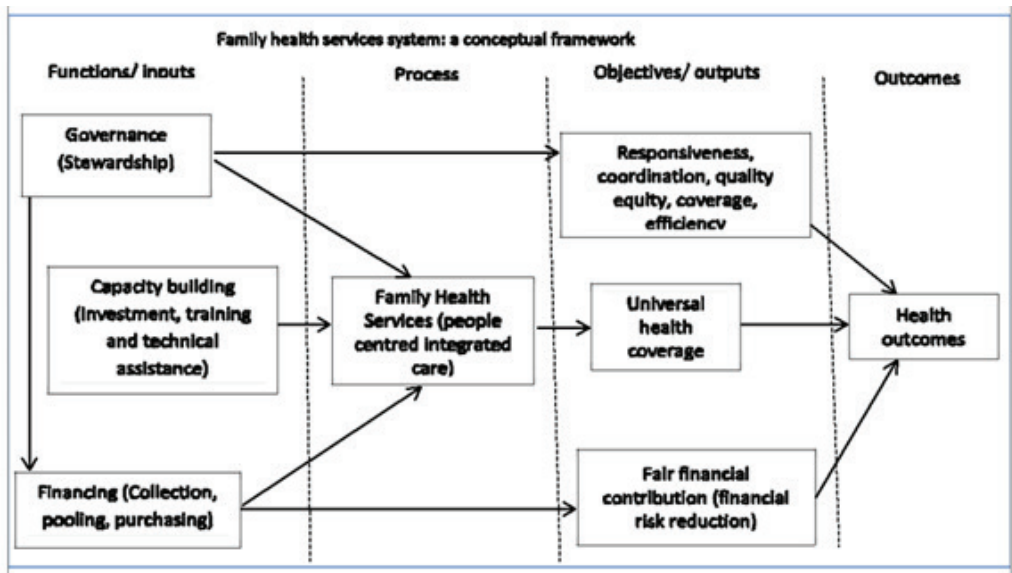
Conceptual framework for family health Approach for Sudan

The conceptual framework below was adapted from WHO health system's framework (WHO, 2000). The health system framework was re-configured and re-conceptualized from the perspective of delivering family health services. For family health services to be delivered three functions or inputs of the health system need to be put in place: (i) Governance and stewardship

(ii) Capacity building or investing in the infrastructure, technology and supplies, human resources development and technical assistance and (iii) Financing in terms of fund raising or revenue generation, fund pooling, and allocation of resources for purchasing services. These inputs contribute to developing 'continued people centered integrated care' and 'holistic' family health services. The output, similar to UHC, is characterized by efficient, equitable and quality health care with no financial hardship to the people when ill. The outcome of this type of health system is better health in terms of reduced mortality and morbidity.

The framework is operational in its construct and therefore follows a system approach i.e. input, process and output/outcome (Figure 2).

Figure 2: Conceptual Framework for Family Health Services in Sudan`



In ideal situations a family physician should be the leader of the family health team. Nevertheless this will be difficult to implement in the time being because of several challenges. Firstly, a critical mass of family physicians has not been built yet and family physician to population ratio is far below the required international standards. Secondly, doctors (in general) do not prefer to be posted in less developed states and rural areas. As a matter of fact, almost three quarter of the doctors work in Khartoum state only. Migration is also another challenge that further complicates the issue of misdistribution of doctors. For these reasons, it is not feasible in the current time that we assert the family physician to be the leader of the family health team in all areas of the country. The policy takes into account the country's context and the available resources.

Therefore, we propose a Family Health Approach that is holistic in nature led by three categories of health providers; family physicians, medical assistants and community health workers according to availability as per geographic area. The aim of the family health approach is to strengthen the primary health care system by setting up Family health team with a holistic patient centered approach at Primary health care centers.

Governance

An effective governance structure and a set of governing functions need to be put in place to help ensure the smooth implementation of the policy.

A. Sudan Family Health Council (SFHC)

This council is at the federal level and it is the supreme authority with regard to family medicine practice. It brings all stakeholders concerned with training and practice of family health, and thereby establishes the link between training and practice. The council reports directly to the NHCC.

The council is chaired by undersecretary of FMOH, with membership of relevant departments of FMOH, SMOH, NHIF, SMSB, SMC, family physicians association and training institutions.

-The purpose of this council is to regulate family health in the country by providing the following functions; setting standards of Family health practice, develop roles and responsibilities for family practice, coordinate between actors involved in implementation of family health and ensure consistence between training and practice

B. Governing structures for family practice

Governing structures for family practice are of utmost importance leading the profession and providing accountability. The governance structure can be broadly divided into; governance of practice and governance for training. The governing structure for practice that is proposed here comprises two main bodies; a council, and standing units that accompany it. Training is mainly governed by the SMSB that regulates all training institutes.

