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Improving the Delivery of Health Services:

A Guide to Choosing Strategies

Peter Berman, Sarah Pallas, Amy L. Smith, Leslie Curry, Elizabeth H. Bradley

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Health, Nutrition and Population (HNP) Discussion Paper

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Health, Nutrition and Population (HNP) Discussion Paper

Improving the Delivery of Health Services:
A Guide to Choosing Strategies

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Abstract: Sufficient funding and efficacious technology may be necessary conditions for achieving health gains, but experience in many countries confirms that they are not sufficient. Effective and efficient service delivery is the point at which the potential of the health system to improve lives meets the opportunity to realize health gains. Health service–delivery performance means access and use by those in need; adequate quality of care to produce health benefits; efficient use of scarce resources; and organizations that can learn, adapt, and improve for the future. All too often, potential benefits are not realized because service delivery underperforms.

Organizations must combine financial, physical, and human resources to deliver health services. However, organizations can be complex, and this complexity must be considered in developing strategies for change. This guide will help planners and policy makers navigate the complexity and make better decisions to improve health services.

Users of this Guide will find practical advice about what performance means in service delivery as well as how to measure the performance of service delivery organizations. The Guide discusses reforms to service delivery organizations at the system level and at the individual facility level. It emphasizes the internal workings of the organization as well as the external environment in which an organization functions, and discusses its capacity to develop and manage change. A diverse set of theories and concepts explaining organization performance are brought together and compared. Guidance is given on how to identify the root causes of poor performance, the most plausible explanations underlying these causes, and the right strategies to address and improve performance.

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EXECUTIVE SUMMARY

How can health outcomes around the world be improved? Although more resources, better health system designs, and further advances in medical technology will always help, improving the performance of organizations that deliver health services offers significant promise.

Research and empirical observation in low- and middle-income countries report many examples of underperforming health care organizations. In some countries, it is not unusual to find rural clinics in areas of great unmet need serving very small numbers of patients even though they have a sizable salaried staff and adequate supplies. Similarly resourced districts achieve very disparate levels of coverage, varying by multiples of five or more with services such as immunization or antenatal care (ANC). Rural hospitals of similar size and scope may range in their bed occupancy rates from 20 to 90 percent in the same country or province. High levels of health worker absenteeism or disappearance of essential drugs and supplies have been documented across many developing countries even though, officially, health workers receive salaries and warehouses are adequately stocked with drugs.

Why does this matter? Performance in service delivery is where the potential of the health system to improve lives meets the opportunity to realize health gains. Performance means access and use by those in need; adequate quality of care to produce health benefits; efficient use of scarce resources; and organizations that can learn, adapt, and improve. Better performance means mothers' lives saved, children cured or protected from disability and disease, fewer missed opportunities, and more effective use of money and technology. Improving the delivery of services is essential if the full potential of health system reforms, resources, and medical advances are to be realized in health outcomes. In the current period of economic and fiscal stress, where the potential for large increases in resources is constrained, improving service delivery performance is a key strategy for sustaining progress.

Recent interest in health system strengthening has increased the use of innovative strategies for improving service delivery such as the introduction of new community-based organizations and workers, facility autonomy, results-based financing, and new information technologies. In the past, the selection of strategies was often determined by assumptions or current trends. To improve this next wave of innovation, this Guide provides advice and methods to employ in deciding which strategies are the right ones to use and why.

Organizations are complex, and their complexity must be considered in developing strategies for change. This Guide helps users navigate the different explanations for organization, which are derived from a range of social science and management disciplines. Applying its recommendations should lead to better evidence with which to diagnose the causes of poor performance and to clearer thinking about which strategies or combination of strategies are most likely to improve performance.

Policy makers, planners, and program performance and health facility managers will find practical advice on what performance means in service delivery and on how to measure the performance of service delivery organizations. They will learn to recognize the importance of the environment in which organizations function as well as their capacities to develop and manage

change. Useful techniques to assess the root causes of poor performance as well as guidance on choice of appropriate strategies are provided.

Organizational change to improve health outcomes may be needed at both the system level and at the level of individual health facilities or government organizations, such as district administration, hospitals, and health centers. This Guide addresses both levels, since both are potential sources of better performance, and complementary reforms that may be needed. Raising performance of individual facilities within a health system to the higher levels already being achieved by other facilities in that same system can significantly improve results. Raising performance across a health system to achieve the full potential demonstrated in other, similar settings can improve results even more.

Users of the Guide will find sound advice as they embark on the vital process of improving performance in service delivery. They will not be handed predetermined recommendations but rather guidance on how to choose the best strategies. The guidance that is provided supports practice. By applying what is found here, users will improve their ability to make informed decisions in choosing the best strategies for improving health system results.

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PREFACE

Effective, equitable, and efficient health service delivery is a priority for the World Bank and its clients working in human development. The World Bank's 2007 Health, Nutrition and Population Strategy emphasizes the importance of strengthening health systems. Service delivery is universally acknowledged as one of the core instruments through which health systems produce better health, financial protection, and client satisfaction—key dimensions of HNP results.

In recent years there has been a significant increase in global and national attention toward improving health outcomes; thus, there has been dramatic progress in a number of areas. However, in many low- and middle-income countries there is evidence that progress could be greater and more rapid. Many countries are not on track to meet global objectives such as Millennium Development Goals 1, 4, 5, and 6, which include specific HNP-related targets. Funding for these priorities has increased, and efficacious technologies that can rapidly improve health are available. However, weak performance in service delivery—affecting access, quality, and cost, and through these, health outcomes—is often a cause of lagging health system performance.

Policy makers, planners, and managers have responded to this lagging performance with a creative array of innovative strategies to improve service delivery. These include scaling up investments in essential inputs such as human resources, drugs and supplies, and transportation. They include new supporting technologies, such as those for information and logistics systems. Strategies also include organizational and funding reforms such as community health workers, task shifting, decentralization, results-based financing, public-private partnerships, and public and community accountability mechanisms.

Organization change is difficult—especially when it involves reforms in large public and private systems, which are often resistant to change. Choosing the right change strategies is critical as is sound design and implementation of service delivery.

This Guide focuses on the knowledge, skills, and methods needed to improve the choice of change strategies. It recognizes that there are a number of differing concepts about what drives organizations' performance and the behavior of managers, workers, and clients who vie for decision makers' attention and who each have their own discipline-based predilections. This Guide will help decision makers think more systematically about the causes of performance problems that affect service delivery and choose the strategy or mix of strategies most likely to remedy those causes.

There have been several significant World Bank initiatives to improve knowledge and practice for better health service–delivery performance in recent years. This Guide builds on that earlier work and provides valuable complementary contributions.

The 2004 World Development Report, "Making Services Work for Poor People" was a benchmark contribution from the World Bank to this topic. The report emphasized the

importance of considering both providers (supply side) and clients (demand side) in developing effective service delivery and recognized the important role played by policy makers, planners, and managers. It raised the visibility of incentives and accountability mechanisms in improving service delivery performance and discussed appropriate designs for these that would balance the three sets of actors.

In subsequent years, several. strands of new work have made further contributions. Many of the better tools and methods are described in Amin, Das, and Goldstein (2008). Health care–facility and provider surveys—including absenteeism studies—were a key part of this effort. Application of these tools, such as the Quantitative Service Delivery Surveys (QSDS) has provided a rich base of evidence on performance gaps.

In 2009 a major compilation of the results of systematic literature reviews on the effectiveness of different health service–delivery improvement strategies was published in Peters et al. This volume reviewed evidence on a wide variety of examples of four major types of strategies: public oversight strategies, provider-based strategies, household and community empowerment strategies, and financing strategies. It concluded, as mentioned above, that the base of evidence to assess the effectiveness of these strategies was weak. While there was evidence of what worked and what didn't, the authors concluded that context and implementation mattered a great deal for results.

This Guide builds on some of the results and lessons learned from this previous work. It seeks to strengthen concepts and practices further "upstream" in the process of developing more effective health service delivery. The Guide makes an important contribution to help policy makers, planners, and managers ask why they would choose a particular strategy or set of strategies for improving service delivery by clarifying different categories of causes of poor organization performance. The premise is that choice of strategies should not be based on implicit assumptions or the latest development fashion but rather on explicit and evidence-based diagnosis of causes. Clearer thinking about causes can be used deliberately to identify strategies that will address those causes, which then are more likely to have the intended effect on performance.

PART I. IMPROVING PERFORMANCE BY IMPROVING DELIVERY

The Challenge: Improving the Delivery of Health Services

How can health outcomes around the world, and especially in developing countries, be improved? Health systems are one of the key instruments created by human societies to help achieve that goal. Health systems help raise and channel resources and create and manage the service delivery mechanisms that bring effective health-improving technologies to the people who need them. Service delivery is a critical link in this chain—the locus at which money and technology are transformed into health-improving interventions.

