Assessment of the feasibility and appropriateness of a National Health Insurance Scheme in Malawi

Final Report

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**Abbreviations**

CHAM  Christian Health Association of Malawi
EHP  Essential Health Package
GIZ  Deutsche Gesellschaft für Internationale Zusammenarbeit
GOM  Government of Malawi
MOH  Ministry of Health
MRA  Malawi Revenue Authority
MWK  Malawi Kwacha
NHIA  National Health Insurance Agency
NHIS  National Health Insurance Scheme
OPM  Oxford Policy Management
UBR  Unified Beneficiary Registry
USD  United States Dollar
# Table of contents

Acknowledgements ii  
Abbreviations  
Table of contents  
Summary report: Appropriateness and feasibility of a National Health Insurance Scheme in Malawi i  
  Executive summary i  
  1 Introduction 1  
  2 Context for reform 2  
  3 Defining the reform scenarios 3  
  4 Benchmarking NHI against health financing objectives 5  
  4.1 Financial effects – revenue mobilization and technical efficiency 5  
  4.2 Non-financial effects – equity, financial risk protection, policy coordination and resource allocation, and health outcomes 10  
  4.3 Summary of benchmarking analysis 11  
  5 Capacity development needs 13  
  6 Modelling the total revenue effect of the reform scenarios 14  
  7 Conclusion 16
Summary report: Appropriateness and feasibility of a National Health Insurance Scheme in Malawi

Executive summary

The objective of the project is to assess the relative merits of four health financing reform scenarios, including introducing a National Health Insurance Scheme (NHIS) in Malawi. A benchmarking framework was agreed to guide the analysis. This included the expected net effect on revenue generation, but also their anticipated effects on health financing objectives such as health outcomes, efficiency, equity, financial risk protection and policy coordination.

Three reform scenarios are included in this final report. The base scenario is to implement incremental reform of the current financing of health care through the national and council budgets. The first alternative is to establish a National Health Insurance Scheme. The NHIS would finance outputs but also collect revenue from households through NHIS contributions. The second alternative is to establish a purchasing agency that will finance services as the outputs of the health system instead of inputs into service provision; no NHIS contributions would be collected.

Net revenue generated by the NHIS from both formal and informal sectors (including “service access fees”) is projected to range between MWK 68 and 72 billion by 2021/2022. The estimate depends on modelled NHIS enrolment rates among the informal non-poor and the net revenue raised from this group, ranging from 8% of total net revenue (with realistic enrolment ~ 5% of the informal non-poor) to 11% of total net revenue (with exceptional enrolment ~ 40% of the informal non-poor). Notably, most revenue of the NHIS would come from the formal sector but it would not be new revenue for the health sector as stakeholders agreed that the formal sector is already heavily taxed and should not be burdened additionally. Whereas formal sector national health insurance (NHI) contributions could easily be collected by the Malawi Revenue Authority (MRA), an assessment found that the MRA has no capacity now or in the foreseeable future to collect funding from informal sector households. Revenue collection outside the MRA is expected to be expensive (25% of raised revenue). Details of the NHI income projections are found in Background Paper 2.

Administrative costs were projected in the NHI and Purchaser Scenarios based on a realistic model of business processes and structures developed specifically for this report (see Background Paper 1). In the Purchaser Scenario, establishing a purchaser-provider split entails establishing an agency (in the first instance as a structure within the Ministry of Health (MOH)) whose main role would be to contract with health service providers and ensure compliance with clinical standards. Its estimated running cost are projected to be as high as MWK 450 million by 2021/2022, assuming it would share ancillary services with the Ministry of Health and that it operates at 100% capacity from the first year.

In the NHI Scenario, a NHIS premium collection component would be added to the purchasing function. A National Health Insurance Agency (NHIA) would administer insurance contributions as well as contract with health service providers (integrating the purchasing function). Total administrative costs of the NHIA, including communication campaigns and insurance regulation, were projected based on a detailed model of the structures and processes of the NHIA. Costs are projected to be MWK 11 billion by 2021/2022. In the first year, an initial NHIS communication campaign would bring costs up to MWK 14 billion.

Efficiency gains from a purchaser-provider split are estimated to increase from MWK 11 billion in the first year to close to MWK 60 billion in the fifth year. Since the purchaser-provider split is common to the Purchaser and NHI Scenarios, they would accrue in both models,
provided that a number of complementary reforms would be implemented such as granting service providers more autonomy.

**Compared to the MOH Scenario, both the NHI and the Purchaser Scenario are expected to increase resources available to the health sector.** As expected efficiency gains are large in both the NHI and the Purchaser Scenarios, and projected administration costs of the NHIA outweigh additional income from NHI contributions and user-fees, the net revenue effect of the Purchaser Scenario is projected to be larger than that of the NHI Scenario.

The collection of revenue from informal sector households in the NHI Scenario would adversely affect equity and access to care since user-fees will need to be implemented as an incentive for the non-poor informal sector to enrol in the NHIS. This is particularly important since the roll-out of national ID cards has just started and an assessment of the targeting under the Unified Registry of Beneficiaries (UBR) showed that it cannot be guaranteed that all poor households will be effectively targeted. The targeting models underlying UBR have high inaccuracies at cut-offs: 60% of the poorest households are not identified as such. Furthermore, the targeting programmes are only present in 18 out of 28 districts, and where they are in place they only collect information from 50% of the population who are deemed poorer.

The main argument in favour of the MOH Scenario is that this scenario avoids the formation of added complexity of the policy coordination and resource allocation process, as it is the case in the NHI and Purchaser Scenarios. The changing roles, information and capacity requirements of new provider payment mechanisms under a purchaser-provider split create risks for implementation.

There is currently limited capacity in Malawi to undertake essential functions for NHIS such as service purchasing. Building this capacity will take time. A gradual approach to building this capacity is proposed, whereby roles in the NHIA organisational structure are categorised as “core” and “expansion”, where “core” departments are those that are essential for the NHI to function and “expansion” components will be added later. The essence of the approach is to plan capacity development in three stages: first, the technical skills of core departments; second, the management and leadership skills of core and some expansion departments; and finally, the skills of the remaining expansion departments.