1. Family Health Department (FHD) at federal level

- This department for family health (Federal level) is under the directorate of PHC. It is responsible for planning for expansion of family health, regulation of service provision, supervision of FPs, evaluation of reports, organizes the relation between FPs and prepayment organizations.

- The FHD supervises state level as well

2. Human resource department at federal level

HR department will be responsible for recruitment of new doctors to be enrolled in family medicine program, basic training of MAs and CHWs, in service training of all staff involved in family health.

3. Family Health Department (FHD) at state level

- This department for family health (State level) is under PHC directorate at state ministry of health. It is responsible for regulation of service provision, supervision of FPs, monitoring of implementation, evaluation of reports, organizes the relation between FPs and prepayment organizations.

- The FHD supervises local level as well.

4. Family Health Unit (FHU)

- **This unit is at the locality level. It is responsible for managing and providing PHC services.**
- **In states with well established local health system, family physicians are accountable to the locality but if otherwise they are directly accountable to the state.**
- **One option is that Family physicians becomes part of locality team and participates in planning and management of health in the locality, with administrative affiliation to the state (this may help in, linking FP to the locality team, avoiding problems of weak management)**

C. Governing structure for Family Medicine Education

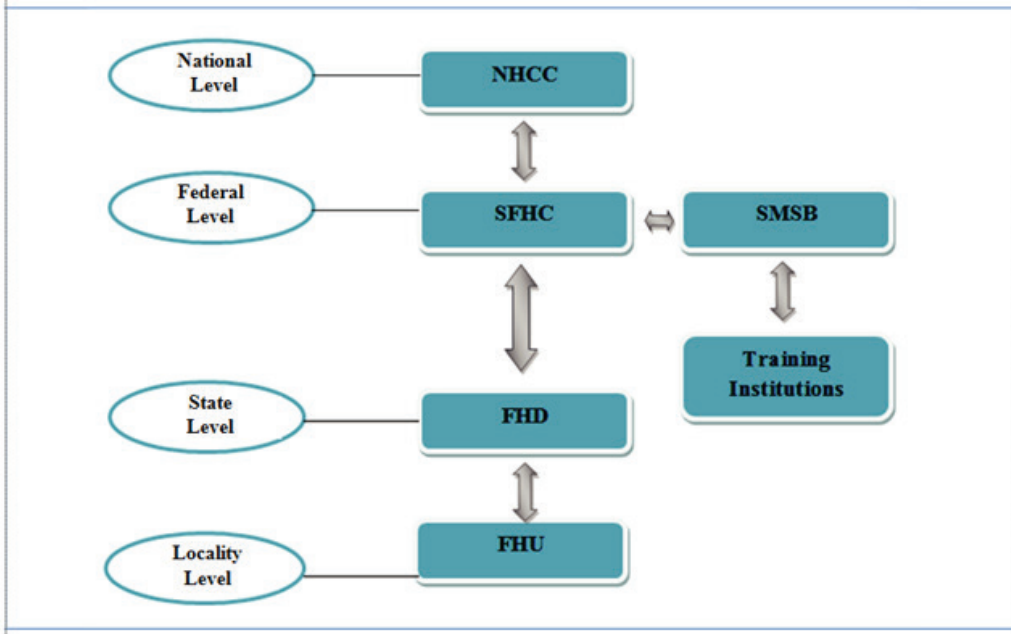
The Sudan Medical Specialization Board is the main body that governs family medicine training. It regulates all the training institutes that offer training programs in family medicine.

The SMSB is the premier regulating body in regards to family medicine training. It is responsible for the development of a unified curriculum for Family Medicine that all other training institutes should follow.

D. Governance of family medicine profession

SMC has an important role in setting career pathway for doctors and recertification at a predefined interval subsequent to satisfying the requisites.

Figure (3): Flowchart showing family health stakeholders at different levels



E. Updating laws and regulations

Legal frame governing family health practice and training have to be reviewed. In this regard, role of SMSB in regulating training of family medicine should be enforced.

Career pathway for family physicians, and recognition of doctors holding post graduate degrees in FM have to be regulated in the SMC law and regulations.

Terms and conditions of service including job descriptions for different PHC cadres should be reviewed in light of family health approach. Amendments could then be carried out if required and approved at relevant boards and councils.

F. Roles and Responsibilities of Family Physicians

Family Physicians lead the implementation of the family health approach; their roles and responsibilities are outlined below.

- 1. Provide person-based counselling and health promotive, preventive, therapeutic and emergency services**
- 2. work as gatekeeper and Coordinate with secondary and tertiary services**
- 3. Engage with community**
- 4. Oversee the environmental health interventions in the catchment area.**
- 5. Participate in outbreaks investigations, report about notifiable diseases**
- 6. Training of staff at the facility**
- 7. supervision of staff at lower PHC facilities**
- 9. Administration and planning for health services at his facility**
- 10. Mobile services to remote rural areas**

G. Reform in health information system (HIS)

Health systems are increasingly under pressure to develop information systems that are responsive to changing health needs and appropriate to service objectives.

