

## **Achieving Value for Money in Healthcare: Principles, Methods and Empirical Applications**

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### **Abstract**

The concept of value for money (VfM) has evolved in recent years to inform healthcare delivery and policy. It relates the delivery of health system outcome to its expenditure in a way that justifies the use of resources to inform the provision of care; and many have come to find this a worthy goal. Hence, the driving force of VfM is related to accountability. More so in the era of dwindling health resources amidst increasingly needs, funders of health services (governments and donor agencies) are under increasing pressures to justify the use of taxpayers' money in the provision of services. Similarly, patients need to be reassured that the health system is providing necessary care fairly and consistently. Consequently, many government and donor health programmes are now incorporating VfM framework to ensure improved values of monies spent from public expenditures. Currently VfM is focused on improving programme performances, ensuring that available resources are efficiently utilized to maximize desired health outcomes, based on health system goals. VfM provides real opportunities for NGOs as well as donor and recipient countries to critically assess and manage their developments to ensure delivery of maximum impact for people living in poverty. This paper reviews the concept of value for money to locate the relevance/role in improving the delivery and performance of healthcare programmes in developing countries vis-à-vis the health system goals. The paper identifies the opportunities for and challenges of implementing VfM framework in developing countries such as Nigerian. It concludes by summarizing the priorities for three key constituencies: policy makers (regulators), managers, and researchers

**Keywords:** value for money, costs, economy, efficiency, effectiveness, health outcome, resource utilization

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### **Introduction**

The current global political and economic environment has put increasing pressures on the

resources required for implementing a wide range of developmental and poverty reduction

programmes especially in developing countries. As a consequence, donor governments and development partners need to demonstrate as much as possible how their resources are used to effectively pursue social justice and poverty reduction. There is increasing need for NGOs to demonstrate the value of aids in delivering benefits to the intended beneficiaries. Governments and funders are making sure that they are getting maximum return on the aids budget to justify the use of taxpayers' money. They want to ensure that not only that the impact is maximized, but good value for money is delivered. This requires that a cost of business is carefully accounted for and risks are effectively managed.<sup>1</sup> As a result, there is a greater demand for accountability in public as well as private expenditures, while striving for desired impact. Hence, the need to justify the use of scarce resources and provide justification for spending taxpayers' money and for continuous funding or expanding of programmes/aids especially in developing countries, has informed increasing demand for value for money in assessing the impact of healthcare programmes and governments' aids to developing countries.

Value for Money (VfM) is the optimal use of resources to achieve intended outcomes.<sup>2,3,4</sup> It is the optimum combination of whole-of-life costs and quality of the good or service to meet the user's requirements.<sup>4</sup> In other words, VfM is using resources effectively, economically and without waste, with due regard for the total costs and benefits, and its contribution to the outcomes the organization is trying to achieve.<sup>5</sup> Indeed, it is a term generally used to describe a clear commitment to achieving the best possible results from money spent.

It has been emphasized that while universal coverage and access to healthcare are essential, the core issue in healthcare is the value delivered to the patient, the primary beneficiary.<sup>6</sup> This value is measured by the amount of health outcome per cost of delivery. Hence, in delivering value, patients' context is essential in judging whether resources have been effectively and efficiently used in delivering results that are of most value.<sup>7</sup> Where savings have been made, has outcome been achieved? Both partners and patients alike need to be involved in planning and implementing programmes or interventions. This understanding has led to the redesigning of healthcare to dramatically improve value to the patient, requiring fundamental restructuring of the system, and not incremental improvements.<sup>6</sup>

Thus, in reviewing performances of programmes,

VfM assesses whether or not an organization has obtained the maximum benefit from the goods and services it both acquires and provides, within the resources available to it.<sup>8</sup> In public institution, use of this term reflects a concern for more transparency and accountability in spending public funds, and for obtaining maximum benefit from the available resources.<sup>3</sup> In a broad term, the concept captures both quantitative factors, such as costs, and qualitative factors, such as service quality and protection of public interests.