Moving to an NHIS with collection of revenue has the potential to leverage more funding that would help to cover some of the financing gap, but not to close it. A simplified actuarial model of the Malawian health sector suggests that the total net revenue of any reform scenario would be lower than the growth in required health expenditure and that the funding gap would slowly increase for all scenarios over the next few years. Under the MOH scenario, the gap would be of about MWK 250 billion by 2021/22. The NHI and the Purchaser Scenarios would both partially close the gap to below MWK 230 billion.

**The main recommendation is to focus initial reforms on realizing the efficiency gains from purchasing.** Revenue collection could be added at a later stage when capacities at MRA are stronger and purchasing mechanisms are solid. **NHIS could be a long-term objective of a health financing strategy.** Given current capacities and the macroeconomic context in Malawi, there is no need to rush legislative action for NHIS in the National Assembly in early 2017.

In practical terms, **Service Level Agreements can be extended to national referral hospitals and selected district hospitals** in order to pilot contracting with public sector facilities as a first step. This can start being implemented immediately over the course of 2017. In a second step, a basic purchasing structure can be developed within the MOH and be at the centre of a nationwide pilot of output-based contracting with national referral hospitals and all health
providers in selected districts across at least two regions. The findings of the two pilots as well as evaluations of other public sector developments (e.g. national ID roll out) can inform future choices along the health financing roadmap, most likely from 2019 onwards.
1 Introduction

The Government of Malawi (GOM) pursues a health sector reform agenda with the objective to increase access to quality services through increased equitable financing and service availability. The reform consists of four reforms as follows: (1) Establishing a health insurance scheme; (2) Creating a Health Fund; (3) Reviewing the public-private partnership between the GOM and the Christian Health Association of Malawi (CHAM); and (4) Undertaking three interrelated health reforms focusing on the decentralization of health services at district level and reforming central hospitals.1

In May 2015, the Ministry of Health (MOH) requested support from the partners of the P4H Network to provide technical assistance to “support the reform process, in particular, the proposal to establish a National Health Insurance Scheme (NHIS)”. It was pointed out that it wanted “evidence to be generated specific to Malawi” and that the “design of these reforms will be based on evidence and implementation will be carried out only if it is feasible, appropriate and beneficial to do so”.2 GIZ agreed to support this effort through Oxford Policy Management.

The assessment team included team leader Tomas Lievens, actuarial specialist Denis Garand, local consultant Deliwe Malema, health economist Adrian Gheorghe and macroeconomist Alexandra Murray-Zmijewski, and social protection specialist Andrew Kardan. An inception report was agreed with MOH and the contracting agency, GIZ, based on discussions with various stakeholders from MOH, the wider Government, development partners, non-governmental organisations (NGOs), private sector organisations, and various key organisations in health financing in Malawi. It was agreed to conduct the remainder of the work in three phases:

- Phase 1: Assess three NHI scenarios selected by the MOH and partners against the option of maintaining the status quo to inform a decision by MOH as to the preferred scenario based on further stakeholder discussions and data collection (August 2016 by the health economist and macroeconomist).3
- Phase 2: Present and discuss the findings of the Phase 1 report at a stakeholder workshop in Malawi. Actuarial specialist Denis Garand presented at the workshop and following that, the MOH indicated to the consulting team that one of the scenarios (NHI tertiary care) would be dropped from the comparison and Phase 3 would continue the comparison of the remaining three scenarios. Furthermore, the health sector expenditure model that was developed for Phase 1 would be updated, enriched and provided to the MOH in order to enable them to conduct their own analyses.
- Phase 3: Detail the reform scenario selected by MOH in Phase 2. Content was organised in separate background papers: organisational design, business processes, administrative costs (paper 1); income projections (paper 2); and capacity development needs (paper 3)4.

During Phases 1 and 2 of the assessment, the four scenarios were assessed against each other using a benchmarking framework agreed with MOH and stakeholders. The framework included the expected net effect on revenue generation for the health sector, but also their anticipated effects on other health financing objectives such as health outcomes, efficiency, equity, financial risk

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1 The President and Ministry of Health (2015) Performance contract between His Excellency The President and the Minister, February 2015 to December 2015.
2 Letter of the Secretary for Health to the Head of Development Cooperation of the German Embassy, dated 22/05/2015.
3 The social protection specialist did not visit Malawi for this specific assignment as he had been working on the Malawi targeting mechanisms and the Unified Beneficiary Registry in 2015. His contribution draws on this work and a desk review documents produced since then and remote interviews with key stakeholders.
4 Background Papers 1-5: NHIS Organizational Design, Business Processes and Administrative Costs (Garand et al. 2017); NHIS Income Projections (ibid.); NHIS Capacity Development Needs (ibid.); Rapid Appraisal of the Malawi Revenue Authority (Murray-Zmijewski 2017); Targeting Mechanisms and the Unified Beneficiary Registry (Kardan 2017).
protection and policy coordination. Following the presentation of the findings from the benchmarking exercise in Phase 2, the MOH decided to focus Phase 3 on a parallel in-depth exploration of two NHI scenarios against the status quo option (i.e. dropping only one scenario). The three reform scenarios included in this final report are:

- Maintain the existing institutional arrangements with purchasing through government (MOH and local government); ongoing reforms within this framework will be implemented; this scenario will be referred to as the “MOH scenario”.

- Establish a premium based NHI: collecting mandatory direct contributions from the formal sector and the informal non-poor, while fully subsidizing the poor; covering all health care services included in the Essential Health Package (EHP); pooling and purchasing at national level; this scenario will be referred to as the “NHI Scenario”.

- Establish a purchasing agency; separating service purchasing from service provision, either centrally or decentralized; this scenario will be referred to as the “Purchaser Scenario”.

This report is the final deliverable, which synthesizes the results of the scenario assessment (Phase 1) and the proposed organisational design for NHIS (Phase 3). It is structured as follows: section 2 outlines the context for reform; section 3 presents the main findings of the benchmarking of the three NHI Scenarios against health financing objectives; section 4 outlines the NHIS income projections; section 5 presents NHIS organisational setup and administrative costs; section 6 outlines the capacity development needs; and section 7 presents the conclusions and some recommendations going forward.