Despite much progress, the gap between need and effective action is still large. More resources, further development of cost-effective interventions, and better health financing schemes are certainly needed. But it is also striking that even the funds and technologies that are available are often not being used effectively. In many countries one encounters health facilities with shockingly few patients, communities with low levels of coverage in life-saving services even where capacity exists to provide that coverage, or trained workers missing from their assigned posts and empty shelves for drugs and supplies when workers have been paid and supplies purchased. Clearly, having money and technology are not sufficient conditions for impact. Even with more money and better technologies, a major challenge remains: improving the delivery of health services. Without improvement in the performance of the organizations that deliver health services, potential gains in health outcomes from increased funding and better technologies will not be achieved.

The need for improvement in the delivery of health services can be pictured as the gap between what available funds and technologies could achieve and what they actually do achieve in specific countries, districts, and communities. Some examples may help illustrate such gaps. In India, the child immunization program is largely financed by the national government at comparable levels across the states. Yet, according to a recent national survey, the level of coverage with DPT3, a good indicator of overall immunization, ranged from 28.7 in the lowest performing state to 95.7 percent in the highest. Within states across this performance range one can also find similar large variations across districts; within districts, differences persist across the catchment areas of health facilities. With relatively similar levels of resource availability, what accounts for these differences; how can the poor performers be improved?

In Kenya, measures of service volume for three key services were collected for government health centers—a facility type suggesting similar levels of infrastructure and staffing. The average number of these services delivered in each facility was approximately two thousand visits per year, or five to ten visits per day. Yet some health centers reported almost no delivery of these important services, while others reported output levels five-to-six times the average. Similar facilities, different results—why, and what can be done?

Studies in six countries of the presence of health workers in their assigned posts found that, on average, 35 percent of workers were absent at the time of an unannounced visit during official working hours. Most of these workers were employed and being paid by their governments, but many were not doing the work. This situation is widespread and largely tolerated. What is its impact, and what is the solution?

These and many similar reports suggest the frequency of both low performance levels and large performance gaps between better and worse performing health facilities of the same type. Performance in these examples can be expressed in terms of measurables such as service coverage, reaching poor or disadvantaged groups, appropriate quality of care, or resource productivity—intermediate results that are steps on the pathway to health outcomes.

Low performance levels for health care–delivery systems as a whole means that performance indicator averages are below what could be attained and is actually being attained by other, comparable systems. In many low- and middle-income countries, the overall level of health service–delivery performance is not what it could be. For example, the Countdown to 2015 on Maternal, Newborn, and Child Survival noted in its decade report (2000–10) that, of the 68 countries monitored for progress in priority infant and young child mortality goals, 19 were on track to achieve Millennium Development Goal 4. But 49 countries were not on track, and 12 countries have experienced slowdowns in their progress.

And even within an existing average performance level for a particular country, performance gaps across organizations and facilities are also widespread. In many settings, a substantial differential exists between low-performing health service–delivery organizations and their high-performing peers. In rural India, most antenatal care is delivered by government workers in district-level, health service–delivery organizations. Across the country, district coverage with full ANC averaged 18 percent but ranged up to 94 percent. In the Tigray region of Ethiopia, high-performing health service–delivery organizations provided eight times more family planning services and treated about eight times more malaria cases than average-performing organizations. In Serbia, high-performing health centers reported more than four times as many outpatient visits per capita per year as low-performing facilities. In Egypt, higher-output urban health units report treating more than six times more sick children annually than the average for similar facilities. In Namibia, occupancy rates in district hospitals ranged from 18 percent to well over 100 percent. Even in well-performing Sri Lanka, occupancy rates in a sample of medium-size government hospitals ranged from 21 to 95 percent. Around the world, high-performing health service–delivery organizations demonstrate the better outcomes their peers could achieve within the same health systems and with similar resource levels.

Why does this matter? Performance in service delivery is where the potential of the health system to improve peoples' lives meets the opportunity to realize health gains. Better performance means mothers' lives saved, children cured or protected from disability and disease, fewer missed opportunities, and more effective use of money and technology. Raising performance within health care delivery to levels already being achieved in that setting can significantly improve results. Raising it further—to achieve the full potential demonstrated in other, similar settings, can increase results even more.

Some Elements of Better Performance

If the overall performance of health service–delivery systems were raised and performance gaps between the higher-performing and lower-performing organizations were closed or reduced, health outcomes in low- and middle-income countries could improve significantly. The observation that health outcomes would be better if the delivery of health services were

improved is widely shared. But how should we approach this problem of improving health service delivery?

One useful approach in this Guide is to recognize the importance of both the overall organization of delivery as well as of particular delivery organizations. That is, the Guide attends to performance at both the system level and the facility level. At the system level, it is concerned with the mix of different health service–delivery organizations in any market, region, or country. This includes the array of organizations in the public, private, and independent nonprofit sectors; the relationships among these different organizations; and the division of activities between them. It also includes system-wide issues of institutional relationships and organizational design—issues that may be too complex for individual health care–delivery organizations to address. Just to take one example, government health facility managers in many countries have little discretion in hiring, compensation, and transfers of staff because these aspects may be managed for the civil service as a whole rather than for specific departments or facilities. System-level organizational reform may be needed to bring about improvements in these aspects.

At the facility level, this Guide focuses more on the internal operations of frontline service delivery organizations such as hospitals, clinics, and health centers—but in ways that are also relevant for larger levels of organization such as a district or municipal health department, which might contain numerous health facilities. Health facility managers can often bring about significant performance improvements with the authority they already possess.

Improvements in performance at the system level and the facility level may be both imperative, and indeed interdependent. System-level initiatives alone are often too blunt an instrument to improve service delivery across diverse organizations, and they also depend a great deal on the desired response by individual facilities and organizations. Without interventions directed at performance within individual facilities, broader policy reforms may not achieve their full impact. Yet interventions at the facility level cannot have a substantial and sustained impact on health outcomes if they are not reinforced by efforts that address the entire mix of delivery organizations. Without changes at the system level, improvements within facilities may be undercut. The problems that the interventions were meant to address may reemerge as their systemic causes continue unaddressed. This Guide therefore attends to both levels throughout.

A second useful construct recognized in this Guide is the importance of assessing the choice of strategies for organization reform to improve performance and implementation. Understandably, given the pressing need to improve health in developing countries, a great deal of attention has been given to the development of interventions to improve health care–delivery performance. Many different strategies have been advocated and implemented in pursuit of performance improvement. Recent meta-analyses conclude that the base of evidence to evaluate different strategies is relatively weak and that the effectiveness of strategies depends a great deal on the local environment and implementation factors. Because strategies are likely to have differential impacts in different organizational contexts, no finite set of proven strategies can be recommended.

These conclusions suggest that policy makers and planners may need to focus on identifying the most appropriate strategies to address the causes of performance problems in each particular situation. Therefore, this Guide, as the title suggests, focuses mainly on the question of how to

choose the right strategies. It asks: What is the correct strategy to tackle any particular performance problem in a given context? What conceptual orientations and practical steps will facilitate the selection of strategy? Which strategies will address the root causes of an organization's performance problem, be aligned with the environmental conditions in which the organization is situated, be feasible given the organization's implementation capabilities, and have conditions for effectiveness in place? How does one identify the possibilities and choose among them?

This Guide also tries to balance discussion of overarching concepts with recommendations on practical operational steps that can be applied to help navigate through those concepts. Meta-analyses confirm there is no strategy or set of strategies that will be effective in all organizational settings. If there were a definite set of proven recommended strategies, there would be no need for this Guide. But the task of choosing strategies is nuanced. It entails both clear, conceptual thinking and sharply focused investigation and analysis. This Guide therefore provides consideration of such issues as the assumptions implicit in different disciplinary approaches and the dynamic quality of the alignment between environmental conditions and implementation capabilities. Yet it also delivers explicit guidance on how to choose the best metric to measure performance along several domains, and offers examples of how to engage stakeholders and conduct root cause analyses. Good practice, in strategy choice as in many other aspects of performance, involves both clear concepts and explicit operational steps, and this Guide attends to both.

This Guide also builds on some of the results and lessons learned from previous World Bank work, as described in the preface above. In addition, it seeks to strengthen concepts and practices further "upstream" as it develops more effective health service delivery. One important contribution of this Guide is to help policy makers, planners, and managers assess why they would choose a particular strategy or set of strategies for improving service delivery by clarifying different categories of causes of poor organization performance. The premise is that choice of strategies should not be based on implicit assumptions or the latest development fashion but rather on explicit and evidence-based diagnosis of causes. Clearer thinking about causes can be used deliberately to identify strategies that will address those causes; these are more likely to have the intended effect on performance.

Guide to the Guide

All those engaged in the task of improving the delivery of health services will find valuable material here. The intended audience for the Guide includes policy makers and planners with responsibility for national or regional health programs, international funders interested in assisting client countries conduct needs assessment, and the managers and practitioners directly engaged in operating frontline delivery organizations. Users of this Guide will be better equipped to make their diagnostic, analytical, and decision-making processes more consistent and explicit, while also including and structuring opportunities for input from colleagues, staff, and stakeholders. Because they will have a clear understanding of how their strategy choices relate to explicit analyses of the causes of poor organization performance, users of this Guide will also be better able to explain choices to a full range of stakeholders.

