Health System Benefit Package Design & Provider Payment Mechanisms

Consultancy to WHO Sudan for NHIF

Provider Payment Mechanism
Technical Report

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EBD.
EconomicsByDesign

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Glossary

PPM - Provider Payment Mechanism
NGO – Non-Governmental Organisation
DRGs – Diagnostic-Related Groups
EHBP - Essential Health Benefits Package
CBP – Comprehensive Benefits Package
ABP - Additional Benefits Package
PHC – Primary Health Care
WHO - World Health Organisation
FMOH - Federal Ministry of Health
NHIF - National Health Insurance Fund
AfDB - African Development Bank
PHC - Primary Health Care
SNHIF – State National Health Insurance Fund
UHC - Universal Health Coverage
MOH – Ministry of Health
PHI – Public Health Institute
SMOH – State Ministry of Health
GDP – Gross Domestic Product
MOH – Ministry of Health
KPIs – Key Performance Indicators
U5 – Under 5
NMSF – National Medicines Supplies Fund
FFS – Fee-for-service
HIS - Health Information System
ICD – International Classification of Diseases
OPCS - Office of Population Censuses and Surveys
TOR – Terms of Reference
JLN - Joint Learning Network for Universal Health Coverage
SRO – Senior Responsible Officers
DG – Director General
NMPB - National Medicine and Poisons Board

Key Points

Economics by Design (EBD) has been commissioned by the WHO Sudan to design a Health Benefits Package (EHBP) and a Provider Payment Mechanism (PPM) for the Health System of Sudan. These are two inter-connected projects are funded by the European Union, and together will help accelerate Universal Health Care (UHC) for the citizens of Sudan.

Findings from the PPM project are presented in this report. The report has drawn from information from a variety of documents and previous reports as well as from discussions, workshops, and site visits held with stakeholders from the Ministry of Health, the National Health Insurance Fund, and the Public Health Institute between December 2019 and September 2020. In summary;

- A current State assessment has been completed. There is political commitment to deliver UHC and inter-sectoral co-operation. However, the current methods of funding services at the front-line does not ensure that the funds are available to pay for the resources required to deliver the right services, at the right time, and in the right place.

- Common reform objectives have been synthesized from the various reform documents and prioritized by local stakeholders. There is a clear consensus that the PPM should prioritize Access to services, Quality and Safety of services, Efficiency of services, Availability of services, and Utilisation of health system resources. Additional tactical objectives have also been developed to address challenges and ensure efficient use of workforce, information technology, facilities, clinical practice, prevention, and for the health delivery system as a whole.

- A detailed review and description of different PPM options for Sudan has been prepared covering PPMs which are organized on the bases of meeting need (capitation), increasing activity (case-based payments), increasing capacity (global and line-item budgets), and improving performance. The application of these mechanism in a mixed payment model for the under 5 population in North Kordofan has been reviewed in some detail.

- An assessment of the feasibility of implementing different PPMs in Sudan suggests that there needs to be significant investment in information technology and management capability before PPMs that rely on accurate diagnostic clinical activity data (such as DRG payments) can be implemented.

- It is recommended that a simple national PPM approach for payments from NHIF (in its new role as payer) to FMOH and SMOH (in its role as public sector provider) should include capitation for primary care to address need, and a mix of episode-based payments and global budgets for secondary care to encourage growth in planned activity ensuring capacity for urgent and emergency care. Performance payments will also be included to reward health system resilience building in pre-defined areas. It is further recommended that each SMOH be given flexibility to use a pre-approved national taxonomy of payment mechanisms to fund outlets within each State so as to meet local challenges and priorities.

- Three pilot sites (test beds) have been launched and training has been provided by Economics by Design to the pilots to cover; overview of PPMs, proposals for PPMs for Sudan, preparing for pilots, PPM Information requirements, and PPM pilot evaluations. The training material is available online for the wider roll-out for other states in Sudan.[1]

The limitations of the work undertaken to date are documented in the report. Importantly, the work will need to be taken forward and developed by NHIF and FMOH stakeholders and refined as data, capability, capacity, and stakeholder engagement permit and as learning from the pilots emerge.

[1] https://economicsbydesign.com/courses/provider-payment_mechanisms_for_sudan/ Password access is available on request from WHO Sudan.

Chapter 1: Introduction

The Health System of Sudan is undergoing significant change. The new Government are currently refreshing the National Health Plan and is committed to working towards Universal Health Coverage.[2]

EHBP + PPM Projects

Two key projects have been commissioned by the World Health Organisation (WHO) Sudan to support the Government of Sudan on this journey.

Project 1 involves the design of an **Essential Health Benefits Package** – Box 1. This will involve the establishment of three packages; a (basic) package of essential services for all citizens, a comprehensive package for the formal sector and the poor, and an additional package available to those who pay a premium contribution.

BOX 1: What is an Essential Benefits Package in the context of Universal Health Care?

'a core [and explicit] set of good-quality health services to which all eligible citizens are entitled regardless of their circumstances '&' an [affordable] benefit package includes not only the work of designing a technically sound benefits package, but also updating, monitoring, evaluating, and implementing it.' (Amanda Glassman, 2016)

The optimal package depends on local health needs, robust evidence, system capacity and capability, and the size and sustainability of the financing pool.

Project 2 builds on the work undertaken for the Health Financing Plan.[3] It involves the implementation of **Provider Payment Mechanisms** for use by the National Health Insurance Fund (NHIF) – Box 2.

Box 2: What is a Provider Payment Mechanisms in the context of Universal Health Care?

The money which is transferred from a payer to a provider as fair and sustainable compensation for the delivery of the essential benefits package. Methods include cost-based payments for the use of health care resources directly, through to value-based payments for the achievement of population health outcomes. Each method will result in funds being focused on different parts of the system and care pathway; clever design can strongly influence local decisions about delivery priorities.

The optimal method(s) will depend on the priorities and objectives of the payer and the capacity and capability of the provider.

[2] (Federal Ministry of Health, Republic of Sudan, 2017)
[3] (Public Health Institute, Federal Ministry of Health, Republic of Sudan, 2016)

The successful implementation of both Projects should generate strategic benefits for Sudan:

- Accelerate progress to Universal Health Coverage
- Increase population coverage for health services
- Improve access to services
- Improve the quality of health services
- Reducing fragmentation of health care
- Reduce health inequalities
- Increase efficiency, utilization, and value for money from health resources (workforce, facilities, medicines, and digital health technology)
- Reward providers for sustaining efforts to improve efficiency and effectiveness of services
- Improve health outcomes and healthy life expectancy – healthy population = healthy economy.

Both projects will support strategies for investing in the health system of Sudan. Establishing an 'evidence-based' Essential Benefits Package and associated Payment Mechanisms that encourages and rewards providers to deliver improved health and care will provide clarity of information and evidence for:

- Making the business and economic case for government investment in health: healthier population ➔ wider economic benefits.

- Making the business case to the citizens for prioritizing pooled spending on health and care compared to other programs.

- International Donors to support programs of investment in new and better services by answering the question "how can we help?" clearly and robustly.

Project Objectives

The main purpose of the PPM project is to be a catalyst for the implementation of new payment systems to deliver the Prioritized Health Benefits Package in Sudan. The expected outcome is to have a health insurance payment mechanism in selected States with improving coverage, quality, equity, efficiency, and health outcomes.

Specific objectives are:

- To perform a **situation analysis of current payment system** in order to determine gaps and identify the requirement to introduce new payment mechanisms and related challenges.

- To create key new concepts and construct technical guidelines, plan, and establish working manuals to support implementation.

Discussion with Health System Leaders helped the Project Team to develop some key principles to guide the approach. Namely that recommendations should be: Practical, Achievable, As Simple as Possible, Quick, Skill Building, Impactful, Popular.

Report Outline

This Technical Report presents the work undertaken in relation to the development of the PPM. Chapter 2 provides an assessment of the current context in Sudan, and Chapter 3 provides an analysis of potential PPMs and an example of their application in North Kordofan State in Sudan. A feasibility analysis of implementing these PPMs in Sudan is provided in Chapter 4. Chapter 5 presents a recommended way forward for PPM development in Sudan, and Chapter 6 provides an overview of the Piloting arrangements.

A large bibliography has been referenced and used to inform this report and this is presented in Appendix 1.

Chapter 2: Current State Assessment

Introduction

The current health services offered by the Government of Sudan entitles its beneficiaries to a range of free healthcare, mainly primary care including medical consultations from primary health care providers, GPs and specialists, routine and special laboratory investigations, and imaging (including CT Scan and MRI). Service users are expected to pay 25% of the medicines cost.[4] Certain health services are excluded from the benefit package such as cosmetic surgery, open-heart surgery, and organ transplantation. The current package is in principle very broad, with few services explicitly excluded from coverage. There is a comprehensive list of Essential Medicines that is updated each year by the Pharmacy Directorate at the Ministry of Health in consultation with the NHIF. There are also separate medicines lists held at State level by the State Ministry of Health. The NHIF Essential Medicines List is updated every two years with the support and involvement of FMOH and health partners and beneficiaries.

However, as will be discussed in the following paragraphs, there are many challenges and issues which affect the flow of funds and, thereafter, the delivery of the current package. These go some way to explaining the continuing very high proportion of out-of-pocket expenditure on healthcare in Sudan. Whilst coverage is broad, in practice there is huge geographic variation in the funding and availability of resources and the associated quality and availability of supply of many basic health care interventions. Local stakeholders face huge challenges in fulfilling commitments to the population.