2 Context for reform

Malawian stakeholders have different views as to what NHI might entail. Most stakeholders discussed NHI in relation to funding and less so in terms of pooling funding and purchasing services. The assumption that premium-based full NHI will generate additional domestic funding for improving availability and quality of health services makes it the most attractive reform scenario in the eyes of institutional stakeholders.

Resource mobilisation is seen as the main objective of NHI, however there is an expectation that NHI will have a broader role and act as a platform for other far-reaching reforms. It is expected that NHI would raise sufficient additional resources to complement government spending and increase fiscal space for health; at the same time, there is acknowledgement that financial sustainability is a long-term objective for any NHIS and the government may need to subsidize heavily during the inception years. Further, it is imperative that NHIS leads to demonstrable improvements in quality of care.

Reaching out to the informal sector was a key consideration for considering the introduction of a NHIS. This is also seen as addressing an equity issue as the informal non-poor are currently not captured by the taxation system, and foreign citizens are perceived to free-ride and overburden the health system. ‘Resource mobilisation’ is understood as collecting premiums from the informal non-poor, who represent roughly 20% of the population of Malawi. Two rapid appraisals were conducted as part of this assessment, one of the Malawi Revenue Authority and one of targeting mechanisms underlying the Unified Beneficiary Registry, to assess the mechanisms in place to distinguish between the poor and the non-poor to collect revenue from the informal non-poor.

5 The scenario dropped was to establish a high-cost risk protection NHI, with revenue collection through the NHIS but reimbursements only for tertiary care.

6 See Phase 1 report for full details on the results of the two appraisals.
Several concerns were raised in relation to introducing NHI:

- **Assuring good governance will be key to the credibility of the NHI scheme and a condition to its effectiveness.** Existing examples of perceived poor governance in the Malawi health sector (e.g. the creation of Central Medical Stores Trust (CMST) did not solve drug shortages) undermine the legitimacy of yet another government agency to administer health insurance or even to purchase health services from providers.

- **Evidence from Malawi** suggests there is willingness to pay for a comprehensive health care package that covers transport cost (estimated premium MWK 3,300 per household), but little willingness to pay for a minimal package that does not include transport costs.

- **In the context of decentralization, where health budgets for community, primary and secondary care have already been transferred to local councils, if NHI would cover a mix of primary, secondary and tertiary care services, the question becomes what will happen with primary and secondary care budgets currently sitting with local councils.**

- **Since there are fewer providers serving the rural population than the urban population,** any benefits from NHI (e.g. improved efficiency and quality of care) are likely to accrue more among urban rather than rural populations, raising equity issues.

- **In the absence of user-fees at Government health facilities, there would be little incentive for individuals to enrol in a NHIS for accessing these very services without an effective enforcement mechanism.** Other countries with (decentralized) health insurance schemes do charge user-fees (e.g. Ghana, Rwanda and Tanzania) and even so, coverage rates have remained low among premium-paying populations (e.g. Ghana and particularly Tanzania).

### 3 Defining the reform scenarios

The three reform scenarios represent common ways in which the health financing functions of collecting revenue for health services, pooling of the funds for groups of beneficiaries, and purchasing of services (incl. selecting the service package, determining the price, and defining the model of payment) can be arranged.

The comparison of the three reform scenarios against health financing objectives depends on the financial (revenue and costs) and non-financial (health, equity, risk protection, policy coordination) effects of the different institutional arrangements of each scenario. It is therefore important to be clear about where the similarities and differences between the scenarios are in order to understand the results of the benchmarking carried out in the next section.

Table 1 on the next page provides an overview of the assignment of the different health financing functions under three assessed scenarios where these differ between scenarios. Functions that are allocated to the MOH under all scenarios are not listed, e.g. stewardship of the health system and regulation of health services.

Differences between the three reform scenarios can be divided into two types. First, some health financing (sub)functions exist in all scenarios but are assigned to different institutions in the different models, e.g. assurance of the quality of health services. Second, some (sub)functions are only part of the health system under a NHI model but not in a national health service (NHS) model, e.g. revenue collection is done through the general taxation in an NHS model, but through insurance contributions in an NHI model.

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7 “Abiiro GA (2016) Estimating Willingness-To-Pay for Health Insurance in Malawi. Report submitted to GIZ.” Findings are based on insurance for access to CHAM facilities, which are often perceived to have a higher quality
<table>
<thead>
<tr>
<th>Function/role</th>
<th>MOH Scenario</th>
<th>NHI Scenario</th>
<th>Purchaser Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHIS marketing</td>
<td>n/a</td>
<td>MOH and National Health Insurance Agency</td>
<td>n/a</td>
</tr>
<tr>
<td>Revenue collection</td>
<td>n/a</td>
<td>National Health Insurance Agency and/or Malawi Revenue Authority</td>
<td>n/a</td>
</tr>
<tr>
<td>Administer NHIS membership database</td>
<td>n/a</td>
<td>National Health Insurance Agency in collaboration with National Registration Bureau and Unified Beneficiary Registry</td>
<td>n/a</td>
</tr>
<tr>
<td>Insurance claims management</td>
<td>n/a</td>
<td>National Health Insurance Agency</td>
<td>Purchasing agency</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>MOH</td>
<td>National Health Insurance Agency (with purchasing function integrated)</td>
<td>Purchasing agency</td>
</tr>
<tr>
<td>Contracting with service providers</td>
<td>MOH</td>
<td>National Health Insurance Agency (with purchasing function integrated)</td>
<td>Purchasing agency</td>
</tr>
</tbody>
</table>

Similarly, the two institutional reform scenarios (NHI and Purchaser) under examination also have a common component – the **purchaser-provider split** – and a differential component – **NHIS premium collection** – which appears only in the NHI scenario but not in the Purchaser Scenario.

**Splitting service purchasing from service provision** entails two major changes: first, a third-party payer will reimburse service providers and not their governing authority (MOH or district authorities); second, an output-based financing mechanism, managed through contracts between the third-party and the service provider, will replace the current input-based financing mechanism.