The ongoing efforts to overcome fragmentation and develop integrated health information system should be supported. Moreover, health information system has to undergo further reform to guarantee accountability, monitor quality of service and support performance based provider payment mechanism. Developing an essential data set provides policy makers with a clearly defined set of indicators for monitoring and evaluating services. The following options are proposed to strengthen HIS in Sudan:

- 1. Build a unified comprehensive health information system**
- 2. Create family folders with a core data set for family health history information**
- 3. Revise indicators to reflect comprehensively the performance of the system and quality of service provided. This system will be used for financial capitation incentives for family physicians.**
- 4. Introduce electronic medical records at PHC facilities covered by family physicians. Measures to ensure privacy, confidentiality and security should be in place**

H. Improving and controlling quality of services

Quality management in the health care field ensures that patients receive an excellent provision of care. In this policy the following mechanisms are suggested to improve quality of services at primary health care level:

1. Accreditation of facilities

2. Separating purchaser from provider

3. Performance based payment

4. National protocols and guidelines need to be developed and followed at all PHC levels. This will help to avoid confusion and also improve accountability. These guidelines can be taught to students at training level as well.

Resources and Capacity Building

Resources and capacity building has subcomponents, namely investing in infrastructure, technology and supplies, human resources development, and capacity building. The type and extent for each of these sub-systems depend on the nature of the family health services.

A. Standards of human resource in family health

It is proposed that the number of team members have to be reduced because of the shortage of human resources (Annex 1). This reduction may improve the group dynamics and bonding and help guarantee feasibility of implementation. However implementation of these standards should be strictly tracked.

It is quite crucial that the health care provider/population ration has to be predetermined based on justified criteria in order to plan for production of these cadres and to feed the system and filling the current gap.

Below is a table displaying the number of family physicians required per population ratio. The number of family physicians required in 2015 is approximately 12,000. (0.3/10000)

Table (2): Number of FPs needed for Sudan, EMRO 2015

Population	2015	2020	2025	2030	2035	2040
Sudan	39,613	44,499	49,676	55,078	60,613	66,169
0.6 / 1000	23,768	26,699	29,806	33,047	36,368	39,701
0.5 / 1000	19,807	22,250	24,838	27,539	30,307	33,085
0.4 / 1000	15,845	17,800	19,870	22,031	24,245	26,468
0.3 / 1000	11,884	13,350	14,903	16,523	18,184	19,851

These calculations however are based on the assumption that FP is the main care providers in all situations, which is not the case in the intended family health approach as mentioned above. Therefore these numbers represent the three categories of main family health providers (FP, MA, and CHW) and not only FPs. In the current situation more than 50% of PHC facilities are FHUs which will be served by MAs as main care providers of family health services. This should be considered when estimating and projecting the need for staff providing family health services.

B. Undergraduate and Postgraduate Education

1\ Undergraduate Education

Training on family medicine has to start early at medical schools. Therefore, injection of family medicine in undergraduate medical school is of utmost profit and shall be enforced as early as possible. This was successfully implemented in countries like Slovakia, Lithuania, Latvia and Hungary(1).

This can be shaped in many ways. For instance, reorienting undergraduate education and incorporating promotion and prevention concepts is one way. In addition, community oriented curriculum can be the foundation for rural work and family health approach. Moreover, the injection of courses on family medicine as a part of undergraduate curriculum is significant, and it also can be hosted by other departments.

(1) Seifert B, Šváb I, Madis T, Perspectives of family medicine in Central and Eastern Europe

Estonia, Slovenia, Poland and Czech Republic all had their own family medicine departments in medical schools, which showed good progress and enhanced the specialty.

The establishment of family medicine departments within Sudanese medical schools is another way to divulge the importance of this specialty and ascertain respect and weight of this department in relation to others.

2\ Postgraduate Education

WONCA developed Global Standards for Postgraduate Family Medicine Education. The standards highlight that every medical school in the world should have an academic department of family medicine/general practice, or an equivalent academic focus and that every medical student in the world should experience family medicine and general practice as early as possible and as often as possible in their training.