In essence, VfM derives from the desire to achieve the most impact of healthcare programme from a given amount of resources, making efficiency as the key concept underlying VfM. To inform analysis, this efficiency is divided into two fundamental economic concepts of technical and allocative efficiencies.<sup>9</sup> Technical efficiency assesses a programme to show the extent to which it is securing a minimum cost for a maximum output (i.e. maximizing health outcome at minimal cost). This aspect mainly focuses on operational performance and to what extent resources are being wasted in service delivery.<sup>10</sup> Allocative efficiency shows the extent to which limited funds are used in procuring the mix of health services according to patients' needs and preferences (or allocating resources to a mix of services in a way that maximizes outcome). This approach informs the use of quality adjusted life years (QALYs) as a measure of health gains/outcome and cost per QALY as a criterion for decision on adoption of a treatment, the approach adopted by UK National Institute for Health and Clinical Excellence (NICE).<sup>9</sup>

The two levels of efficiency determine the approach to VfM analysis in practice. While analysis based on technical efficiency is used to evaluate a programme to determine how resources are being used to maximize outputs at lower costs, allocative efficiency measures how limited resources are effectively allocated to competing needs to achieve optimal outcomes. Consequently based on its retrospective approach, technical efficiency provides the basis for evaluating the operational performances of organizations in practice, while allocative efficiency is the basis of prospective assessment of technologies to inform resource allocation (reflecting evaluation at patient's level). This paper mainly focuses on the retrospective measurement of VfM, at organizational level.

#### *VfM principles/evaluation framework:*

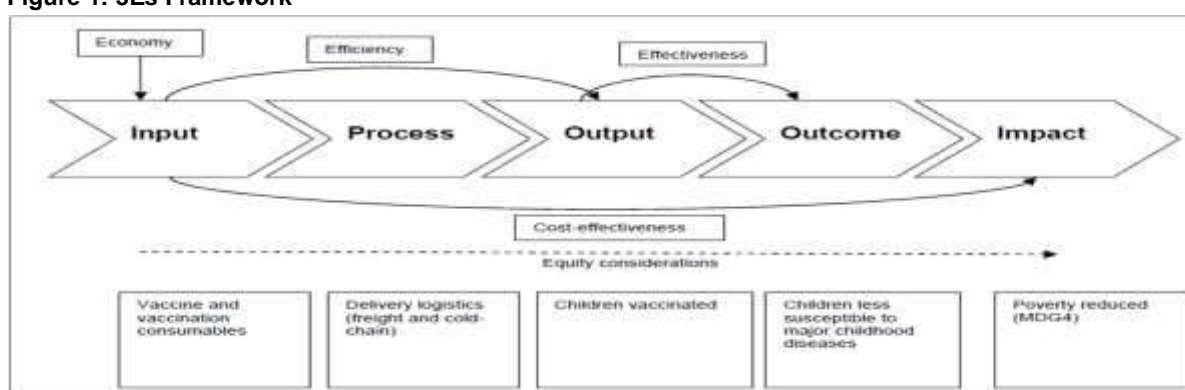
VfM describes a concept that relates efficient procurement of resources to efficient delivery of output and effectiveness in achieving the intended

outcome. It is a process that converts money resources into input resources such as in purchasing materials and human resources, putting in place the right mix of inputs to achieve optimal outputs which in turn is ultimately projected to achieve the desired health outcomes, for the patient. VfM as a consequence, analyses a programme based on its economy, efficiency and effectiveness, to determine if the programme is achieving value/purposes for which it is funded. This is described as the 3Es framework or criteria for VfM analysis.<sup>2</sup> It reflects a measure of accountability and transparency in justifying the continued funding or otherwise, of a programme

with taxpayers' money. This framework has therefore become the basis/criteria for evaluating the effectiveness and VfM of healthcare programmes.

The relationship between the 3Es is illustrated in Figure 1 through a production process that begins from input resources, transformed through a process to generate an output that overtime delivers the intended outcome and impact. VfM relates a measured value of health output, as health outcome to the corresponding cost of generating the outcome.

Figure 1: 3Es Framework



Source: DFID's 3Es Framework.<sup>2</sup>

**Economy** represents the price paid for inputs. It is a measure of what goes into providing a service. Unit costs are typically used as an economy measure. The whole life costs of inputs such as the direct and indirect costs of acquiring, running and disposing of assets or resources should be considered.<sup>3</sup> The key question is whether we are buying inputs of appropriate quality at the right price. Inputs represent resources such as staff, consultants, raw materials and capital that are used to produce outputs.<sup>2,3</sup> In essence, VfM under economy reflects demonstration of good management practices in terms of effective procurement practices, good financial system and functional monitoring and evaluation.

