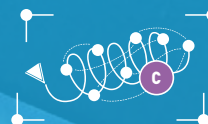




World Health
Organization



Strategizing national health in the 21st century: a handbook

Chapter 7

Estimating cost implications of a national health policy, strategy or plan

Karin Stenberg

Dheepa Rajan



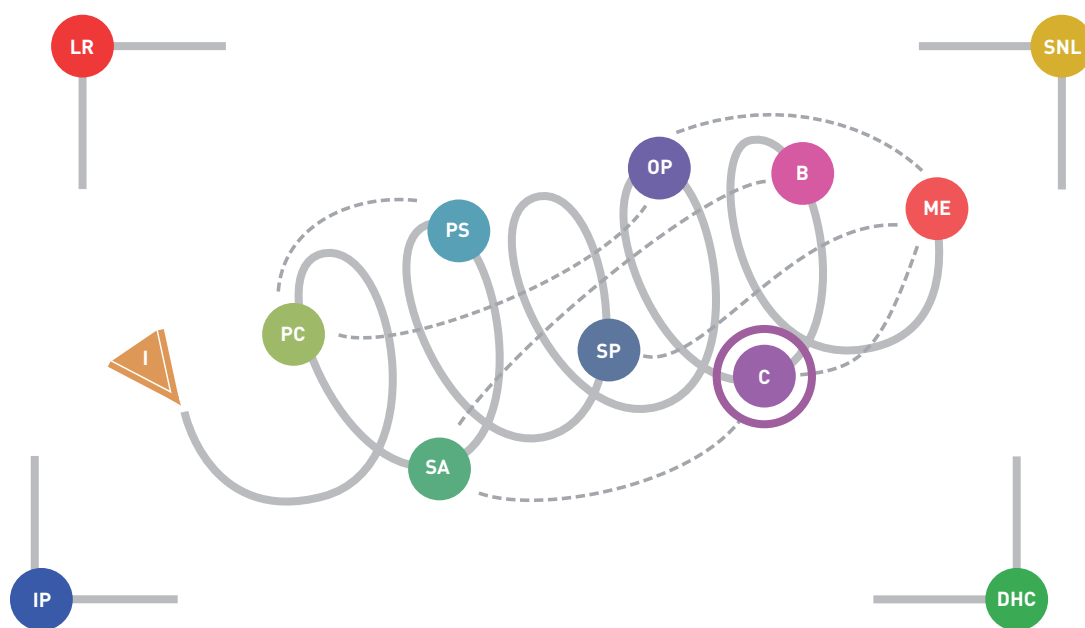
OPERATION Western Area Surge

What is the purpose of the Western Area Surge?
To encourage people to come forward from 14th December onwards.

- We recognise that the system has not been working well enough to protect the community, we want the public to know if the symptoms/implications that we have
- If you have a fever, cough, or difficulty breathing, please come forward.
- The chance of survival is 50% if you come forward from 14th December onwards.

What can communities expect during the surge?
Communities should expect to have more people from 14th December onwards.

- More treatment centres of all kinds will be set up using people who have volunteered.
- More community workers and local volunteers about Ebola, the risks, and what to do.
- Action against the disease.



I	CHAPTER 1 Introduction: strategizing national health in the 21st century
PC	CHAPTER 2 Population consultation on needs and expectations
SA	CHAPTER 3 Situation analysis of the health sector
PS	CHAPTER 4 Priority-setting for national health policies, strategies and plans
SP	CHAPTER 5 Strategic planning: transforming priorities into plans
OP	CHAPTER 6 Operational planning: transforming plans into action
C	CHAPTER 7 Estimating cost implications of a national health policy, strategy or plan
B	CHAPTER 8 Budgeting for health
ME	CHAPTER 9 Monitoring and evaluation of national health policies, strategies and plans

Cross-cutting topics relevant to national health planning

LR	CHAPTER 10 Law, regulation and strategizing for health
SNL	CHAPTER 11 Strategizing for health at sub-national level
IP	CHAPTER 12 Intersectoral planning for health and health equity
DHC	CHAPTER 13 Strategizing in distressed health contexts

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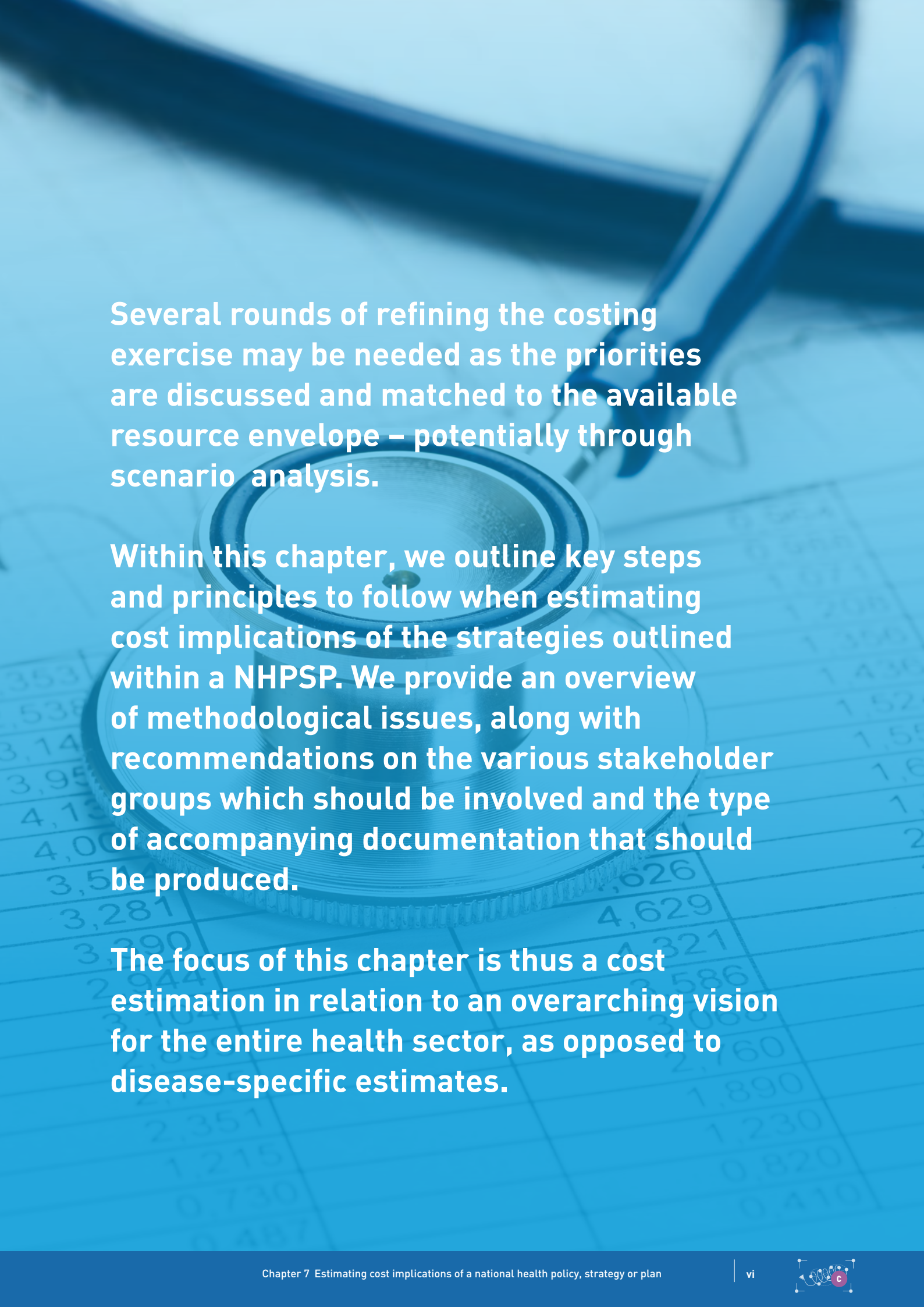
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Overview

This chapter discusses the estimation of costs in relation to a national health policy, strategy or plan (NHPSP). The process of estimating costs can be a crucial step within the NHPSP formulation process which allows decision-makers to consider the extent to which policy objectives and strategic orientations are feasible and affordable. The process of costing a strategy should be considered an essential part of the planning process and not something to be undertaken after the overall plan has been completed and presented as a finalized document.



Several rounds of refining the costing exercise may be needed as the priorities are discussed and matched to the available resource envelope – potentially through scenario analysis.

Within this chapter, we outline key steps and principles to follow when estimating cost implications of the strategies outlined within a NHPSP. We provide an overview of methodological issues, along with recommendations on the various stakeholder groups which should be involved and the type of accompanying documentation that should be produced.

The focus of this chapter is thus a cost estimation in relation to an overarching vision for the entire health sector, as opposed to disease-specific estimates.



Summary

What is meant by “cost implications” of a NHPSP?

- ▶ Estimating the costs of a strategy serves to indicate the financial resource needs of planned activities. Broad policy objectives can be translated into activities and targets by year, to quantify the resources needed for implementation, estimate the related costs, and then assess aspects related to feasibility, affordability and efficiency.
- ▶ Costing is an iterative process and several rounds of discussion and calculation can be necessary to fine-tune the numbers. The aim is to inform the user of the potential overall magnitude of the costs and the main cost drivers.
- ▶ Costing results can inform the budget exercise.
- ▶ The estimated costs should be compared with the projected available financial resources, to assess affordability and potential resource gaps.

Why is it important?

- ▶ To improve the soundness of the NHPSP in terms of setting feasible and financially attainable targets, thus improving accountability.
- ▶ Affordability and therefore “cost” being key criteria in the priority-setting process, information on costs should inform the discussion on priorities in the health sector, which may include considering different sequencing of activities and reforms to match the resource availability. Strategies should also focus on increasing efficiency of current spending

to make progress toward universal health coverage.

- ▶ Cost projections for the NHPSP can be used for advocacy to mobilize additional resources.
- ▶ The estimated NHPSP costs can feed into a Medium-Term Expenditure Framework (MTEF) and annual budgeting process and help gear resource allocation towards strategic priorities in order to improve health system performance and overall health outcomes.

When should costs be estimated for the NHPSP?

- ▶ Costs can be estimated as part of the planning process. A rough estimate of costs can start as soon as the major policies and overall direction of the health plan are agreed upon.
- ▶ Costing should match planned policies to the likely resources available, and closely follow discussions around the policy scenarios and strategies proposed for the NHPSP. Several rounds of refining the costing may be needed as the priorities are discussed and matched to the available resource envelope – potentially through scenario analysis.
- ▶ The cost estimates should not be interpreted as fixed resource needs but rather as an initial projection of resources needed, acknowledging that the environment is dynamic with a certain level of uncertainty related to population risks, and where best practice strategies and prices of goods and services constantly evolve.

How is costing of the NHPSP carried out?

The cost estimation should be integral to the overall planning process. An initial scoping analysis gathers information on likely trends in available financing and fiscal policy “ceilings” over the planning period, along with planned reforms – including those that may impact on the cost structure, such as civil servant reforms, health provider payment reforms, etc. For example, what strategies are being considered to increase efficiency of current spending and make progress toward universal health coverage?

A costing team can form the liaison between the broader planning discussions and the cost estimation process. The team is often headed by specialists in the ministry of health (MoH) planning department, along with cadres from the MoH department of finances, but works closely with a range of stakeholders (e.g. various technical agencies and departments including the ministry of finance (MoF), district managers, development partners) to promote participatory processes and gain buy-in.

Inputs are gathered from a range of technical planning units (e.g. health workforce, maternal health, mental health) regarding their planned activities and targets, while taking into account the expected outcomes of their activities in relation to broader policy objectives and planned health reforms.

Scenarios on costs are presented and discussed through a series of consultations, including data

validation processes with technical counterparts. Presenting cost data compared with estimated financing projections informs discussions on priority-setting as needed.

Multi-year cost projections¹ are continuously updated as required in a dynamic planning environment, and linked to mid-term reviews and annual plans.

Who should contribute to the costing of an NHPSP?

The costing of a NHPSP relates to the entire health sector. As such, it is led by the MoH, but must be relevant to all stakeholders involved in the planning process. The role of civil society, development partners and other government ministries is crucial when it comes to providing input data, ensuring consistency with government policies and plans put forth in other sectors, and validating the final estimates in terms of targets, costs and related projected outcomes such as accessibility to care and overall population health impact.

Anything else to consider?

- ▶ decentralized environment;
- ▶ fragile environment;
- ▶ highly aid-dependent context.

¹ Multi-year cost projections for the health sector are often used as a basis for the expenditure targets calculated for a MTEF.





7.1 What do we mean by “estimating the cost implications” of a NHPSP? How does it fit into the broader health financing context?

Health planning, costing and budgeting are critical activities to inform policy development and implementation. Priority-setting, transforming priorities to operational plans – all crucial steps in the health policy and planning cycle – are covered in previous chapters of this handbook. The budget process is the subject of Chapter 8 ‘Budgeting for health’ in this handbook.

This chapter serves to address the issue of projecting costs for a multi-year health plan to reflect planned results and investment. Estimating costs for a NHPSP should not be confused with the budgeting process. The multi-year projection of costs may reflect aspirational goals set out within the strategy, often reflecting commitments that have been agreed upon through broad consultative processes. In some instances the cost projections for the NHPSP exceed available resources. Those NHPSPs cannot be considered a realistic platform for planning. The combination of ambition and realism is a hard balance to maintain. Thus, the costing exercise needs to be combined with realistic projections of available financing, and adjusted accordingly, in order for the analysis to be credible. Countries may use frameworks such as the MTEF or other approaches to organize and present the information (Box 7.1).

NHPSP cost projections can open political opportunities. When the cost estimates have solid buy-in, they can be strongly leveraged as an overall reference for the implementation process, which is ultimately shaped by the annual budgeting process.

Box 7.1

What is an MTEF?

An MTEF is a comprehensive, government-wide spending plan that links policy priorities to expenditure allocations within a fiscal framework (linked to macroeconomic and revenue forecasts), usually over a three-year planning horizon.^{II} The MTEF process facilitates the combination of cost projections with the projections on available resources, helps to discuss inter- and intrasectoral trade-offs, and informs ceilings that are set for expenditures in different government sectors. An MTEF covers all public expenditure and revenues from all source. In the context of a NHPSP with political targets for the entire health sector, the resource estimates for NHPSP activities may be broader and beyond the MTEF public sector resource envelope (private sector domestic financing for health, contribution of other sectors to health sector goals, etc.).

Projecting costs for investment strategies associated with a multi-year health plan is a critical component of strategizing for health.