The purchasing agency would fulfil two key functions:

- Contracting with service providers. At the moment, the MOH does this to an extent with CHAM facilities through Service Level Agreements. Separating purchasing means that contracting with all public and CHAM providers would pass to the new third-party entity i.e. purchasing agency, which would also process claims from providers, based on their activity, with a view to reimbursing them as per the contract

- Ensuring compliance with quality standards of providing health services in order to avoid compromising quality of care. Depending on the type of contract between the purchaser and service provider and its specific provisions, different incentives can steer the provider’s behaviour one way or the other (e.g. controlling costs by any means) and potentially affecting health outcomes.

**The NHIS premium collection component** (only in NHI Scenario) is more complex than purchasing. Several additional functions need to be carried out simultaneously. A new agency, named generically National Health Insurance Agency (NHIA) in this paper, would fulfil most of these functions, some of them in collaboration with other institutions. Specifically:
- NHIS marketing: mass communication of NHIS products to stimulate enrolment, particularly among the informal sector. It was assumed that the NHIA would be responsible for this with cross-governmental engagement via the MOH. The cost of constant communication campaign was factored.

- Revenue collection: collect NHIS premiums from individuals in the formal and informal sector. For those in the formal sector, the Malawi Revenue Authority (MRA) already has the processes in place. For the informal sector, however, the MRA currently does not have and is unlikely to have appropriate systems for collecting revenue from individuals in the foreseeable future. However it is developing tools for collecting revenue (to an extent) from informal businesses\(^8\). As such, the only remaining option would be to establish a network of field operators whose role would be to “sell” NHIS insurance products to the informal non-poor and collect insurance premiums from them. These field operators can be incentivised financially based on a set percentage of the premiums they collect. Such a structure could be hosted under any institution e.g. either MRA or the NHIA.

- NHIS membership database: the records of all insured individuals, both contributing members and those exempt (e.g. extreme poor), would be need to be hosted and administered by the NHIA. Depending on the final design of NHIS membership (e.g. the role of national ID in identifying various categories of members), collaboration with other bodies such as the National Registration Bureau and the Malawi National Social Support Programme, which administers the Unified Beneficiary Registry, will be required.

- Insurance claims management: providers would file claims to the NHIA for each insured patient in order to be reimbursed for their activity with the respective patient. NHIA systems would have to be in place in order to store, evaluate and validate the claims.

- Contracting: a purchasing agency (discussed above) will manage contracts with service providers and reimburse them using NHIA funds.

4 Benchmarking NHI against health financing objectives

A clear objective of an NHI reform was that it should make available additional resources for the health system. These can come from additional revenue mobilized as well as from freeing up resources through gains in technical efficiency. The first part of this section will look at these quantifiable effects. At the same time, there is also agreement among stakeholders that NHI should be embedded in wider health financing and health systems reform in Malawi as NHI interacts with all the main health financing objectives. Thus, it was agreed with MOH during the inception phase that all reform scenarios would also be benchmarked against four other health financing objectives: equity, financial risk protection, policy coordination, and health outcomes.

4.1 Financial effects – revenue mobilization and technical efficiency

The key results in the area of revenue mobilisation is that NHI will generate some additional direct net revenue compared to the MOH and the Purchaser Scenarios but only to a limited extent. A sizeable share will come from user-fees, not NHI contributions, and parts of the revenue will be offset by high administrative costs. Some of these costs are also incurred in the Purchaser Scenario, which makes the net revenue effect negative when compared with the MOH Scenario.

The model projects that total net revenue generated by the NHIS from both formal and informal sectors (including user fees) is projected to range between MWK 68 and 72 billion by 2021/2022 (Figure 1). Assuming 100% coverage in the formal sector, between 89% and 92%\(^8\) For more details on an appraisal of MRA capacity to collect revenue for the purpose of NHIS, see the Phase 1 report.
or revenue would come from the formal sector, depending on the assumed coverage rate in the non-poor informal sector. Importantly, under the assumption that the formal sector would not be burdened with additional costs, as directed by MOH, the revenue from the formal sector is not new revenue. It would simply be earmarking general government expenditure for health, e.g. by turning income taxation into an NHI contribution (assumed to be 6%; 3% each employer and employee).

**Figure 1. Projected total net NHIS revenue (2021/2022)**

![Projected NHIS Revenue Chart](chart.png)

Note: The cost of collecting insurance premiums by the MRA from the formal public and formal private sectors were deducted from respective revenues proportionally with maximum projected membership in 2021/2022.

**Fresh money would only come from the contribution of the non-poor informal sector, and range between MWK 5.3 billion and 7.9 billion,** depending on the success of insurance roll-out in the non-poor informal sector target group. Importantly, this income will include not only NHI contributions, but also revenue from “service-access fees” charged to patients who cannot identify themselves as NHI members. Without such a fee, non-members could continue using services for free, which would leave no incentive to pay for NHI enrolment. User-fees would account for between 31% and 85% of total income, depending on the assumed level of NHI enrolment.

The low projected revenue is influenced by expected low coverage and low NHI contribution levels on the one side and high administrative costs on the other side. First, international experience has shown that insurance coverage usually remains low if government enforcement capacity is limited. For Malawi, NHI coverage of 5% in the non-poor informal sector target population (as used in the lowest revenue scenario) is considered realistic by 2021/22. A coverage rate of 40% among the target population (as used in the highest revenue scenario) is considered an unlikely exceptional success. NHI cases with high enrolment rates such as Rwanda and Ethiopia rely both on user-fees and on enrolment enforcement mechanisms by Governments that permeate all aspects of their respective societies. Stakeholder interviews did not indicate that the Malawi Government is expected to have the same capacities. Second, NHI contributions are expected to be low. An NHI contribution of MWK 3,000 per individual was assumed, based on international experience of membership premiums of ~ 1% of average per capita incomes. A recent estimate of willingness-to-pay for insurance in Malawi was even lower at just above MWK 3,000 for coverage of an extended family (Abiiro 2016). For more details on the income projections, see Background paper 2.