Context

The following provide some high-level indicators of the current population and epidemiology of Sudan.

The population of Sudan is estimated at 44 million in 2020 and is growing at around 2.9% per year (2018 est.); it is expected to increase to 55 million by 2030.[5] Sudan comprises a Federal Government with 18 States covering an area of 1.7m sq km; the largest State by population being Khartoum (in excess of 8 million population) and the smallest being Central Darfur (circa 751,000).[6] There is huge diversity across the country with approximately 145 different languages spoken (70 native languages), reflecting the rich cultural history of the geography and its populations.[7]

The population is predominantly rural (65% rural) and although the urban population is growing relatively quickly, it is still only expected to account for 39% of the total population by 2030. Estimates suggest that around 80% of the population work in the agriculture sector.[8]

Fertility rates remain high (ranked 17 in the world) at 4.85 children born per woman.[9] Infant mortality is relatively high at 44 per 1000 live births and maternal mortality is also relatively high at 295 per 100,000 births.[10] Life expectancy at birth is relatively short in global terms at 65.8 years (ranked 186 in the world).[11] It is a relatively young population with a median age of 19.7, growing to 21.6 by 2030.[12] The youth dependency ratio is 75 per 100 working adults.[13]
There remains a very high risk of major infectious disease including food or water borne diseases such as typhoid, vector borne diseases such as malaria, water contact (schistosomiasis), animal contact (rabies), and respiratory

[4] Salim, Anas Mustafa Ahmed, and Fatima Hashim Mahmoud Hamed. "Exploring health insurance services in Sudan from the perspectives of insurers." SAGE open medicine vol. 6 2050312117752298. 11 Jan. 2018, doi:10.1177/2050312117752298 p5
[5] United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019: Data Booklet (ST/ESA/SER.A/424) p16
[6] https://www.citypopulation.de/en/sudan/
[7] Young African Leaders Initiative https://yali.state.gov/country-of-the-week-sudan/
[8] Source CIA World Factbook, Sudan, 2017
[9] Source CIA World Factbook, Sudan, 2017
[10] Source CIA World Factbook, Sudan, 2017
[11] Source CIA World Factbook, Sudan, 2017
[12] http://data.un.org/CountryProfile.aspx/_Images/CountryProfile.aspx?crName=Sudan
[13] Source CIA World Factbook, Sudan, 2017

diseases. Malnutrition is a major issue with 34% of children under the age of 5 underweight (ranked 5 in the world).[14] Major communicable disease and complications of pregnancy and birth features heavily in the top 10 causes of premature death. Respiratory infections, diarrheal diseases, malaria, HIV/AIDs, pre-term birth complications, neonatal sepsis, neonatal encephalopathy, protein energy malnutrition, and meningitis feature as the top 9 causes of premature death, followed closely by road injury and congenital anomalies.[15] Chronic diseases are beginning to grow, with stroke and ischemic heart disease also featuring in the top 20 causes of premature mortality.[16]

In 2017, Gross Domestic Product was growing at 1.4% per year, slower than population growth, which puts pressure on per capita GDP which was already relatively low at $4300 per annum in 2017.[17] The human development index which combines life expectancy, education, and income shows a relatively low score of 0.502.[18]

Estimates suggest total health expenditure is around 5.3% of GDP (below the global average of 10%) and per capita current health expenditure is US$132 (2015 estimates).[19] Government health expenditure is much lower at 0.75% of GDP whereas household out-of-pocket expenditure as a percentage of current health expenditure is relatively very high at 80%.[20]

Until April 2019 Sudan was governed via a Federal Republic, however following a power-sharing deal between civilians and the military the country is now under-going a three-year transition to a new democratic political system led by an 11-member Sovereignty Council and a civilian Prime Minister. There appears to be strong political commitment on the part of the new leadership to improve health care as well as clear inter-sectoral agreement to support health-in-all policies: there is a new willingness to work collaboratively across traditional boundaries. The new Government is in the process of refreshing and renewing policies and strategies, and has made a commitment to significant increases in funding for healthcare in 2020 that will be protected in 2021 and 2022.

Current Health Services

The Sudan Health Provider System comprises of:[21]

Public Sector	Private Sector
❖ 4916 family health centres/units ❖ 380 local/rural hospitals ❖ 55 general hospitals	❖ For-profit sector focused on curative care and located in cities = 17 hospitals ❖ Not-for-profit sector accounts for 32 hospitals and 319 health centres

[14] Source CIA World Factbook, Sudan, 2017
[15] IHME analysis of premature mortality in Sudan, 2010, all ages, all causes, rates per million population
[16] IHME analysis of premature mortality in Sudan, 2010, all ages, all causes, rates per million population

[17] Source CIA World Factbook, Sudan, 2017
[18] United Nations Development Programme – Human Development Reports Sudan: 'Human Development Indices and Indicators: 2018 Statistical Update' p1 http://hdr.undp.org/sites/default/files/Country-Profiles/SDN.pdf
[19] National Health Accounts 2015
[20] National Health Accounts 2015
[21] FMOH PHI, Strengthening Health Care in Sudan through a Family Health Policy Approach, 2016.

The **Federal Ministry of Health** (FMOH) is responsible for

Standards
Legislations & Control Measures
National Policies & Strategic Planning
Capacity Building of State & Local Health Systems
International Relations & Managing External Aid
Monitoring & Evaluation

The **states** are responsible for

Operational Planning
Capacity Building of Human Resources
Governing
Providing Secondary Care & Rural Hospitals

The **locality** is responsible for

Provision of Primary Health Care Services (PHC)
Midwifery & MCH Services
Environmental Health
Vector Control
Human Resource Management

MoH services are organised at Federal, State, and Locality level. Public services are also provided by the Military, Police and other government agencies.

Early discussions with stakeholders suggested that there are severe challenges associated with the availability of current health services for the citizens of Sudan, namely:

- Services included are not necessarily priority services and/or based on solid international evidence of cost effectiveness.
- Services, whilst free in theory, may not be available at all, may only be available in part, may be of poor quality, and may be unsafe.
- There is wide ranging disparity in access across geographies, rural and urban, and between socio-economic groups. The distribution of health workers does not match population need, either geographically (38% work in Khartoum), or urban / rural (70% of the population resides in rural areas yet 70% of health workers work in the urban areas).[22]
- There is a predominance of secondary care, 67% of the staff work in secondary and tertiary care.[23]
- Access to safe and effective pharmaceuticals, medical devices, and digital health technologies remains variable across and within states and quality is not systematically assured.
- Patients are expected to pay 25% of their medication costs, and although regulated, the monitoring of prices is not closely controlled.[24]
- Patients may be required by local centres to make additional financial contributions towards services in order to keep things going.

22 Directorate General of Human Resources for Health Development, Federal Ministry of Health, Government of Sudan Situation Analysis for Strategic Plan for Sudan 2017-2021, p18
23 Directorate General of Human Resources for Health Development, Federal Ministry of Health, Government of Sudan Situation Analysis for Strategic Plan for Sudan 2017-2021, p18
24 Salim, Anas Mustafa Ahmed, and Fatima Hashim Mahmoud Hamed. "Exploring health insurance services in Sudan from the perspectives of insurers." SAGE open medicine vol. 6 2050312117752298. 11 Jan. 2018, doi:10.1177/2050312117752298 p5

- The separation of roles to NHIF as Payer and MOH as Provider is still underway, and there is still confusion about what is funded by NHIF and what is funded by subsidy from MOH.
- Public health prevention programmes remain a top priority but are fragmented and funding does not seem to be systematically incorporated and protected strategically as part of the NHIF programme.
- Vaccination levels have improved, but there are still issues around management of cold chain.
- Wider determinants of health (e.g. environment) remain significant drivers of disease and ill-health.

Since these early discussions, more in-depth discussions have identified specific challenges and opportunities for improvement.

As will be discussed in the following paragraphs, there are many challenges and issues which affect the delivery of the current package and which goes some way to explain the scale of out-of-pocket expenditure on health. Whilst coverage is broad, in practice there is huge geographic variation in the quality and availability of supply of many basic health care interventions, and local stakeholders face huge challenges in fulfilling commitments to the population.

Workforce

Sustained, significant, and chronic shortages of health professional staff is a major challenge for Sudan across all disciplines, specialties, and grades. In the context of a "global" shortage of health professional staff, salary levels in Sudan are very low and uncompetitive; newly qualified staff are tempted by significant financial incentives to move to tertiary centres in the city, Khartoum, and ultimately to work overseas. As a result, the numbers of qualified health staff are relatively low for the size of the population and the distribution of health workers does not match population need geographically (38% work in Khartoum), or in terms of urban / rural (70% of the population resides in rural areas yet 70% of health workers work in the urban areas).[25] There have been various initiatives to address workforce issues through upskilling and developing new roles for health assistants and support staff. However, these have created their own disparities on account of the sizeable pay gap between different types of health and care professionals particularly in primary care, itself causing problems with recruitment and retention. The availability of trained professional staff will place a major constraint on the pace of change within Sudan and the rate at which new benefits packages can be implemented consistently across the country.