Reaching the required critical mass of family physicians for the country necessitates a lengthy waiting period; as an alternative the policy suggests three phases to fill the gaps and start implementing the family health model meanwhile. This phasing includes short term, intermediate and long-term directions as follows:

1. Short term policy directions:

- **The first option is to opt for medical assistants after completing a minimum package of short course with a certificate in family health approach services and they shall run family health units.**
- **In addition, medical graduates after finishing the houseman and willing to work in PHC facilities have to complete a training course in family health**
- **The strategic direction of building critical mass of family physicians will be established but with varying options including PG diploma, master or enrollment in MD program.**

2. Intermediate term policy directions:

This phase is used to graduate a considerable number of family physicians

in relatively not lengthy period; therefore the policy suggests the following modality for their training:

- **Continue training of medical assistants to be posted in family health units**
- **Newly medical graduates can be enrolled in a one-year family medicine diploma (PG-Dip) which can then be upgraded into master program, or they can be enrolled directly in two-year formal training program (solid, continuous) as master degree (MSc) in family medicine**

3. Long term policy directions:

- **Continue training of medical assistants to be posted in family health units**
- **Candidates who completed the master degree must continue for other two years on job training to upgrade into Medical Doctorate (MD) certificates from the SMSB.**
- **Other category (graduates) can be enrolled directly in the four-year MD program certificates from the SMSB.**

C. Career pathway of family physician

The policy seeks ultimately to have family physicians with MD degree. To reach this destination, medical officer can start from Diploma or master and proceed until obtaining the MD degree. Alternatively he can be enrolled directly in MD program.

Terms of reference and authority in clinical practice will increase simultaneously with type of degree obtained by family physician (diploma, master and MD).

D. Training of paramedics

Paramedics are an important element to implement the family health team approach. Therefore, this policy suggests the following to train the paramedics:

To inject family health approach for allied health workers –at undergraduate level according to their future expected specific roles and responsibilities.

1- Content of the training

The content of training should be tailored according to roles and responsibilities of family physicians at practice level. The content of training should be modified according to future role that the family physician will take (e.g. teacher, manager, and service provider with a holistic approach).

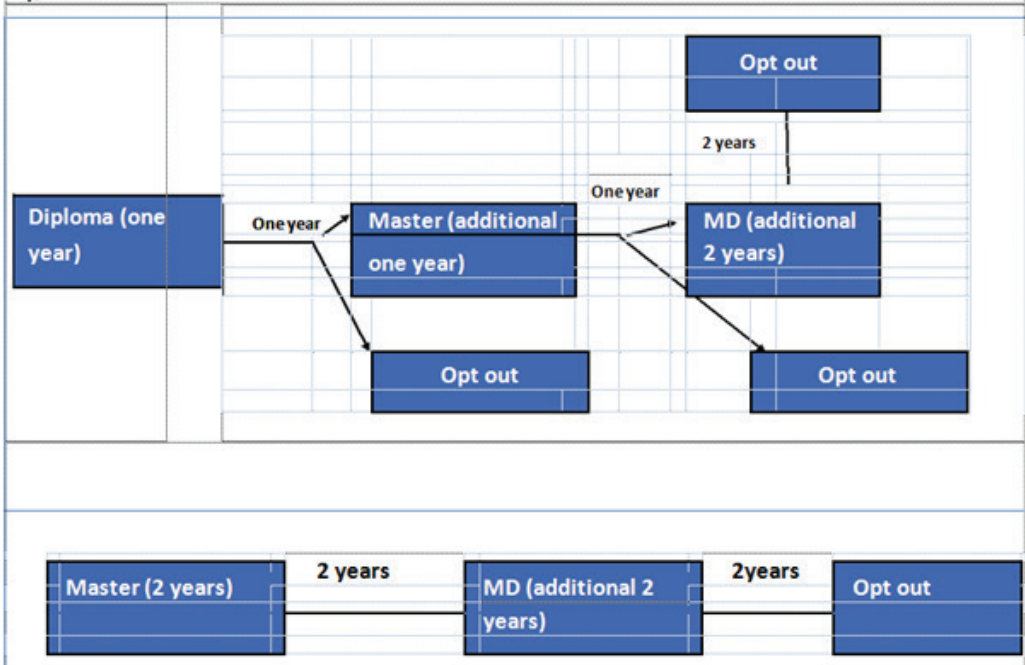
2- Licensing and regulations

- The SMSB shall regulate training. Licensing is regulated by SMC.

E. Attractiveness, retention and recognition family health profession

Family medicine as a speciality needs to be recognized and promoted. Also as a new discipline it is important to introduce certain measures to attract medical doctors to this speciality and put arrangements for ensuring retention of family doctors within the health system. Family physicians sponsored by ministry of health could be retained for 8 years if they opt to get MD. This includes 4 years of training and same period as service providers. For those opted to get only diploma or master degree they will be kept for 2 and 4 years respectively. Half of the period will be as trainees and the other half as service providers. The figure below illustrates these options.