On the cost side, contributions from the formal sector would be readily accessible to the MRA, but an assessment of the agency found that it has no capacity now or in the foreseeable future to
collect such funding from informal sector households (see Box 1 below). Establishing new collection channels is expected to be expensive, around 25% of revenue raised. At the same time, implementing all functions of an NHI, would generate substantial additional administrative costs through staffing, equipment and other running costs. See Background paper 1 for more details on the cost estimate.

**Box 1. Rapid assessment of the Malawi Revenue Authority**

| If the NHIS was to focus on the formal sector alone, revenue collection could be accomplished within current capacities and IT systems of the MRA. This would require no new technology with MRA, simply a department focusing on NHIS. All data and systems are in place to allow for collection of health insurance revenue using the existing taxation processes relevant to the formal sector. The cost of establishing a Formal-Sector-only NHIS department in MRA would be approximately MWK 43 million in the first year, rising to MWK 54 million in year five of operation. This represents 0.2% of additional budget to the MRA. |
| MRA does not and in the foreseeable future will not have capabilities to track informal sector individuals to collect NHIS premium payments. The presence of identification cards would be a prerequisite out of the control of MRA. Furthermore, the MRA currently does not have the systems in place to cost-effectively identify informal sector businesses from which NHIS revenue could be collected. However, there are plans for improvements across the board which will culminate in strengthened capacities to adequately administer the NHIS for both the formal and informal sector in a few years' time. These include ICT improvements; connections to local-level registries and information; and administering other levies. |
| With these changes it is expected that the MRA will be in a better position post-2018 to reach the informal sector. This would be subject to a number of complementary initiatives, including a strong communication campaign, appropriate partnerships for revenue collection purposes and an explicit focus on demonstrably improving quality of care. The estimated costs of running a formal-and-informal sector NHIS department would be in the region of MWK 177 million in the first year, rising to MWK 221 million in the fifth year (0.8% of MRA budget). Potential revenue collections could outweigh the costs of collection, subject to strong assumptions related to the successful implementation of ongoing reforms within MRA and payment compliance; in any case, a more detailed assessment of costs and revenues (salaries of members and affordability of premiums) needs to be undertaken once these reforms are implemented. |

The total annual cost of administrating the NHI would amount to approximately MWK 11 billion, after an initial frontloading of the costs of an NHIS communication campaign that would bring the costs during the first year up to MWK 14 billion. Table 2 on the next page provides an overview of all the additional costs by function, while details on the organizational structure, business processes and related cost projections can be found in Background paper 1.

The largest part are the costs for **running the NHIA**, which could be as high as MWK 9.3 billion by 2021/2022, based on the assumption that the agency operates at 100% capacity from the first year and covers 100% of eligible health service providers. Staff salaries and benefits would represent 35-40% of total operating costs. Several other types of costs need to be added as part of the NHI Scenario: Communication campaign for NH; costs of health facilities to process claims with NHIA; cost of collecting revenue from the formal sector by the MRA; cost of insurance regulator. These combined costs could add another MWK 1.7 billion in 2021/22. Relative to the total projected population of Malawi, this is equivalent to about MWK 550 per individual per year.

**Running the purchasing agency would cost about MWK 450 million annually by 2021/22** (Table 3). It was assumed that the agency operates at 100% capacity from the first year and covers 100% of eligible health service providers. About 70% of running costs would be staff salaries and benefits. These costs would also be incurred in the Purchaser Scenario.
## Table 2. Total revenue, administrative costs and net effects of NHI Scenario (MWK million)

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<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHI contributions (informal sector)*</td>
<td>552.9</td>
<td>614.3</td>
<td>678.7</td>
<td>746.9</td>
<td>820.0</td>
</tr>
<tr>
<td>User fees*</td>
<td>3,165.7</td>
<td>3,516.9</td>
<td>3,885.5</td>
<td>4,278.0</td>
<td>4,694.6</td>
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<tr>
<td><strong>Cost (by function)</strong></td>
<td>Source/details</td>
<td>14,182.5</td>
<td>10,376.7</td>
<td>10,724.2</td>
<td>10,843.8</td>
</tr>
<tr>
<td>NHIS membership database</td>
<td>NHIA NHIS database</td>
<td>7,078.5</td>
<td>7,114.5</td>
<td>7,269.3</td>
<td>7,443.6</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>NHIA quality assurance + Purchasing compliance</td>
<td>326.2</td>
<td>333.7</td>
<td>354.3</td>
<td>377.0</td>
</tr>
<tr>
<td>NHIS marketing</td>
<td>NHIS communication campaign + NHIA communication staff</td>
<td>4,626.1</td>
<td>729.2</td>
<td>789.9</td>
<td>852.5</td>
</tr>
<tr>
<td>Contracting with service providers</td>
<td>Purchasing contracting</td>
<td>301.5</td>
<td>315.6</td>
<td>330.7</td>
<td>345.3</td>
</tr>
<tr>
<td>Insurance claims management</td>
<td>NHIA claims management</td>
<td>463.1</td>
<td>471.2</td>
<td>501.4</td>
<td>535.2</td>
</tr>
<tr>
<td>Other NHI and purchasing functions</td>
<td>NHIA other functions + Purchasing research + Purchasing other functions</td>
<td>662.3</td>
<td>664.2</td>
<td>687.6</td>
<td>687.0</td>
</tr>
<tr>
<td>Revenue collection</td>
<td>Formal sector revenue collection (MRA)</td>
<td>43.0</td>
<td>44.2</td>
<td>46.2</td>
<td>49.9</td>
</tr>
<tr>
<td>Revenue collection</td>
<td>Informal sector revenue collection (NHIA)*</td>
<td>138.2</td>
<td>153.6</td>
<td>169.7</td>
<td>186.7</td>
</tr>
<tr>
<td>Insurance regulator</td>
<td>Insurance regulator</td>
<td>12.9</td>
<td>13.3</td>
<td>13.9</td>
<td>15.0</td>
</tr>
<tr>
<td>Health facilities processing NHI claims</td>
<td>Health facilities processing NHI claims</td>
<td>530.6</td>
<td>537.4</td>
<td>561.3</td>
<td>351.7</td>
</tr>
<tr>
<td>Cost (million USD)</td>
<td>18.9</td>
<td>13.8</td>
<td>14.3</td>
<td>14.5</td>
<td>14.9</td>
</tr>
<tr>
<td>Projected population</td>
<td>18,431,195</td>
<td>18,831,715</td>
<td>19,232,229</td>
<td>19,632,747</td>
<td>20,033,264</td>
</tr>
<tr>
<td>Cost per capita (USD)</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Cost per capita (MWK)</td>
<td>769.5</td>
<td>551.0</td>
<td>557.6</td>
<td>552.3</td>
<td>559.3</td>
</tr>
</tbody>
</table>