**Efficiency** is a measure of productivity, how much you get out in relation to what is put in. It examines the relationship between inputs and outputs. How well do we convert inputs into outputs? Here, outputs represent results delivered to an external party. However, strong control over the quality and quantity of outputs is emphasized.<sup>2,3</sup> Under the efficiency criteria, VfM is compared to drive and improve decision making. The unit cost of output is the basis of measurement under this criterion.

**Effectiveness** is the quantitative or qualitative

impact achieved by the outputs. This examines the relationship between outputs and outcomes.<sup>3</sup> How much impact on poverty reduction does an intervention achieve relative to the inputs invested in it?<sup>11</sup> Note that in contrast to outputs, we do not exercise direct control over outcomes because of exogenous factors such as lack of knowledge of existing intervention and living condition. Generally, the effectiveness criterion is a more evaluative method that combines both qualitative and quantitative evidence of outcome/impact with those of costs to demonstrate overall VfM. It uses a more technical approach that includes modeling, econometrics etc, to demonstrate VfM. Hence, data requirement is often high and results are subject to scrutiny, analysis and external validation

Essentially, value for money is about maximizing each of the 3Es, so that maximum effectiveness, efficiency and economy for each intervention/project are achieved. The 3Es framework indicates that the value for money agenda is not just about cutting costs.<sup>3</sup> VfM doesn't mean we only do the cheapest things, but that we are getting the desired quality at the lowest price.<sup>5</sup> In VfM judgments, context matters need to be taken into account. Costs are going to vary on the basis of the different environments we work in. Remote places and people which are

hardest to reach will be more expensive to deliver development results to. The important thing is to understand what the cost drivers are and to ensure that the desired quality of inputs are obtained at the cheapest possible price.<sup>2</sup> The purpose of the VfM drive is to develop a better understanding of costs and results so that organizations can make more informed evidence-based choices.<sup>2,3</sup>

In evaluating VfM of a health programme, the organization answers question such as; are purchases made at minimum costs? (i.e. paying wages below or at market rates); is the right mix of inputs being put in place? (i.e. employing the right mix of doctors and other professionals and workers, avoiding wastages of skilled personnel.<sup>9</sup> Are the adequate number of services provided to the patients? Hence the definition and concept of VfM derives from economy, efficiency and effectiveness of healthcare programmes.

#### *Principles to effective evaluation of VfM:*

In reviewing a programme to assess its effectiveness in delivering good VfM, a set of principles have been identified as major considerations that should guide the review. These principles represent the key issues that inform values that are expected to be delivered to the beneficiaries from effective implementation of programmes.

1. Assessment should focus on how results reached intended beneficiaries for which the programme/aids was designed. They are expected to own the programme in terms of the results.
2. Sustainability of results is another important focus of assessment. The programme should aim at empowering local community, civil society, government agencies and private sector, who should take charge of the development process on the exit of the programme.
3. Waste and corruption must be addressed. The programme should demonstrate good governance and stewardship, which should be built into the programme at all levels.
4. Good VfM should strike a balance between cost and achieving quality of desired outcome, (ie striking a balance across economy, efficiency and effectiveness, not just about cutting costs). Any cost saving should result to improved outcome, as VfM does not necessarily mean choosing the cheapest option. Sometimes more expensive option may yield more lasting results. While cost is a major consideration in VfM, avoiding wastages and

ensuring available resources are efficiently utilized to maximize outcome, it does not mean that only the cheapest things are to be done. Value is the driving goal of VfM, such that any cost minimization that does not accompany improved outcome does not represent good VfM.

5. The programme is encouraged to be involved in well-managed risk-taking, in recognition of the presence of complex problems, which requires innovative solutions. Risk-taking is encouraged in the design and delivery of programme as long as they are clearly identified and managed effectively. Risk-taking and mitigation is to be built into resource allocation, planning and monitoring processes.
6. Transparency and accountability are the core values in VfM that should be central to programme/aids management in order to improve the quality of programme. These help to ensure that resources/funds are used for the intended purposes and not lost to fraud and corruption.