Figure 4:



The following elements can help improve the attractiveness and recognition of family health professionals:

- **The content of training to be tailored according to roles and responsibilities of family physicians so as to reach their expectations.**
- **Enabling working environment to facilitate the delivery of care according to the predefined roles will improve the degree of attractiveness.**
- **Strengthening CME**
- **The family medicine association should be activated and strengthened.**
- **Enhance teaching and mentoring roles at training level**
- **Incorporating family practice at the undergraduate level**
- **Reform payment mechanism**
- **Create relations between family medicine and other specialties**
- **Opportunities for fellowships in regional and international boards**

F. Continuous Medical Education (CME)

CME is an important element to cope with the dynamic medical education field and to ensure keeping health workers updated. The policy suggests CME directions for both family physicians and their supportive team as well. The FMoH also has a significant role in guiding the CME according to identified needs. In addition, it ensures application of the needed CME. The linkage of CME with recertification of family physicians at SMC is suggested possibility to reinforce the continuous education; however the duration and periodicity between CME courses should be determined by the system,

1\ For family physicians:

The importance of continuous medical education of family physicians should be stressed out and well organized and linked to recertification and relicensing. The training can include standard, short courses identified by the organizers centrally or it can be based on educational needs of the individuals determined through supervision and quality assurance activities, along with new approaches like Personal Development Plans (PDP) that can be introduced.

2\ For other members of the family health team:

All core team members (Annex 1) should be trained on the family health approach in periodic short courses or workshop. Continuous professional department at federal and state ministries of health can lead establishment and management of a system for continuous development PHC core team. At practice level, the family physicians take part in training, supervising and mentoring of paramedics

G. Family Health Service Development:

1. Building cohesive family health team

-To build a cohesive team it is suggested that health care and administrative systems should be developed and communicated to all team member clearly. The division of labor between members of the team is also quite crucial and facilities the flow of work.

-Training of all team members on healthcare and administrative systems, communication and coordination is an important element. Effective communication between team members through specified mechanisms should be included in both under and postgraduate education.

2. Infrastructure, technology and supplies: Standards and management systems

-Standards for facilities should be preset, standards for construction should enable provision of integrated health services according to the content of the package identified for each category of PHC facilities. Also standard list of essential equipment for each category of facilities should be in place. Staff should be trained on using equipment and systems for maintenance and replacement has to be established. Expedite expansion of PHC facilities, with well-established management support system to ensure availability and sustainability of services. This was found to be very crucial for successful introduction of family practice in Iran.

Financing

Sources of funding for family health services are to be aligned with the health finance policy (2015), below are some highlights that will guide this policy:

- All PHC services will be covered by prepayment mechanisms. All population should have free access to family health services; however copayment could be introduced for drugs
- General revenue through federal ministry of finance will be the main source of funding for this package. However, all these sources should be pooled under NHIF.
- Purchase of family health services is proposed to be through strategic

purchasing. In addition, health insurance will be the single purchaser for family health care services in the country.

- Providers of family health services are mainly public PHC facilities; however, private sector can be used specially in needy areas where there are no public facilities (however, accreditation of these facilities is a prerequisite).
- Provider payment mechanisms were determined to be mainly through both salary and capitation incentives.

V. Organization of Family health services

A. Facilities providing family health services

Facilities providing family health services and posts for family physicians should be clearly defined. There are different models for service provision among different countries.

In the European model all PHC facilities provide family health services, but only FHCs have family physicians located. In the African model again all PHC facilities provide family health services, but family physicians are only located at rural hospitals.

In Sudan both family health centers and rural hospitals have family physicians located currently. It is important to differentiate between family health services provided at urban and rural settings. Family physicians working at family health centers will be the first contact in urban settings, while in rural areas FP will be posted depending on where the first contact will be, because in some areas the first contact institution is the rural hospital rather than a family health center. So in such areas the family physician will have a post at rural hospitals but at the same time he/she will also support and coordinate care at lower level facilities. States with good coverage by FHCs and capacity to attract family physicians could adopt the model of family physicians working FHC at both urban and rural areas. Other PHC facility staff should be trained on family practice approach and linked to facilities occupied by FPs.

This policy adopts the following model:

- In urban areas, FP is the first contact and is placed at FHC
- In rural areas, where there is no FHC and the nearest facility is the rural hospital; FP is located there.
- In rural areas, either FHU or FHC will be existing:
 - In case of FHU is the nearest facility, it will be posted by medical assistants and they will be the first contact.
 - Alternatively, FHC might be the nearest facility, and it will be posted by family physician and they will be the first contact.

B. Package of health services

All PHC facilities will provide comprehensive promotive, preventive and curative health services. Depth of curative services will depend on the facility type and care provider category. While MAs at FHU will provide curative services focusing on common illnesses, FPs will be enabled to provide wider range of curative services. Details of service package at different facility levels have to be developed.

C. Integration of family health services

- **Integration of family health services with primary health care services is the core concept of this policy**
- **Integrated team and division of roles and pathways have to be clearly defined beforehand**

- **The family physician is the leader of the family health team at the PHC. He/she should provide guidance, supervision and mentorship for the team. The FP facilitates exchange of information between facility team members and most importantly, has the holistic view.**

- **Pathway of patients attending health facility starts with the FP as the gatekeeper as part of the integration and comprehensive family health package.**

D. People centeredness and role of community

People centeredness and role of community are features of family health.