Facilities

Health care facilities and equipment are also of variable quality and suitability, many simply do not provide the right "platform" for the delivery of the healthcare interventions. This is not simply about physical buildings without access to electricity and basic infrastructure. It is also about limited access to laboratory services and equipment to support diagnostics, properly equipped pharmacy, information technology, and telecommunications. A current survey of facilities is underway which should provide some insight into the extent to which investment in facilities is needed before improvements can be made in terms of access to services. This was due to report in April 2020. As with workforce, the pace of investment in the "rehabilitation" of facilities will constrain the pace at which new benefits packages can be implemented consistently across the country.

25 Directorate General of Human Resources for Health Development, Federal Ministry of Health, Government of Sudan Situation Analysis for Strategic Plan for Sudan 2017-2021,p18

Information Technology

Whilst there has been some investment in electronic information technology in health care in Sudan, and a strong commitment to do more, currently most facilities record all activities using paper-based records systems (including for NHIF claims). Electronic data that are recorded are primarily captured for the purposes of reporting KPIs and/or analytics. With the exception of a few well-developed primary care centres, the majority of health clinics do not have computing capability on site. In this environment it is extremely difficult to embed complex clinical practice guidelines within clinical operating protocols and to monitor compliance through clinical audit. As information technology is not generally used for primary data capture as part of processes such as "admissions management" "pharmacy management" etc. so there is no opportunity for the use of these data to develop an electronic health record. Health professional staff therefore rely on, often incomplete, manual records to support clinical decisions. Crucial, timely, and electronic information about the health status of patients in terms of diagnosis, treatments, and outcomes are not available for the effective clinical management of patient populations and the optimal utilisation of resources. Not only does this impact on the feasibility of implementing a comprehensive range of effective health interventions, but it also places serious constraints on the use of health informatics to inform payment mechanisms.

Digital Health

Many countries are starting to see the potential for digital health solutions to empower the population and to enhance the workforce in terms of productivity and effectiveness of prevention and treatment services. The use of AI to support virtual primary care, digital human diagnostics, telemedicine, and remote professional support for the delivery of treatment programmes in rural areas, are increasingly being adopted to address issues relating to staff and workforce shortages, and the paucity of health care facilities. There is great potential for "digital human" solutions to support the system in Sudan, but this would require investment in basic infrastructure and information technology (data are crucial), 4G telecommunications and secure cloud platforms, as well as in digital training for citizens and staff. It would also require a process for the NHIF to include digital healthcare interventions in its considerations, alongside more traditional treatment interventions to include in its health benefit packages.

Health Delivery System

The historic fragmentation of service delivery across various Ministries and the NHIF is considered to have amplified the impact of these challenges. The adopted policy to separate and refocus the roles of the NHIF as the Purchaser of health services on behalf of the Government, and MOH as a Provider of Government Health Services provides a real opportunity for re-alignment and focus. However, the implementation of this policy remains 'work in progress'. There is confusion about what is funded by NHIF and what is funded by subsidy from MOH. Current financing flows from the State to health care delivery facilities and outlets are opaque and overly complex. There is also considerable historical disparity between the range and quality of primary care services and facilities previously (and mainly still) provided by NHIF, and the equivalent MOH facilities. This is acting as a barrier to change as NHIF stakeholders remain reluctant to pass oversight of these facilities to SMOH stakeholders. Misalignment in the planning and distribution of properly trained staff, functional buildings, modern equipment, and effective medicines across health and care facilities results in system inefficiencies with the irony of under-utilised facilities sitting alongside crowded clinics with long waiting lines.

The transition to NHIF as a Purchaser and MoH as a Provider of health services will need a clear implementation strategy and plan, which builds on the strengths and achievements of both organisations in order to recreate a safe health delivery system and associated facilities and which aligns payment systems with the development of new Health Benefit Packages.

Prevention

Public health prevention programmes remain a top priority for Sudan. Many programmes are delivered through primary care with wider determinants of health being addressed by Localities (Municipalities). Challenges here included fragmented funding sources (many are part of programmes funded by Donor agencies), and a lack of clarity about the role of the Purchaser in paying for services that impact on population and community health (as opposed to the behaviour of individuals). The development of the three health benefits packages provides an opportunity for clarity and coherence around funding for effective and cost-effective prevention services, as well as an opportunity to reconsider service delivery through programmes.

Clinical Practice

Local stakeholders advise that where services are available, whilst meeting a pressing health need, they are not necessarily targeting the highest health priorities. This can be evidenced from the predominance of secondary care; 67% of the staff work in secondary and tertiary care.[26] There is some evidence from the visit to North Kordofan State that there has been a concerted shift towards primary care in recent years, with reduced reliance on secondary care facilities and some consolidation of secondary facilities into fewer, larger units. Many primary care services have developed as a result of specific local initiatives, often funded by NGOs to address a specific problem rather than strategic national considerations of the priority health needs and epidemiology. It has been further reported by stakeholders that the current services generally do not meet the needs of special population groups such as the homeless, nomads, and refugees.

The predominance of communicable disease as a leading contributor to morbidity and cause of premature mortality presents its own challenges in terms of current health services. Epidemics present enormous challenges in terms of logistics and costs, quite apart from the health impacts. Addressing the problems associated with communicable disease remains a top priority for the health system and must drive priorities for the NHIF in its new role as Purchaser of health care. Whilst the risk of epidemics continues to take centre stage this will undermine the ability of the country to invest in health interventions to support longer healthier productive lives, which are essential for the economy to grow and thrive.

Local health professionals are delivering care in the most challenging of contexts. The challenges facing the system has meant that there is an absence of clear and consistent clinical practice guidance across Sudan based on evidence of efficacy, effectiveness, and value for money.

Pharmaceuticals

There is relative clarity about the Essential Medicines list. This is prepared by the General Directorate of Pharmacy and approved each year, procured by the National Medicines Supplies Fund, and regulated by the National Medicines and Poisons Board. However, these pharmaceuticals are not necessarily linked with and/or aligned with the services which are being delivered on the ground to patients. There are some challenges involved in the procurement of medicines as a result of shortages of hard currency, and the need to align payment and manufacturing timescales within tight procurement timelines. There are also some national challenges with the availability of laboratory services able to test and validate the quality and compliance of medicines and gaps in the regulations (particularly in relation to biosimilars). However, according to interviews with local stakeholders, more than 97% of medicines are registered with NMPB, and prices benchmark well with international standards. There is also considerable scope to develop local manufacturing in the coming years: this would improve access and reduce costs further.

Whilst there is an impressive supply chain management function from Federal to State, the efficient and effective distribution and storage of medicines from State to “last mile” is challenging. As a result, the availability of

26 Directorate General of Human Resources for Health Development, Federal Ministry of Health, Government of Sudan *Situation Analysis for Strategic Plan for Sudan 2017-2021*,p18

approved medicines at the front line of service delivery is not consistent, access is variable, and quality is not assured. That said, vaccination levels have improved and much has been achieved to implement immunisation programmes across Sudan. Remaining challenges are centred on the quality of facilities and management of the cold chain.

Overall, delivery of the current package is not consistent or comprehensive and, where services are available, there is a risk that they are provided in the wrong care setting or without access to the right level of health care professional. So, whilst free in theory, many services may not be available at all, may only be available in part, may be of poor quality, or may be unsafe. Partly as a result of the challenges mentioned above, citizens are not clear about what they are entitled to and providers appear to charge co-payments or full payments for services to enable access, and to supplement the funds they receive from the SMOH, NHIF, and NGOs.

In addition to the above there are a number of other issues that will need to be considered in the development of a new PPM:

- Until recently prices have been agreed at Executive Councils at State level. A costing strategy that reflects the full cost of delivering sustainable services is needed.
- New accountability frameworks are required especially at State level, including financial transparency re both NHIF and SMOH.
- There is a need to include public health and programme financing in the health budgets at State level.
- There is a need to ensure that NHIF has the full range of distributed skills and capabilities required to develop and manage the new PPMs.

Reform Objectives

A workshop was held with stakeholders from NHIF, FMOH, and PHI to identify and rank reform objectives. The objectives are shown in the inset box.

In summary, where trade-offs exist between options for PPMs, highest priority should be given to improving:

- Access to services
- Quality and Safety of services
- Efficiency of services
- Availability of services
- Utilisation of health system resources

Other wider health system objectives are important and should also be considered when reviewing options for provider payment mechanisms.

Ranked Reform Objectives
Increase Financial Protection
Increase Number of People Covered
Improve Quality & Safety
Increase Equity
Ensure Sustainability of the Health System in the medium term
Increase Scope of Services Covered
Improve Efficiency
Improve the Measurement of Health Outcomes, Improved Health Outcomes & Reduce Unwarranted Variations in Health Outcomes
Increase Emphasis on 1 & 2 Disease Prevention
Implement the Political or Legal Mandate
Respect Consumer & Professional Preferences

Discussions with stakeholders following a site visit to North Kordofan State also identified the following tactical objectives for the development of PPMs in Sudan:

Workforce	❖ Ensuring consistent payment mechanisms to be used for health professionals working in the same health care facilities, and across the same health care settings ❖ Addressing staff shortages in part by providing competitive salaries for health professionals
Information Technology	❖ Investing in information technology, infrastructure, and manpower including systems to support operational practice, electronic health records, information specialists, and financial management
Facilities	❖ Investing in facilities and equipment to address specific gaps within each State
Clinical Practice	❖ Promoting and encouraging the adoption of and compliance with clinical standards and protocols ❖ Incentivising the development of laboratory services and diagnostic capabilities ❖ Optimising medicines alignment, management, and compliance ❖ Improving medicines supply chain management ❖ Improving quality and safety monitoring ❖ Reducing waiting times and waiting lists for planned procedures
Prevention	❖ Ensuring alignment of adequate funding between health treatment, disease and injury prevention, and the wider determinants of health for any given locality
Health Delivery System	❖ Investing in the administration of health delivery systems which cluster health outlets into coherent delivery units to integrate vertically and horizontally and embrace clinical networks ❖ Developing and implementing a strategy to minimize fraud waste and abuse.