#### *VfM Evaluation criteria:*

To achieve the aims of VfM review based on the principles outlined above, a programme is evaluated for delivering good VfM based on the following criteria:

1. Objectives: The programme should have realistic and appropriate objectives with a clear plan as to how and why the planned intervention will have the intended impact.
2. Delivery: The programme should have robust delivery arrangements which meet the desired objectives and demonstrate good governance and management through the delivery chain.
3. Impact: The impact of the programme should be positive and transformational, with lasting effect on the lives of the intended beneficiaries. It should be transparent and accountable.
4. Learning: Does the programme reflect and incorporate learning to improve future aid delivery?

#### **Methodology**

##### *Method for Measuring VfM:*

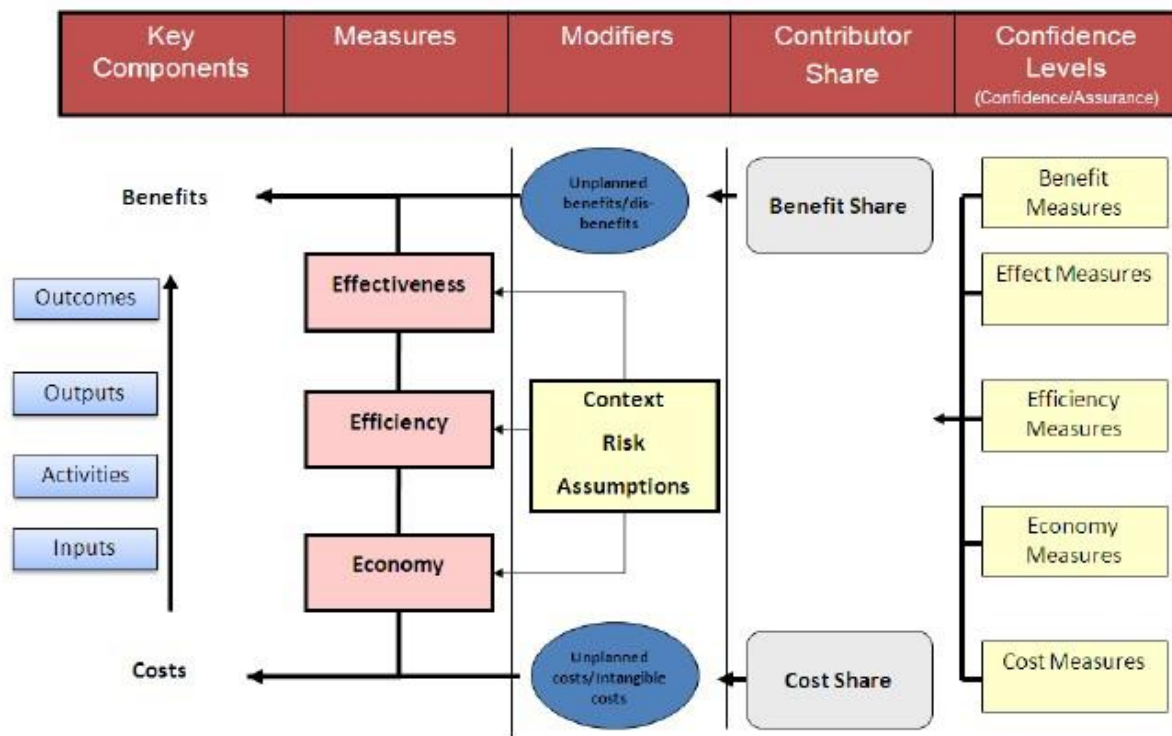
The main objective of VfM measurement is to show how resources are successfully transformed into outputs, and this can be challenging due to methodological issues. It follows the 3Es criteria, of economy, efficiency and effectiveness criteria which are linked to basic programme logic, linking input resources to the programme output/outcomes. The

process involves the study and analysis of programme inputs, activities, outputs, results and impact to reach conclusions on the three criteria of economy, efficiency and effectiveness. The process can be divided into two broad aspects of measurement, comprising of performance auditing and economic analysis. Performance audit is analysis in which actual results are compared/judged against planned performances (first and second criteria of economy and efficiency). Economic analysis is an appraisal process of systematically comparing the costs and benefits of the project to determine VfM.