^{II} For more detailed information on MTEFs, see Chapter 8 “Budgeting for health” in this handbook.



7.1.1 What do we mean by costing in the context of this handbook?

“Costing” can be defined as a process of identifying the resources required to produce something or undertake an action, and then valuing these in monetary terms. There are multiple policy uses of cost data.^{III} This chapter addresses the development of multi-year cost projections on the resources needed to implement strategic activities linked to the NHPSP objectives in the medium term (3–10 years) and for the entire health sector. Such estimates would generally include resources needed both for the various health system areas (health workforce, governance, supply chain, etc.); as well as for different public health programmes, curative care, outbreak response and disease control. A common preoccupation concerns the inclusion of activities that may fall outside the traditional definition of the health sector. In the spirit of the Sustainable Development Goals (SDGs), health planning authorities can foster a multisectoral response to address those health issues which require it – the question of *who* (which sector) should pay for this and *why* is addressed in more detail in the chapter on intersectoral planning.^{IV} Suffice it to summarize here that a certain level of investment still must be made by the health sector to foster better collaboration with other sectors. This should thus be reflected as a strategic orientation in the NHPSP and as a specific activity in an operational plan.

To a large extent the costing process will entail translating broader policy goals (which can include benefits or “outputs” such as “increase in the utilization rate of health facilities”) into concrete activities. The transformation of high-level policy objectives expressed in the NHPSP into specific activities and targets is a process

which should be informed by a thorough situation analysis and studies on feasibility. For example, programme-specific targets (e.g. those related to malaria or HIV/AIDS) should be set taking into account the overall capacity of the health system (availability of trained nurses etc.), reflect the most recent evidence on effective interventions and investment strategies, and then set targets against which decision-makers can be held accountable. An integrated approach across health programmes is particularly important when planning the utilization of shared resources (such as health workers), and is equally crucial when considering programme-specific approaches that could more effectively be shared (such as separate laboratories versus joint laboratory facilities). The costing process can be helpful in fostering an in-depth reflection on the details of operationalizing a plan, and helps to identify areas where more strategic thinking is required.

A large part of the costing work thus relates to:

- (a) strategic thinking around what resources would be required to implement policy objectives, i.e. strategic reforms and innovation within the health system;
- (b) more detailed definition around the kinds of inputs required (staff time, materials, vehicles, medicines, etc.) for the specific activities. The details are required in order to subsequently attach a quantity and a price to each input.

The discussion on the broader policy goals and the associated activities takes part during the

^{III} “Costing” can have multiple objectives and refer to many different kinds of analysis. Annex 7.1 provides an overview of different situations in which a cost analysis can inform strategizing for health.

^{IV} Please see Chapter 12, “Intersectoral planning for health and health equity” of this handbook.

planning process. So bringing together those who plan and those who cost at an early stage is critical, as it ensures that the national health plan does not end up becoming a wish list of activities or goals for which resources are insufficient, or capacity is lacking – meaning that they cannot be implemented. The costing process can help to provide a realistic, financial feasibility assessment as an important element in the decision-making process.

The costing should also be used to look at potential duplication of activities among different actors in the health system. One of the conclusions from the analysis carried out in Sudan to develop NHPSP cost projections is that the exercise helped to highlight duplication in areas such as monitoring and logistics.¹ Similar findings regarding duplication of activities became evident during the costing of Angola's Plano Nacional de Desenvolvimento Sanitário 2012–2025.^V

Box 7.2

How much does a NHPSP cost? A valid question

Some may argue that estimating the overall cost of a NHPSP serves little purpose, and that efforts would be better addressed at estimating costs of more discrete financing-related strategies, such as “how much financing is required for extending my benefit package”, or “what cost assumptions should be used when reimbursing different providers?”. While these two more specific questions are certainly extremely valid and useful, the process of costing a NHPSP can serve to inform decision-making on strategic directions. The crux lies in the definition of “costing” and the approach taken for the analysis. In the case of NHPSP costing, the costing should not be approached as a mere mathematical exercise of attaching numbers to activities; it should be used strategically as a policy instrument to discuss issues around feasibility, financial sustainability, and the need for prioritization when resources are limited. The NHPSP costing can also be most useful in specific contexts to bring various technical programmes and planners together in a joint discussion.

Bringing the costing element into the process of strategic planning at an early stage helps ensure that the national health plan is accompanied by a realistic projection of resource needs, and not an unaffordable “wish list”.

^V Tania Lourenco, MoH Angola, personal communication [29 March 2016].



Scenario analysis
– i.e., alternative
projections
for how the
strategic vision
outlined within
the plan could
be implemented,
along with the
associated costs
– can be a useful
tool to inform
the planning
dialogue.

The objective of a NHPSP costing exercise often evolves into an analysis with a very broad and visionary question: what resources are required, and how should they be organized, in order for the health sector to meet the priority health needs of the population? The key word here is priority, because overall health needs will be infinite, and in the end, resources are scarce in relation to needs.

There is seldom a single answer to this question, and within this chapter we refer to “scenario analysis” – i.e. the development of alternative projections for the strategic vision outlined within the plan. While the overall vision for the health system may be long-term over the next 20–30 years (Box 7.3), the medium-term scenarios (3–10 years) that are the subject of an NHPSP and thus, this handbook, can refer to more specific scenarios, for example:

- ▶ different strategies for health system investment – i.e. boosting the “backbone” or “hardware” of the system;
- ▶ different service delivery platforms for packages of health services;
- ▶ different scope of services to be delivered – whether the existing set of services will be expanded to include, for example, more tertiary care or a greater number of mental health services;

- ▶ the focus on prevention and public health interventions vs treatment;
- ▶ demonstrating cost savings that can arise as a result of shifting care models and from focusing on high impact preventive interventions;
- ▶ considering strategies for differentiated geographical targeting, or focusing on vulnerable groups, where relevant, and what this would require in terms of resource planning;
- ▶ different models of providers’ payment (which ultimately alters their incentives, their behaviours, and the related resource use);
- ▶ different assumptions as to how care-seeking could change with (i) investments in the health system and (ii) changes in incentives for both patients and providers, and thus coverage of health services and predicted health outcomes;
- ▶ changing policies on essential medicine lists and pharmaceutical prices (e.g. reference prices);
- ▶ different assumptions around economic growth and estimated available health budget.

We will see throughout this chapter how scenario analysis is proposed as an approach to help examine the feasibility and affordability of different policy reforms or strategic investments in the medium term.

7.1.2 How does NHPSP costing fit into the broader health financing context?

Box 7.3

Long-term projection models: Australian health care expenditure 2003 to 2033²

Many member countries of the Organization for Economic Co-operation and Development (OECD) with a primarily tax-funded health care model undertake expenditure predictions over the longer term in order to assess the fiscal future of health specifically. Modelled projections for Australia combine demographic data on population ageing and population growth, with non-demographic factors such as changes in disease rates, volume of services per treated case, access to treatment, and health price inflation. The analysis applies assumptions around what shares of expenditure will be funded by the government, as out-of-pocket, or through other private means. Estimates produced in 2008 indicated that total health and residential aged care expenditure is projected to increase by 189% from 2003 to 2033, representing an increase from 9.3% of gross domestic product (GDP) in 2002–2003 to 12.4% in 2032–2033. The largest projected increases in volume of care and related costs concern diabetes and dementia. **The report concludes that projection work is relevant, not so much for the accuracy of the numbers produced, but because it assists in an understanding of the drivers of health care expenditure, and the place of the health sector in the economy, which can subsequently be used to inform policy to address the anticipated changes.**

Many health plans suffer from a weak situation analysis, unclear prioritization and poor rationale for target setting, combined with limited thinking about financing and sustainability.³ A major challenge is that planning and costing are often not truly participatory and based on a multi-stakeholder dialogue. The consequence is a plan which does not adequately reflect what stakeholders want and are willing to implement. Such plans then do not properly serve to inform the budgeting process and actual implementation on the ground. It is a repeated observation that policy-making, planning, budgeting and costing take place independently of each other (often by different technical units within the MoH). Another challenge is ensuring coordination between central level and regional/district/community level planning (top-down vs bottom-up processes).^{VI}

Development assistance brings further distortions in low-income countries.^{4,5} First and foremost, the costing of the NHPSP needs to consider what the anticipated policy changes are, and what resources can be better used. Should there be a reprogramming of current resources towards other priorities, or can a change in the governance institutions and processes lead to changes in the way that activities take place, towards more efficient strategies? The costing process also requires consideration of the fixed costs that are firm commitments and do not change vis-à-vis the number of services produced.

The cost projections should also consider anticipated changes in the supply and demand for health services. Changes on the supply side (e.g. how services are provided and purchased)

VI See also Chapter 11 “Strategizing for health at subnational level” of this handbook.



7.2 Why estimate costs for the NHPSP?

can also have implications for the demand side (lower copayments may result in increased care-seeking) (see Box 7.4).

This section discusses why estimating costs for the NHPSP can help to inform health policy dialogue. Other types of cost analyses which can inform health planning are described in Annex 7.1.

Box 7.4

Costing benefit packages and provider payment⁶

Many NHPSPs contain a strong link to a benefit package of services, whether these are implicitly or explicitly defined. In order to advance the policy dialogue around a benefit package, in most political settings, an estimation of the cost implications can be helpful. While there are few guidance documents available on how to estimate costs for a benefit package, such processes tend to be geared towards benchmarking and setting rates for provider payments. Estimations of benefit package costs are therefore narrower than a NHPSP costing which considers activities that need to occur across the health planning spectrum. When costs have been estimated for extensions of the benefit package, such analysis forms an essential component of the scenarios for the NHPSP and must be considered.

7.2.1 Because a NHPSP cost estimation is a necessary basis for policy dialogue on the affordability of the NHPSP

Costing can be seen as a foundation of a good and comprehensive national strategy. This view is reflected in the International Health Partnership (IHP+)'s five core attributes of a national health strategy, formalized and applied through the Joint Assessment of National Health Strategies (JANS) processes. Box 7.5 illustrates two attributes referring to the estimated costs and budgetary framework for the strategy.

Box 7.5

Criteria used to assess comprehensiveness of cost and budget frameworks for NHPSPs

IHP+ has identified core attributes of a national health strategy.⁷ Attributes 8 and 9 specify characteristics for the costs and budgetary framework.

Attribute 8: The national strategy has an expenditure framework that includes a comprehensive budget/costing of the programme areas covered by the national strategy.

The strategy is accompanied by a sound expenditure framework with a costed plan that links to the budget. It includes recurrent and investment financing requirements to implement the strategy, including costs of human resources, medicines, decentralized management, infrastructure and social protection mechanisms. When appropriate, the framework includes costs for activities and stakeholders beyond the public health sector.

Cost estimates are clearly explained, justified as realistic, and based on economically sound methods.

Attribute 9: The strategy has a realistic budgetary framework and funding projections. If the strategy is not fully financed, there are mechanisms to ensure prioritization in line with the overall objectives of the strategy.

Funding projections include all sources of finance, specify financial pledges from key domestic and international funding sources (including lending), and consider uncertainties and risks.

Funding projections are realistic in the light of economic conditions, medium-term expenditure plans, and fiscal space constraints

If the level of funding is unclear or there is a gap, then the priorities for spending are spelled out with the consequences for results (either by showing the plans and targets under high-, low-, and most likely-funding scenarios, or by explaining the process for determining spending priorities).



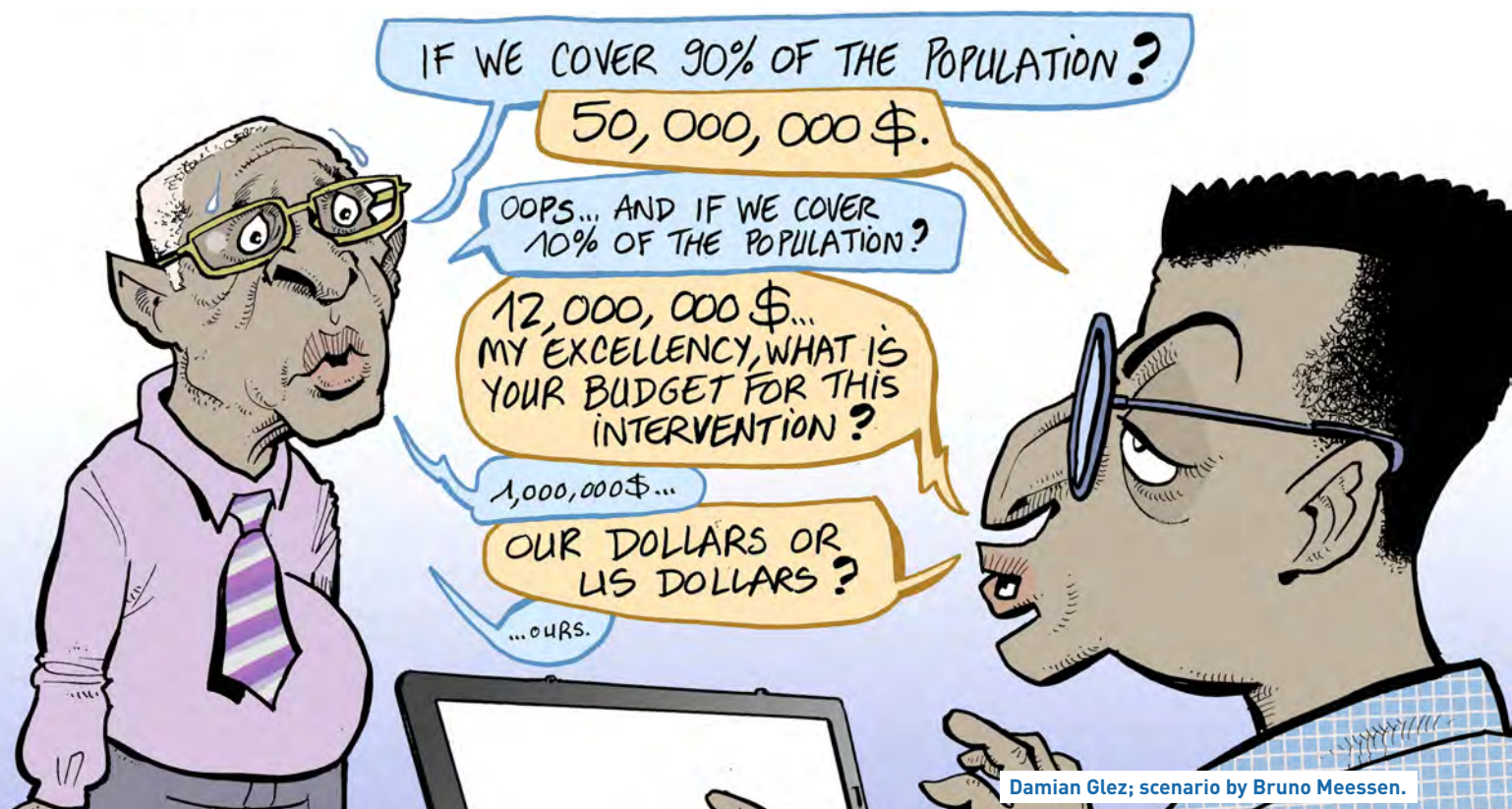
With the Sustainable Development goals there is increased emphasis on the role of domestic resources, even in low-income countries. The concept of “affordability” should be grounded in projections of locally raised resources

The overall cost estimate can be considered a reference point to inform the planning and financing dialogue. Understanding the costs and resource implications informs the policy dialogue on the affordability of the NHPSP, including whether targets are feasible and realistic. The notion of “affordability” is highlighted in the discussions around the Sustainable Development Goals, where the central financing component is increasing countries’ capacity to raise domestic resources through improved tax administration and overall policies to combat mismanagement of funds and illicit financial flows.⁸

A strong link between planning and costing should exist from the onset of any discussion on planned reforms and targets, including on the resource requirements. The process is iterative because planning decisions must take into consideration operational and financial feasibility, while the cost projections need to adjust between planned activities and available fiscal space.