This Guide is presented in several parts, as shown in box 1. A Guide to the Guide. Part II puts organizational performance in context. It underscores the imperative of alignment between strategies, environmental conditions, and implementation capability for any organization or set of organizations. Part III succinctly reviews some of the many disciplinary frameworks that can be used to examine organizational performance. Part IV addresses how to measure performance, and includes explicit guidance for selecting metrics and benchmarks. Part V provides a comprehensive and insightful taxonomy of strategy areas, presenting distinct ones to address a full range of performance problems and identifying their conditions for effectiveness. Part VI takes the user through a multistage process for selecting among these strategies to arrive at suitable, effective, and feasible choices in local contexts. Part VI closes with two actual examples of the process of strategy choice, one at a broad national level and the other for a single facility. Concluding thoughts and a call to practice are provided in part VII.

Box 1. A Guide to the Guide

I. Improving organization performance can improve health system outcomes: why we wrote this Guide
II. Reformers need to understand the environment in which organizations work and the capacities of organizations to implement change
III. Causes of poor performance—a guide to use the concepts and theories rooted in different disciplines that study organization
IV. To identify the problems that reforms try to remedy, we need to measure performance. Here are a number of important dimensions to measure and some help with methods for measuring them
V. Strategies for changing organization performance should be based on explicit explanations of poor performance. Here is a guide for thinking of how to match discipline-based explanations of the causes of poor performance with different types of change strategies—how to match explanations with strategies
VI. Putting the parts together to choose effective organization reform strategies to improve performance—a step-by-step guide with two specific examples
VII. Final thoughts and suggestions—and a call to practice

A Note on Sources

This Guide condenses the findings of an extensive literature review conducted by the Global Health Leadership Institute at Yale University and funded by the World Bank. That review retrieved 2,371 articles addressing the performance of health delivery organizations in countries eligible as of 2009 for World Bank support. These were systematically reviewed to yield a final sample of 181 articles for analysis. The complete analysis is available in Bradley et al. (2010), http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/DevelopingStrategiesforImprovingHealthCareDelivery.pdf

That paper also provides eight appendixes presenting the full methodology and results, and summary tables of the final sample articles organized by World Bank region, measurement

method, health service area, health facility department, and cross-cutting theme. The literature review also yielded a study by Pallas et al. (2011). Users of the Guide are encouraged to consult both papers for a more detailed discussion and complete references for the topics presented here.

PART II. PERFORMANCE IN CONTEXT

How can the performance of service delivery organizations be improved? Before considering strategies to improve performance either across an entire health system or within a particular health facility, a crucial first step is to consider that performance in context. Two key elements of organizational context are environmental conditions and implementation capabilities. Environmental conditions may enable or inhibit any strategy for improvement; implementation capabilities are an important determinant of the feasibility of any strategy. Alignment with environmental conditions and implementation capability is therefore imperative for any strategy to improve the performance of delivery organizations.

Environmental Conditions

What are the relevant environmental conditions for organizational performance in the delivery of health services? At a general societal level, they include the distribution of political power, prevailing market structures, cultural and community norms, demographic and epidemiological transitions, and the availability of physical infrastructure (for example, transportation and telecommunication networks). The health system within which an organization or set of organizations is situated also establishes many environmental conditions, shaping how a chosen organizational strategy unfolds. A health system's financing affects possible strategies by determining how much money is available, who bears the financial burden, who controls the funds, how risks are pooled, and whether costs can be controlled. A health system's payment schemes, determining how providers of all types are remunerated, create powerful incentives that influence the actions of providers and consumers alike. Regulations are another aspect of health systems that can directly impinge on strategies for improving performance. Regulations affect not only organizations that provide and finance health care, but also those that produce inputs, like pharmaceuticals, and those that educate health professionals.

Some environmental conditions, whether at the general societal level or specific to the health system, can promote or support better performance among health service–delivery organizations. Other environmental conditions may inhibit efforts to improve performance or even worsen performance. At times, an organization or set of organizations must simply adjust to or be constrained by prevailing environmental conditions. Alternatively, organizations can also act to change the environmental conditions in which they find themselves.

How can environmental conditions be changed? Initiatives may be directed at either the broad social setting or at particular features of the health system. Fostering changes in labor regulations, for example, could have a substantial impact on the number of health workers available (see box 2. Task Shifting in Malawi). Similar possibilities include changes in licensing standards, safety regulations, or institutional accreditation. Privatizing state-owned health facilities and decentralizing decision making to the facility level might be other ways to significantly change the environmental conditions in which strategies to improve the delivery of health services are pursued. Other options might be investing more in workforce development and the health professional educational pipeline, deploying data-collection infrastructure and health management–information systems, and establishing performance-based funding or contracting.

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The critical message here is that some environmental conditions are malleable, especially over the medium- to long-term. Efforts to improve organizational performance should therefore consider interventions that will create enabling environments for chosen strategies.

Box 2. Task Shifting in Malawi

The Republic of Malawi has been severely affected by the HIV/AIDS epidemic, with an estimated prevalence of 12 percent in 2008. Malawi also suffers from a shortage of qualified health workers, with only 2 doctors and 59 nurses per 100,000 population. The shortage of qualified health workers has been further exacerbated by outmigration and HIV/AIDS infection of health workers themselves.

In the last decade, a dramatic increase in external resources to finance the costs of antiretroviral treatment has posed serious dilemmas. Would Malawi have enough qualified health workers to implement treatment in already underserved rural areas? Would use of scarce health workers for HIV/AIDS treatment undermine other public health programs?

To address these challenges, Médecins sans Frontières (MSF) developed an innovative program to train lay health workers. The program yielded many more health workers capable of supervising patients and administering AIDS drugs. Treatment administration by such less-qualified health workers, however, was against the law. How could this limiting condition in Malawi's legal environment be changed to allow this organizational innovation of task shifting?

The MSF team in Malawi recognized the importance of an explicit and multifaceted approach to foster acceptance of task shifting within the legal and professional environments. From the outset, MSF coordinated and consulted with the primary regulatory bodies involved, such as medical and nursing councils, and with the relevant government ministries of health, education, and labor. Because formal legal changes in regulatory frameworks can take many years to be enacted, MSF pursued other approaches and policy methods, including the use of executive orders or the granting of temporary pilot status to programs engaged in task shifting. MSF was also careful to ensure that task shifting among health workers was accomplished in ways that were acceptable to other professionals and community organizations, so as not to provoke informal resistance.

Sources: Zachariah et al. (2009); Bemelmans et al. (2010).

Implementation Capability

Another key element of organizational context is implementation capability. Implementation capability measures an organization's ability to obtain and deploy the resources required within the timeframe of the plan of action for the chosen strategy. Plans of action typically detail the resources needed to accomplish each step of the plan, the responsible parties for each step, and the timeline expected for each action. Additionally, implementation capability involves the ability to set in motion, coordinate, and monitor the overall plan of action, including the leadership needed to motivate the human resources to accomplish such implementation actions.

How can an organization determine if it has or could acquire the requisite implementation capability for strategies under consideration? Assessing implementation capability entails dissecting each proposed strategy into its component tasks and ensuring the organization has the requisite skills, resources, and leadership. This may include attention to management expertise and authority, available infrastructure, adequate funding or the means to attain it, and proper staffing. The purpose of the assessment is to identify which strategies could be successfully deployed given the organization's ability and motivations.

Alternatively, the focus could be on improving implementation capabilities so as to eventually pursue a preferred strategy. One possibility is designing a strategy with a first phase directed at building the capability needed to execute subsequent phases. In all assessments of implementation capability, it is also important to consider consequences of implementing the action plan on other goals of the organization. Other activities may be crowded out due to changed deployment of resources and attention.

Assessments of implementation capability are undertaken whether the strategy being considered will affect the performance among many facilities (see box 3. Budgeting for Decentralization) or the internal operations of a sole facility (see box 4. Reducing Patient Waiting Times in a Clinic). Ascertaining that current capabilities are adequate or could be sufficiently enhanced is essential regardless of the scope of the chosen strategy.

Box 3. Budgeting for Decentralization

The state-financed health care–delivery system in a middle-income Latin American country had not changed for years. Decisions regarding the number of clinics, their staffing, and the job descriptions of staff were made by the provincial health department. These provincial decisions were carefully detailed in operating manuals. It was the job of the medical director (MD) at the municipality level to execute these decisions. The MD's responsibilities included handling the paperwork for the posting and transfer of health workers, processing requests for maintenance of buildings and vehicles, and overseeing the distribution of drugs and supplies to the network of primary level clinics in the municipality and to the municipal hospital.