**Net revenue**

|          | -10,463.8 | -6,245.5 | -6,160.0 | -5,820.9 | -5,689.7 |

*Realistic coverage scenario (5% of informal non-poor population)

Note: The allocation of NHIS costs to key functions is indicative only.

## Table 3. Total revenue, administrative costs and net effects of Purchaser Scenario (MWK million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions</td>
<td>not applicable</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>User fees</td>
<td>not applicable</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Cost (by function)</strong></td>
<td></td>
<td>368.1</td>
<td>385.0</td>
<td>403.2</td>
<td>420.9</td>
<td>451.7</td>
</tr>
<tr>
<td>Contracting</td>
<td></td>
<td>301.5</td>
<td>315.6</td>
<td>330.7</td>
<td>345.3</td>
<td>370.6</td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td>15.9</td>
<td>16.6</td>
<td>17.4</td>
<td>18.2</td>
<td>19.5</td>
</tr>
<tr>
<td>Compliance</td>
<td></td>
<td>47.6</td>
<td>49.8</td>
<td>52.2</td>
<td>54.5</td>
<td>58.5</td>
</tr>
<tr>
<td>Other functions</td>
<td></td>
<td>3.1</td>
<td>3.0</td>
<td>3.0</td>
<td>2.9</td>
<td>3.1</td>
</tr>
</tbody>
</table>

**Net revenue**

|          | -368.1 | -385.0 | -403.2 | -420.9 | -451.7 |

Note: The allocation of NHIS costs to key functions is indicative only.
Results on technical efficiency equally depend on the effects of a purchaser-provider split and accompanying reforms such as increased management autonomy of health service providers that are currently being developed by the MOH. It should be noted that efficiency gains from such reforms have not been quantified for the MOH Scenario.

Few low- and middle-income countries have fully transitioned from passive purchasing to strategic purchasing, but there is some evidence for associated efficiency gains. Examples include Turkey, where comprehensive health sector reforms, which included the introduction of performance-related payments and increased provider autonomy, were associated with improved hospital efficiency, and Thailand, where cost savings and more equitable access to services were realized following the introduction of strategic purchasing. More broadly, there is a wealth of experience on the implementation of strategic purchasing elements in high-income countries which can be valuable for implementation, but which requires careful consideration as transferability depends on the strength of existing systems and institutions.

Efficiency effects gains from active purchasing (reflected in the per capita cost of medical services) are projected to be around MWK 60 billion in 2012/22, if such reforms would be implemented alongside financing reforms under the NHI or the Purchaser Scenarios (Table 4). It is expected that technical efficiency would improve more than in the current set-up (MOH scenario).

Table 4. Efficiency gains under NHI / Purchaser Scenarios (MWK million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumed cost reduction (compared to MOH Scenario)</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Efficiency gains from active purchasing (million MWK)</td>
<td>11,514.1</td>
<td>25,187.5</td>
<td>36,672.3</td>
<td>49,889.0</td>
<td>59,885.7</td>
</tr>
</tbody>
</table>

Table 5 combines the results of the revenue mobilization and the technical efficiency effects on the financing of the health sector, it can be seen that for the next five years, the Purchaser Scenario is expected to have the largest positive effect.

Table 5. Comparison of financial effects of the reform scenarios (MWK million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MOH</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>NHI (all effects)</td>
<td>1,050.3</td>
<td>18,942.0</td>
<td>30,512.3</td>
<td>44,068.1</td>
<td>54,195.9</td>
</tr>
<tr>
<td>positive effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>additional revenue</td>
<td>3,718.7</td>
<td>4,131.2</td>
<td>4,564.2</td>
<td>5,022.9</td>
<td>5,514.6</td>
</tr>
<tr>
<td>efficiency gains</td>
<td>11,514.1</td>
<td>25,187.5</td>
<td>36,672.3</td>
<td>49,889.0</td>
<td>59,885.7</td>
</tr>
<tr>
<td>negative effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>administration costs</td>
<td>-14,182.5</td>
<td>-10,376.7</td>
<td>-10,724.2</td>
<td>-10,843.8</td>
<td>-11,204.4</td>
</tr>
<tr>
<td>Purchaser (all effects)</td>
<td>11,146.1</td>
<td>24,802.5</td>
<td>36,269.0</td>
<td>49,468.1</td>
<td>59,434.0</td>
</tr>
<tr>
<td>positive effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>additional revenue</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>efficiency gains</td>
<td>11,514.1</td>
<td>25,187.5</td>
<td>36,672.3</td>
<td>49,889.0</td>
<td>59,885.7</td>
</tr>
<tr>
<td>negative effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>administration costs</td>
<td>-368.1</td>
<td>-385.0</td>
<td>-403.2</td>
<td>-420.9</td>
<td>-451.7</td>
</tr>
</tbody>
</table>

4.2 Non-financial effects – equity, financial risk protection, policy coordination and resource allocation, and health outcomes

In contrast to the financial effects of revenue mobilization efforts and technical efficiency gains that were possible to quantify in a common metric, the non-financial effects cannot be summarized in this way and a qualitative analysis is provided for each health financing objective.

The analysis on equity indicates that introducing NHIS will cause a decrease in access for poor households, since service access fees for NHI non-members will be needed. There is substantial international experience that user-fees reduce access to and utilization of health services of patients who have to pay them, especially among the poor. It is currently not expected that Malawi will be able to charge service access fees to non-poor households without also affecting the poor. The non-contributory MOH and Purchaser Scenarios would avoid such effects.