The challenge for the NHPSP costing is thus to go beyond a mere quantification of stated targets. In many countries the NHPSP costing team is a technical team, adjacent to the general NHPSP planning team, which receives information from the NHPSP. A key challenge is to ensure a two-way dialogue, to use the costing exercise to unlock dialogue on strategic priorities and reforms that should be reflected in the NHPSP. Such a process requires three things that are in short stock: technical capacity, power to influence, and time. The second challenge is to move the planning and costing work beyond the technocratic government sphere and ensure a real multistakeholder process and participatory dialogue. Even if the actual calculation work might be left to those who are trained to perform complex computations, the assumptions behind the numbers and the details of the activities that the numbers represent must be based on multistakeholder policy dialogue.

Fig. 7.1. Costing a national health policy, strategy or plan



Damian Glez; scenario by Bruno Meessen.

Table 7.1 Estimating costs for NHPSP implementation: challenges and potential strategies to overcome the challenges

CHALLENGES	POTENTIAL STRATEGIES
Costing team is disconnected from planning dialogue	Develop scenarios with whatever data is available (e.g. salaries, anticipated commodity costs for key health services), present these to gain policy-makers' attention regarding the power of cost projections. The cost scenarios (based on the best available evidence) can be leveraged to stimulate a rational, multistakeholder policy dialogue on health sector priorities.
Costing exercise is perceived as externally owned	Foster local understanding of how the costed NHPSP can be useful for policy dialogue. When local capacity is constrained, focus on fostering the more critical roles related to ensuring MoH quality assurance of the data estimation process and final results.
Time constraint for analysis	Focus on cost drivers. Avoid going into too many details and losing the interest/momentum.
Limited interest by various technical programmes and data managers to participate in the process	Conduct outreach with the health programmes and health system departments; explain the objectives of costing; discuss how previous NHPSP estimates were developed and used and what can be improved this time around. Look explicitly into the costing that might have been done for their own programme planning and show linkage/limitations.
Challenges finding local data; reliance on global/default data	Use global/default data but document assumptions and data sources explicitly. Define data collection agenda for next costing round.

The link between planning and costing must be very strong from the beginning – any discussion on planned reforms and targets should take into consideration resource requirements.





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7.2.2 Because costing can help promote cohesive support for the NHPSP

In countries where health programmes (e.g. health workforce, maternal health, mental health) or the broader health community (other line ministries, professional associations, academia, civil society, etc.) may have had limited involvement in the overall NHPSP process, the process provides an opportunity for these stakeholders to get engaged and feel their issues are taken on board. These processes often have greater value than just the technical generation of numbers and indicators, since they also help establish overall ownership of the NHPSP. In many settings, however, the individual specific health programmes have limited interest in the NHPSP process as they may not see the benefits of engaging in a sector-wide discussion. This is where the central planning unit of MoH needs to make a concerted effort to reach out to individual programmes and engage their interest. This is easier when planning cycles are aligned.

The first lesson of economics is scarcity: there is never enough of anything to fully satisfy all those who want it. The first lesson of politics is to disregard the first lesson of economics.
-- Thomas Sewell

7.2.3 Because NHPSP cost projections put the MoH in a stronger position during the budget negotiation stage

Scarcity of resources is the first lesson of economics, in that there will never be enough to undertake everything that policy-makers wish to do. Health expenditures typically constitute around 6–15% of public spending, making health one of the largest sectors in most countries.^{VII} Health sector planning requires information on the costs of planned policies precisely because they need to be examined in light of the scarce resources available.

NHPSP discussions with stakeholders can include a debate on the financial implications of the NHPSP. Having resource needs estimates readily available can help to advocate and mobilize additional resources from government and partners in support of the health plan. It is also important to remain in continuous dialogue with the ministry of finance (MoF) to discuss what information they are most interested in having when making resource allocation decisions for the health sector. This often includes concrete information on health system outputs or health outcomes (Box 7.6). The presentation of estimates should be carefully developed so that it provides information in a language which MoF staff can understand and relate to, which then makes it a good tool for lobbying and negotiating with the MoF.

^{VII} In 2014, low-income countries on average spent 10.4% of their general government expenditure towards health. The values for lower middle-income and upper-middle-income countries were 6.3% and 10.5% respectively. High-income countries on average give higher priority to health with a share of 16.9%. Source: WHO Global Health Expenditure Database (<http://who.int/health-accounts/ghed/en/>, accessed 10 July 2016).



Box 7.6

More money for health in Ethiopia following MoH–MoF negotiations⁹

“It was a result of a revolution in the way we started planning for health that impressed the MoF to allocate more budget [to health],” says Nejitudin Bilal, former Director-General for Policy, Planning and Financing, MoH, Ethiopia.

In Ethiopia, the health sector progressively received large national budget allocation increases during the decade 2000–2010. Ceilings were shifted to accommodate increases for the health sector – quite a revolution, considering that usually, MoHs in many countries tend to be one of the least successful line ministries in government to argue for increased budget allocations.

How did the MoH in Ethiopia manage such a feat?

A detailed costing exercise was undertaken for the Ethiopian Health Sector Development Plan III 2005/6–2009/10 which included a fiscal space analysis and several financing

scenarios to convince the MoF to prioritize the health sector. A crucial MoH strategy was demonstrating to the MoF that health sector goals were not only linked to, but critical to, the achievement of National Development Strategy goals and Millennium Development Goals (MDG) targets; and that scaling-up one of the flagship programmes of the health sector – the Health Extension Programme (HEP) – could have a decisively positive impact on those commitments. The various financing scenarios were linked to plausible impact, for example, the MoH was able to demonstrate that full financing of the HEP would ensure achievement of MDG4 to reduce child mortality for Ethiopia, which translated in reality five years later.

The Ethiopia example (Box 7.6) is powerful testimony to the potential a MoH has to leverage rational health planning and costing results, especially when it is ably linked to a realistic fiscal space analysis and financing. The Ethiopia example also demonstrates the

need to link the costing to a policy direction (here the health extension worker programme) and strong arguments to link the investments to improved health system performance, in this case a reduction in under-five mortality.

7.2.4 Because costing strengthens accountability

A detailed NHPSP costing can strengthen accountability for the strategy. This is particularly the case when the costing process requires an open and transparent presentation of the concrete investments and reforms needed to achieve the stated aims as well as an informed estimate of the resources required to achieve them. Depending on the scope of the NHPSP, accountability will encompass mainly the government implementing institutions but potentially also the full range of stakeholders in the health sector, including the private sector. A NHPSP costing exercise will help clarify who will fund what and how far partnerships with other stakeholders (such as public/private partnerships) are necessary to fulfil the goals of the plan.

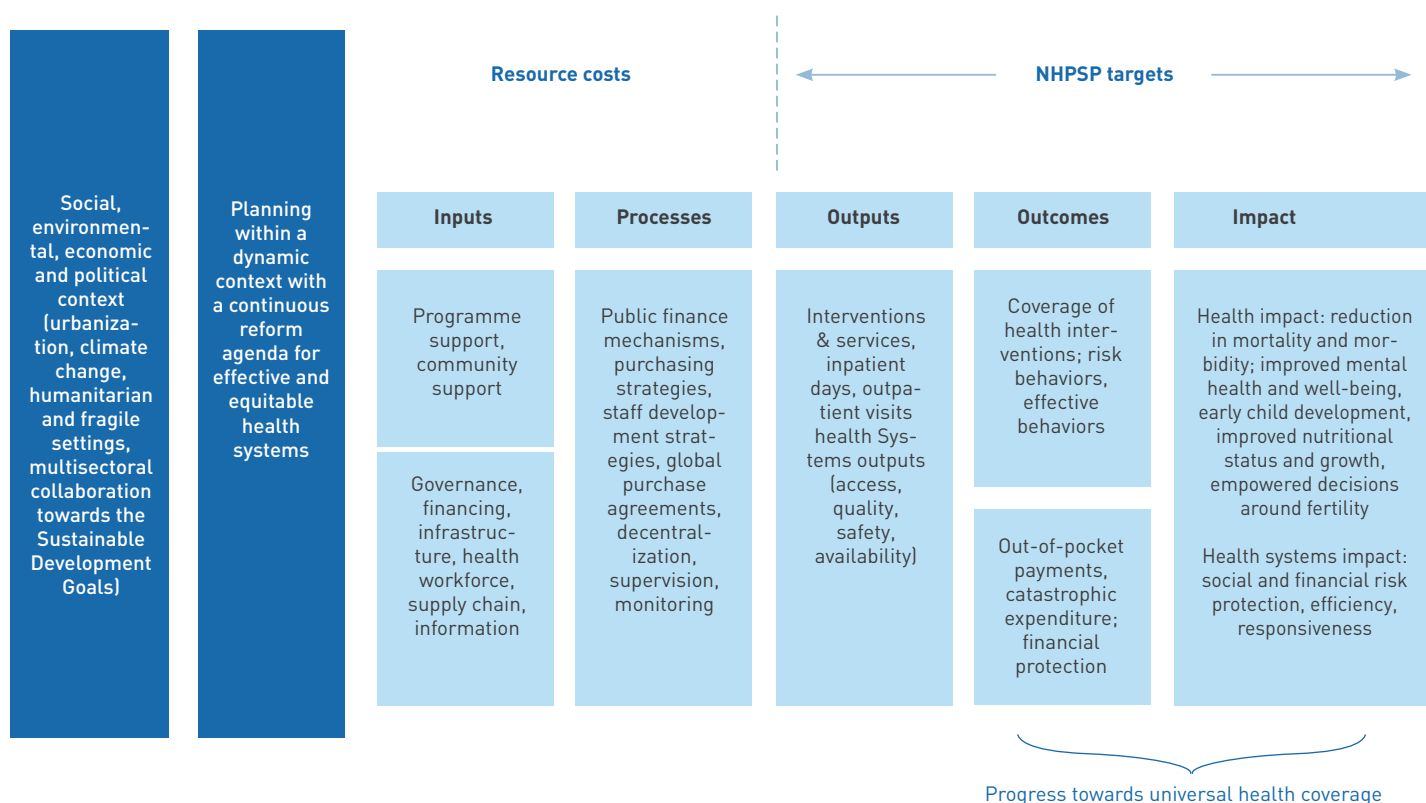
Within the government policy space, a costed plan helps map out the envisioned policy changes and ensure that the amount allocated to health is adequate to undertake the planned policies.

Estimating the costs of an NHPSP also requires getting down to the details of those policies. What activities should be undertaken in what year, and with what specific targets and inputs, in order to reach the objectives?? How would the structure of costs be expected to change over time, e.g. through innovative delivery strategies, a transition towards the use of a more cost-effective mix of services and improved service efficiency, or through modified purchasing strategies?

Accountability and transparency are strengthened when NHPSP objectives are aligned with the planned reforms, and the planned inputs are clearly spelled out and linked to outputs and outcomes (Fig. 7.2). Targets for an NHPSP often centre on outputs, outcomes and impact. The necessary investments for achieving those targets will be input-based. This is where the NHPSP costing process can emphasize strong links between inputs, processes/strategies and the longer-term anticipated impact.

Costing can facilitate an open and transparent presentation of the investments and activities needed to achieve the stated goals; in effect, a detailed NHPSP costing strengthens accountability.

Fig. 7.2 From inputs to outputs: a conceptual framework¹⁰



A well-costed plan allows a range of stakeholders – including civil society, private sector, parliamentarians and the media – to have insight into the rationale for resource allocation decisions, and to hold policy implementers accountable to the same. The essential next step, however, is the extent to which this information transparently feeds into the budget formulation process. In order to aid this process, information around the NHPSP multi-year cost estimates should

be simplified enough for a range of audiences including those not working in the health sector. This can require three or four layers of messages (for technical health specialists, health policy-makers, non-health policy-makers, the general public, etc.). Box 7.7 provides an example of how examining projected costs for a strategy allows stakeholders such as civil society to challenge targets and standards set for service provision.

Box 7.7

Using cost estimates to influence resource allocation: an example demonstrating the influence of civil society in South Africa¹¹

In South Africa in the 1990s the government health budget was only partially covering HIV/AIDS prevention and treatment drugs. There was limited access to drugs that prevent mother-to-child transmission (PMTCT) of HIV, as well as antiretroviral therapy (ART) in general. This led to the creation of a Treatment Action Campaign (TAC) in the mid-1990s. The TAC became a mechanism that allowed civil society to examine targets, assumptions and budget calculations, and to challenge them openly.

In 1998, the government suspended trials on PMTCT, stating high costs as the primary

reason. The TAC was able to demonstrate that costs would be lower than the government had estimated, and show that public funds spent on a PMTCT programme would actually save money by reducing future HIV infections and associated costs. The discussion ended in court, where the judge ruled in favour of TAC, stating that a country-wide programme using Nevirapine (a common HIV drug) was affordable. As part of the legal process, the judge drew attention to the provincial health departments' underspending of their HIV/AIDS budgets, and argued that resources should be available. Between 2000 and 2003, a similar process was followed for ART.