With the passage of a new national decentralization law, MDs learned that all this would change. The MD in a rural municipality was informed that in the following year the full budget for running the municipal health services would simply be transferred to the department level. Instead of administering a standard set of provincially determined processes, the MD would now have much wider authority to hire and fire staff, place them in different facilities, close or modify the configuration of facilities, and provide bonuses and incentives. The department would be monitored with a new set of service delivery output and quality measures. Further, the MD and the department could receive a significant bonus if they improved their performance each year.

Included in this new arrangement was a significant budget to assist with the transition. These funds could be used to hire new staff, purchase new information technology, or provide staff training and development. The MD was tasked to prepare a plan for the next two years to utilize these funds. Which strategies should be chosen to improve performance? Which capacities would be needed to implement different strategies? The MD developed the following assessment:

Capacity needed	Type of change strategy	Mechanism of change
Facility managers should be able to design and implement facility-based quality-improvement program in response to new budget incentives	Change clinical practices to improve adherence to standard protocols	Quality-measurement and quality-improvement program
District program management offices should identify low- and high-cost performance for similar programs across similar facilities	Identify efficient and inefficient providers and design programs to improve efficiency	Cost accounting
Hospital directors should be skilled in community outreach and communications	Develop community-based accountability mechanisms to provide feedback for hospital performance improvement	Cultural sensitivity and communication skills

Box 4. Reducing Patient Waiting Times in a Health Center

A health center is considering a plan of action to reduce patient waiting times. Possible actions include: (1) retraining the registration and medical records clerks, (2) relocating the cashiers, (3) hiring an additional general practitioner, and (4) establishing a clinician for triaging the most severe cases to the emergency area and retaining the less severe cases in the outpatient department.

Analyzing each of the four options reveals differing levels of implementation capability that would be needed at the health center to accomplish these tasks. For instance, it may be clear that the health center management has the needed expertise and authority to retrain the registration and medical clerks (action 1). The health center management probably also has the authority and skill to relocate the cashiers, although it may be constrained by existing space availability (action 2). The health center alone probably does not have the authority or funding to hire a new general practitioner (action 3), depending on its relationship with the government planning or ministerial agency that allots staff. It is possible that the health center could accomplish this step by working in collaboration with the health ministry; however this process might require substantial time that would exceed the timeline for the plan of action. Lastly, the health center management may lack the ability to establish a new role of triage in the outpatient department (action 4), which could be complex and may require not only a reassignment of resources but also reconsideration of clinical team relationships and standards of practice.

This simplified assessment of implementation capability could be summarized as follows:

Action	Level of implementation capability
1. Retraining of registration and medical records clerks	High
2. Relocating the cashiers	Medium
3. Hiring an additional general practitioner	Low
4. Establishing a clinician for triaging the most severe cases to the emergency area and retaining the less severe cases in the outpatient department	Low

The Imperative and Implications of Alignment

Improving the performance of organizations that deliver health services requires an alignment among strategy, environmental conditions, and implementation capability (see figure 1). Even the most carefully prepared strategies will be ineffective if they are impeded by environmental conditions, such as existing labor regulations or financing levels; or will not be feasible if basic skills and resources to carry them out are lacking.

Figure 1. Aligning Determinants of Organizational Performance

Strategy

Organizational Performance

Environmental Conditions

Implementation Capability

Source: Bradley et al. 2010, Figure 6.

The illustration in figure 1 intentionally does not indicate causality or directionality among the elements. In attempts to improve organizational performance, environmental conditions and implementation capabilities are typically taken as given, with strategy being the element most subject to choice. The choice of strategy is indeed the easiest point of the triangle to manipulate. Strategies can generally be tailored to function within environmental bounds and make use of existing capabilities. It is possible, however, for policy makers, program managers and organization executives to act on their environments to create conditions that are more conducive to their preferred strategies. Similarly, it is possible to build the capabilities of individual organizations to the point where they could implement preferred strategies. Any of the three points has the potential to be held fixed or be designated as the point of intervention in a performance improvement initiative.

The need for alignment between strategy, environmental conditions, and implementation capability has several implications for designing performance improvement programs. One implication is that organizations in the same environment may need to use different strategies to enhance performance based on their differing levels of implementation capability. When reviewing strategy for a set of organizations, the implementation capabilities of each facility must be taken into account.

A second implication is that initial environmental conditions need not determine the choice of strategy. In the case of two organizations with identical environmental conditions, one might choose to start executing a strategy with its existing capabilities while another might choose first to enhance its implementation capability to execute a more challenging strategy. It is likely that the environment may be relatively fixed over the period of many performance improvement programs; however, interventions at the level of the environment (for example, regulatory or payment reform) are possible and should be considered, especially when altering implementation capability or strategy is likely to be difficult.

A third implication of the importance of alignment is that performance-improving strategies cannot be designed in a vacuum as ideal types. Rather, they must be selected with consideration for the specific organization's environmental conditions and implementation capacities.

A final implication is the need for flexibility. Although two of the three points on the triangle may be held fixed for purposes of designing initial interventions for improving organizational performance, over time all three—strategies, environmental conditions, and implementation capabilities—are moving targets. As a result, performance-enhancing interventions will need to be aligned and then periodically realigned as the situation evolves.

PART III. DISCIPLINARY FRAMEWORKS: THE CONCEPTS AND THEORIES BEHIND CHANGE STRATEGIES

Many different disciplinary frameworks have been applied to the study of health service–delivery organizations. Indeed, in the effort to improve organizational performance, policy makers, program managers, and organization executives encounter a diverse community of experts. Each expert may be grounded in a different academic discipline, use different analytical tools, promote a particular diagnosis of the causes of poor organization performance, and advocate a preferred strategy for improving performance.

Just as flexibility is the right way to approach alignment between strategy, environmental conditions, and implementation capability to best meet the objective of improved organizational performance; flexibility is also valuable in the use of disciplinary frameworks. While many disciplinary frameworks offer useful insights into organizational performance, rigid adherence to one precludes from consideration strategies that might help to raise performance levels among or close performance gaps between organizations delivering health services.

This Guide does not advocate any particular disciplinary perspective. It does urge users to be aware of the disciplinary frameworks in which they operate. Those frameworks influence the implicit and explicit assumptions that are made, the questions that are asked, the priorities and standards that are followed, and the solutions that are favored in any effort to analyze and improve organizational performance. Being aware of the framework, or of the different approaches of multiple frameworks, will help those engaged in improving organizational performance to develop analyses and reach conclusions that could be explained and defended independent of any one disciplinary point of view.

Among the many different disciplines that have been applied to health service–delivery organizations are organizational behavior and organizational theory, economics, psychology, and sociology. The disciplines of organizational behavior and organizational theory are often associated with management and business administration. In addressing health service–delivery organizations, they direct attention to such topics as the role of leadership, working conditions, reporting hierarchies, staff relationships, or strategic alliances with other organizations. In contrast, economic models of organizational performance look at the utility-maximizing choices of individuals and the profit-maximizing choices of firms or organizations. Addressing an organization's environment, an economics framework attends to the markets in which it operates. Economic research on health service–delivery organizations has focused at the microlevel on provider payment arrangements, and at the macrolevel on questions of market regulation and competition, technology adoption, insurance incentives, ownership structure, service pricing, and production efficiency. The discipline of psychology has also provided useful insights to the study and improvement of health service–delivery organizations. Research informed by this discipline has concentrated on patient-provider relationships, human resource management, leadership, and employee motivation. This research incorporates the nonmedical determinants of patient outcomes as well as the nonfinancial determinants of provider performance, offering a different set of potential policy levers for improving health services. The field of sociology accords primary attention to social and community structures to explain individual and organizational behaviors. In the health services sector, sociological studies have focused on nonmedical

determinants of health (for example, poverty, social class, stigma), barriers to accessing existing health services, socially constructed roles of sickness, and the experience of different subgroups in seeking and providing health care. Sociological research on health service–delivery organizations has helped explain why organizations with similar material resources, trained personnel, management practices, and patient profiles may perform differently when their employees' social backgrounds are different or when they operate within different social environments.

This review of different disciplinary perspectives on health service–delivery organizations underscores that none of these approaches alone explains or predicts behavior in every organization. Rather, researchers and practitioners must work within multiple frameworks and avoid the blind spots that result from working with only one. The best way to assess a possible strategy for addressing the shortcomings and improving the performance of any organization will not be how closely that strategy adheres to any particular disciplinary framework, but how directly it addresses the problem at hand.

The case study below (box 5 and table 1) illustrates how operating exclusively within one disciplinary framework can substantially shape the recognition and analysis of a problem as well as the range of solutions proposed.

Box 5. An Illustration of Different Disciplinary Perspectives

K is one of four nurses in a rural government health clinic, which also has two clerks and one health officer. The next closest government clinic is 25 kilometers away.