VfM is a set of assessment practices for appraisal, review or evaluation of systems and functions as well as initiatives, schemes and projects that are time bound. It involves both qualitative and quantitative aspects, in recognition of the

complexity and interdependence of the various factors at play. Essentially, by their nature, quantitative data are more readily available and accessible than information of a qualitative nature. However, some elements may be subjective, difficult to measure and intangible<sup>8</sup>. Judgment will therefore be required to determine whether VfM has been satisfactorily achieved or not. While it measures the cost of goods and services, it also takes into account the mix of quality, cost, resource use, fitness for purpose, timeliness, and convenience.<sup>8,12</sup> It is therefore necessary to take a pragmatic approach, focused particularly on practical considerations of data availability.<sup>13</sup> However, to elaborate more on value for money as a concept and approach, a conceptual framework below presents visually the key elements, considerations and cautions of a VfM assessment.

**Figure 2: Value for Money Conceptual framework**



Source: VfM Conceptual Framework.3

*VfM conceptual framework explained:*

**Key Components:** VfM examines the optimal relationship between costs/inputs and benefits/outcomes – delivered through processes that transform inputs through activities to outputs which are necessary to trigger outcomes.

**Measures:** The focus is to ensure we spend less when we can, spend well and spend wisely by optimal consideration of the 3Es - economy,

efficiency and effectiveness. It is the balance between these three measures that represents the optimal route to good VfM.

**Modifiers:** This involves factoring in of context, risk and assumptions which set limits on effectiveness, efficiency and economy. VfM assessment considers not only performance against plan but unplanned costs and benefits.

**Contributor share:** When making VfM assessment,

challenges are often encountered in determining how to attribute costs and benefits. This component of the VfM framework is just a reminder that the attribution/contribution questions need to be answered in any VfM assessment and that assuming a pro-rata claim on outcomes based on inputs may be too crude an approach.

Confidence levels: Data quality plays an important role in VfM assessment. This is related to reliability, relevance and robustness of data sets used. It is of specific relevance to measuring.<sup>3</sup>

*The main benefits of promoting VfM:*

- The clarification of objectives – VfM principles give managers a framework with which to assess the objectives of an activity. This will maximize their chance of achieving the desired ends without unnecessary expenditure and effort.<sup>12</sup>.
- Planning – Application of VfM principles ensures that the activity is planned. Good planning minimizes the risk of an activity failing to deliver the intended outcome, at the right time and at the right price.
- Openness and transparency – Properly documented planning and assessment helps provide a demonstration of achieving propriety as well as VfM. This is important in a world of growing accountability and responsibility, and is essential for organizations that receive public funds. Such organizations have a special responsibility to show that they operate honestly, fairly and without bias.
- Compliance with statutes and regulations – Application of VfM principles at the planning stage ensures compliance with statutes and regulations. All organizations need to comply with legal and other associated requirements. By adopting best practice, the risk of failing to identify and comply with such requirements is significantly reduced.
- Risk assessment – Application of VfM principles at the planning stage ensure that appropriate risk assessment of the activity has been carried out. All activities have risks attached. Although it is often not necessary to undertake a full risk assessment for every activity, an inadequate risk assessment, particularly for significant activities, can result in poor VfM.<sup>12</sup>
- Effective programme management – VfM makes for (provides the basis for) strong programme management to ensure that programme stays on track to achieve the intended results, to be delivered on time and within budget. However the challenging aspect

is that many a time situations arise when organization's activities depend on the action of others. This therefore calls for need for more realistic approach to setting achievable results in view of external factors. Regular reviews of programmes are also necessary to ensure that they continue to represent good VfM.

- Improvement of financial management across the organization – Effective management of organization's finances is critical to achieving the intended results. Getting the most value from the invested resources requires continuous improvement in the monitoring and reporting capabilities to ensure that the resources are effectively tracked and reallocated where necessary/appropriate. Effective monitoring and evaluation will enable decisions to be made in allocating and reallocating funds to areas that will make most impact.
- Important advocacy tool for foreign aids – Agencies have used the VfM report to demonstrate effective programme management and therefore an important tool for attracting projects funding from donor agencies and governments who need to justify the use of taxpayers' money.

*Application of VfM in Public Service Delivery/ Opportunities for improved healthcare performances:*

There are seven key aspects of public service delivery which all Government Departments should seek to target in achieving better VfM.<sup>13, 14, 15.</sup>

- Robust project planning, ensuring timescales for implementation are realistic and making full use of pilot schemes prior to full rollout.
- Strengthening project management, with realistic business cases and timescales, robust risk assessment and effective contingency planning.
- Reducing complexity and bureaucracy, streamlining overly complex processes as far as possible and reducing tiers of expensive bureaucracy.
- Improving productivity, matching resources to workload and benchmarking wherever possible to identify excessive costs and suboptimal performance.
- Improving commercial awareness, exploiting buying power to secure better deals, increasing professionalism of the procurement function and focusing on longer-term VfM rather than simply lowest price; assess the ways they currently procure services, and decisions on whether to outsource aspects of service

provision.