7.2.5 Because the costing can help in the selection of relevant priorities according to available funds

Historically, many NHPSP processes estimated costs, compared these with estimates on available financing to demonstrate a financing gap, and then stopped short of taking the analysis further. While the demonstration of a funding gap can serve an advocacy purpose, in most settings it will not lead to an increase in resources. A necessary subsequent step will therefore be to set priorities for the medium-term investment framework. Here, information on costs is highly useful. The process of priority-setting is politically delicate and success relies on the adoption of a transparent process with clear criteria. In the priority-setting chapter of this handbook,^{VIII} one of the possible criteria to be used for priority-setting within the national health planning process. There are different types of cost analyses which can be used to feed into the priority-setting process; one of them is certainly the costing of the NHPSP since cost implications of planned activities will affect how those activities are prioritized. The generation of multiple scenarios may be particularly useful to highlight how there may be trade-offs – for example, extending service coverage vis-à-vis improving quality of care for existing services. The use of scenarios can also be done to identify a key set of priorities which will remain the core of the NHPSP implementation plan should there be unexpected shocks such as funding cuts.

An increasing number of countries also use “budget impact analysis” to consider the incremental economic impact that a new technology would have on the health sector, as part of priority-setting through health technology assessment processes.^{IX} Such studies model the budgetary resources incurred due to illness with

the current situation, and compare with those of the introduction of a new technology.¹² While such models can be very useful for informing decisions on the margin concerning new technologies, this chapter does not consider single intervention assessments, but deals with multiyear projections for the entire health sector.

7.2.6 Because costing can be a useful approach to inform discussions around efficiency

Costing can also be used to inform a dialogue on how to evaluate the current use of available resources, and whether these can be more efficiently spent. In many settings fiscal constraints make it difficult for any increase in resource allocation towards the health sector, and there may even be a reduction in available resources. Efficiency gains are thus the most available route to create fiscal space. Discussions on efficiency may be organized around the following:

Allocative efficiency. This concerns the “what” – i.e. the health service package that is being provided, and whether changing the composition of services within the package (subsidized by public funds) would bring more value for money. Here, cost-effectiveness analysis^X is a useful tool to assess efficiency. In the case of a budget reduction for health, important decisions would need to be made whether to restrict access and/or increase co-payment for some services and/or populations and if so, which ones.

The projected costs can be used to inform the policy dialogue on more efficient use of health sector resources.

^{VIII} See Chapter 4 “Priority-setting for national health policies, strategies, and plans” of this handbook.

^{IX} Health technology assessment is the systematic evaluation of the properties and effects of a health technology, addressing the direct and intended effects of this technology, as well as its indirect and unintended consequences, and aimed mainly at informing decision making re-

garding health technologies. [Definition of The International Network of Agencies for Health Technology Assessment: <http://www.inahta.org/>, accessed 19 July 2016].

^X See Chapter 4 “Priority-setting for national health policies, strategies, and plans” of this handbook.



7.2.7 Summary of rationale for costing of the NHPSP

Technical efficiency. This relates to “how” resources are used, and whether the same set of services could be delivered more efficiently. Potential strategies may include shifting tasks from one type of health worker cadre to another, changing purchasing strategies for drugs and medicines in order to obtain lower prices, and shifting from inpatient to outpatient care where this can be safely and effectively done.

Specifically in the context of an NHPSP, key issues include the inefficiency of parallel systems (e.g. supply chain systems for specific disease programmes), and how improved integration across the health system can bring increased value for money. Again, scenarios that highlight the resource implications of different investment strategies and compare these with the expected outcomes will help inform discussions.

The purpose of estimating costs of implementing strategies as outlined in the national health plan is therefore to examine:

- ▶ the overall envelope required; as well as
- ▶ how resources should be distributed to support different policy objectives, including allocation by areas of health intervention/geographical regions, etc.

The results of the above should serve to inform, in an iterative way, priority-setting when the overall envelope is insufficient and while keeping in mind that certain costs are fixed and cannot be reallocated in the short term (e.g. health worker salaries).

The NHPSP costing process therefore provides key input into the policy dialogue on feasibility, efficiency, affordability and financial sustainability as follows:

1. to assess whether the plan is realistic in terms of what it sets out to achieve (the link between activities/inputs, resource needs, and projected policy outcomes);
2. to ensure that the plan is realistic in terms of the funding available (costs are aligned with the likely financial resources available);
3. to facilitate evidence-informed negotiations with the SHI agencies and other fundholders on expected outcomes and efficiency gains;
4. to generate clear and transparent information to inform the health budget formulation process.^{xii}

^{xii} For discussions on the use of cost and budget projections to strengthen accountability, please see chapter 8 “Budgeting for health” in this Handbook.

7.3 Timing of NHPSP costing

The projection of costs should start early on in the planning process. Ideally, as soon as the potential priority reform areas and strategic directions are known, preliminary costing should take place to put approximate price tags on these priorities and assess to what extent they are feasible. Too often, costing work is undertaken after an overall plan has been completed and presented as a finalized document. Sometimes the costing is taken out as something done “on the side”, neglecting the power of the costing process to transform and refocus the policy dialogue. The problem with such practices is that they de-link the strategy from the overall financing needs.

There have been instances where the retro-active costing demonstrated that the targets set in the NHPSP would require investments that are unaffordable within the medium-term time-frame. This then may call into question the overall validity of the NHPSP in the first place. A cost estimation is an opportunity to bring the NHPSP back to the reality of what can be actually operationalized on the ground, within a certain budget envelope.

Moreover, the added value of scenario analysis will be minimal if the planning process is already concluded. If there is no longer any scope to discuss different policy scenarios, then the costing becomes a mechanical and mathematical exercise of multiplying activities by prices without being able to influence the policy debate. Of course, this is a false dichotomy and depends on the targets and strategies outlined in the NHPSP. If the targets remain diffuse, there is still scope to use the costing to model different implementation scenarios and discuss the benefits of one versus the other.

A general rule, however, is to limit the notion of “plan first, then cost” as it will set a divide between those who plan and those who cost. Instead, costing should be integral to the planning process. Below in section 7.5.2 we present an outline of how cost projections for a NHPSP can be produced through an iterative process where the validity of estimates increases as numbers are fine-tuned with each round of iteration.

The time-frame for the costing process as well as the necessary resources to undertake a solid costing depend primarily on three things:

- (i) the approach chosen in terms of scope and methodology/tools;
- (ii) the availability of data to inform the costing; and
- (iii) the political willingness and participation of knowledgeable planners to provide inputs into the process.

When costing is produced for an overall national health plan, taking into account all major diseases, health areas and service providers, along with systems building, it is not unusual to spend between three and six months estimating costs on the first attempt. It should be emphasized that an extended timeline of three to six months does not imply full-time work on the costing, but allows for consultation processes and for an iterative process that dynamically feeds into discussions around the ambition of target set within the strategic plan (see Fig. 7.3 for a country example from Mozambique where the process in total was estimated to have taken six months, due to periods of inaction between the three phases of preparation, analysis and finalization). A costing that links strategic policy changes to costs requires a wide range of assumptions, data

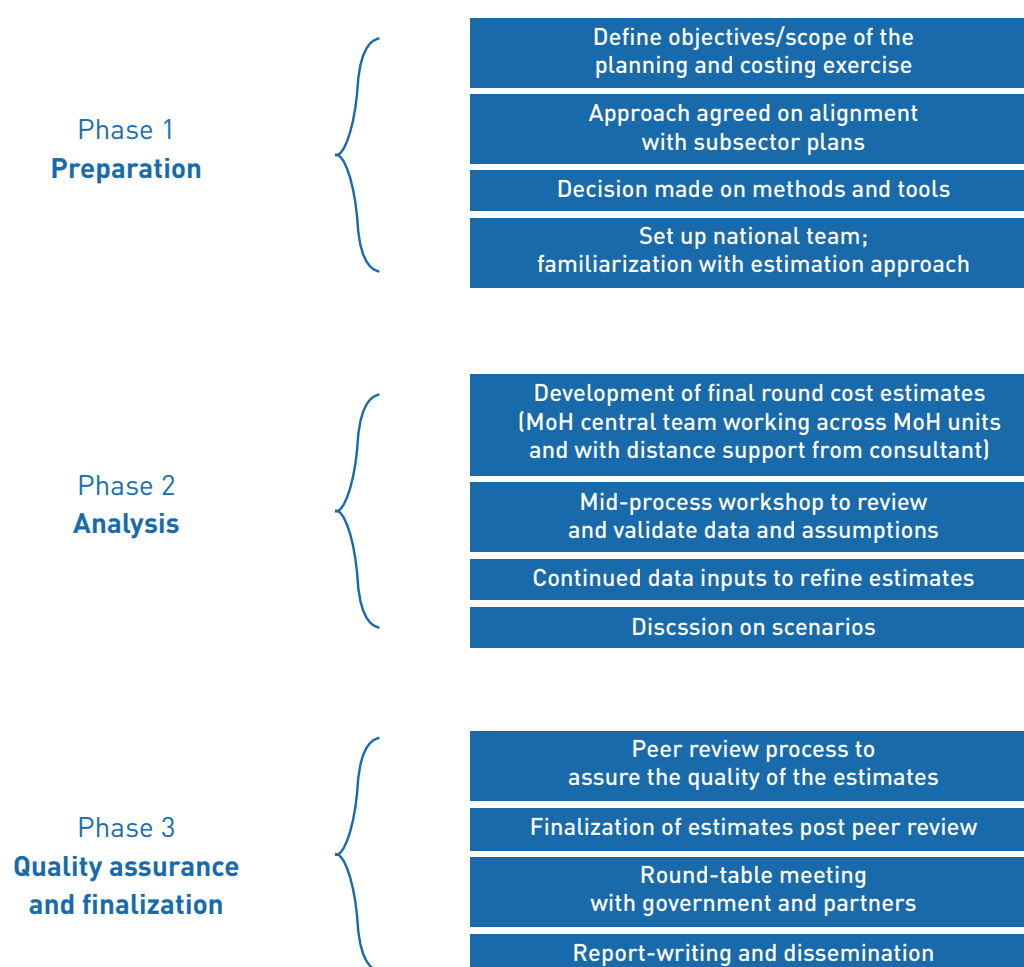
De-linking costing from planning neglects the power of the costing process to transform and refocus the policy dialogue.



and information inputs, especially in comparison to traditional (historical) line item budgeting. For this reason, various software-based tools (see Box 7.11) come equipped with defaults to

aid in reducing the time spent on data collection so that planners can focus on overall resource allocation questions, at least for the first round of estimates.

Fig. 7.3 Process of costing the national health sector plan in Mozambique^{XII}



^{XII} Costing team for the Plano Estratégico do Sector Saúde, 2014–2019, personal communication, [June 2013].

7.4 Roles and responsibilities of NHPSP stakeholders in the costing process

While led by the public administration, the scope for the NHPSP costing should to the extent feasible cover the entire health sector, and not only publicly financed services. Different stakeholders will play different roles in this process. The following list of stakeholders to be engaged in the process mirrors the overall list of organizations to be involved in the overall planning process, as emphasized throughout this handbook.

7.4.1 Ministry of health

The estimation of costs related to the NHPSP is often best led by the MoH. It is often managed jointly by the department of finance or economics and the department of planning. This happens when the NHPSP itself is within the MoH's authority, and costing is a key input and key step in the overall planning process. The calculations may be overseen by an ad-hoc team or by an institutionalized unit. The technical costing work may be outsourced to an independent institute or external consultants, if necessary, but they benefit from being supervised and guided by the MoH.

Costing is an iterative process and involves developing various scenarios for stakeholders to consider. The planning-costing iterative process as well as the scenario-building work involves making several assumptions and hypotheses for the health sector; these are clear decisions to be made by the MoH for its own sector, independently of whether the technical work around quantitative estimates is being carried out by external consultants or internal staff.

7.4.2 Other ministries, including those of planning and finance

Multisectoral partnerships are paramount to improving population health-related outcomes. The engagement of other ministries for public health outcomes is therefore critical. An example is in the area of noncommunicable diseases, where ministries relating to sport, youth, transport, energy, water, environment and agriculture play a critical role in ensuring an enabling environment for favourable public health outcomes. Similarly, the role of the ministry of education in improving overall health is unquestionable, whether through direct efforts (such as school health, and academic institutions for training health workers) or through indirect efforts (a better-educated population is likely to engage in more effective preventive behaviour and seek timely care when needed). Involvement of the ministry of army and defence is often important because of their management of military health facilities.

The role of other government ministries is also crucial when it comes to providing input data, ensuring consistency with government policies and plans put forth in other sectors, validating the final estimates in terms of targets, costs and related projected outcomes, such as accessibility to care and overall population health impact. Engagement of the MoF, health insurance funds and other major fundholders in the NHPSP costing process is beneficial to promoting alignment with overall budget and financing processes. If done well, the cost estimates can be a basis for a common language between the MoH and the MoF. In particular:

The estimation of NHPSP costs is best led by the MoH, with early engagement of the MoF and in some countries, the ministry of planning or social welfare as well.



- ▶ reaching out to the MoF at the start of the process to gather macroeconomic data around gross domestic product growth projections and other financing indicators, to inform projections around likely available domestic financing for health;
- ▶ inviting fundholders and the MoF to join the NHPSP process as active stakeholders and share in discussions around the estimated resources required, how to finance these, and what health outcomes they will buy;
- ▶ keeping fundholders informed about the process of the NHPSP costing, and linking this to the overall budget planning initiatives like MTEF;
- ▶ inviting fundholders to the final stages of discussion around draft costs and discussing affordability and sustainability.

In some countries, there will be a separate ministry of planning, which will obviously play a key role in the process, not least because of its link to national institutes of statistics and other units that collect and manage data and research.

7.4.3 Sub-national health authorities, including community level

Regional and district health authorities have an important role in providing complete data and information to the central level for a consolidated central exercise such as the NHPSP costing. Good, reliable data from district and regional level are critical for informing the national health planning process, including the situation analysis.^{XIII} The situation analysis documents and analyses can be a good starting point from which extracts can be used to start building

scenarios. Moreover, they can help ensure that projected estimates reflect planned activities to overcome regional bottlenecks.

In addition, issues around the challenges and bottlenecks faced at the local level should be communicated clearly to those who are developing the NHPSP and related costing as they need to be reflected in the underlying assumptions made when discussing policy reforms and building costing scenarios. In any case, since planning and costing are so closely linked, the same regional and district health authorities who are part of the overall national health planning process should also contribute to the costing (Box 7.8). The process whereby this will be done differs between countries and depends on the extent to which health policy and planning are decentralized.