K grew up in a poor village in the north of the country. Watching how hard his parents worked on their farm, he resolved to do well in school and make a different life for himself. He was one of only three students from the north to gain a place in the government's nurse training program. K graduated from the training program the same year that the north's leading political party came to national power. Although K hoped this fortuitous event would afford him a better job posting, he was assigned to a clinic in a southern village. The roads were terrible, the electricity intermittent, and fellow northerners were rare.

Disappointed with his posting, K made an effort to transfer to an urban clinic in the regional capital. His supervisor declined the request on the grounds that K had not completed his public service period. K later learned, however, that the supervisor's brother was assigned to the regional capital without having done any public service in a rural area. The government had not raised salaries for nurses for the past two years, although food prices had increased dramatically. Further, K's salary was often paid a month or two late.

As time went by, K began to charge a little extra for his services at the clinic. He always reported and paid in the official amount to the district health service, but the extra fees he kept for himself. Although the government set prices for all the standard clinic services, many of the village's residents were willing to pay more, especially during the harvest season. K knew that nurses in other health centers did the same because they joked at their monthly district meeting about whose salary was most in arrears and who had charged the highest mark-up to his or her patients.

How would K's behavior be explained from within different disciplinary frameworks? How would the interventions proposed by those frameworks differ? Table 1 summarizes approaches from economics, psychology, sociology, and organizational behavior and organizational theory to illustrate the range.

Table 1. Different Disciplinary Approaches and Possible Interventions

Behavior observed in the organization: A government nurse running a primary health clinic in a rural village charges some patients extra fees above the official government price, secretly retaining the surplus for himself.
Organizational intermediate outcomes affected: quality, efficiency, utilization, access, learning, sustainability

Disciplinary approach	Possible explanations of the behavior	Possible interventions to alter behavior
Economics	(1) Nurse's salary is too low or too infrequently paid, and punishment for corruption is too lax. (2) Government prices are set too low; some clients are willing to pay more. (3) Nurse is a de facto monopolist of officially sanctioned health services delivery in the village, allowing him to price discriminate among clients.	(1) Increase nurse's salary, pay it regularly, and increase monitoring of and punishment for corrupt practices. (2) Increase official prices and provide targeted subsidies to those who cannot afford them. (3) Permit and incentivize competition from other accredited (private) providers in that village/region.
Psychology	(1) Nurse has developed a positive psychological association with having power or dominating other people. (2) Nurse has learned a behavior in response to historical environmental stimuli. He grew up in conditions of financial insecurity; he takes extra fees to feel more secure.	(1) Provide individualized therapy to develop alternative positive associations. Promote professional and community norms of shame around corruption and exploitation of others. (2) Provide group or individualized therapy to alter response to stimuli of felt insecurity. Institute and apply systematic punishment for corruption.
Sociology	(1) Nurse's behavior is consistent with social norms and hierarchical class structure in which he, as an educated professional, is not accountable to the poorer, less educated village residents. (2) Nurse is from the ethnic group that holds political power, while many village residents are of an ethnic group associated with the opposition party. Nurse's behavior is a local manifestation of national political dynamics.	(1) Promote anticorruption social norms among civil servants and during professional training of nurses. Educate and empower village residents to assert their rights. (2) Highlight to leaders of the ethnic group in power the political risks of corrupt public service provision, which can fuel opposition mobilization. Encourage multiparty oversight of social services.
Organizational behavior/ Organization theory	(1) Nurse's professional peers also charge extra fees to their patients; they see it as their right because the government does not pay them as they deserve. Discussing this common grievance and practice allows the nurses in the district to feel solidarity with each other. (2) Nurse does not feel ownership of the clinic's mission. (3) Nurse knows that transfer to an urban post is reserved for those with high-level political connections. Because good performance will not enable him to advance in the system, he tries to make the best of his current situation.	(1) Identify "positive deviants" (nurses who do not charge extra fees). Promote their strategies and the conditions that enable them to resist peer pressure. Engage third party to mediate dialogue between nurses and government. Create alternative shared experiences to generate solidarity among nurses. (2) Understand the needs of the nurse that the clinic can accommodate. Improve the working environment and culture so that the nurse wants to support the clinic's mission and feels a part of the organization, rather than an individual. (3) Create a transparent, merit-based system of promotions.

Source: Bradley et al. 2010, Table 5.

What lessons can be drawn from box 5 and table 1? This material is an invitation to step back, recognize the plausibility of each approach, critically examine the underlying assumptions about behavior in each, and appreciate how those assumptions shape the conclusions and proposed interventions that arise in each discipline.

Taking this one step further, box 6 presents several stylized cases of actual organization change experiences. In these cases, strong discipline-based assumptions may have led to design and implementation of incorrect or incomplete change strategies—sometimes with negative unintended consequences. These examples argue for critical and reflective examination of the theoretical and disciplinary roots of causal assumptions. This can be encouraged in group processes as well as through self-reflection by policy makers, planners, and managers.

Box 6. Some Examples of the Importance of Considering Different Disciplinary Perspectives

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Example 1: Improving diagnosis and treatment for children's diarrhea

What was the observed problem?
In a number of developing countries, the vast majority of cases of acute diarrhea in young children are taken to drug shops and pharmacies. Often, untrained or minimally trained drug shop attendants both diagnose and prescribe a treatment. Typically this is a course of one or several antibiotics. Oral rehydration solution is often neither available nor recommended by the drug shop attendant.

Views of the causes from disciplinary perspective(s)
Surveys of drug shop attendants showed lack of knowledge about different causes of diarrhea and appropriate treatment. In these surveys, drug shop attendants expressed a desire for greater knowledge about diseases. They expressed their commitment to community service and willingness to use broader knowledge for patients' benefit. Concepts of altruistic and community-oriented service behavior from sociological and psychological perspectives suggested that increasing drug shop attendants' knowledge about appropriate treatment would lead to appropriate treatment behavior, as the main cause of their prescribing behavior was lack of proper technical knowledge.

What was the intervention?
Training programs for drug shop attendants and information campaign for drug shop owners and potential patients about correct treatment protocol were conducted. Information was placed in pharmacies and drug shops.

What was the result?
The intervention resulted in very modest improvements in treatment behavior, increased recommendation and sales of oral rehydration solution, but little reduction in recommendation and prescription of antibiotics.

How could it have been done better?

Drug shop attendants and owners were reluctant to reduce sale of antibiotics as these were profitable. Analysis of financial incentives of drug shop attendants and owners grounded in economics would have suggested greater need to understand the effects of the sale of antibiotics on them. Training and information combined with compensating incentives might have been a better strategy.

Example 2: Increasing effort of community health workers

What was the observed problem?
Volunteer community health workers devote few hours each month to their health work, and their commitment tends to decline over time. They have great potential to increase coverage of key services, especially for the rural poor, but their effort isn't commensurate with their potential.

Views of the causes from disciplinary perspective(s)
From an economics perspective, voluntarism is a weak motivator and hard to sustain. Increasing community health worker incentives with an output-based payment system would compensate them for lost work time in their main occupations and increase output.

What was the intervention?
Output-based payments to community health workers were introduced for increases in priority services coverage such as immunizations and antenatal care visits.

What was the result?
Community health workers significantly increased their time and effort to motivate village families to use priority services and often accompanied them to the clinic. However, salaried clinic health workers resisted this new program. They saw additional resources diverted to community workers while their own workload increased: they considered themselves underpaid relative to their existing workload. Clinic health workers often wouldn't provide service when community workers were present or would counsel clients to come back another time. They tended to withhold information and supplies from the community workers or asked them to share their additional revenue.

How could it have been done better?
Insights from sociology and organizational behavior to depict the health center environment as a social system would have highlighted the possibility for competitive behavior between community workers and salaried workers. Incentives for community workers might have been better designed as incentives for all team members with an acceptable distribution arrangement for all.

Example 3: Increase availability of essential drugs and supplies at rural hospitals

What was the observed problem?
Rural community hospitals lack sufficient budget to assure adequate supply of consumables. Patients are asked to purchase inputs outside. Quality of care suffers, and families bear higher out of pocket costs.

Views of the causes from disciplinary perspective(s)

Higher-level budget limitations were perceived as the main cause. Economic frameworks suggested that patients were willing to pay for better services at hospitals.

What was the intervention?
Hospitals were given more financial autonomy to charge fees and use the revenue for hospital operating costs and consumables. Economic frameworks suggested that it would be best to offer patients the choice of private wards with better amenities, for which, most likely, the better-off patients would pay out of pocket.

What was the result?
Hospitals created private wards, which became popular with patients who could afford them, since they were less expensive than comparable private sector services. Revenue was generated for hospital operations and consumables, but an increasing share of hospital patients and of total bed days were allocated to serving better-off families. Hospital capacity for nonpaying patients declined. Introducing private wards and user fees also created incentives for hospital workers to divert more effort to paying patients. This coincided with the interests of the elite rural population who found an opportunity to obtain better quality subsidized services in government hospitals. Capacity and care for the poor suffered.