Health System Map

In order to contextualise the project and ensure the PPM design would meet the requirements of the wider health system in Sudan, the EBD Team developed a conceptual map of the proposed new Sudan Health System from the perspective of service eligibility, financing, commissioning, and delivery. This map is shown in Appendix 2.[27]

The map comprises of five components:

Health Financing
The source of funding, the funding pools for each package, and the risk pooling arrangements across those funds at Federal and State level.

Payment Mechanisms
The methods used by the NHIF to pay providers of health services, and the methods used by SMOH to distribute funds across the MOH outlets / facilities.

Provider Systems
The connectivity between the MOH outlets as a system at primary, secondary, and tertiary level.

Packages of Care
The services provided and associated care pathways as part of the benefits package.

Benefit Package Eligibility
Showing the basis of eligibility for the Essential Benefits Package (EHBP), the Comprehensive Benefits Package (CBP), and the Additional Benefits Package (ABP).

Appendix 2 is best viewed poster size.

Please note that Policy, Governance, and Regulation functions are not included within this system overview but are essential to its successful operation.

Summary

Overall, delivery of the current package is not consistent or comprehensive and, where services are available, there is a risk that they are provided in the wrong care setting or without access to the right level of health care professional. So, whilst free in theory, many services may not be available at all. Money does not follow entitlement in a coherent way and so services may only be available in part, may be of poor quality, and/or may be unsafe. Partly as a result of the challenges mentioned above, citizens are not clear about what they are entitled to and providers appear to charge co-payments or full payments for services to enable access and to supplement the funds they receive from the SMOH, NHIF, and NGOs.

The health system reform objectives provide a strong sense of what the objectives should be for the development of new PPMs and these focus on access, quality and safety, efficiency, availability and utilisation. The PPMs are only one part of the overall health system reform program and should be considered alongside governance, health financing, the new Health Benefits Package, provider systems, and care pathways.

27 An overview of the health system map is included in the appendices with the Health Benefits Package Technical Report.

Chapter 3: Provider Payment Mechanisms

Introduction

The Project Team has identified a range of PPMs which might be considered for implementation in Sudan, either in combination or adapted in context to suit local circumstances.

These payment mechanisms have been classified according to the primary organising principles of:

Need

Capitation - Providers are paid a fixed amount in advance to provide a defined set of services for each enrolled individual for a fixed period. Payments can be linked to pre-defined outcome measures, measured using KPIs.

Activity *Case-Base including for example:*

Fee-for-service - Providers are paid for each individual service provided. Fees are fixed in advance for each service or group of services and are often based on volume.
Diagnostic-Related Groups (DRGs) - Providers (hospitals) are paid a fixed amount per admission or discharge depending on the patient and clinical characteristics, which may include admission diagnosis and other factors.
Price-per-episode - Prices per episode is the reimbursement of health care providers on the basis of expected costs for clinically defined episodes of care.

Capacity

Global Budget - Providers receive a fixed amount for a selected period to cover aggregate expenditure for delivering an agreed portfolio of services. The budget can be used flexibly as long as targets are achieved for service delivery and quality. Top-sliced elements can be linked to the achievement of specific outcomes or goals.
Line-Item Budget - Providers receive a fixed amount for a specified period to cover specific input expenses e.g. personnel, medicines, utilities etc.

Performance

Pay for Performance or Outcome Based Payments - Providers receive a financial reward for delivering predefined performance improvement targets. Providers can be penalized for not hitting performance standards. This mechanism has the potential to be useful in specific circumstances to achieve the tactical objectives related to workforce IT systems, care pathway redesign, care safety improvements etc.

These are described in more detail in this chapter.

The Project Team has also had the opportunity to review and visit a PPM pilot which was established in Sudan in North Kordofan Sate. This is essentially a PPM programme which combines a number of the PPMs listed above to tackle specific challenges relating to the delivery of health care for the under 5 population. This pilot has enabled improved resource allocation within the State and, consequentially, improved outcomes for children. The key features of this pilot are presented at the end of this chapter.

Overview of PPMs

The following tables provide a more detailed description and analysis of the key features of each PPM, where risk is held between the payer and the provider, and the data collection requirements.

Organizing Principle	Illustrative Payment Mechanism	Why?	How payment "rates" determined	Timing of payments	Active/ Passive	When Appropriate?	Appropriate "Step"	Modalities of Measure	Psychological Imperative	Key Resulting Challenges	Implications of principle and timing	Information Prerequisites	Purchaser prerequisites	Provider/ICS Pre-requisites
Need	Capitation	Directs money "where needed"	In advance by Purchaser	Prospective *(can have Retrospective adjustment)*	Very Active	When priority is to reduce gap between need and capacity AND system has the capability to respond	"Pool" (SNHIF) to "Purchaser" (SMoH)	DALYs	Equity	Mobilising Supply	Adequate financial discipline and skill of purchaser and provider	Accurate info re demography and epidemiology by locality	Clinical Commissioning & Financial Skills	Managerial & Financial Skills

Capitation (per capita)

Providers are paid a fixed amount in advance to provide a defined set of services for each enrolled individual, for a fixed period. Payments can be linked to pre-defined outcome measures measured using KPIs.

Payer — **Risk** — Provider

Usefulness for Sudan

This mechanism has the potential to be useful in specific circumstances at State Level particularly when payers want established providers to increase access particularly to primary care and prevention services.

Data Collection Prioritisation

Enabling Resource Allocation by Need (1 and 2)

Present & Projected Populations (to 2040 at least)

- By State and locality
- Sex
- 5-year age bands (and yearly estimates for ages 0 to 5)
- Should include precisely defined cohorts of refugees, nomads and the poor.
- Should be drawn from National Register of Births and Deaths (and Marriages)

Burden of Disease

- Should record the incidence and prevalence of disease by diagnosis / major disease category (ICD 9 or 10)
- By State and locality
- By Sex
- By 5-year age bands (and yearly estimates for ages 0 to 5)
- Should include precisely defined cohorts of refugees, nomads and the poor
- By UPI?

Organizing Principle	Illustrative Payment Mechanism	Why?	How payment "rates" determined	Timing of payments	Active/ Passive	When Appropriate?	Appropriate Level	Modalities of Measure	Psychological Imperative	Key Resulting Challenges	Implications of principle and timing	Information Prerequisites	Purchaser prerequisites	Provider/ICS Pre-requisites
Activity	FFS Price per episode Case-based	Incentivizes to Increase Outputs	Before *(or after)* by Purchaser *(FFS by Provider)*	On Time Near Time	Active	Where capacity is secure but under-performing	Purchaser or Provider	Outputs	Incentivisation	Managing Financial Constraints	Adequate financial discipline and skill of purchaser and provider	Accurate info re demography and epidemiology by locality	Accounting IT Clinical Skills *(basic)*	Accounting Clinical IT Managerial Skills

Activity Levels

Individual and Summary Records of:

- Inpatient Admissions (Emergency, Urgent, Planned)
- Inpatient Discharges and Deaths
- Completed episodes of care
- Complete operations, treatments and diagnostic procedures
- A&E attendances (by type)
- Outpatient attendances
- Polyclinic attendances
- GP attendances
- Pharmacy dispensed

Record individually by:

- By State and locality (of residence and treatment)
- By Sex
- By 5-year age bands (and yearly estimates for ages 0 to 5)
- Should include precisely defined cohorts
  - Refugees
  - Nomads
  - The poor
- By Unique Patient Identifier

Fee-For-Service

Providers are paid for each individual service provided. Fees are fixed in advance for each service or group of services.

Fees are often based on volume.

Payer — **Risk** — Provider

Usefulness for Sudan

Fee-For-Service has the potential to be useful in specific circumstances at State Level when payers want established providers to increase access to specific services, e.g. accident and emergency services.

Case-based *(DRGs)*

Hospitals are paid a fixed amount per admission or discharge depending on the patient and clinical characteristics, which may include departments of admission, diagnosis, and other factors.

Payer — **Risk** — Provider

Usefulness for Sudan

This mechanism has the potential to be useful in specific circumstances at State Level when payers want established providers to increase access to secondary care services for patients with specific conditions, particularly chronic conditions.

Price-per-Episode

Bundled payment is the reimbursement of health care providers on the basis of expected costs for clinically-defined episodes of care.

It has been described as a middle ground between fee-for-service reimbursement and capitation, given that risk is shared between payer and provider.

Payer — **Risk** — Provider

Usefulness for Sudan

Price-Per-Episode has the potential to be useful when payers want to efficiently reduce waiting list and waiting times.

Organizing Principle	Illustrative Payment Mechanism	Why?	When & by whom payment "rates" determined	Timing of payments	Active/ Passive	When Appropriate?	Appropriate Level	Modalities of Measure	Psychological Imperative	Key Resulting Challenges	Implications of principle and timing	Information Prerequisites	Purchaser prerequisites	Provider/ICS Pre-requisites
Capacity	Global Budget Line Item Budget	Provides financial security to existing providers	Before (By Purchaser)	Prospective	Passive	Where capacity is developing or fragile	Purchaser to Provider	Inputs	Conservatism	Increasing output and mobilising improvement	Adequate financial discipline and skill of purchaser	Accurate info Re-built, material and human capacity	Basic accounting skills	Basic accounting and managerial skills

Payer **Risk** Provider

Global Budget

Providers receive a fixed amount for a specified period to cover aggregate expenditures to provide an agreed-upon set of services. Budget is flexible and not tied to line items.