7.4.4 Parliamentarians

The national budget is generally brought to the legislature for discussion and subsequent passing into law. This is when public hearings and debates may take place on specific parts of the budget and/or the budget on the whole, with specific legislative committees engaging in discussions of specific topics. Here, the health committee of the parliament will be active in studying the health sections of the overall budget and preparing an analysis and response, often in the form of amendments.^{XIV} The legislature is thus an important partner for the MoH here and it can increase support for its costed plan by engaging with parliamentarians early on in the planning and costing process to inform, explain and clarify why certain strategic directions have been selected and how their cost implications were estimated.

Transparent data and information that reflect how the health system and health needs differ between geographical regions is critical for informing the national health planning process, especially the situation analysis and costing.

^{XIII} For more detailed information, see Chapter 3 “Situation analysis of the health sector” in this handbook.

^{XIV} For more information on health budgets and the budget process as a whole, see Chapter 8 “Budgeting for health” in this handbook.

Box 7.8

Aligned priority/target setting and costing in a federal system – Ethiopia ^{xv}

Due to the highly decentralized structure of the Ethiopian health system, an aligned approach to priority setting and costing across different levels of administration is necessary to inform the health budget. The country is divided into nine regional states and two city administrations, which are further divided into woredas (districts)—a basic decentralized administrative unit—and kebeles—which consist of 2500–4000 population. All these levels have their own two types of plans: strategic and operational plans. Therefore, to ensure alignment of plans prepared at all levels (vertical and horizontal alignment), the Ethiopian health sector redesigned its planning and monitoring and evaluation (M&E) process in 2007, and now implements with the principles of “one plan, one budget and one report” of harmonization and alignment. The planning process follows the top-down

and bottom-up approach in order to align priorities and targets. A top-down approach means an indicative plan produced at higher level with high-level priorities and disaggregated targets are cascaded to lower levels. Based on the cascaded-down priorities and targets (indicative plan), lower level (districts and health facilities) prepare their comprehensive plan, which will be aggregated to the upper-level (region and then national level) bottom-up approach.

To ensure harmonization and alignment, the sector uses the same costing and planning methodology at all levels. Aligned costing techniques across different levels of government allow for assumptions in Ethiopia’s national health plan to accurately reflect bottlenecks faced in local health sectors.

7.4.5 Private sector

Ideally, the private sector should be a full-fledged partner in the cost estimation process. In many countries, a large proportion of health care is directly provided by the private sector; in addition, much of the supply-side inputs for the health sector come from the private sector. The contributions of the private for-profit, private non-profit, private practice within the public sector, and public/private partnerships need careful consideration. Input directly from the private sector is essential in getting the data and information right.

A general approach may be adopted for NHPSP costing.

- (a) Focus on those activities that relate to government-incurred costs:
 - ▶ regulating service delivery, e.g. regulation and accreditation of private providers;
 - ▶ regulating activities related to public health determinants in the broader sense, e.g. regulation of private manufacturers of foods and beverages, employers overseeing workers’ health.

^{xv} Kahsu Bekuretsion, Federal MoH, Ethiopia, personal communication [18 May 2016].



7.4.6 Development partners

The private sector plays a key role in implementation of the NHPSP, so its cost estimations should take this into account when strategically important.

(b) Be explicit about private sector service delivery in terms of assumptions. It should be noted that information regarding private sector activities (quality, prices) may not be readily accessible and the costing team will need to carefully consider what assumptions to make and/or how to gain access to quality data. The decision to estimate and include the related costs depends on the scope of the NHPSP costing, and the provider payment structures.

- ▶ When private providers are paid by the government for service provision, such costs can be presented separately.
- ▶ The inclusion of private sector costs for which prices are unknown should be carefully considered: such estimates will have high uncertainty and will push NHPSP cost estimates upwards.^{XVI}
- ▶ An option is to present costs for public-sector related activities, along with a description of anticipated engagements of the private sector.

(c) Model available financing

- ▶ The role of the private sector is critical for the assumptions on estimated available financing (the role of out-of-pocket spending, contributions by other private sector sources).

The development partners' role revolves around providing relevant data and information on the projects and programmes in which they are involved, in relation to the projected NHPSP activities. Such information relates both to (i) planned activities (for the costing), and (ii) anticipated financing (for estimating available financing). Development partners may support the government directly in its programmes (on-budget funding) or may act outside the budgeting space of the government and undertake independent activities (off-budget funding). Note that the Paris Declaration (2005), the Accra Agenda for Action (2008), and the Busan High-Level Forum on Aid Effectiveness (2011) all encourage on-plan and on-budget activities of the development partners. In some low-income countries, external resources may make up more than half of the public budget for health. The external resources may have an impact on the costing of the health plan (for example, some commodities are provided as part of development assistance and internally procured at international price rates rather than local prices), but also with respect to the anticipated financing to be made available to the government over the planning period. In some countries, district-level health sector activities are being undertaken by development partners so their participation in the costing process is very important also for sub-national considerations. Development partners should be held accountable to provide the data/information on planned investments in an acceptable and understandable format.

^{XVI} When it is difficult to access private sector data, the public sector cost can be used as a placeholder in order to generate an idea of the expected total resource requirement. Assumptions should be clearly documented.

7.4.7 Civil society, professional associations, academic institutions, think tanks and special interest groups

Civil society works directly with the populations in need of the services, and represents their demands. Professional associations represent health workers and know in practical terms which resources they need to provide services. Academic institutions are important with regards to their knowledge of any databases and studies (costing, cost-effectiveness, etc.) which could

be of use in the NHPSP costing. As with other stakeholders, it is important for civil society to be transparent in providing relevant data and information and, through their critical input into the overall planning process, ensure that the assumptions made for costing scenarios are realistic and feasible, and relevant to the populations they represent (Box 7.9).

Box 7.9

Civil society organizations (CSOs) and costing in Uganda

Since the mid-1990s, CSOs have increasingly contributed to policy discussion and health policy formulation in Uganda.¹³ Uganda has taken a comprehensive approach to strategizing for health, in which all governments, donors and stakeholders from the health sector are brought together; this allows the government to understand more fully the resource needs and costs based on the input of different parties, such as CSOs. NHPSPs in Uganda have benefited from CSOs proximity to health services and local knowledge.

Many CSOs in Uganda are directly involved in service delivery, hence their input is critical in the planning and costing process¹⁴. For example, information on district-level resource needs or facility-level intervention costs are often provided by CSOs, and cost estimation assumptions are discussed in detail with all service providers, including CSOs.





7.5 How to estimate NHPSP costs: methodological approaches

7.5.1 Getting started: setting objectives and defining an approach for the NHPSP costing

One of the initial steps in any costing exercise will be to determine the objectives and expected outputs. For the multi-year NHPSP projections, the scope of costing should be defined in relation to the policy reforms that are envisioned. There are multiple approaches.

Goal-oriented projections. The key question is “which strategies will bring us closer to attaining our goals?” Note that some targets may be fixed at an international level such as the SDGs.¹⁶ The analysis should carefully investigate the potential related activities, and what would be the estimated associated funding requirements.

Resource-driven costing. The key question is “how can we maximize returns within a fixed budget envelope?” This ultimately considers policy reforms that will help make progress towards policy goals and targets within a financially constrained context, with a set spending target.

Bottleneck analysis. This considers current bottlenecks within the system and what would bring about a reduction in these, thus resulting in improved overall health-system (see Box 7.11) performance, and subsequent progress towards policy goals.

Many times, all three above approaches are relevant to the country context. While resources are limited, NHPSPs should consider the existing system bottlenecks and how best to invest to move towards health targets. Here again, scenarios can be a powerful tool to allow a discussion around how to bring goal-oriented planning closer to an assessment of resource constraints, through modelling different policy reforms. It will be useful within the analysis to consider allocative efficiency (what to do) as well as technical efficiency (how to do it) – and to consider both dimensions when discussing what can be changed within the current system as well as within a possibly expanded resource envelope.

Costing exercises can adopt multiple approaches such as goal-oriented projections, resource-driven costing, and bottleneck analysis. These approaches are not mutually exclusive and all three examples here may be relevant at country level.



Box 7.10

NHPSP costs (in USD) presented by strategic objective: country example from the Democratic Republic of the Congo National Health Plan 2011–2015

Strategic directions							
RESULTS	PROGRAMMES	2011	2012	2013	2014	2015	TOTAL 5 YEARS
I. Development of health districts							
Expected result #1: The population covered by quality health care services has increased by 30%	1. Improvement in health service coverage	33 222 600	24 803 400	23 113 400	23 173 400	23 233 400	127 546 200
	2. Streamline health facility functionality at all levels of the health system	68 465 400	84 476 420	108 297 020	117 089 420	158 467 840	536 796 100
	3. Support to health districts to provide basic interventions	53 776 800	49 830 000	43 255 500	39 945 900	37 754 400	224 562 600
	4. Improvement in health service quality	201 520	160 436	257 050	222 961	178 367	1 020 334
Expected result #2: The curative health service utilization rate has increased by 25%	1. Promotion of community participation in the health sector	6 455 715	806 315	821 915	829 715	825 115	9 748 775
	2. Health promotion	88 500	166 500	244 500	283 500	310 500	1 093 500
	3. Improvement of financial access	–	–	–	–	–	–

There should be a clear and joint decision by all stakeholders concerning the scope of the costing and the extent to which the costing covers public services only, or the full sector. Overall it is recommended (for example in the JANS guidelines,

Box 7.5) that NHPSP costing should be broad and cover the full implementation needs for both health and other sectors. Ultimately, however, this will depend on information available and how the end results will be used.

A first step is to identify the types of outputs which one expects to have as the end result of the costing, since these will influence the scope of the analysis, the level of detail required in the final results, and how the information is gathered, analysed and presented. If a pre-developed template or software tool is used to inform the costing, the types of outputs that the tool

can produce should be assessed based on the actual policy needs. Annex 7.2 provides some suggestions for standard presentation formats. As mentioned above, it is useful to consider early on how the costed NHPSP should link to the country's budget formulation process and how costs should be presented to facilitate such a process.

Box 7.11

Bottleneck analysis

Given the importance of contextual factors influencing health-care seeking patterns as well as the supply of quality health services, a concept which has proven effective at identifying and costing implementation barriers is bottleneck analysis. A systematic analysis of health system performance at decentralized level often reveals that many weaknesses in implementing effective health activities and strategies are related to service delivery bottlenecks at the district level.¹⁸

Bottlenecks among lower levels of implementation can exist at various levels and for an array of reasons. For instance, demand-related constraints may involve community norms and household behaviour, whereas at the provider level issues may concern local government financial management, and at the district level the constraint may be poor monitoring practices.¹⁹ The first step of a bottleneck analysis is to identify those bottlenecks at district level, and to develop strategic action plans through consensus building activities, following which marginal costing can be performed under different scenarios to inform subnational plans and eventually a national level strategy.

The concept of bottleneck analysis was successfully developed into a practical tool for situation analysis, strategic investment scenarios, and marginal cost estimates in the Marginal Budgeting for Bottlenecks (MBB), developed by the United Nations Children's Fund (UNICEF) and the World Bank.

The MBB tool assists the user to consider what high-impact interventions could be used in existing health plans, what major health system bottlenecks are impeding on effective service delivery, what is the potential cost of alternative plans to alleviate a system's hurdles, and what are the additional financial resource needed. Importantly, the tool also indicates what could be achieved in terms of health outcomes by removing the bottlenecks.²¹ While the MBB tool primarily focuses on maternal and child health, it has successfully been used in many settings to inform cost scenarios for national health sector strategies.²¹ A notable example is the Ethiopia plan described in Box 7.6. These bottlenecks are usually linked to: availability of essential commodities and human resources, accessibility and utilization of health services, quality of services and continuity of services.



7.5.2 Costing the NHPSP in 20 steps

The NHPSP costing process involves iterative back and forth between those who plan and those who cost; early engagement and constant dialogue on the different cost scenarios are essential.

The estimation of costs can be part of processes related to a new plan but also the revision of pre-existing plans and estimates, such as a mid-term review of a NHPSP or a multi-year operational plan, or during any other milestone events in a country's health policy and planning cycle.

The 20 steps listed below describe the costing of activities that relate to a new NHPSP under development. The list of steps is not meant to be prescriptive, but serve as an example only.

- 1. Early engagement.** Bring up the topic of costing at the initial stages of planning the development of the NHPSP. In a context where those who are costing are part of the national health planning process from the beginning, they will be privy to and have access to the situation analysis data and discussions to get a sense of the key interventions that need to be costed. Make the point that even the initial discussions of the planning process can be informed by a discussion around the resource implications of the various overall policies considered (e.g. a changing composition of the health workforce, or a shift towards a stronger primary health care model) and whether these would fit within the anticipated resource envelope.
- 2. Prepare.** Identify the scope of the costing and the expected outputs, the intended audience (primary users of the cost estimates) and the timeframe, in relation to the overall strategic planning process. Note the deadline: by when do you need the estimates in a preliminary format and in a final format?
- 3. Team formation.** Set up a coordinating team (typically two to ten people). The team size will depend on the scope of the costing, the anticipated detail of analysis and the time given to complete the work. All members do not necessarily need prior costing experience but there should be at least two or three members who have experience of costing and understand the data requirements. Ensure that the coordinating team will have access, within the period of the costing exercise, to key experts within the different departments of the MoH as well as within the major national health priority programmes.
- 4. Budget envelope.** Gather information on likely trends in available financing and financial "ceilings" over the planning period (including projections for macroeconomic growth and allocations to health).
- 5. Discuss alternate strategies for coverage.** Undertake a review of current health system bottlenecks. Map and consider planned reforms that may impact the cost structure (e.g. civil servant reforms, health provider payment reforms). Get a good sense of what the main strategic areas of investment will be over the planning period. What alternate strategies are being considered to address bottlenecks, increase efficiency of current spending, and to make progress toward universal health coverage? What can be the expected impact of these strategies on coverage for health services? How would the unit in charge of the NHPSP define the key reforms that will impact on service delivery, governance structures, accessibility to care and overall health system performance?

Based on discussions to date, what alternative scenarios could be considered for the plan itself and the related costs?