Catchment areas for all facilities should be defined and population should be registered because these are the main prerequisites for adopting family health approach.

E. Continuity of care

- To ensure provision of continuous care for families family folders should be created and monitored through quality supervision. This is also to enhance informational continuity.

The relationship of patients will be with facility, and not with specific care provider. Existence of family folders will inform the care provider about the presenting patient. This means the relational continuity will be with the facility rather than with the care provider.

F. Gatekeeper to the health care system

- Primary health care is the gate-keeping institution to the health care system (with exception of some services accessed directly at secondary level e.g. emergencies) and family physician is the gate-keeper at this level.

- Patients are allowed to access directly secondary level, but the system should introduce disincentives (extra charge); in order to reduce the use of secondary services without any need or referral.

- An alternative option is not to adopt gate keeping until improving quality of PHC through accrediting PHC facilities and this will automatically attract the community to use these services.

G. Referral system

A referral system pathway should be defined. Facilities with FP should receive referred cases from lower level facilities. The feedback for referring cases should be two-way,(the referring and referred facility) Mechanisms to improve methods of communication between facilities should be developed.

- **One option is to develop central referral service that receives and manages, and directs referred cases to relevant facilities. This can facilitate and organize referral pathway. However, referral monitoring and evaluation is crucial to maintain quality services at both levels.**
- **PHC teams should be trained on referral guidelines and strictly work with them. On the other hand, health workers at secondary and tertiary levels should be also well trained on these especially feedback to the first contact facility.**
- **For certain identified clinical conditions patients may be referred from primary level directly to tertiary care hospitals.**

H. Supervision system and accountability

With regard to line of accountability and supervision system for the three categories of staff involved in family health model the following is proposed:

- **CHW administratively and technically accountable to locality, and reports to and supervised by Medical Assistant in the nearest area**
- **Medical assistant's administratively and technically accountable to locality or state in case of absence or weak local health system and report to Family physician or directly to the locality**
- **Family physician's administratively and technically accountable to state and report to and supervised mainly by state. An integrated team can be formed with representatives from the state ministry of health and localities. Their role is to supervise and mentor family physicians and also to ensure that any upcoming administrative issue is resolved. The supervisory team can comprise specialists from different disciplines such as medicine and surgery. On the other hand, family physicians should be involved in supervision of allied staff working at FHUs.**

VI. Implementation of the family health policy

Governing structures

Family health council will be established to regulate the practice and coordinate between different actors involved in teaching and delivery of family health services. Role of **SMSB** in regulating the training in family medicine has to be established and strengthened. Besides status of master holders' family doctors, authorities must be identified and approved at **SMC**.

Implementers of the policy

Federal ministry of health will be responsible for strategic planning, developing standards, monitoring and supervision of implementation of the family health approach. This will be through accommodating family health department within PHC directorate general. Also FMOH through its training institutes will organize in-service training of medical officers and MAS, production of MAs and community health workers. **States ministries of health** will lead implementation at states including planning for delivery of family health services, monitoring and supervision. **National health insurance fund** with its branches at states will be the purchaser of family health services. **Sudan medical specialization board**, PHI and other training institutes will be responsible for training of family physicians.

Capacities and resources required for implementation

Human resource:

Implementation of the policy relies mainly on 3 types of care providers: family physicians, medical assistants and community health workers. Therefore building capacities of training institutes to produce adequate numbers of well trained care providers is mandatory. The main targeted training institutes in this regard are training institutes providing post graduate training in family medicine and academies of health sciences. Likewise the role of CPD is pivotal for providing in-service training for these cadres, and also for providing the basic training on family health for medical officers before their deployment to health centres. Preparation of training materials and adequate trainers are important elements in this concern.

Service delivery system preparation

Service delivery system must be prepared both in terms of infrastructure as well as for clinical practice. Continuation of ongoing efforts targeting expansion and rehabilitation of PHC facilities is mandatory for ensuring service availability, improving quality of service and work environment for care providers. Beside these structural aspects, improving quality of clinical practice through development of guidelines and standards is highly needed. Also designing and implementing a system of referral is crucial. A detailed guideline for establishment of catchment areas for PHC facilities has to be developed.

Management support systems

As mentioned in the policy, reform in information system to promote continuity of care is essential. Health information department must lead the task of developing family folders and collecting data about population in the catchment area of each PHC facility. Strengthening supply system including procurement of equipment and maintenance are highly essential. Building capacities of the states in management, monitoring and supervision is important.

Availing adequate fund to provide family health services, and improving purchasing and provider payment mechanisms are important components. That is why implementation of this policy must go parallel with implementation of health finance policy which introduces effective arrangements in this regard.