It has already been shown that it will not be possible to charge non-poor households in the informal sector directly through the MRA for NHI membership (see Box 1), which means that all poor households would need to be identified and subsidized to ensure their free access to care. However, a rapid assessment of the targeting mechanisms under the Unified Beneficiary Registry (UBR) has shown that these are too weak to reliably identify poor households at the moment (see Box 2 below).

Box 2. Rapid appraisal of the Unified Beneficiary Registry

The Unified Beneficiary Registry (UBR) is a recently developed but yet to be deployed system aimed at providing a single source of information on households eligible for social support services. It is envisaged to expedite the registration process for potential beneficiaries and support sharing of such information among those using such information. It consists of a database that contains information on the socioeconomic characteristics of a number of households and a data management interface that helps to link it with other social protection programmes and enable these to apply their eligibility criteria through their own Management Information Systems.

Given difficulties with the design of the targeting models and problems that may emerge during implementation, it seems inappropriate to use these models for determining fee paying ability of household and, as a result, determining their rights to accessing insured health services.

Programmes using the envisaged targeting mechanism are only present in 18 out of the 28 districts in Malawi and where they are in place, they only collect information from the 12.5% to 50% (depending on locality) of the population who are expected to be poor. This means that 50% to 87.5% of households are currently never formally assessed for their poverty status. At the same time, the predictive power of the targeting models underlying the UBR is rather weak. 60% of households in the poorest quintile are not correctly identified as such, while 44% of those in the richest quintile are wrongly identified as not belonging to this group. Such targeting errors would likely also occur around other cut-off points if the model were to be scaled up to assess 100% of the population, including the suggested cut-off point of 50% of the population in an NHI model.

Costs of the current targeting mechanisms constitute another challenge to the Government of Malawi, if not to the Health Sector. The estimated costs of targeting 50% of the population in all districts within the country, using the current targeting model, is equivalent to 1.4% of total government expenditure and 0.6% of GDP (approx. MWK 12.9 billion). To assess 100% of the population and minimize wrong classifications would likely increase costs further.

In the absence of public enforcement mechanisms of a legal mandate for enrolment, service-access-fees are the only way to prevent NHI non-members from accessing services for free, and thus the only way of providing an incentive to pay the NHI premium. It should be noted that it does not matter whether the service access fee would be the typical “user fee”, i.e. a
small payment entitling the payer to a specific service, or the full “NHIS premium” that would allow free access to services included in the NHIS benefit package for a specified period of time.

**Financial risk protection** is closely related to the equity analysis, and the effects on financial risk protection depend on the effects of official fees on informal payments, as well as the inclusion of transport costs in benefit packages of any scenario – which would increase the funding gap.

The **policy coordination and resource allocation process** would be more difficult if a purchaser-provider split (NHI and Purchaser Scenarios) were to be implemented, due to changing roles, information and capacity requirements under new provider payment mechanisms.

The key result in the area of **health outcomes** is that the expected effects will rely on whether an effective purchaser-provider split can be implemented (common to the NHI and Purchaser scenarios) and whether this will lead to improvements in service quality.

### 4.3 Summary of benchmarking analysis

Table 6 on the next page summarizes the benchmarking analysis for the three reform scenarios. The Purchaser Scenario is identified as the most favourable reform model. It combines a higher net revenue effect than the NHI Scenario while not creating the same negative equity and financial risk protection effects as the NHI model. Compared to the MOH scenario, it generates additional revenue while having a neutral to positive effect on equity.

At the same time, the analysis above has made clear that the largest positive effects of reforms of the Purchaser Scenario (and the NHI Scenario) are gains from technical efficiency that rely on a number of accompanying reforms, most significantly accountable, improved and more autonomous management. However, implementing such reforms is challenging, both in technical and in change management terms and assumptions made when quantifying the effects of the reforms may not hold if reforms are not, partially or ineffectively implemented. In this case, the additional complexity in policy coordination and resource allocation may be a serious drawback.

The next section will therefore look at capacity development needs and a possible long term reform path starting with a Purchaser Scenario and moving towards an NHI Scenario.
<table>
<thead>
<tr>
<th>Health financing objective</th>
<th>Reform scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MOH</td>
</tr>
<tr>
<td><strong>Revenue mobilisation</strong></td>
<td>Widening funding gap</td>
</tr>
<tr>
<td><strong>Technical efficiency</strong></td>
<td>No change expected, potential improvements depending on the outcomes of decentralization and hospital autonomy reforms</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Improvement dependent on national rollout of national ID</td>
</tr>
<tr>
<td><strong>Financial risk protection</strong></td>
<td>No change expected</td>
</tr>
<tr>
<td><strong>Policy coordination and resource allocation process</strong></td>
<td>Depends on implementation of upcoming reforms e.g. revised EHP</td>
</tr>
<tr>
<td><strong>Health outcomes</strong></td>
<td>No change expected</td>
</tr>
</tbody>
</table>
5 Capacity development needs

For the long term vision of a strong and effective NHI, various skills and knowledge will be required by a variety of positions. The development of skills in staff and strong organization will take some time to get in place. This would be particularly the case for Malawi, where capacity is currently lacking for the essential functions e.g. purchasing. Furthermore, developing them all at once is unrealistic and would require, in any case, substantial effort. Some form of prioritization in capacity development would allow:

- Putting in place a minimal functional structure as early as possible, with a view to a gradual expansion later on both in size and scope, as institutional memory accumulates; and
- Formulating a strategic capacity development plan at the outset, linked directly to the ideal NHIA organizational setup (see Background paper 1).