6. **Get buy-in.** Conduct an initial briefing to explain the process to various decision-makers and planners (e.g. department heads, district managers, MoF, parliamentarians, private sector representatives, donors) in order to gain their buy-in. Present findings of the budget envelope analysis. Discuss and get agreement on the directions for the costing and how it relates to the plan, including if possible, several scenarios to discuss the financial implications of emphasizing different policies within the NHPSP. Discuss the importance of health system investments and how to address existing service delivery bottlenecks.
7. **Develop a data collection plan** for making the cost projections (see Box 7.12).
8. **Gather specific inputs** from various technical planning units (e.g. health workforce, maternal health, mental health) regarding their planned activities and objectives, and where possible, taking into account the expected outcomes of their activities in relation to broader policy objectives and planned health reforms. Where relevant, these discussions should consider possible scenarios that link the programme-specific investment plans to the overall investment strategies for the NHPSP. An example might be a reallocation of resources, and an accompanying health financing reform that restructures the way resources are allocated and providers receive payment. In this context the strategies put forth by specific units such as health workforce and mental health should reflect the same broader move. At this stage, this is to inform the first rough costing, focus on getting the assumptions right for cost drivers such as human resources (salaries and other costs), and investments in infrastructure and logistics. Quick methods can be used for deriving cost for medicines – for example, through applying inflation measures to past years' estimates, or potentially using tools with pre-populated standards for drugs per case treated (see Table 7.2 below).
9. **Analyse the resource implications** of the planned activities and assess overall financial needs. This is the time to assess the potential scope for synergies and increased coordination and/or integration between specific programmes and departments, and likely constraints (e.g. health system constraints to deliver programme-specific targets).
10. **Modelling impact.** When modelling the expected health impact, review the expected outcomes. If a limited health impact is projected, discuss with programme experts and consider how investments could be geared towards more effective interventions.
11. **First-round.** Finalize the first-round analysis of costs, identify the main cost drivers and cross-check data validity on cost drivers.
12. **Refine fiscal space projections.** Obtain and/or develop projections for macroeconomic growth and allocations to health, in order to project fiscal space and overall financial space for the duration of the plan (the term



“financial space” is used here to define the broader financing context, to include not just the government’s expenditure but also that of the private sector and development partners). This step would be done in collaboration with the MoF.

Data validation is an essential step to ensure the quality of the cost estimates; it also greatly facilitates the buy-in of technical counterparts.

13. **Conduct a mid-term consultation** to discuss first-round results, various scenarios for adjusting policies and plans, and assumptions on likely effectiveness of strategies in addressing bottlenecks. Brainstorm on cross-cutting issues – e.g. overcoming potential health worker shortages; the role of the private sector in service delivery. Discuss the need for prioritization in view of anticipated resource constraints. This could be a three- or four-day workshop involving a broader group of stakeholders in order to get buy-in and involvement, and to further discuss the production of implementation scenarios.
14. **Prioritization.** Following the workshop, adjust the cost projection as needed, given the discussions on prioritization.
15. **Data validation.** Engage in overall quality-control processes, including subjecting the cost projections to peer review. Organize a data validation workshop to validate

the coverage, inputs and outputs for the scenarios with technical counterparts. Fine-tune the projected costs with inputs from planning units.

16. **Map costs** to various presentation frameworks, including the country budget formats, to inform future budget allocation discussions.
17. **Write a report** to document the assumptions, process and results.
18. **Organize a consultation workshop** with a broader set of stakeholders (technical and policy) and discuss the NHPSP objectives and the costs at the same time – along with scenarios for priority-setting in different contexts of growth and/or financial austerity.
19. **Update** the estimated resource projections as may be needed post the consultation workshop. Undertake updates to the estimates as needed within a dynamic planning environment, and link these processes to midterm reviews and annual plans.
20. **Support institutionalization** of the above processes.

Box 7.12

Developing a data collection plan for the cost projections

In order to facilitate data collection, a mapping should be undertaken at the start of relevant documents and resource persons should be undertaken upfront. It is helpful to indicate which team members will be responsible for retrieving each data source.

Examples of information data sources, used to project costs for the NHPSP activities^{XVII}

TYPE OF DATA	DOCUMENTS AND RELATED INFORMATION	INSTITUTIONS AND RESOURCE PERSONS
General planning documents	<ul style="list-style-type: none"> ▶ Previous NHPSP and related costing, if any ▶ Mid-term and/or final review of previous NHPSP ▶ Situation analysis to inform new NHPSP ▶ Health sector reviews ▶ National health accounts ▶ Demographic and health survey/multiple indicator cluster survey for coverage of health services ▶ Budget framework 	Name and contact for each document
Health workforce	<ul style="list-style-type: none"> ▶ Health workforce projections and existing plans ▶ Research studies that assess health personnel efficiency and time allocation ▶ Salaries and incentives 	
Medicines	<ul style="list-style-type: none"> ▶ Essential medicines list ▶ Prices of drugs and consumables ▶ Logistics and supply chain arrangements, including cold chain 	
Malaria programme	<ul style="list-style-type: none"> ▶ National strategic plan for malaria ▶ Global Fund proposal ▶ Evaluation of programme performance ▶ Treatment protocols 	
Maternal health	<ul style="list-style-type: none"> ▶ Health indicators related to maternal health (coverage, health outcomes, etc.) ▶ Various strategic plans and road maps and associated evaluations ▶ Emergency obstetric care assessments 	

The level of detail provided and the quality of data in these systems and documents will differ from country to country. In a decentralized setting, reporting systems may be set up such that data are mostly to be managed at

the regional level. For example, few facilities may report to the central level. In this case, it may be necessary to conduct data collection at the regional level.

^{XVII} Andre Zida, Abt Associates, formerly with Ministry of Health, Burkina Faso, personal communication, [24 April 2016].



Sector reviews and updating cost estimates

During a NHPSP review (mid-term or annual), progress made towards the objectives should be analysed in relation to whether the budget allocation was sufficient or if there are other, non-financial constraints. The sector review process may reveal a need to reorient the NHPSP and/or to consider alternative implementation strategies. It may also reveal a change in the estimated available financial resources compared to what was initially predicted. This provides an opportunity to review the plan and to revise the costing in an inclusive and transparent manner. The review is also an opportunity to validate the assumption using actual data.

Iterative costing

The process to estimate costs is iterative by nature, and the level of accuracy will increase over time. The first production of cost estimates should rely on broad assumptions so as to be able to produce an overall estimate that can feed into the policy discussions around financial affordability at an early stage. Table 7.2 illustrates this further.



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Table 7.2 A progressive approach to costing a NHPSP

	PURPOSE	APPROACH
First-round estimates	<ul style="list-style-type: none"> ▶ Using broad assumptions, assess the overall resource envelope required and compare this with financial resources likely to be available, to assess general affordability. 	<ul style="list-style-type: none"> ▶ Focus on overall health systems needs and on the major programmes and areas likely to drive the costs (such as health worker salaries). ▶ Use simplified assumptions for intervention inputs and drug prices based on status quo, unless there are known differences likely to impact the overall costs. ▶ Adjust medicine costs for anticipated coverage increases.
Second-round estimates	<ul style="list-style-type: none"> ▶ Derive an estimate that is more specific to the planned increase in coverage and the support activities required, that allows for discussion around relative costs of different programme areas/ strategic objectives. 	<ul style="list-style-type: none"> ▶ Having examined cost drivers and discussed potential reallocations within an affordable envelope, fine-tune some of the assumptions related to the cost drivers to ensure that they are correct (e.g. price of drugs for multidrug resistant TB; price of vaccines; targets for vehicles and equipment). ▶ Adjust some of the more prominent activity objectives and related costs to fit into the available envelope, if needed. ▶ Estimate likely gains in service coverage triggered by strategies addressing bottlenecks. ▶ Consider undertaking a scenario analysis without yet fine-tuning all of the cost input assumptions.
Close to final estimates	<ul style="list-style-type: none"> ▶ Derive an estimate that is specific to (the adjusted) planned targets and activities, taking into account financial sustainability. 	<ul style="list-style-type: none"> ▶ Ensure that all relevant health services and activities are included in the costing, including those with smaller budgets. ▶ Prioritize as needed to take into account financial/ fiscal constraints. ▶ Fine-tune further as needed by reviewing input assumptions. ▶ Submit to peer review.
Final estimates	<ul style="list-style-type: none"> ▶ Produce a final cost estimate that can later be used to inform the budget. 	<ul style="list-style-type: none"> ▶ Finalize assumptions and related documentation.



7.5.3 Different approaches, methods, and tools to inform NHPSP costing: some issues to consider

As a general point the benefits of cost information must be balanced against the cost of producing it. When developing a costing methodology, there is a need to balance elements such as level of detail, timeliness, accuracy and complexity with the cost of producing the cost information. The adopted costing practice must meet the stated needs, but the practices must also be sustainable. The investment made to produce cost information should not exceed the benefits the information provides.²⁰

This section outlines approaches and concepts with respect to measuring and estimating costs. The first part considers overarching issues. The second part considers specific methods – such as unit costs, input-based costing, historical budgeting – and discusses the context of their application, including advantages and disadvantages. A third part considers different classifications of costs and benefits of presenting these separately. The fourth part covers the topics of inflation, exchange rates, and using specific pre-developed tools.

Overarching issues

Listed below are some of the issues to consider when selecting a methodological approach for costing the NHPSP.

Answers to policy questions will determine the scope of the costing and the link to other ongoing policy processes (such as benefit package reforms).

Expected outputs of the costing exercise, including stakeholder expectations, should be ascertained. If the expectation is to have a detailed activity-based plan which links inputs to outputs, this determines the approach to be taken.

It is important to establish a timeline: the time available to undertake the costing (if limited, one may opt for historical budgeting for smaller cost categories and focus on the main cost drivers for the detailed estimations).

Available resources to undertake the costing (human, financial and information) will affect the approach taken.

Another determining factor is the capacity to access the required information, and resource persons/experts to undertake the costing.

Medium- and long-term sustainability of the proposed practices will enhance their value. Devising scenarios: modelling efficient systems vs actual practice.

A NHPSP resource needs projection may be based on norms (such as, “a health worker should be in the facility eight hours per day, providing the correctly prescribed drugs according to national guidelines”) or actual observed behaviours (such as, “health workers are on average in the facility four hours per day, often not following the national guidelines for drug prescriptions”). The approach taken for the analysis reflects a philosophical perspective. If it is not expected that inefficient behaviours will change in the short- to medium-term, the costing team may want to discuss how to take account of some inefficiencies or slack in the system (Box 7.13). The bottleneck analysis should address how to reduce inefficiencies over time, and to model:

- (i) the costs of activities that would add incentives to be more efficient, and
- (ii) adjust the assumptions in the cost model such that efficiency increases over time.

Box 7.13

Scenarios for health worker projections in Mozambique and Sierra Leone

The costing of the Mozambique NHSP (Plano Estratégico do Sector da Saúde, PESS)²¹ considered two scenarios for human resource projections. A first scenario assumes a highly efficient work force that achieves high productivity based on the use of clinical equipment and high skill levels. A second scenario assumes more intensive labour inputs expressed as longer duration of patient encounters, especially among the “basic” nurse cadres and mid-level staff. The technical team considers that the second scenario reflects actual service delivery conditions more closely, and the use of scenarios here allowed for policy discussions that were based on concrete modelling.

In Sierra Leone, the costing of the Health Sector Recovery Plan 2015–2020²² allowed for an examination of the predicted health worker capacity utilization and inpatient bed capacity utilization. These outputs facilitated a discussion on current staff distribution, in particular on obvious shortages of key health care providers in comparison to the predicted requirements as corresponding to implementation of the plan. The modelling led to concrete policy commitments by the government to review the planned health worker production and hiring strategies for the health sector.

Alignment of programme-specific estimates with NHPSP costing

By programme-specific plans we refer to sub-sector plans such as a malaria strategic plan or a maternal health roadmap. Overall it is recommended that programme/sector-specific plans should be fully aligned with – and ideally completely incorporated into – the NHPSP. It is often assumed that the sum of all programme plans is equal to an overarching NHPSP. This assumption completely ignores the significant health system investments usually spelled out in NHPSPs – all the more reason why programme plans need to carefully consider the underlying health system capacity to deliver health services, both under current capacity as well as with planned improvements for the future.

In general, the costing methods and health system assumptions used across the different programme areas and NHPSP need to be comparable. If the costing for one area (e.g. malaria) assumes a health system that is inefficient and with significant wastage rates, but another area (e.g. immunization) assumes that the health system is working optimally, the underlying assumptions are different. Standardizing assumptions across programmes is therefore important. This includes price assumptions used across programmes. If resources are supposed to be shared (e.g. health workers), then assumptions around the prices of shared resources need to be consistent across different areas in the plan.

Assumptions on prices and health system capacity used in the cost estimations across the different programme areas and for the NHPSP need to be comparable.



Methods

Bottom-up assessment versus historical allocation

As discussed above, costing a plan can/may link the plan's policy targets to activities, and the activities to specific costs. The level of detail by which costs are estimated may vary. To some extent, a historical allocation approach (or "inertia budgeting") may be used, whereby an amount is allocated to a specific area in the plan based on the previous year's budget, often with a small percentage increase to account for inflation. This may be justifiable if the amount spent in previous years was considered to be appropriate in achieving the specific functions, and if a similar level of activity and related (or nominally higher) budget is expected to suffice for the coming years as well. Examples may include the cost for overhead functions such as maintaining a national cancer registry or the salary bill for MoH central-level programme management staff.

The use of inertia budgeting should be carefully considered. However, this approach is less useful when the purpose is to cost a strategy which envisions a health system which is likely to be quite different from the status quo; for example, comprising significant new investments or different types of services, a change in the way services are provided and financed, and a subsequent expansion of health service coverage. Here, a more detailed bottom-up approach to the costing would more adequately capture the resources needed in reflecting such changes in the system.

The analysis may use a combined approach, and while inertia budgeting may be deemed sufficient for some areas, the focus can be on more detailed costing in other areas.

Bottom-up costing/activity-based costing: using unit costs or an input-based approach?

Bottom-up costing relies on detailed information regarding inputs, quantities and prices. The starting point is the identification of specific activities and annual targets, such as the population in need of specific services, by year. This is then multiplied by the average inputs – e.g. as required per person and service, and their respective prices. Such an approach may also be referred to as activity-based costing. The bottom-up approach is useful in that it allows for modelling how cost structures may change for existing activities if new reforms are implemented, such that the inputs mix per output changes, and/or the prices of those inputs change.

Both unit costs and input-based approaches can be used to inform bottom-up costing. Unit costs refer to the cost incurred to produce one unit of "output", for example, the cost per fully vaccinated child. Applying unit costs to volumes required can help provide a quick appraisal of the funding required, but has certain limitations in that unit cost estimates are very dependent on the specific assumptions that went into producing them. For example, Adam et al.²³ showed that the estimated cost for one outpatient visit was very sensitive to the assumptions made on how many patients are seen by a provider per day (see Box 7.14 for more information on unit costs).