Elements can be linked to the achievement of specific outputs and/or outcomes measured using KPIs.

Usefulness for Sudan

This mechanism has the potential to be useful in specific circumstances at State Level when established providers require financial security and can respond flexibility to local circumstances and where information is scarce.

Payer **Risk** Provider

Line-item Budget

Providers receive a fixed amount for a specified period to cover specific input expenses e.g:

- Clinical staff
- Medicines
- Consumables
- Infrastructure

Usefulness for Sudan

This mechanism has the potential to be useful in specific circumstances at State Level when resources need to be targeted to a new service in a specific locality and where information is scarce.

Existing & Planned Capacity

- Built capacity
- Stocks of major equipment and materials (incl. pharmacy)
- Human resources
  - Age
  - Sex
  - Profession/specialty
  - Seniority
  - Experience
- Financial resources (by organization and location)

Organizing Principle	Illustrative Payment Mechanism	Why?	When & by whom payment "rates" determined	Timing of payments	Active/ Passive	When Appropriate?	Appropriate Level	Modalities of Measure	Psychological Imperative	Key Resulting Challenges	Implications of principle and timing	Information Prerequisites	Purchaser Prerequisites	Provider Prerequisites
Performance	Pay for Performance	Can incentivize tactical objectives	Before in principle, after in practice	Near time	Very Active	Where capacity is secure but under-performing	NHIF to SMoH to Provider	Input Outputs Outcomes Impact	Change Orientation	Mobilising improvement	High level of financial and managerial discipline and skill in both the purchaser and provider	Accurate info re performance target metrics (S.M.A.R.T)	Clinical, managerial, financial & IT skills & capacity & external orientation	Clinical, managerial, financial, HR and IT skills and capacity & external orientation

Data Collection Prioritisation

Defined Performance Targets

- Input
- Outputs
- Outcomes
- Impact

Costs

Pay for Performance

Providers receive a financial reward for delivering predefined performance improvement targets. Providers can also be penalized for not hitting performance standards.

Payer — **Risk** — Provider

Usefulness for Sudan

This mechanism has the potential to be useful in specific circumstances to achieve the tactical objectives related to workforce IT systems, care pathway redesign, care safety improvements etc.

Case Study: North Kordofan

A Provider Payment Mechanism Project was developed in 2016 in North Kordofan State[28]. This combined different Payment Mechanisms to solve some specific problems relating to Access and Utilisation of health services by the Under 5 (U5) population and related health care outcomes. The PPM Project Team visited North Kordofan in January to review the pilot and its potential wider use in the development of a model for Sudan.

In line with PPM good practice frameworks, the pilot started with an analysis of the problem facing the U5 population and set a number of related objectives for the design of a new payment model.

A conceptual framework was developed to show the roles of the Payer and Provider(s), the development of the Pool Fund and the flow of funds.

The Essential Benefits Package was designed to improve population health running through from health promotion, sickness prevention, diagnosis, treatment, and rehabilitation. There was a focus on Nutrition and Vaccinations (including cold-chain management).

The Payment Mechanisms included:

- Line-item payments for rehabilitation, equipment, and administration.
- Capitation allowances for the U5 registered with primary health centres.
- A combination of global budget and fee-for-service for U5 population who required secondary care services.

Financed by:

- Free treatment for U5 budget.
- Contribution and premium of insured families.
- Governmental subsidy for poor families (to fill the gap).

Items	%	Remarks
Medicines	**50%**	NMSF + NHIF
Administrative Cost	**4%**	2% MOH ,2% NHIF
Rehabilitation & Equipment	**5%**	Coordination between MOH & NHIF
PHC level	**27%**	Capitation
Hospital	**12%**	Global Budget & FFS
Referral	**2%**	

[28] (Dr. Weal Ahmed Fakihammed, December 2019)

Implementation went beyond the payment mechanism and included refurbishment of facilities, training of staff, and the establishment of a monitoring and evaluation framework.

Reported results - end of 2017 - included:

- Increase coverage by PHC services to 95%.
- Increase in population coverage by 14% out of the target population - from 29.3% (2016) to 43% (2017).
- Increase in coverage with pharmaceutical services from 45% (2016) to 93% (2017).
- Redistribution and retention of medical cadres.
- Increase utilization of services in all localities.
- Rehabilitation of more than 120 public facilities.
- Improvements in cold chain.
- Increase vaccination coverage.
- Reduction in malnutrition.

There were some important lessons from this case study that will impact on the development of a PPM for Sudan:

- Collaboration between payer and provider is essential at this stage of the development of UHC in Sudan.

- Change will take time.

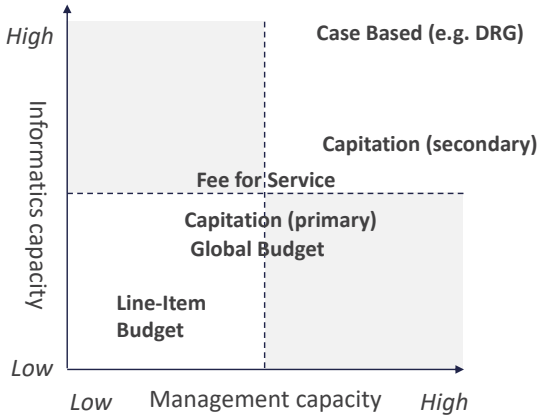
- The Payment Mechanism should not only focus on covering the medical expenses but should support different blocks of the health system including HR, HIS, and facilities.

Chapter 4: PPM Feasibility Assessment

Introduction

As the description in Chapter 3, and the illustration shown here on the right, illustrate some PPMs are more demanding of informatics and management than other mechanisms.

In this chapter we explore the key requirements for the successful design and implementation of PPMs, as well as the barriers and challenges presented by the current situation in Sudan in relation to these requirements.



Key Requirements

There are some common foundations which are required for the successful implementation of any of the Payment Mechanisms. All payment mechanisms need:

- Good systems to record costs
- Good systems to record activity
- Good systems to measure and compare performance

Clinical costing is needed to inform price setting for both Payer and Provider. Clinical costing is generally:

- A mix of top-down (apportioned) and bottom-up (measured for individual patients).
- More specific for acute care than for mental health, ambulance, community, or primary care.
- Made more complex in the absence of a standard, mandated, Chart of Accounts.
- More consistent if aligned to the patient classification methods used by providers and associated standards.

National adoption of new Payment Mechanisms will require the development, implementation, and adherence to costing standards for health services provided by MOH and SMOH providers. These should govern how the provider:

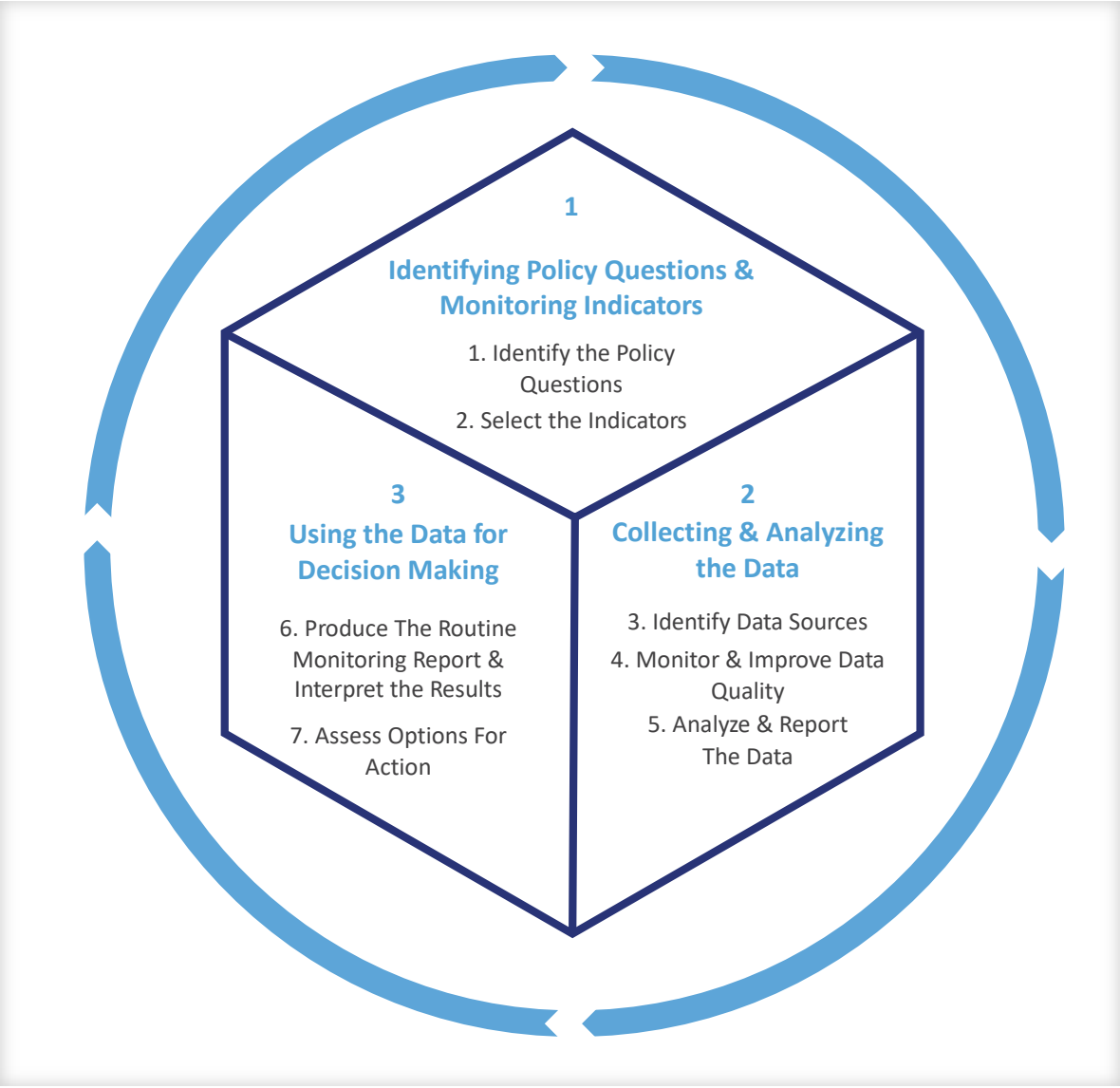
- Records general ledger activity in accordance with a common Chart of Accounts.
- Records income and expenditure from the general ledger to show cost centre and expense code, and periodic value (monthly and year to date).
- How costs should be mapped to “patient facing” and “support”.
- How costs should be allocated to different types of activities and the cost drivers which should be used.
- How activities are recorded for or allocated to individual episodes, attendances, or patients.
- Undertakes reconciliation activities.
- Undertakes quality assurance activities.
- Reports costs, and to whom, to inform the Price Setting exercises.