How could it have been done better?
Insights from sociology and political science would help highlight the interests of different socioeconomic classes in rural areas. Government might have provided compensating incentives, including nonfinancial ones, for maintaining services for the poor or required some degree of revenue-sharing to cover the costs of nonpaying patients.

Example 4: Improve accountability of rural service providers to their clients

What was the observed problem?
Rural clinics were perceived by rural communities to provide poor quality service. Clinic workers were often absent from work with little sanction.

Views of the causes from disciplinary perspective(s)
Government capacity to supervise rural clinics was ineffective. Higher-level government supervisors were reluctant to discipline their subordinates because of social and bureaucratic constraints. Organizational behavior and sociology-based insights suggested that this would be difficult to solve within the existing organizational setting without more comprehensive reforms. Economics-based approaches emphasized introducing greater accountability to community members.

What was the intervention?
Community health boards were formed of representatives from villages surrounding rural clinics. Board members were senior village officials from each village and the town mayor. Boards reported on health worker performance twice yearly, which determined health worker promotions, transfers, training opportunities, and transfers.

What was the result?

Health worker attendance increased as did their effort. However, health workers devoted increasing attention to meeting the needs of the rural elite through special fixed appointments, home visits, and preferential access to limited drugs and supplies. Quality of care improved for the elite but worsened for the rest of the population.

How could it have been done better?
Better analysis of rural social systems using insights from sociology, politics, and anthropology would have highlighted the danger of elite capture. A greater number of representative boards might have been selected, a more gradual transition planned, or indicators for services to disadvantaged groups monitored more explicitly.

What can be done in the face of multiple plausible explanations and recommended interventions? A series of helpful questions can be asked: What is the supporting evidence for a particular disciplinary viewpoint? Is there evidence supporting other views? What are the implications for action and the results of assuming a wrong explanation and ignoring a right one? Could there be more than one right account? Often acting on several discipline-based explanations simultaneously is desirable and increases the likelihood of positive impact. In the example in box 5 and table 1 here, raising the nurses' compensation and improving group commitment to common work goals are complementary and may be more effective than pursuing one strategy alone.

Policy makers, researchers, and managers are often biased toward their own prior experience or training and favorite explanations for observed behavior. The presentation of different disciplinary frameworks and multiple plausible causal accounts and reasonable strategies are a reminder to be aware of these biases.

PART IV. MEASURING PERFORMANCE

Choice of strategy to improve organizational performance should not occur without a clear perspective on disciplinary frameworks and an appreciation of organizational context and capabilities. The selection of suitable strategies also requires comprehensive information about organizational performance. Measuring performance along several domains is done with the use of properly selected metrics. That information can then be compared with the performance of health service–delivery organizations in the same country or in other countries, or it may be benchmarked against domestic or international standards or against historical performance. Choosing what to measure, measuring it well, and then assessing the information all help to characterize overall performance and identify performance gaps. The process also provides substantial basic information necessary to identify potential strategies.

What to Measure: Intermediate Outcomes

Intermediate outcomes at the organizational level contribute to final outcomes of improved health status, risk protection, and client satisfaction at the health system level. They also influence the distribution of these final outcomes in terms of reaching the poor or other disadvantaged groups. Six intermediate outcomes or performance domains are discussed here: quality, efficiency, utilization, access, learning, and sustainability (see table 2). Together, these six intermediate outcomes offer a model for what a high-performing health service organization should deliver. High-performing organizations deliver high-quality, efficient, accessible, and utilized services and therefore contribute to final outcomes in terms of level and distribution. Furthermore, high-performing organizations should enable learning (and hence continuous improvement) and have strategies for securing the support necessary for sustainability. These six intermediate outcomes capture much organizational performance research in the health services sector.

Table 2. Six Intermediate Outcomes of Organizational Performance

Intermediate outcome domains	Dimensions	Examples of measures
QUALITY	• Clinical quality • Management quality • Patient experience	• Adherence to clinical guidelines • Avoidance of medical errors • Availability of medical supplies • Functional medical records system • Patient satisfaction on average, and for poor or other groups
EFFICIENCY	• Cost-to-service ratios • Staff-to-service ratios • Patient or procedure volume	• Nurses or health workers per bed • Inpatient or outpatient visits per day, per bed, or per health worker
UTILIZATION	• Patient or procedure volume relative to capacity • Patient or procedure volume relative to population health characteristics	• Percent occupancy • Outpatient visits per provider • Percentage of pregnant women receiving antenatal care • Percentage of low-income pregnant women receiving ANC.
ACCESS	• Physical access • Financial access • Linguistic access • Information access • Service availability/allocation • Nondiscriminatory service provision (equitable treatment regardless of age, gender, race, ethnicity, religion, or class)	• Geographic distance to facility • Availability of transport to facility • Hours of operation of facility • Absenteeism of health care workers from facility • Affordability of services on average and for poor • Availability of culturally and linguistically appropriate services
LEARNING	• Data audit and feedback processes • Innovation adoption • Training/continuing education for healthcare workforce	• Use of balanced scorecard for organizational performance • Presence of patient suggestion box • System exists for nurses to report errors to hospital management • Quality-improvement methods used
SUSTAINABILITY	• Political support • Community and patient support • Financial support • Human resource supply • Staff commitment • Strategic planning	• Involvement of community leaders in facility planning and monitoring • Use of strategic management process to promote organizational fit with environmental conditions • Timely, useable, and monitored data on facility financial status • Robust connection with health workforce educational pipeline

Source: Bradley et al. 2010, Table 2.

Quality

Quality as an intermediate outcome of a health service delivery organization has three dimensions: clinical quality, management quality, and patient experience. Clinical quality refers to whether the provider's care conformed to best clinical practice for those who use the services of the organization. It does not refer to outcome measures of population health, such as vaccination or antenatal care coverage in which the denominator is the population. Historically, much of the research on health care delivery has focused on clinical quality, investigating whether the care provided to a patient was safe and medically appropriate. Managerial quality refers to the degree to which administrative systems such as procurement, human resources, and data management support the delivery of high-quality clinical care. The third dimension of quality, patient experience, is included because of the importance of patient-centered service delivery. Patient experience is often used as a counterpoint to the technical standards of clinical and managerial quality. Possible measures of quality along these three dimensions include organizational or system-wide adherence to clinical guidelines, a functional medical records system, and patient satisfaction.

Efficiency

In the context of assessing the performance of health service–delivery organizations, efficiency refers to technical rather than allocative efficiency. Technical efficiency is a relative measure that compares inputs used (for example, human, technological, financial) to outputs attained (number and level of services). It addresses questions about whether an organization is deploying the right mix of personnel, equipment, supplies, and facilities to produce outputs at the lowest cost. For health service organizations, dimensions of efficiency include cost-to-service ratios, staff-to-service ratios, and patient or procedure volume. These may be measured, for example, by the number of nurses or health workers per bed, or by the inpatient or outpatient visits per day, per bed, or per health worker within a single facility or across a district.

Utilization

The intermediate outcome of utilization refers to the volume of services delivered or clients served. Setting universally applicable standards for the right level of utilization is difficult because of the influence of diverse and variable client demand patterns. Utilization is better conceived as a relative measure, that is, utilization rates relative to organizational capacity or population health characteristics. An organization or set of organizations with chronically underutilized capacity would be considered lower performing. Some excess capacity may be desirable, as such slack can facilitate organizational learning and long-run sustainability. However, too much excess capacity can constitute a cost to the organization without adequate compensatory benefits. Similarly, utilization significantly below or above expectation, given the health characteristics of its client population could also be a signal of poorly performing organizations. Benchmarking utilization across organizations serving similar populations is therefore an important method for assessing this intermediate outcome. For the purposes of measuring performance, utilization may be captured as patient or procedure volume relative to capacity or relative to population health characteristics. Examples of relevant measures might include occupancy rates, outpatient visits per provider, and the percentage of pregnant women receiving antenatal care.

Access

The fourth performance domain for assessment is access, understood here as the availability, accommodation, affordability, and acceptability of health services. Access refers to the potential ability of an organization's potential clients to obtain its services. At the level of health service–delivery organizations, relevant dimensions of access include physical, financial, linguistic, and information access; service availability/allocation; and nondiscriminatory service provision (equitable treatment regardless of age, gender, race, ethnicity, religion, and class,). Sample measures of access include geographic distance to a facility, availability of transport to a facility, hours of operation of a facility, absenteeism of health care workers from a facility, affordability of services, availability of culturally and linguistically appropriate services. These may be measured for any individual facility or for a set of facilities.

Learning

Although it is generally understood that learning is attained by individuals, in the context of organizational performance, however, it refers to the process by which an organization acquires new knowledge and translates this knowledge into organizational practices. This occurs as individuals assimilate newly gained knowledge into new work routines, standards, norms, and structures within their organizations. Thus, organizational learning generates both changes in knowledge as well as changes in observable processes and organizational culture. Organizational learning also outlasts any individual staff member.