Input-based costing tends to take a more detailed approach, with costs derived through the multiplication of quantities and prices. The input-based approach keeps the prices and quantities, seen as the key "inputs" of a cost, separate and distinct. For example, providing pregnant women with malaria treatment may require an

Bottom-up costing relies on detailed information regarding inputs, quantities and prices. Historical allocation is an allocation method based explicitly on the previous year's budget. While there are situations for which historical allocations are necessary, a more detailed and nuanced costing methodology can better meet the needs for NHPSP costing.

outreach strategy to raise awareness, effective diagnostics, antimalarial drugs, the time of the health worker, and the use of the health facility. Using unit costs, on the other hand, means bundling the quantity and price into one – for example, the cost for treating a pregnant woman

with malaria would include assumptions on the type of treatment provided and the cost for that treatment that are not usually disclosed to those wishing to understand what the unit cost is based on. Table 7.3 summarizes advantages and disadvantages of these two approaches.

A bottom-up costing approach is resource intensive but allows for modelling how cost structures may change as new reforms are implemented.

Table 7.3 Input-based costing vs. unit cost approach

	INPUT-BASED COSTING	UNIT COST APPROACH
Advantages	<ul style="list-style-type: none"> ▶ Being able to separate out different components (e.g. health workers, medicines, transportation costs) and thus estimate these separately, allowing for greater transparency and predicting how the cost structure, and cost drivers, changes over time. ▶ Being able to adjust costs if quantities or price levels change, due to changes in factors such as treatment guidelines or procurement strategies. 	<ul style="list-style-type: none"> ▶ Can be used to provide quick estimates of resource needs, particularly when done at high level (e.g. unit cost per inpatient care multiplied by the projected increase in inpatient care utilization during NHPSP). ▶ Provides estimates that reflect part of a shared system, when not wishing to estimate the full cost of the system.
Disadvantages	<ul style="list-style-type: none"> ▶ Resource-intensive, requires assumptions around the extent to which resources are used or left “idle”. 	<ul style="list-style-type: none"> ▶ Relies on good quality data through cost studies, which are resource intensive in themselves. ▶ If data is inaccurate, may provide wrong estimates. ▶ Challenging to know how representative unit costs are. ▶ Challenging to compare unit costs across services when derived through different studies. ▶ Costs structures will change with evolving health system, making unit costs quickly outdated.

Estimates derived from an input-based approach can be transformed into unit cost estimates but the reverse is not always true.

Within an NHPSP costing, both approaches may be combined.



Box 7.14

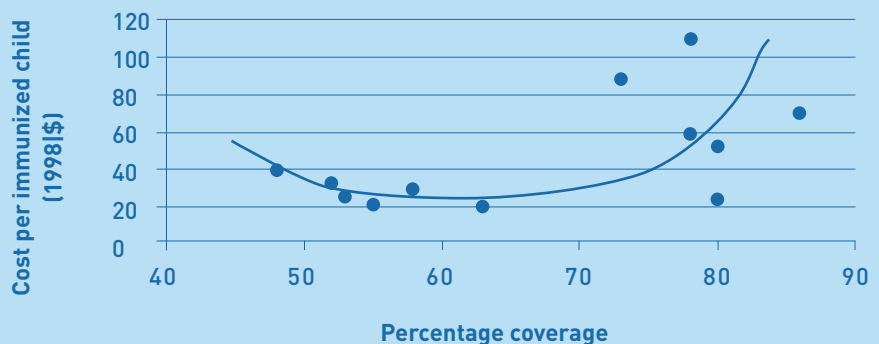
Top-down derived unit costs

Unit costs are typically derived using a “top-down approach”. This refers to a process whereby the total amount of resources is known, and is then allocated to different cost functions, using specific allocation algorithms. An example is assessing costs for hospital care, where the total expenditures of the hospital are allocated to the different departments, in order to assess the cost of each specific department, and the average cost per patient seen for different types of care. The unit costs derived from actual practice will reflect the existing system, including current capacity utilization of resources and associated inefficiencies (for example, if there is a lot of slack time by certain types of health

worker, their capacity is underutilized and unit costs will generally be higher than in a more efficient system).

The concept of economies of scale implies that unit cost should decrease with an increase in coverage as the fixed costs are spread over more units of output. However, once a certain level is reached, corresponding to full capacity, unit costs may increase again (step increase). They will likely not decrease again until a certain level of hospital activity and turnover is achieved. In most settings it is difficult to know where the “average facility” or delivery programme sits within the cost curve.

Illustration of a typical “unit cost curve” reflecting published data



Source: adapted from Johns B and Tan Torres T. Costs of scaling up health interventions: a systematic review. Health policy and planning. 2005. (<http://heapol.oxfordjournals.org/content/20/1/1.long>, accessed 18 October 2016)

Given that unit costs derived from a top-down allocation reflect the current system, they do not necessarily indicate the resources needed to guarantee quality outputs, especially in chronically underfunded health systems. When unit costs are used, there needs to be

careful consideration around how one would expect unit costs to vary over time and across populations, and whether the data gathered as the reference point reflects the anticipated resources needed in the system.

Lump Sums

Lump sums refer to a cost figure which includes several inputs, quantities, and cost lines bundled into one. The lump sum cost would generally cover more items than a unit cost, but with less transparency – such as an overall lump sum cost required for pandemic or emergency preparedness. Lump sums are inferior to unit costs and inputs-based costing because of their lesser detail, but again the analyst needs to consider the resources available for the costing and whether to use lump sums in some instances, especially for those items that constitute a small part of overall costs. In certain settings general rules of thumb may be applied, for example any costs anticipated to constitute 1% or less of the overall resource envelope can use less sophisticated methods.

The lump sum amount should nevertheless be sufficient and proportional to the expected outputs. Some categories of costs, such as utilities, may seem fixed in nature and thus make a case for lump sum costing, but in fact they may hide inefficiencies in resource use. An example is in former Soviet Union countries where utility costs make up a large share of the budget, partially due to the infrastructural setup. High density of facilities incur large fixed costs for electricity and heating, and utility costs may be used to subsidize other resource use. In the Republic of Moldova for example, in 2000, over 25% of government health expenditure was spent on utilities.²⁴ A few years later, expenses for water, heating and electricity fell by 6.8%.²⁵

Treatment of various types of costs

Capital versus recurrent costs

The costing should generally present a breakdown of capital and recurrent costs separately. Capital costs are those which last for more

than a year (for example, an X-ray machine) whereas recurrent costs, once the good is consumed, last for less than a year (e.g. the electricity costs related to running the X-ray machine).²⁶ The purpose of separating these is to allow planners to understand what share of the costs are one-off capital investments. The model used for costing should also have clear links between capital and recurrent costs. Every additional unit of capital invested will incur additional recurrent costs. For example, in many states of the former Soviet Union, the government incurred significant recurrent costs for running hospitals, the capital investments of which were made 30–40 years ago. Closing down hospitals could free up resources currently used in running inefficient structures, reallocating those resources to lower-level, close-to-patient services. In other settings there may be an expressed need within the NHPSP for significant investments in tertiary care, and when this includes building new hospital structures, such investments should be accompanied by increases in recurrent investments in relation to salaries, commodities and operating costs. Please note that the investment plans and related funding may be accessed through different ministries and/or departments for recurrent vs capital costs.

Intervention versus programmatic costs

When working with technical disease programmes in the MoH, many programmes set objectives both for health interventions (e.g. skilled delivery at birth) as well as for programmatic (programme-specific) activities (e.g. conduct demand generation activities such as information and outreach into communities, or organizing training courses to improve midwives' skills to provide quality care at birth). Ensuring and managing a sufficient budget for actual service delivery is usually out of the influence

Different types of costs need to be treated differently, and sometimes separately: capital vs. recurrent costs, intervention vs. programmatic costs, direct vs. indirect costs.



of the specific technical programme; however, arguing for and managing the budget specific to “programmatic” activities is directly within its influence. It is often necessary, therefore, to estimate and present intervention and programmatic costs separately.

Total versus marginal costs

The NHPSP will require estimations around its total cost, to inform MTEF and budget discussions. Marginal costs are those that refer only to additional resource needs above the current health system setup, including those incurred to reform and increase the efficiency of the system. It is possible to estimate marginal costs and then add those to the current health spending, with or without modelled modifications to the latter in view of anticipated reforms, but the caveats need to be well known and documented in terms of whether the current level of investment and expenditure should be expected to remain as is, for the duration of the NHPSP.

Additional issues

Inflation

The costing may incorporate inflation or not. In either case, the decision should be clearly communicated, and the assumptions for inflation made explicit. The primary reason for not presenting costs that take inflation into account is that inflation is an uncertain factor, and future trends may digress considerably from what was presented for the NHPSP. The recommendation

is, therefore, for those countries wishing to present estimates that consider inflation to include several output tables, where at least one has constant price levels, while others present scenarios for constant inflation, IMF-predicted inflation, reduced and/or increased inflation levels. Another option is to initially present costs in constant prices and then whenever estimates are updated and/or presented to various funding partners, to convert costs into inflation-sensitive numbers, taking into account the latest available data on inflation

Exchange rates and traded goods

The costs of drugs and diagnostic tests are influenced by whether they can be purchased locally or are imported using foreign exchange. If there is a reliance on imports, the affordability measured in the local currency will rely on favourable exchange rates. It may be important to reflect this when estimating and presenting the costs, and to indicate:

- ▶ which type of investments are most affected by assumptions around exchange rates;
- ▶ present multi-year estimated costs both in local currency as well as in USD or another global currency.

Costing tools

There are multiple tools available to inform priority-setting and cost projections, whether for specific diseases or for broader health sector planning. Using pre-developed costing tools has several advantages and disadvantages. Some of these are listed in Table 7.4.

Table 7.4 Potential advantages and disadvantages of pre-developed costing tools

POTENTIAL ADVANTAGES	POTENTIAL DISADVANTAGES
<ul style="list-style-type: none"> ▶ Tools provide a checklist of recommended inputs for different activities or interventions, often populated for a list of high-impact priority interventions that are globally recommended. The provision of a checklist can help reduce the risk that critical but less visible activities are unaccounted for (such as administrative costs and maintenance of equipment and vehicles). 	<ul style="list-style-type: none"> ▶ Users may use the checklist as an absolute guide and be tempted to fill in every section without carefully considering what is most relevant within the national context.
<ul style="list-style-type: none"> ▶ Tools provide calculation algorithms, thus simplifying the mathematics of calculations. 	<ul style="list-style-type: none"> ▶ Calculation algorithms may hide details from the user, thus limiting transparency.
<ul style="list-style-type: none"> ▶ Tools facilitate the use of standardized methods/prices across calculation areas (such as different disease programme areas). ▶ Tools help to provide an evidence base with which to explain the health system implications of programme-level investments. 	
<ul style="list-style-type: none"> ▶ Tools often provide global default prices of inputs such as medicines, vaccines and vehicles, and sometimes even local prices, such as wages of health workers. The defaults often come from similar contexts or countries and can be used to inform an initial rough costing and serve as checks for local data. The added value of defaults is that: <ul style="list-style-type: none"> ▶ after a quick feasibility check, they can be used for the first round of rough costing; ▶ they can be used as a check against which local data can be measured. 	<ul style="list-style-type: none"> ▶ Users may apply default data uncritically without looking for local alternatives. ▶ If default data are not kept up to date, they may reflect outdated numbers and prices.
<ul style="list-style-type: none"> ▶ Tools may provide a standard template format for activities, such that users can easily enter data related to target-setting for training courses, vehicle purchases, etc. ▶ Less probability of making calculation mistakes ▶ Formulae are pre-tested and validated ▶ A standard, validated template makes it more easily accessible for review. 	
<ul style="list-style-type: none"> ▶ When tools include an epidemiological impact component, they will allow for calculations of the predicted impact of the plan. 	<ul style="list-style-type: none"> ▶ Epidemiological impact estimates need to be considered as indicative estimates, and not as an absolute given.
<ul style="list-style-type: none"> ▶ Tools provide output data quickly and automatically, including tables and graphs. ▶ An analysis of the health system as a whole may be easier with all costing-associated data in one database 	
<ul style="list-style-type: none"> ▶ Adjustments can be made over time in one single consolidated database, which can be monitored. 	<ul style="list-style-type: none"> ▶ The use of tools requires local capacity to be built and maintained to ensure that projections can be updated as needed.



The OneHealth Tool was developed by a group of UN agencies on request by countries for a health sector-wide planning and cost estimation tool.

The OneHealth Tool (developed by an interagency working group consisting of costing experts from WHO and other United Nations [UN] agencies) is one of the available instruments that can be used to generate overall costs and scale-up targets for a costing that supports strategic planning and budgeting. The OneHealth Tool

was designed to enable the user to assess to what extent targets set within the plan are feasible, and to consider programme goals and health systems jointly. The tool can also be used to produce estimates of health impact related to changes in coverage and service delivery

Box 7.15

The OneHealth Tool²⁷

The OneHealth Tool is a software tool designed to inform national strategic health planning and costing in low- and middle-income countries. Its development was overseen by an interagency working group with representatives from WHO, UNAIDS (Joint United Nations Programme on HIV/AIDS), UNDP (United Nations Development Programme), UNFPA (United Nations Population Fund), UNICEF, World Bank and UN Women.

The OneHealth Tool was developed as a complement to disease-specific tools which neglected to take into account health systems costs. The tool links strategic objectives and targets of disease control and prevention programmes to the required investments in health systems, and provides a platform for analysing the costs of a full health sector plan. It provides planners with a single framework for scenario analysis, costing, and health impact analysis of strategies for major diseases and health system components.

In addition to calculating costs, the tool estimates the likely reduction in mortality and morbidity based on targets identified by the user. Furthermore, for strategic planning, a useful feature is the possibility to design scenarios to develop “what if” plans and examine their costs and impact.

The tool is pre-populated with defaults for disease prevalence and incidence, intervention protocols for promotive, preventive and curative care, and prices of drugs, supplies and equipment – all of which can be changed by the user.

The development of the OneHealth Tool is overseen by the UN InterAgency Working Group on Costing. The first official version of the OneHealth Tool was released in May 2012. Since then the tool has been applied in more than 30 countries to inform planning and costing.