Piloting or going universal

This policy introduces major changes to the service delivery system, which require huge investment to be implemented. The main issues in this concern include:

- * Reforming service delivery system
 - Infrastructure
 - Supportive management systems
 - Family folders and catchment area
 - Gate keeping and referral system
- * Human resource
 - Adequate production of staff
 - Continuous professional development
 - Retention
- * Finance
 - Adequate financing of PHC
 - Provider payment

Further, testing these options in Sudanese context and then modifying and adapting it is favourable. For the time being states vary greatly in the capacity of their health systems to carry this service delivery reform forward. Moreover the program of family medicine currently is delivered at little number of training institutes. Consequently the expected numbers of graduated family physicians will remain limited in the coming couple of years compared to the total number needed to cover all Sudan. It will be wise to concentrate the enrolled physicians in certain states to let the complete family health model to function and materialize. Therefore starting implementation with better prepared states to set the model, learn lessons and then expanding implementation will be the adopted strategy for this policy. Criteria for selecting pilot states include:

- State commitment
- management Capacity of state ministry of health
- Coverage by PHC facilities
- Availability of training institutes providing programs of family medicine
- Availability and ability to attract candidates of family medicine

Phasing of implementation

Above piloting was discussed as first step to implement nationwide family health model for PHC level. In this part we focus the discussion on the approach of phasing the implementation to rollout the model throughout the country.

Currently there are 5 states involved in family medicine post graduate training programs. By the end of May 2016 these states will have considerable numbers of family physicians with master degree, which is an important and precious asset for implementing family health approach, because family physician will provide leadership to the whole model. Therefore one option to be considered is to choose these states for piloting the entire reform of service delivery described in this policy given

that they fulfil there other criteria or their capacity could be improved to be ready for implementation. Another option is to select the best relevant states out of these five states with trained family physicians for piloting. This option has advantages over the first option:

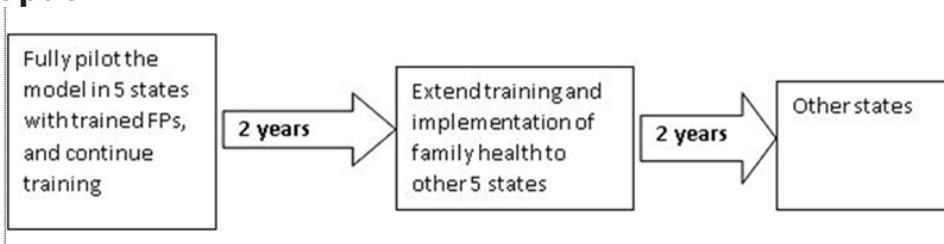
- Ensures readiness of states for implementation
- Focusing piloting consolidates efforts and facilitates implementation and monitoring of the performance

On the other hand inclusion of all 5 states accelerates the implementation of the family health model, and makes use of the investment done on production of family physicians in all these 5 states.

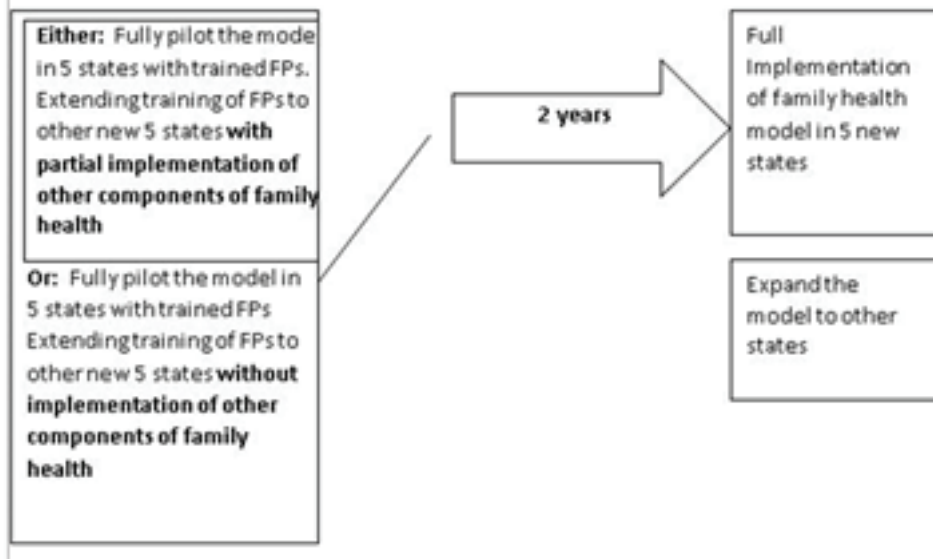
Another issue to be considered is the question of whether the new cycle of enrolment of new candidates in the family medicine program should be from the same 5 states or shifted to other new states? Another related question is whether these new states should be also part of the piloting in case of opting to take new states? And if the states become part of piloting should the model piloted comprehensively or partial piloting is possible? And if the piloting will take place should it start form the first year or it could be postponed to the second year?