Activity classifications usually derive from operating systems and follow national "data dictionary" definitions (e.g. date of admission, date of discharge, readmission, length of stay, day case etc.)

Patient classification systems use diagnosis, procedure, and treatment codes. Examples of international systems include ICD codes and OPCS codes. There are too many treatment codes to support case-based costing and associated payment systems for individual treatment codes, hence the development of "groupings' such as DRGs. DRGs are based on grouping together patients who consume similar levels of resources. Allocation of costs to DRGs is generally undertaken using grouping software which requires good quality Electronic Health Information Systems. The choice of or development of "home grown" DRG grouper is dependent on the maturity and comprehensiveness of the prevailing patient classification systems.

Importantly, costing standards, data dictionaries, and patient classifications in providers should be developed and validated before the development and use of DRGs as a payment model.

In line with the TOR, once the PPM has been confirmed this project will draw from another, more recent JLN Toolkit for countries implementing new Provider Payment Mechanisms (2017). The following steps are adapted from the JLN framework.[29]



[29] (Joint Learning Network for Universal Health Coverage, 2017)

Current State Assessment

Following a review of the documentation, discussions with stakeholders during three PPM workshops, and a site visit to North Kordofan State, the following issues have been identified which, unless addressed, will act as a constraint in the development of new PPMs in Sudan.

- Accounting taxonomy: PPMs rely on accurate costing information and financial record keeping. A preliminary assessment of prevailing capability suggests that objective accounting (records of spending on inputs such as clinicians, equipment etc.) is relatively clear and that within each State there exist charts of accounts and rules for recording expenditure. However, there appears to be under-investment in the development of consistent rules and taxonomies in regard to subjective financial analysis (such as costs per patient, costs per treatment etc.) and associated rules and guidelines. This will act as a constraint on the extensive use of PPMs which rely on such analysis (output or outcome-based payments) across Sudan.

- Consistent clinical taxonomy: Some PPMs rely on accurate recording of clinical activity and in particular, referral type, diagnostics, and treatments. There exist standard international classifications such as the ICD10 codes which are in common use and provide relatively consistent clinical taxonomy. These are not standard in Sudan. This will act as a constraint on the extensive use of PPMs which rely on clinical information (such as DRGs) across Sudan.

- Diagnostics: As discussed in Chapter 2, stakeholders have reported to us that their remains shortages of investment in diagnostic capabilities and laboratories which necessarily constrains the ability of clinicians to obtain an accurate and comprehensive diagnosis for patients. The use of PPMs such as DRGs relies on accurate diagnosis for the classification of patients into different resource types.

- Informatics and Information Technology: As discussed in Chapter 2, health information and associated technology is currently very immature and under-developed. Many health and care facilities still rely on manual processes and do not have hardware or software solutions to manage basic operations such as booking admissions, managing prescriptions etc. For these reasons, health records are largely paper-based and those data that are reported are mainly paper-based (claims) or are entered from paper records for specific electronic reporting of KPIs. Until and unless there is significant investment in Health Information Technology, there will be severe constraints on the use of PPMs which rely on timely, accurate, and relatively sophisticated system performance data.

- Information specialists and financial management personnel: There is generally insufficient local capacity in information specialists and financial management skills and expertise to allocate resources across the delivery system on the basis of relatively complex, output or outcome-based PPMs. In general, payment systems based on inputs and budgets are less demanding in terms of skilled staff in information, clinical informatics, and financial management than those where the "risk" of delivering a set of outcomes for pre-defined payments is passed to the provider.

- Context: There is huge diversity across Sudan both within and across States. A "one size fits all" approach to PPMs is unlikely to enable Sudan to achieve its reform objectives and/or overcome the specific challenges faced with delivering the three health benefit packages in a local setting. This suggests that whilst there may be some common rules about the use of particular PPMs, and whilst the actual mechanisms might be fixed in terms of payments from NHIF to State Ministry of Health providers, the use of fixed PPMs direct from NHIF to SMOH outlets will not adequately reflect the huge disparity of issues and challenges across localities within the State – this is discussed further in the next section.

- Population and Population Mobility: Some payment mechanisms, particularly capitation methods, rely on an identified and pre-defined catchment population. Stakeholders advise that obtaining accurate population figures is problematic on account of unreported births, deaths, and informal migration within Sudan and across borders. Registering the insured population should enable this issue to be addressed, however, we are advised that confining the registered population to utilise services within a particular clinic or even locality is unlikely to be successful in the short term – particularly whilst inequities exist in terms of coverage and access. In North Kordofan, where they have been operating a mixed provider payment model for the U5 population for 3 years,

the use of capitation to allocate funds to primary care facilities was soon abandoned as it proved impossible to assign users to specific clinics; users were soon enabled to visit any clinic across the state and payment had to be adjusted to reflect the number of visits rather than registered beneficiaries.

A study in 2012 recommended the use of DRGs for secondary care payment mechanisms and capitation for primary health care (Rhodes, 2012). The example of North Kordofan suggests a priori evidence that a blend of line-item, capitation (for primary care), fee-for-service, and global budget should be feasible for Sudan. However, in the absence of high quality HIS, the **early adoption of DRGs is not feasible**. Evidence from a selection of international comparisons suggests that it can easily take ten years or more to introduce a robust DRG system and then a reliable and value adding DRG Payment Mechanism. These were already mature health systems. The apparent exception to this timeline was the Russian Federation which claimed to have introduced a DRG system in 2 years.[30]

Other pre-requisites for successful implementation of PPM include:

- The need to enhance **partnership** working between NHIP and MOH at Federal, State, and Locality levels
- The need for **financial transparency** by both NHIP and MOH (NHIP at Federal and State levels, MOH at Federal, State, Locality, and Institutional levels)
- The need for PPMs to support an **agile** response by MOH at State, Locality, and Institutional levels – including public health and program financing
- The need for PPMs to support the **financial security** of institutions (both NHIP and MOH) in the near term (2020)

[30] (Caryn Bredenkamp, 2020)

Chapter 5: Proposed Payment Mechanisms

Introduction

Discussions with national stakeholders have established that there should be:

- A common taxonomy and standard set of metrics for PPMs which are provided through policy briefs, accompanying booklets, and data dictionaries and adhered to nationally.
- Standard and consistent PPMs used by NHIF to pay SMOH for different types of services
- A mixed payment model for SMOH to use to fund different SMOH health care outlets which allows for "bounded choice" flexibility within a State (with prior approval from SNHIF)
- Performance components to reward achievement of objectives (including tactical objectives) which can vary State-by-State and be used with discretion within States.

These proposals are discussed in more detail in the remainder of this chapter. The chapter concludes with a discussion of issues to consider as Sudan moves forward into the pilot phase for these PPMs.

NHIF Payment Models

Under the new separation of payer and provider within Sudan each SMOH is considered as a single provider of MOH services within each State, and each SMOH will have a contract with NHIF for the provision of health care for the eligible population.

It is recommended that NHIF will broadly use four payment mechanisms for providing funding for services under contract with each SMOH:

Need

Capitation for the provision of primary care by SMOH across the State, based on State catchment population.

Activity

Case-based payments based on episodes of care for secondary care– which could mature to DRGs over time - to address the need to increase coverage and access and reduce waiting times. This will depend on the services included within the Comprehensive Benefit Package and will be claims-based.

Capacity

Global budget to cover a proportion of the payment related to expected case-based payments, so as to provide stability and a specific range of core services as required (e.g. emergency hospital care, ambulance services, laboratory services). This will depend on what is included in the EBP in relation to urgent secondary care services.