Summary recommendation

When resources allow, the recommendation is to use bottom-up (input-based) costing to:

- ▶ link inputs to outputs, thus enhancing accountability;
- ▶ link the costing (specific cost items) to categories in the national budget;
- ▶ use realistic assumptions on implementation pace and impact of strategies on health intervention coverage on the basis of a bottleneck analysis.

A NHPSP costing need not be based on detailed inputs down to the exact number of gloves and cotton balls required by each facility in the coming years, but does benefit from a costing that links inputs to outputs at a level that is context-specific and population-driven enough, yet minimizes the need for detailed planning. The key point is that the selected approach should be evidence-informed, and that the planning unit should be able to justify indicated amounts, whether based on historical data or a bottom-up forecast.

7.5.4 Assuring high quality cost estimates

It is crucial that steps are taken to ensure that the NHPSP costs meet the required standards. Guidance on standards and criteria are included in the JANS (Box 7.5), which primarily focuses on the comprehensiveness of the costing (includes all types of resources and stakeholders), transparency (estimates are clearly explained), realism (limited specific guidance is provided through

JANS, but the “reality checks” below may serve as a guide) and methodological soundness (input data must be as accurate as possible, as must the calculation algorithms).

First, some initial “reality checks” should be done early on in the costing process:

- ▶ calculate per capita estimates, which are more readily interpreted than aggregate estimates;
- ▶ compare per capita estimates with current spending, with past projections, and with estimates available through the global public literature and/or those produced by neighbouring/similar countries;
- ▶ compare costs with current expenditure.

Check cost drivers (Box 7.16) and compare with commonly known current cost drivers from current budgets or health accounts.

Secondly, it can also be helpful to send the costing for peer review. Such review processes may involve internal or external experts’ feedback, or both. Feedback will allow the team to improve the calculation and presentation of estimates.

Third, setting up processes for data validation and overall stakeholder consultation as described above in the sequence of proposed steps, will support validation of assumptions used, priorities set and outputs produced. One of the processes of reviewing the costing is through a comprehensive JANS process, but there are also other ways of peer review, such as inviting costing experts to comment remotely.



Box 7.16**Examining cost drivers within the estimated projected resource needs for Angola's Health Sector Development Plan 2013-2025²⁸**

	Programa	English translation (brief)	Costs 2013–2025 (US\$ million)	% of cost 2013–2025
1	Programa de prevenção e luta contra as doenças	Prevention and disease control	24 472	30.2
2	Programa de cuidados primários e assistência hospitalar	Primary health care and hospital care	851	1.1
3	Programa de planeamento, gestão e desenvolvimento de recursos humanos	Health workforce	20 517	25.3
4	Programa de desenvolvimento da investigação em saúde	Research	7	0.0
5	Programa de gestão e ampliação da rede sanitária	Health facility network	33 001	40.7
6	Programa de gestão, aprovisionamento e logística, desenvolvimento do sector farmacêutico, e dos dispositivos médicos	Logistics, medicines and medical devices	2130	2.6
7	Programa de gestão e desenvolvimento do sistema de informação e gestão sanitária	Health information and management systems	53	0.1
8	Programa de desenvolvimento do quadro institucional	Governance and institutional framework	20	0.0
9	Programa de financiamento e sustentabilidade financeira do sistema nacional de saúde	Financing and sustainability	26	0.0
	Total		81 077	100.0

The Plano Nacional de Desenvolvimento Sanitário (PNDS), or the Health Sector Development Plan, is a strategic and operational tool for realizing the political targets outlined in the long-term national development strategy “Angola 2025” and the national health reform policy. The PNDS vision positions health at the centre of national development and social justice, promoting universal equitable access to quality health care, in view of combating poverty and improving well-being of the population. The plan for 2012–2025 sets ambitious targets to achieve these goals, and projected costs for the planned investments would equate an increase in health spending per capita from US\$ 186 in 2011 to US\$ 276 in 2025.

The table above shows sample results from the cost projections for the plan. US\$ 81 billion over 13 years of the plan equates on average US\$ 6.2 billion per year, although costs are estimated

to increase over the period and reach US\$ 9.4 billion in 2025.

The main cost driver is extension of the health facility network (40.7%), which primarily entails building and maintaining infrastructure for health, as needed after the Angola civil war which destroyed much of the available facility network. The second largest cost driver (30.2%) is prevention and disease control, which is where the various national programme estimates fall, including significant cost drivers such as (in order of magnitude, not shown here): nutrition, cancer control, chronic kidney disease, HIV/AIDS, and child and maternal health. These five programme areas jointly account for over 80% of the projected cost within the category of prevention and disease control. The health workforce accounts for 25.3% of the overall projected PNDS costs.



7.6 What if...?

This section outlines costing issues in specific settings such as decentralized contexts, highly donor-dependent countries, and fragile states.

7.6.1 What if your country is decentralized?

If health is a mandate for a decentralized entity, the full health policy and financing cycles may fall under a decentralized authority. A decentralized process may have in place institutional arrangements for coordination, planning, budgeting, financial reporting, and implementation across government ministries/institutions, as well as between the different administrative levels of the country. These coordination bodies are important mechanisms for health-planning stakeholders to discuss specific issues linked to cost estimations and underlying assumptions as well as review initial calculations and cross-check and compare.

The MoH or other central planning authority should give strong guidance as to the standards and methodologies to be used for costing – without it, a diverse and heterogeneous set of data from the various decentralized structures will make aggregating countrywide data and producing national estimates very difficult. For example, the cost of a community outreach campaign is not comparable between two regions if the underlying costing assumptions and methodology used are not harmonized.

In many large countries, the majority of public spending on health takes place at subnational level. Local governments tend to have better access to context-specific data such that the cost estimates can be fine-tuned and really relevant to the local setting. These estimates are extremely useful to feed into national averages

and aggregates and form a critical basis for NHPSP costing.

Some questions to consider for costing and budgeting in decentralized settings are given below. Since cost estimations are linked to budget allocations, these issues are relevant for both.

What does decentralization actually mean in practice in your country? How far are structures, responsibilities, and budgets actually decentralized?

The more power and authority actually vested in local authorities, the more scope there is for rational costing and budgeting that is close to the real needs of the local population.

Does the central-level authority need to aggregate costing and budgeting nationally?

If so, guidance and templates from a central authority would be useful and necessary to reduce the burden and error margins of reformatting and restructuring in order to compare and aggregate. In addition, technical support from a central authority might be recommended.

The central-level authority should take into account revenue generation at different levels for more accurate fiscal space projections.

How transparent are health system costs, budgets, and expenditures reported at decentralized level?

A low level of transparency may indicate a lack of accountability to the population coming under the decentralized authority and a subsequent lost opportunity to leverage the planning and budgeting advantages of being close to the population.

In decentralized settings, it is important to harmonize and align costing assumptions and methodologies across sub-national entities to avoid a diverse and heterogeneous set of data which makes aggregation of country-wide national estimates very difficult.

7.6.2 What if your country is heavily dependent on aid?

In an aid-dependent context, vertical programmes may receive large amounts of funding as earmarked budgets. Specific programmes (e.g. HIV or malaria) often have multi-year projections that have been estimated as part of development proposals. These projections should be aligned with the overall NHPSP analysis. A few key points should be noted.

First, the relative role of externally funded disease-specific or life cycle-specific strategies within overall sector priorities is often an issue in low-income countries.²⁹ Here an analysis of the impact of programme objectives and their projections on overall shared health systems resources can be extremely useful to stimulate discussion on alignment of donor-supported projects with NHPSP goals.

Second, sustainability becomes an issue when a large share of resources is external. This should be kept in mind when undertaking a NHPSP costing exercise in view of (a) the volatility of external aid flows,³⁰ and (b) the planned transition from external donor support to domestic financing as countries “graduate” from donor eligibility.

Third, externally funded projects may run through different service delivery models from government funded systems, thus resulting in inequitable care.

The costing work can be leveraged as a powerful instrument to inform the dialogue on

the above-mentioned issues and strengthen harmonization around health sector activities by different stakeholders.

Fourth, cost can be significantly higher in programmes directly funded by donors.

7.6.3 What if fragility is an issue in your country?

Fragile or post-conflict states will have a reduced tax base and limited revenue generation compared to other countries, translating into an increasing reliance on informal payments and on donor funding. In addition, the transition from short-term emergency relief to longer-term development means a shift in funding models for the health sector – usually, there is some government takeover of basic services with heavy donor assistance. In most cases, this will be accompanied by the continued presence of emergency services as well, creating several parallel funding streams for different types and levels of services which necessitate strong steering capacity and management by the MoH. This, almost by definition of a fragile state, rarely exists, which makes rational planning and costing extremely complex and challenging. Moreover, investment needs are often higher in fragile states than in other more stable but similar states, due to the need to rebuild the health system.³¹

In a fragile, post-conflict setting, time constraints may not allow high levels of costing detail but a focused emphasis on ensuring that the costing work is done swiftly by experienced experts is crucial. The results of a realistic costing of recovery and reconstruction can be leveraged to influence donor commitments and pledges.



An additional dilemma lies in the highly politicized environment within which transition governments interact with their populations. Unrealistic expectations may be raised, with no adequate capacity and budget to back up their implementation. This vicious cycle can further threaten security. In such a situation, it is important to:

- ▶ undertake a solid and realistic costing of what a post-conflict/emergency health system will cost – time constraints may not allow high levels of detail, but a focused emphasis on ensuring that the costing work is done by experienced experts is crucial;

- ▶ attempt to use the realistic costing of recovery and reconstruction to link to and influence donor commitments and pledges – rather than the other way around, i.e. not allowing donor commitments and interests drive the recovery planning and costing.

Scenario analysis can be an extremely useful tool in fragile contexts to account for the uncertainty of the situation.



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7.7 Conclusion

This chapter has discussed key issues to consider for multi-year cost projections in relation to developing a NHPSP.

The chapter has emphasized the need for NHPSP costing to be an integral part of the planning process, and for costing to be considered within a broader context of budgeting and financing processes. The estimation of costs is crucial as it can help underline the need to set priorities, and to inform the prioritization process.

The cost projections should be interpreted as reflective of a dynamic and uncertain context, thus necessitating updates over time. The advantages of a bottom-up approach – linking inputs to outputs, which support accountability and transparent information sharing – have been put forward.

The most important factor affecting the cost estimations are the estimates of the impact on coverage gains of the implementation approaches of specific strategies and activities outlined in the NHPSP. These estimates of gains in coverage need to be spelled out in studies such as the bottleneck analysis.

The use of scenarios can be a powerful tool to demonstrate which implementation strategies may be more feasible and affordable than others within the short- to medium-term planning period. Scenarios can help inform policy-makers that the cost estimates are not to be interpreted as absolute “static” numbers, but should be considered as indicative estimates for which a considerable uncertainty interval applies.

Finally, NHPSP cost analysis is an essential component to feed into the decision-making dialogue at all levels. The process of estimating resource needs through a participatory approach can in itself strengthen buy-in to the NHPSP process among national stakeholders and external partners.

In summary, it is essential for the NHPSP costing process to be:

- ▶ an integral part of planning;
- ▶ locally owned;
- ▶ reflecting the planned policy reforms;
- ▶ subject to validation and review processes;
- ▶ a tool for feasibility and efficiency analysis;
- ▶ a tool for accountability.



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Annex 7.1

Examples of purposes of estimating and analysing costs, at different levels of the health system

Table A.7.1

LEVEL OF ANALYSIS	EXAMPLES OF TYPE OF ANALYSIS AT THIS LEVEL	COMMON OBJECTIVES
individual health centre/hospital	Estimate the cost per patient for different diagnoses.	<ul style="list-style-type: none"> ▶ Assessing efficiency ▶ Set user fees ▶ Develop cross-subsidization strategy ▶ Facility resource planning
Specific health service project/delivery strategy	Estimate costs related to delivering community based nutrition interventions.	<ul style="list-style-type: none"> ▶ Economic evaluation (cost-effectiveness) ▶ Assess financial sustainability of new/existing programme/project
Provider payment scheme	Setting new reimbursement rates for health providers	<ul style="list-style-type: none"> ▶ Health financing strategy ▶ Inform payment mechanisms
National programme	Costing a maternal and newborn health roadmap	<ul style="list-style-type: none"> ▶ Advocate for greater resource allocation to programme-specific goals. ▶ Analyse the effect of changing program goals, inputs or delivery strategies upon the overall estimated resources required. ▶ Estimate costs for proposal development (Global health initiatives, other donors).
Intervention-specific implementation cost	▶ Budget impact analysis	▶ Calculate and compare scenarios for modifying clinical practice, including both costs and savings from the provider perspective
	▶ Cost-effectiveness	▶ As part of priority-setting and decision-making processes, examine cost effectiveness as explicit criteria
District-level plan	Estimate budget for all planned health activities in the district.	▶ Inform the district annual operational budget.
NHPSP	Estimate costs related to planned health activities in the country.	<ul style="list-style-type: none"> ▶ Inform priorities within the national strategic health plan and related budget. ▶ Advocate for greater/different resource allocation / mobilize resources.

Annex 7.2

Sample content to be included in a report for costing an NHPSP

Acronyms

Acknowledgments

Executive summary

Background

Background/context of analysis, including health financing context (macroeconomic parameters)

Study objectives

Methods

Process for decision on methodology used for costing

Description of methodology/tools used

Data sources

Where relevant, top-down ceilings or allocation mechanisms vs bottom-up costing

Assumptions

Assumptions around:

- ▶ how to model certain policy reforms;
- ▶ changes in utilization patterns;
- ▶ multisectoral approaches;
- ▶ private vs public sector involvement;
- ▶ a description of the parameters used to predict availability of financial resources.

Results (where possible, present multiple scenarios)

Standard results for costs:

(Note: all results should clearly state whether inflation is included or not)

- ▶ total costs, and per capita costs;
- ▶ recurrent vs capital costs;

- ▶ breakdown of costs between different categories (e.g. drugs, salaries, programme activities);
- ▶ breakdown by disease/programme;
- ▶ identification of cost drivers and discussion around cost how these may change due to policy reforms;
- ▶ comparison of estimated costs with estimated resources available;
- ▶ a comparison of estimated costs with current health expenditure per capita.

Additional results, when possible

- ▶ Estimated health impact
e.g. number of maternal deaths prevented, number of child deaths prevented, if the plan is implemented as intended.
- ▶ Progress towards national health goals, including the SDGs

Discussion

- ▶ Gaps in the comprehensiveness of the costing
- ▶ Data limitations
- ▶ Uncertainty

Overall notes

- ▶ Use pie charts, graphs and summary tables in the main report
- ▶ Include more detailed tables as annexes if appropriate





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