Learning is of particular importance in the health sector. Much health care is knowledge-centric. Further, disease burdens shift, environmental conditions change, and new epidemics emerge. Because improved health status is not a static outcome, health service–delivery organizations must be able to acquire and utilize new knowledge continuously. This gives rise to several dimensions along which to examine learning as an intermediate outcome. The first is the existence and quality of data audit and feedback processes, to both capture data and return feedback to the organization. A second dimension concerns the adoption of innovation, whether within an organization from one staff member to another, from one department to another, or between organizations. A third dimension is the provision of training and continuing education for the healthcare workforce. Example of measures of this outcome include the use of a balanced scorecard for organizational performance, the presence of a patient suggestions box, the existence of a system for nurses to report errors to hospital management, and the use of quality improvement methods.

Sustainability

Sustainability, long a guiding principle for development assistance, contributes to improved health status and risk protection by ensuring that needed health services are predictably accessible. The epidemiological transition from acute to chronic disease makes sustainability in health services even more important for continuity of care and effective disease management over time. As an intermediate outcome of organizational performance, sustainability refers to the organization's ability to continue delivering needed and valued services. It addresses both the organization's existing support and its efforts to secure future support so it can continue to provide services.

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Dimensions of sustainability for an organization or set of organizations include sustained political support from government officials, broad community and patient support, and predictable access to needed inputs such as financing and trained human resources. Ongoing staff commitment and capable strategic planning are also dimensions of an organization's sustainability. Relevant measures of sustainability include the involvement of community leaders in facility planning and monitoring; the use of strategic management processes to promote organizational fit with environmental conditions; timely, useable, and monitored data on facility financial status; and a robust connection with the educational pipeline for the health workforce.

How to Measure: Selecting Metrics

Measuring these six intermediate outcomes provides a profile of the performance of health service–delivery organizations. Hundreds of indicators for measuring these six performance domains are available (see box 7. Resource on Indicators). Which metrics will be most appropriate and feasible for the country and organizational context being examined? Seven principles help guide the selection of metrics.

Box 7. Resource on Indicators

Users of this Guide are urged to consult "Developing Strategies for Improving Health Care: Guide to Concepts, Determinants, Measurement, and Intervention Design" by Bradley et al. 2010, available at *http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/DevelopingStrategiesforImprovingHealthCareDelivery.pdf*

Its Appendixes provide results from a systematic review of more than two thousand academic articles regarding metrics for the six intermediate outcomes of organizational performance and explain how to identify which studies have relevant metrics in each of these categories.

Principle 1: Include performance metrics from each intermediate outcome domain

Including multiple metrics from each of the six domains enables a comprehensive understanding of organizational performance and can reveal linkages between performance domains and synergies among possible interventions. For example, underperformance in one domain may contribute to low performance in other domains, as inefficiency may impair the organization's sustainability; poor quality could reduce utilization; and low utilization could limit the organization's opportunities for learning. In devising interventions, investing resources in one area (for example, improving access) may limit resources spent in another intermediate outcome area (such as improving quality). Understanding the whole of organizational performance requires attention to all six domains.

Principle 2: Use existing data sources where possible

Using existing data sources, so long as they are complete, accurate, and timely, will reduce the time and resources required for organizational assessment. Often data generated during health service delivery, such as information gathered for patient medical records, will contain information needed to assess organizational performance. Many countries have some type of

official health and health service–delivery data being recorded through Health and Health Management Information Systems (HIS, HMIS). These, as well as household surveys, facility/provider surveys, and routine administrative data are other sources of data on health care outputs (see box 8. Data Sources on Health Care Outputs).

Box 8. Data Sources on Health Care Outputs

In addition to medical records, four common types of existing data sources are Health Information Systems and Health Management Information Systems (HIS, HMIS), household surveys, facility/provider surveys, and routine administrative data. Each has strengths and weaknesses.

HIS and HMIS record essential health service statistics such as number of patients treated and immunizations given. While useful, these data have several shortcomings. Many countries follow separate reporting protocols for different diseases and donors; individual facilities also maintain multiple reporting protocols. This makes it difficult to gain a comprehensive picture of performance. Further, even basic facilities produce multiple outputs (for example, patient treatment visits, antenatal visits, well child examinations, immunizations, as well as preventive services like inspecting village water sources, spraying for vector control, and personal health education). With no single, uniform measure of output, it is difficult to produce comparable pictures of performance. HMIS data are also often incomplete, with records frequently lost or damaged. As data are self-reported, there are many incentives and opportunities to falsify and misreport. Data on quality can be particularly hard to capture. Good denominator data may not be available at the level of a health facility to calculate population-level outputs such as service coverage. Good vital events data are also usually lacking, making it hard to know outcomes. *Useful link: Routine Health Information Network:* www.rhinonet.org

Household surveys are another significant source of data on health care outputs and quality. They too have both advantages and disadvantages. In their favor, the data-gathering process is controlled and does not rely on many scattered health workers. It is also much harder to falsify data. Further, a single instrument can collect data on multiple outputs. As a defined population is sampled, denominators are available to calculate coverage. Health outcomes can also be estimated. Yet household surveys have several drawbacks. They are expensive and also marred by sampling and reporting errors. Because it can be very difficult to link results in large-scale surveys to specific health facilities, household survey data are less useful for measuring the performance of particular facilities. Household survey data are more frequently used to estimate outputs and outcomes across a geographic area such as a district. *Useful links:* Demographic and Health Surveys www.measuredhs.org; Living Standards Measurement Surveys http://go.worldbank.org/B9VEQWV3Z0; World Health Survey http://www.who.int/healthinfo/survey/en/index.html

Facility or provider surveys typically involve visiting all or a sample of health facilities of specific types. Information collected can include observations of physical facilities (building, space, physical inputs available like equipment and drugs); transcriptions of reports on program outputs and activities, (which may be more accurate than what is provided on HMIS forms); observations of health workers and patients (including such techniques as counterfeit patients); informal tests of health workers' knowledge and skills; and costing data. Facility surveys are costly but yield reliable data. They may be the best way to compile information on organizational output, clinical quality, and efficiency. They are less useful for data on certain determinants of performance such as leadership, motivation, and management skill. And as with HMIS data, it is hard to link outputs to population denominators using data from facility surveys. *Useful links:* Demographic and Health Surveys Service Provision Assessments www.measuredhs.org; World Bank Quantitative Service Delivery Surveys http://go.worldbank.org/MB54FMT3E0

Routine administrative data may include information on variables that stay relatively stable, such as numbers and types of workers and types of services delivered. These data are often collected for a province or district rather than at the level of individual health facilities. Routine administrative data can be combined with HMIS data. *Useful links:* World Health Organization Country Health System Surveillance http://www.who.int/healthinfo/country_monitoring_evaluation/en/index.html; WHO Health Metrics Network http://www.who.int/healthmetrics/en/

Principle 3: Test reliability and validity of metrics in the context of interest

When adapting or applying a metric from one context to another, the metric's reliability and validity in the new context should be tested by using the metric in a pilot assessment. Reliability refers to the consistency of a measure when used in repeated applications; validity is the degree to which a measure assesses what it purports to measure. Testing for cultural equivalence and relevance of the concepts and language used in the metric is also important if measures have not been used previously in a specific population. Cognitive interviewing and other qualitative methods are valuable for determining whether the constructs underlying as assessment are salient and acceptable in a given cultural context, and whether these constructs are expressed in a format and language that is appropriate to the intended audience.

Principle 4: Weigh costs and benefits of internal and external data collection

Data to be used in assessing organizational performance may be collected by individuals internal to that health service–delivery facility or by an external party. Either approach has benefits and costs. Internal data collection has the advantage of involving staff in the discovery of performance gaps and of progress in improvement, perhaps with positive spillover effects on staff motivation and on assuming ownership of organizational change initiatives. Relying on internal data collectors can also develop measuring and monitoring capacity in the country. Integrating data collection into existing care processes may also be less costly if it leverages existing information management infrastructure. If applying the selected metrics requires specialized skills (for example, in the case of clinical quality), this may prove problematic as qualified external assessors may be difficult to find.

Not all metrics will be reliably reported by health facilities themselves, however. For example, health facilities may face performance incentives that deter them from reporting negative results. In such cases, assessment by an external party is important. An external party conducting the same assessment in multiple facilities may also acquire a cross-facility perspective that can be valuable in analyzing trends or identifying best practices. Drawbacks of external data collection include its cost and the potential disconnect between data collection and performance improvement efforts. External assessors may also lack local or historical knowledge of the organizational context, impairing their ability to detect underlying causes of performance differences.

Principle 5: Engage stakeholders in assessment process

Involving stakeholders in the design and execution of organizational assessment can increase their ownership of assessment results and commitment to improving performance. Such

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involvement can also create networks that facilitate subsequent diffusion of best practices and performance improvement interventions. Various methods enable input and feedback from representative groups of stakeholders on the assessment process (see box 9. Engaging Stakeholders in the Development of Metrics). Conflicts of interest may occur if stakeholders select metrics that suit their own interests rather than those that rigorously assess organizational performance. Ensuring representation from multiple stakeholder groups offsets this possibility, as does embedding the assessment in discussion of a shared vision for health service–delivery improvement. Piloting or incorporating multiple metrics for the same performance dimension will help verify that the results do not differ dramatically when an alternative metric is used.