- Tackling fraud, with better information, improved technology (such as e-payment) and visible penalties.
- Better implementation of policies and programmes, properly planned and strongly managed. The above factors underpin VfM across all areas of the public services.

*Opportunities for improving programme effectiveness through VfM concept:*

Informed by the principles guiding the VfM of healthcare programmes as outlined in this paper and the need to deliver value to the patients for whom healthcare programmes are intended, application of VfM concept to the implementation of healthcare programmes provide opportunities for improving the performances of healthcare programmes in our setting. In addition to the benefits outlined above, the following can be considered opportunities for improving the performances of healthcare programmes in our setting.

- VfM framework should be integrated into NGO programmes as formulating defensible case which should be developed during programme inception and shape how the programme is designed; it should outline how VfM is being managed and monitored throughout implementation and be a key source of evidence for demonstrating value for money as part of a programme evaluation.
- Organizations should use the VfM framework to deliver activities and programmes that are of most value to the target beneficiaries to whom they are accountable.
- It is essential that both partners and beneficiaries be involved in planning and implementing interventions. Meaningful participation of beneficiaries in all stages of a programme cycle is key to delivering value for money.<sup>1</sup>
- When designing and implementing an intervention, compare the costs and benefits of different options and make a defensible case for why the chosen approach provides the best use of resources and delivers the most value to poor and marginalized people.
- VfM provides real opportunities for NGOs as well as donor and recipient countries to critically assess and manage their developments to ensure delivery of maximum impact.

*Challenges to measuring VfM:*

- Difficult to measure. Unlike some few objectives which are easier to measure, some results which are transformational, taking longer time to achieve or manifest, are difficult to measure. Such objectives require quantitative and qualitative approaches to measure performances.
- Long-term measurement. Programme impacts often occur in long-term periods after the completion of the programme. Therefore short-term evaluation of VfM may not be feasible.
- Fraud and corruption are often major challenge affecting the operation and impact of the programme in developing countries, making funds not reaching the beneficiaries. It is therefore critical in VfM evaluation to identify these and the risk factors underlying them.
- Getting inputs from beneficiaries who are the best judges of the programme impact on their lives can be challenging sometimes due to difficulty in geographical locations (hard to reach areas). Advent of mobile technology has improved on this.
- Working in partnership with other organizations in the form of a complex delivery chain can pose challenges due to organizational differences in approaches to measurement of effectiveness.
- Given the conflict-status and disaster nature of many settings, with variable and unreliable outputs, obtaining robust and verifiable data about the output can be challenging, leading to estimated data or proxy measures.
- Determination of attribution is a major challenge of public health programmes which are funded by a number of donors as the impact of specific contribution will be difficult to calculate accurately.

## Conclusion

Value for Money (VfM) is the optimal use of resources to achieve intended outcomes.<sup>2,3</sup> It helps ensure organizations spend less when it can, spend well and spend wisely.<sup>3</sup> The 3Es framework indicates that the VfM agenda is not just about cutting costs but getting the desired quality at the lowest price. Costs are a bit environment specific but the key issue is to understand cost drivers and ensure the desired quality of input is obtained at the cheapest possible price.<sup>2,3,1</sup>

Indeed, assessment of VfM can be achieved in a number of ways provided resources are used effectively and economically. Evidently, there is no single way of demonstrating VfM and the decision regarding whether VfM has been achieved is subjective. However, by planning and implementing

activity in accordance with VfM principles, we can demonstrate that we have acted in the appropriate manner required of a publicly funded organization. In the areas where there is limited evidence about what works, we need to ensure there are strong monitoring and evaluation plans in place and we should consider the need for impact evaluation.<sup>2</sup>

More so, empirical finding shows that ICT has great potential to increase value for money in health but the health sector in most countries especially in Africa lags behind in exploiting the productivity benefit of ICT. Finally, it is worthy to note that VFM lies with every member of an organisation and not restricted to senior management or those with financial responsibilities.

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