Performance

Performance payments to address tactical issues and meet tactical objectives.

Consideration should be given to the inclusion of Pharmacy for prescription medication at primary care level within the SMOH contract; currently prescription medications are funded by NHIF directly.

NHIF could, in addition, fund Localities on a capitation basis to fund community-based population health initiatives or these could be routed through SMOH in a "ring-fenced" budget and monitored using pre-agreed performance targets.

These issues should be discussed further as part of the pilot programme.

Payments by NHIF to other non-SMOH providers could be case based for service delivery, with prescription medication for eligible individuals funded directly by NHIF on the basis of claims.

SMOH Mixed Payment Model

It is recommended that the SMOH be given responsibility (as a single MOH provider) to fund individual SMOH outlets / facilities. It is evident that each State within Sudan will face unique challenges in relation to the population, epidemiological, geographical, and the local health infrastructure. For these reasons, therefore, our recommendation is that each SMOH is given flexibility in the distribution of funding to its outlets.

Each SMOH, by prior agreement with NHIF, should use the nationally defined PPMs in a unique and flexible way to allocate resources to each outlet. This way SMOH can put together the optimum mix of PPMs to address specific local challenges and can keep these under review over time. This flexible bounded choice will enable some consistency across Sudan but ensure maximum agility locally to meet local health goals as fast as possible. A good example of where this has been undertaken before, and which appears to have resulted in significant health improvements, is the use of a Mixed Payment System for the U5 population in North Kordofan.

Performance Components

The use of complementary performance components between NHIF and SMOH, and within SMOH and SMOH outlets, should enable some focus to be given to specific tactical objectives. Once the overall costs of the packages have been established a small "performance related" budget could be added and included within the overall budget / fund. The selection of metrics will be determined by the goals and challenges which need to be addressed and the timeframe over which performance is being measured. Usually there is a mix of "lead indicators" which demonstrate efforts are being made to address a problem or achieve a goal, and "lag indicators" which demonstrate the success of those efforts after the event. In practice, selected metrics will comprise a mixture of:

- Input Metrics = designed to measure the scale and intensity of resources being used to deliver services
- Output Metrics = designed to measure the volume, frequency, and intensity of the service delivered
- Outcome Metrics = designed to measure the outcome of the service in terms of quality and effectiveness
- Impact Metrics = designed to measure the impact of the service on the health of the individual and/or population

This will provide a pragmatic and balanced perspective of what can be achieved over what timescale and will enable and encourage investment in infrastructure, information technology and digital health, and health workforce, as well as meeting current service delivery priorities.

Moving Forward

The payment models will need to be further developed as part of the pilot programme to show at a practical level:

- How the capitation amounts will be calculated to reflect unavoidable differences in need and cost
- How provider reimbursement would work for performance metrics
- How providers might select the PPM to solve the problem they face

It will be important to consider the consequences of more equitable distribution of resources such as capitation - the census is not up to date, there is population movement between states, there is inequity in epidemiological and economic status across states.

Consideration will need to be given as to how to use additional funding to target areas where there has been traditional "under-funding".

It needs to be understood that the current model of Federal and State responsibilities in Sudan could mitigate against achieving the consistency envisaged by the design unless the PPM governance is very strong. This new PPM process will need a high degree of governance pushed through from the national level to the State level to ensure:

- That the States are using the PPMs to solve the problems and challenges that are being faced.
- That there will be transparency in reporting on how the money is being spent.

- There is sufficient technical capacity at the state level to make choices between payment models.
- SMART Priorities can be agreed, and expenditure and progress, reported and shared.

The “case” for new PPMs will also need to be made as part of the wider reform. It is therefore very important to ensure engagement with stakeholders at the State level. It will be important to consider how the messages are communicated and how support can be built for the new arrangements. This will need to include examples of best practice.

In setting performance indicators, these will need to highlight equity of access and utilization of resources as these are national priorities. Performance indicators should also be linked to the strategic journey of the health system, flowing from the inputs needed, the processes needed, the outputs expected and the outcomes to be achieved. The success of the payment model will need to be measured carefully to ensure the PPMs are achieving the intended objectives. This will be done using the process recommended by the JLN (Joint Learning Network for Universal Health Coverage, 2017). It will also be important to measure identified risks and to identify and measure other unintended consequences.

Technical Committee members have proposed that in order to encourage the States to take up the new PPMs, consideration should be given to having some form of “Award” with associated funding for States to apply for funding from the Federal Level on the basis of proposals for addressing the tactical objectives. This would promote:

- Engagement
- Ownership
- Accountability
- Capacity development

There could also be a complementary Award for States to bid for funds from the Federal level to promote the achievement of National Priorities linked to the national health strategy and/or particular initiatives in times of crisis – e.g. COVID-19. There will be a need to consult Public Finance stakeholders on how this might work and the governance around the flows of funds.

Chapter 6: PPM Pilots

Introduction

Three states have been selected for piloting the PPMs. These are:

- Northern State
- Gezira
- Al Qadarif

The remainder of this chapter provides an overview of the role of the pilots and a suggested check list for the development of a work plan for the pilots. Training has been provided to key members of the Pilot Teams at a national workshop in Khartoum on 26th August 2020 and an online course has been prepared and is being hosted here: www.sudan-ehbp.com

The pilots are focused on payments relating to the current provision of health services in Sudan. As the work on the essential benefits packages progresses and reaches its conclusion it will be necessary to pivot the pilots to look at changes needed to the PPMs, to ensure that funding enables the delivery of the new Essential Health Benefits package at a local level.

Role of the Pilots (Test Beds)

The purpose of the pilots will be to test the recommendations for the development of a nationwide PPM framework for the Sudan health systems prior to national spread and adoption. The pilots will specifically be looking at:

1. Context: What are the key challenges facing the selected State?
2. Objectives: What are the explicit goals of the PPM reforms in the selected State?
3. Stakeholders: Which stakeholders need to be engaged and what form should that engagement take given their level of interest and influence?
4. Design: What will be the local PPM design (mix of payment models) for each the selected States?
5. Implementation: What does it take to implement the PPMs on the ground in line with the original design - what inputs, resources, processes, and governance are needed to deliver the intended outputs?
6. Fidelity: What were the key barriers and risks experienced by the Pilot and how can these be overcome, and what are the key enablers for successful implementation?
7. Effectiveness: Did the PPMs achieve their goals?
8. Value: Was the cost of implementing the PPMs proportionate to the value of the improvements delivered?
9. Generalizability: What are the lessons from the pilot which should be reflected as the programme is rolled out to other States?

The pilots will need to examine questions in relation to the design of the NHIF Payment Models (the PPMs used by NHIF to fund SMOH services). The following provide initial thoughts of what these questions might cover, however this will need to be developed further as part of the Pilot Programme.

Payment Mechanism	Description	Question for Pilot Phase
Capitation for Primary Care	A fixed payment per head of population	1. How will the target capitation allowance for primary care for each State be calculated to reflect differences in size of the population, the age profile of the population, differences in health need, and unavoidable differences in cost? 2. How does the calculation of target allowances compare with current levels of funding at State level and what would be a reasonable process for moving those who are currently below target so that there is greater equity between states? 3. What would be required in addition to meet the requirements of the new Essential Benefits Package (once agreed)?
Case-based payments for secondary care	A fixed amount per episode of care for a pre-defined list of treatment services.	1. How will the episode tariffs be set and what data will be used? 2. How will the tariffs be adjusted to reflect unavoidable differences in costs across different states? 3. How does the calculation of target payments compare with current levels of funding at State level and what would be a reasonable process for moving those who are currently below target so there is greater equity between states? 4. What would be required in addition to meet the requirements of the new Essential Benefits Package (once agreed)?
Global Budget	A fixed payment to assure the delivery of capacity for urgent secondary care.	1. What proportion of the secondary care budget should be set aside for ensuring the delivery of a core capacity for urgent and emergency secondary care? 2. How does this relate to the tariffs for the case-based payments (should these be restricted to elective or planned care)? 3. How does the calculation of target payments compare with current levels of funding at State level and what would be a reasonable process for moving those who are currently below target so there is greater equity between states? 4. What would be required in addition to meet the requirements of the new Essential Benefits Package (once agreed)?
Performance Payment	A bonus for the delivery of improvements to health system resilience.	1. What should be included in a national Performance Payment Mechanism – e.g. initially should this be based on rewarding the investment in much needed health system infrastructure or should it be focused solely on the delivery of outcomes? 2. How much of the national budget should be set aside for these payments? 3. What would be required in addition to meet the requirements of the new Essential Benefits Package (once agreed)?

The pilots will need to examine questions in relation to the design of the SMOH Payment Models (the PPMs used by SMOH to fund health outlets within the State). These will need to be developed as part of the Pilot itself by should include:

1. What criteria will be used to determine which mix of PPMs should be adopted within the state? These might include for example:
    a. Ability to move resources to where they need to be to address existing challenges
    b. Feasibility of meeting data collection, management, and quality requirements
    c. Capability of management to implement the payment mechanism at the facility level
    d. Ability of the State to monitor performance of the proposed PPM.
2. What will the impact be on funding for individual facilities and outlets?
3. How will the transition from existing funding to new funding be managed?
4. How should locality funding be determined?
5. What proportion of funding should be reserved for wider public health initiatives?

Governance Arrangements

A National Working Group has been established comprising representatives of:

- NHIF economics, planning, finance, information.
- FMOH economics, planning, finance, information.
- The state representative for the NHIF Senior Responsible Officers (SRO) for each of the three pilot sites.
- The SMOH Senior Responsible Officers (SRO) for each of the three pilot sites.