The figures below illustrate these options:

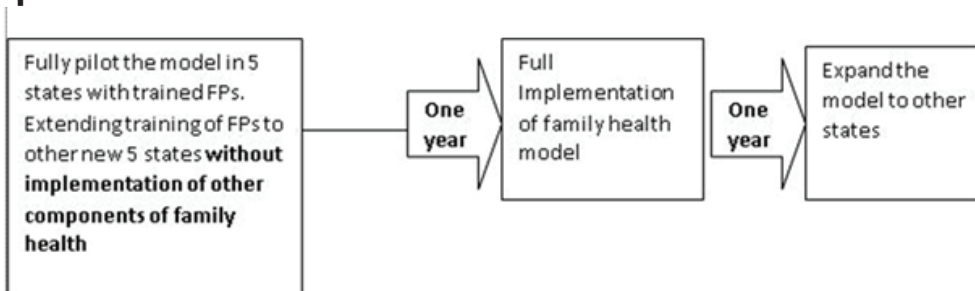
Option 1



Option 2



Option 3



Selecting the same states with family physicians for new uptake of family medicine enrollees has the following advantages:

- Large number of FPs (complete the program and starting) will lead to better implementation of family health approach
- Make use of available experience of states in training FPs
- Concentrating the available FPs in few states will ensure their presence in health system undergoing other components of service delivery reform which are necessary for FPs to perform well and be satisfied
- Relatively easy to implement because it considers the capacity of states

The problem of this option is that it takes longer time to implement the family health in all states

The second option will take shorter time to rollout the model nationally.

The challenges to this option are:

- Putting FM enrolees in the current health system which faces many challenges will hinder linking training with practice of family health
- Delinking training of new family physicians from other service delivery and finance reforms sustains the current problems and leads to dissatisfaction of FPs

These challenges could be mitigated by adopting partial implementation of other components of the reform. Another option is to start training of FPs in 5 new states without implementing any of the other components of the model, which will start one year after training. The justification for this is that during this one year trainees will be heavily involved in the training, with limited or no role in service provision.

Annex (1): Roles & Responsibilities

Stakeholders:

1. The **Federal Ministry of Health** (national level) is responsible for regulation of FM practice in the country. This role is conducted through the Sudan Family Health Council that has a direct relation with the NHCC.
2. The **State Ministry of Health** (state level) is responsible for regulation and provision of services, supervision of FPs, evaluation of reports, organizes the relation between FPs and prepayment organizations and supervises local level. This role is conducted through the Sudan Family Health Board.
3. The **State Localities** (local level) are responsible for managing and providing PHC services. In states with well established local health system family physicians are accountable to the locality but if otherwise they are directly accountable to the state. As an option FP could be part of the team technically by participation in planning and management of health in the locality, with administrative affiliation to state in the first phase of implementation. This role is conducted through the Sudan Family Health Unit.
4. **Sudan Medical Specialization Board** is responsible for putting the standards of education for all professions. All training institutions should follow these standards.
5. **Sudan Medical Council** is responsible for licensing of all physician including family physicians in addition to setting standards of work. It also caters for CME as part of re-licensing

Role of other paramedics (Core team)

1. Should reflect the comprehensive range of provided services (promotive, preventive and curative)
2. Types of staff (nurse, midwife, lab technician...) should be identified, and roles should be divided in an integrated way

Annex (2): Family Health Core Team

We will adopt the standards identified by the Primary Health Care Centres (FMoH) for the three levels of family health service providers:

- A. Family Health Unit
- B. Family Health Centre
- C. Rural hospital

A. Family Health Unit:

1. Medical assistant
2. Nurse
3. Midwife

B. Family Health Centre:

1. Family Physician (1)
2. Lab Technician (1)
3. Nurse Technician (3)
4. Pharmacy Technician (1)
5. Nutritionist and Vaccinator (1)
6. Statistic technician (1)

C. Rural Hospital:

1. Family physicians (hospital manager) (1)
2. Head of nursing (1)
3. Medical officer (2)
4. Nurse for every 8 beds in the shift (1)
5. Surgery preparation officer for every table (1)
6. Anaesthesiologist assistant (1)
7. Nurse per shift (2)
8. Nurse for referral clinic (1)
9. Statistics assistant
10. Lab technician (2)
11. X-ray technicians (3)
12. Ultrasound technician (1)
13. Pharmacist assistant (1)
14. Nurse for blood bank (3)
15. Nutritionists (3)
16. Physiotherapist Assistant (2)

17. Psychiatrist Assistant (1)
18. Social worker (2)
19. Ophthalmologist assistant (2)
20. Optics Technician (1)
21. Health visitor (1)
22. Midwife (4)
23. Vaccinator assistant (2)
24. Dentist (1)
25. Dental assistant (1)
26. Nurse for dental clinic(1)

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