A gradual approach to developing capacity for NHI is proposed. The first step will be to develop the purchaser functions to benefit from associated efficiency gains; the second step will be to add the other functions of an NHI (see Section 3, Table 1). The approach is structured on two dimensions: an organisational dimension and a skills dimension. The organisational dimension is directly linked to the structure of the National Health Insurance Agency. Roles/departments in the NHIA structure were categorised as “core” and “expansion”, where “core” departments are those that are essential for the NHI to function and “expansion” components will be added later (Figure 2). The skills dimension refers to two types of skills required by each generic role in the organizational chart: technical skills, on the one hand, and management and leadership skills, on the other. The essence of the approach is to plan capacity development in three stages: first, the technical skills of core departments; second, the management and leadership skills of core and some expansion departments; and finally, the skills of the remaining expansion departments. More details can be found in Background paper 3.

Figure 2. NHIA organizational chart

Notes: “Core” processes in green. “Expansion” processes in brown.
6 Modelling the total revenue effect of the reform scenarios

In order to provide additional context of the results above, the income and cost effects three reform scenarios were integrated into a health sector expenditure and revenue model to estimate the overall effect of the reforms in terms of financing the health sector as a whole. The model was constructed and populated with the best available evidence that could be sourced for Malawi. The model encompasses health expenditure trends, income projections and estimates of administrative costs of the different scenarios. At the centre of the model are yearly population projections by age bands, which inform estimates of payments to providers based on the expected evolution of the disease profile and revenue estimates (see Box 3 for more information).

As outlined in the previous sections, three NHI enrolment scenarios were modelled: a realistic enrolment scenario assuming 5% of the informal non-poor (1% of the total population) would enrol in the NHIS by 2021/22, which is also the base-case for this analysis; an optimistic enrolment scenario assuming 25% of the informal non-poor (5% of the total population) would enrol; and an exceptional enrolment scenario, assuming 40% of the informal non-poor (8% of the total population) would enrol. For the formal sector, it was assumed that 100% would be enrolled from the start; the same was assumed for the informal poor, with the importance that the government would pay their contributions in full (i.e. a 100% subsidy).

Box 3: Assumptions in the health sector expenditure model

<table>
<thead>
<tr>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues are informed by the National Health Accounts 2012/2013-2014/2015 data and they include donor funding as well as yearly % increases in allocations to health proportional with population growth (2.1% to 2.3% per annum). Inflation was assumed to be 20.8% in 2015/16 and decreasing to 7.6% in 2021/22. We did not develop a specific cost estimate for delivering the EHP as the methodology looked at the Malawian health sector as a whole. The cost of a NHI scheme in Malawi includes the set up and running costs of a national agency administering the health insurance funds, the cost of purchasing, the cost of a NHI regulator, the cost of a NHIS communication campaign and the cost of revenue collection through the MRA. Staffing structures for these agencies account for the decentralization context and assume a moderate to high degree of automation in generating and processing provider claims.</td>
</tr>
</tbody>
</table>

Figure 3. Projected funding gap for each scenario (MWK million)
The key result of the modelling is that under all reform scenarios, Malawi will continue facing a funding gap in the foreseeable future that will require external financing. Net revenue projections (revenues minus expenditure) suggest that the funding gap would slowly increase for all scenarios over the next few years (Figure 3). Under the status quo (MOH Scenario), the gap would be of about MWK 250 billion by 2021/2022. The NHI and Purchaser Scenarios each close the gap partially to below MWK 230 billion – mostly driven by the projected efficiency gains.

It should be noted that all scenario estimates include additional revenue from the combination of MAREP, storage levy and motor vehicle insurance levy worth about MWK 4 billion each year, based on the World Bank Health fund work presented in October 2016. Even when accounting for the potential efficiency gains associated with purchasing (total effects in Table 5 above), worth approximatively MWK 54 billion under scenario 2 (full NHI) by 2021/2022, a funding gap in excess of MWK 150 billion would still remain.
Conclusion

In summary:

- Introducing NHIS would increase revenues, but these would come predominantly from the formal sector and they would be unlikely to cover the health funding gap;

- Targeting the informal sector for the purpose of revenue collection faces serious challenges. The Malawi Revenue Authority does not have the systems in place to collect revenue from informal sector businesses, but may be in a better position post-2018 considering planned developments. MRA has no capacity now or in the foreseeable future to collect revenue from households/individuals in the informal sector.

- Existing poverty identification and targeting mechanisms in Malawi (as demonstrated by the UBR rapid appraisal) are not commensurate with the requirements of a NHIS. Specifically, current targeting models mis-classify 60% of the poorest households as not belonging to this group.

- Introducing NHI in the Malawi context relies on introducing “service access fees”, as without fees there would be very limited incentives to enrol in a NHIS. Coupled with deficiencies of the identification and targeting mechanisms, this will cause a serious deterioration in equity and financial risk protection.

- Currently there is insufficient capacity in Malawi for most key NHIs functions and it will take a few years for this capacity to be gradually built;

- The macroeconomic context of Malawi does not support the introduction of full NHI as the share of the formal sector is small and incomes in the informal sector low.

Our recommendations are as follows:

- Focus initial reforms on the purchasing function as an essential first step to improving efficiency in the health sector. The expected net revenue effect of efficiency gains is much larger than the effect of revenue collection.

- Revenue collection could be added to the purchaser when it has developed its own capacities, and MRA has developed mechanisms to reach out to the informal sector.

- Establishing a full NHIS can thus be a long-term objective of a health financing strategy. There is no need to rush legislative action for NHIS in the National Assembly in early 2017.

- An incremental approach would allow the MOH to start very soon building capacity for purchasing and learn from implementation. Specifically:

  o In a first step, Service Level Agreements can be extended to national referral hospitals and selected district hospitals in order to pilot contracting with public sector facilities. This can start being implemented immediately over the course of 2017.

  o In a second step, a basic purchasing structure can be developed within the MOH and be at the centre of a nationwide pilot of output-based contracting with national referral hospitals and all health providers in selected districts across at least two regions. Subject to results from the Service Level Agreements pilot, this second step could be planned starting with early 2018 for implementation in the second half of 2018.

  o A health financing strategy can be developed until 2018 with the vision of introducing NHI, an associated roadmap and milestones for assessing implementation progress. The findings of the two pilots (above) as well as
evaluations of other public sector developments (e.g. national ID roll out) can inform future choices along the roadmap, most likely from 2019 onwards.