This is co-chaired by the DG of Finance and Planning for the Ministry of Health, and their counterpart from NHIF.

Their role is to oversee all the development steps of the pilot programme and to report to their respective DGs at NHIF and FMOH, and ultimately to the Minister of Health.[31] This group could mature into a PPM Co-ordinating Group as part of a permanent institutionalisation of the function, once the PPMs are rolled-out nationally.

It is recommended that this National Working Group should meet at least twice monthly for whole day working sessions during the initial set-up phase of the pilots and thereafter for one day per month as the pilots move to implementation. Meetings should be conducted in accordance with good practice guidelines.[32]

At these sessions, the agenda should include:

- Discussion of issues relating to all 3 states (such as progress with the NHIF payment models for SMOHs).
- Feedback on progress from each of the pilots.
- Identification of risks, barriers and enablers to the delivery of the pilots and any actions required (including escalation of issues to the Minister where necessary).

Detailed governance arrangements are being developed by the National Working Group as part of the first phase of the development of the Pilot Plans.

31 This will need to be aligned with the wider health system governance requirements under the new Health Strategy.
32 The NHS Healthy Board guidelines provide a useful model.

Pilot Plans

Each of the States are developing project plans for the pilots with support from NHIF and FMOH. A checklist for the development of the plans is included in Appendix 3. This identifies the key steps needed to progress and implement the pilots around 5 stages of development: initiate; discover, define, design; approve; build; operate.

The pilot timetables will be a product of these plans, but it anticipated that the pilots should aim to reach the "operate" stage within a period of 3 months of initiation (December 2020).

The planning checklist includes a requirement to develop an evaluation plan. This should include a process evaluation, impact evaluation, and an economic evaluation. A suggested template for a final evaluation report has been provided as part of the PPM Pilot Training Programme.

The Pilot Team training includes 5 core modules as shown below. Each module is delivered as a video with written narratives in English and Arabic.

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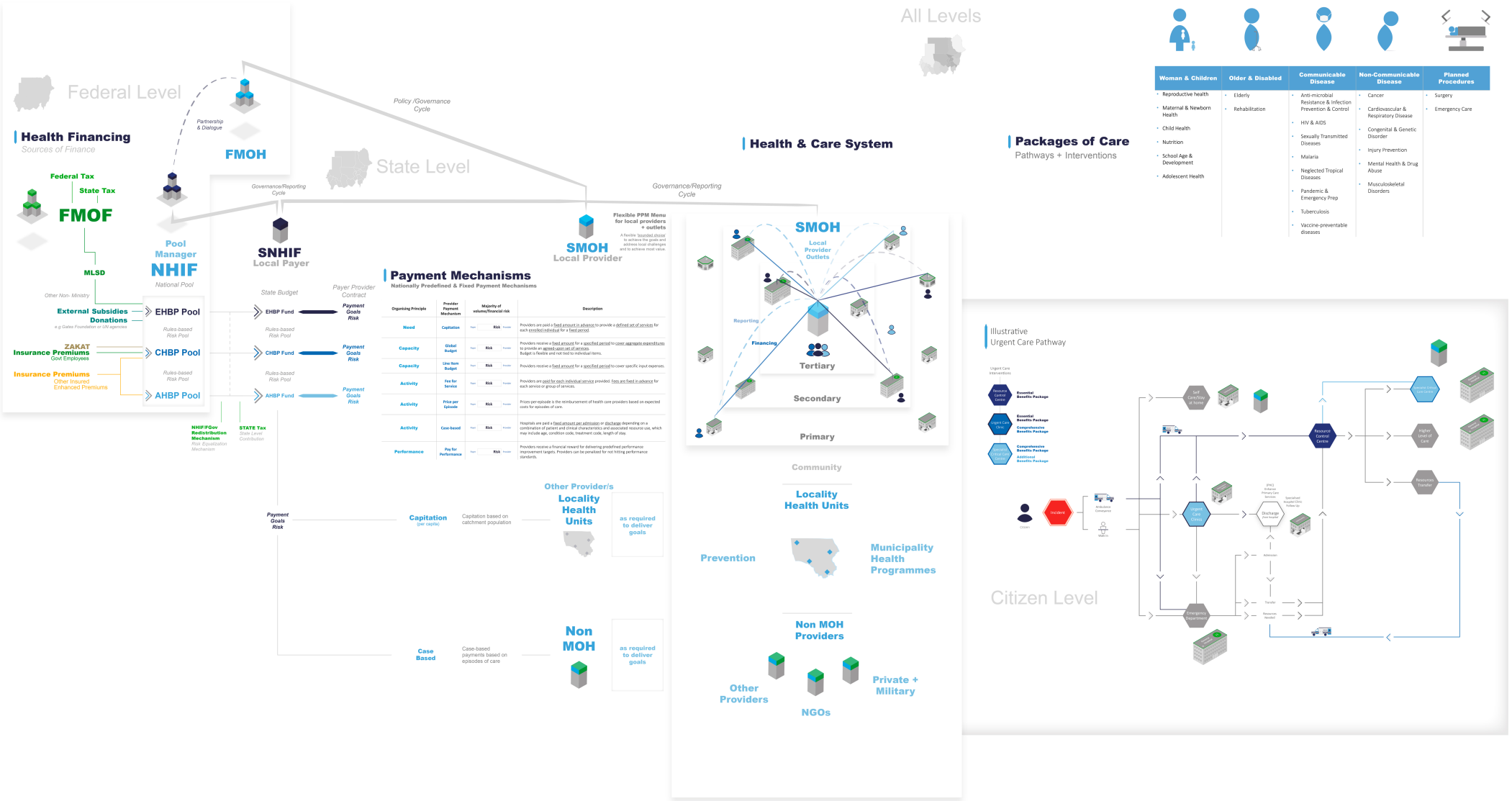
Appendix 2: Health System Overview



Appendix 3: PPM Pilot Plan Checklist

Stage	Step		Lead
Initiate	1	Confirm the governance arrangements for the pilots at a national level (National Governance Team).	NHIF and FMOH
	2	Confirm the governance arrangements for the pilot at the State level (Stage Governance Team).	National Governance Team
	3	Determine State level project management arrangements (State Management Team).	State Governance Team
	4	Determine national level evaluation arrangements for the pilot project (Evaluation Team).	National Governance Team
Discover Define & Design	5	Identify and engage stakeholders to review the context and challenges faced in the pilot state, to agree the scope and duration of the pilot, and to agree specific measurable service development and delivery goals which will address the challenges identified.	State Governance Team + State Management Team
	6	Determine whether the project service development and delivery goals can be achieved within existing healthcare Ministry of Health built, human resource, and technical capacity and capabilities. If no move to step 7. If yes, move to step 8.	State Governance Team + State Management Team
	7	Determine if, how, and when additional required built human or technical capacity can be obtained within the timeline of the project were finances to be available. If not possible, return to Step 5 for reconsideration of scope.	State Governance Team + State Management Team
	8	Develop a Gantt chart to outline proposals of how the project service delivery goals might be achieved and with what Ministry of Healthcare resources and by when. This will involve estimating the resulting activity and output levels. If not achievable within timescales for the pilot return to Step 5 for reconsideration of scope.	State Governance Team + State Management Team
	9	Cost the outline proposals (capital and operating expenditure).	State Management Team
	10	Consider affordability of proposals and whether affordability will be sustained on the introduction of the EHBP. If not, return to Step 5 for reconsideration of scope.	State Management Team
	11	Review proposals with State Governance Team.	State Governance Team
	12	Review proposals with National Governance Team	National Governance Team
	13	Develop Ministry of Health service development and delivery plan	State Management Team
	14	Develop Financial Plan	State Management Team
	15	Identify sources of funding	State Management Team
	16	Select appropriate mix of Provider Payment Mechanisms	State Governance Team + State Management Team
	17	Develop Provider Payment Mechanism logic models and budget impact	State Management Team
	18	Assess capacity and capability of State stakeholders to deliver the proposed financial plan and Provider Payment Mechanisms	State Management Team
	19	Assess capacity and capability of State providers to operate the proposed Provider Payment Mechanisms, particularly information requirements	State Management Team
	20	Review of all financial elements of the proposals	State Governance Team
Approve	21	Review full-service development and delivery plan and financial review	State Governance Team
	22	Undertake any professional and public consultation of the plan	State Governance Team
	23	Recommend plans to National Governance Team	State Governance Team
	24	Review of plans	National Governance Team
	25	Commence professional and public communication	

	26	Agree scope and design of evaluation	State Management Team, approved by State and National Governance Team
	27	Develop plan for the evaluation and undertake baseline assessment	State Management Team, approved by State and National Governance Team
Build	28	Continue communication with professionals and public	State Governance Team
	29	Commence service development plans	State Management Team
	30	Commence capability and capacity development requirements for state stakeholders	State Management Team
	31	Commence capability and capacity development requirements for state providers	State Management Team
Operate	32	Commencement of service delivery plans by providers	State Management Team
	33	Development of new information systems	State Management Team
	34	Commence new Provider Payment Mechanisms	State Management Team
	35	Commence Evaluation	Evaluation Team
	36	Complete Pilots and Evaluation	State Governance Team + State Management Team
	37	Final Review of Pilots and Evaluation	State + National Governance Teams