Box 9. Engaging Stakeholders in the Development of Metrics

In 2009–10, Ethiopia's Ministry of Health undertook a major hospital reform. As part of that effort, the Global Health Leadership Institute (GHLI) at Yale University, with support from the Clinton Health Access Initiative, developed a survey that was embedded into the Ethiopia Hospital Reform Implementation Guidelines.

Stakeholders included potential patients (community-dwelling individuals), patients, hospital and health center staff, and government officials in the ministry of health. To engage these stakeholders in creating a measurement tool to assess patient experience in hospitals and health centers in Ethiopia, the GHLI team pursued several steps that took approximately twelve months to implement in total:

1. Formation of focus groups with diverse community-dwelling adults on issues important to their experience and to their satisfaction with health care services (for example, hospitals and health centers)

2. Discussion with hospital and health care staff about key concepts in assessing patient experience

3. Drafting of the survey tool

4. Translation to local language and back translation

5. Cognitive interviews with patients to assess interpretation and comprehension

6. Revision of survey items based on feedback from patients

7. Review of results with ministry officials and revision of the surveys

8. Testing in formal validation study

9. Revision and retesting

10. Put into widespread use by ministry

Principle 6: Estimate resources required for data collection

Because the methods used to collect data on different metrics vary in their time- and resource-intensity, anticipating the resource implications of different metrics is important. Estimates of resources for adequate performance assessment should be developed not only for the short-term

investment of current assessment but also for the longer-term process of ongoing performance improvement. Putting in place appropriate data infrastructure could include investments in new staff or staff training, new technology, new forms, and new processes of data collection. Organizations should also consider the resources required to integrate the performance assessment–data collection efforts with the relevant national Health Management Information Systems over the long run.

Principle 7: Align data-collection methods to fit with domain

While multiple data-collection methods are possible for each domain, certain methods may be more suitable for selected contexts. For example, efficiency and utilization rely on quantitative data about the volume of services provided; these quantitative data typically can be collected from primary or secondary sources at the health services facility or from a government agency. Primary and secondary quantitative data may also play a role in measuring quality, access, learning, or sustainability depending on the metric chosen. These latter four intermediate outcomes, however, will typically involve some degree of qualitative data. For example, measuring quality via patient experience could require observing patients' interactions with health facility staff in addition to quantitative assessment via surveys. Measuring access in terms of the availability of services might include speaking with focus groups of community members about their care-seeking experiences as well as observing staff absences at the facility. In short, the data-collection methods must fit the metric, and the necessary human and technical capacity must exist to apply the appropriate methods. Considering appropriate data-collection methods as part of the process of selecting metrics can also help identify synergies where the same process can be used to gather data on multiple metrics.

Making Comparisons

Using appropriate metrics to measure organizational performance along six intermediate outcomes generates a wealth of information about the performance of health service delivery organizations. But does this carefully acquired information indicate a poor level of performance, either at a system or a facility level? Does it provide evidence of a performance gap? The only way to tell is to compare the results of the diagnostic assessment against some benchmark. Several comparisons are possible: within-country comparison, cross-country comparison, comparison against domestic or international technical standards, or comparison against historical levels of accomplishment. With due allowance for context, such benchmarking also guides organizations in what they can reasonably aspire to achieve.

Within-country comparison

Within-country comparison looks at results across health service delivery organizations in a given country, using either the top-performing organization or the average performance level among organizations as the standard of comparison. If the organizations being compared are very different in size, location, or population served, they may be grouped by the shared characteristics most salient to the assessment, or other analytic methods may be used to control for these characteristics. The distribution of performance levels across organizations should also

be examined to determine if patterns exist that might point to possible determinants of performance.

The advantage of within-country comparison is that it adjusts for many, though not all, elements of the environment that impact organizational performance. The disadvantage of this approach is that it does not reveal whether the best performing organizations are actually meeting technical standards of health services delivery. For example, a hospital may provide the best clinical quality in a given country but nonetheless fall short of international standards of care. Within-country comparison is therefore best suited to performance domains like efficiency, utilization, learning, and sustainability for which defined technical standards are less likely to exist.

Cross-country comparison

Comparing organizational performance across countries is attractive when the range of performance in the focus country is limited. For example, if all rural health clinics in a country exhibit a similar rate of utilization, it is difficult to ascertain whether this level of performance is high or low. Comparing against a neighboring country can provide valuable perspective on whether more could be done in this performance domain. It may also provide inspiration and models for performance-improvement strategies. The value of comparing diagnostic assessment results with organizational performance in other countries is further enhanced when those other countries have similar population health needs, health system characteristics, and political and economic environments.

One disadvantage of cross-country comparisons is that they tend to rely on aggregate or average performance scores for each country in the comparison. Such aggregation can obscure the distribution of performance among organizations in each country. This is important because the degree of variation in performance can point to environmental conditions (for example, presence or absence of regulation) that may be influencing facility-level performance.

Like within-country comparisons, cross-country comparisons are best suited to the domains of efficiency, utilization, learning, and sustainability for which universal technical standards do not exist.

Comparison with domestic or international standards

Where technical or legal standards exist, they offer a good benchmark against which to compare the results of diagnostic assessments of organization performance. This approach is well suited to performance domains like quality and access for which standards have been established. Clinical quality, for example, is covered by domestic and international medical practice guidelines, which set standards for the process of clinical care and delivery. Managerial quality is addressed in well-established standards and laws regarding such matters as financial management and procurement. The intermediate outcome of access can also be compared with established standards in those countries that legally guarantee some level of access to health services.

Comparisons with reference to standards are useful because they reveal if even the best performing organization in the country is meeting domestic or international performance standards. Such standards also provide a transparent basis for performance rankings and target

setting. This type of comparison cannot be made regarding the intermediate outcomes for which clear technical or legal standards are lacking.

Comparisons over time

A final possibility is to compare the performance of an organization or set of organizations with its own earlier performance. Historical levels of accomplishments can be a relevant standard for any institution. Where there is sufficient continuity, historical comparisons can help in isolating the key determinants of observed changes in performance.

Historical comparisons are possible only where adequate historical data exist to convey an accurate and comprehensive picture of an earlier performance. They are also most relevant where environmental conditions are relatively stable—without drastic upheavals caused by pandemics or warfare. Some continuity in implementation capability, including comparable levels of resources, is also important if comparisons over time are to be fair. Historical comparisons can also contribute to staff members' motivation to reclaim past levels of achievement.

The six domains of quality, efficiency, utilization, access, learning, and sustainability present clear dimensions by which to assess health service delivery organizations. With due care, metrics can be selected to measure each of these intermediate outcomes. A variety of comparisons can then reveal whether the observed organizational performance is up to standard. The next two parts of this Guide present a taxonomy of strategies to improve organizational performance and delineate a method for selecting among strategies.

PART V. A TAXONOMY OF STRATEGIES FOR IMPROVING ORGANIZATIONAL PERFORMANCE

This Guide assists in the selection of strategies to improve the delivery of health services by organizations, and thus improve health outcomes. Thus far the Guide has considered the performance of delivery organizations in context, with attention to environmental conditions and implementation capabilities and the imperative of aligning these with any selected strategy for improvement. It has also reviewed some of the different disciplinary frameworks within which organizational performance can be studied, and considered how the assumptions and analytical approaches of each can yield interventions favored within that discipline. Turning to the measurement of organizational performance, this Guide has identified six domains by which to assess organizational performance, and given careful consideration to measurement and comparative assessment of those intermediate outcomes.

The next topic is the diversity of strategies available for improving performance. The range of available strategies is a great resource, but can also be a hindrance, complicating the task of strategy selection. Can the array of available strategies be classified? What would be a useful classification scheme? The taxonomy presented below is a tool for classifying strategies into distinct areas. It provides valuable guidance not only for sorting and specifying available strategies, but also for determining when those strategies will be effective.

A Taxonomy of Seven Strategies

This innovative taxonomy of strategies to improve the performance of health service delivery organizations emerged from a major literature review of 181 empirical studies of health service–delivery organizations in low- and middle-income countries (see box 10. Resource on Categories of Strategies to Improve Service Delivery). That review used an inductive process to group performance determinants. It then refined this initial grouping further, generating a concise taxonomy.

Box 10. Resources on Categories of Strategies to Improve Service Delivery

For a fuller discussion and related references, see Pallas et al (2011).

See also Peters et al. 2009..

Systematic reviews, such as those done by the Cochrane Collaboration (www.cochrane.org), provide insight into how strategies are defined and categorized.

The taxonomy identifies seven distinct strategy areas (see table 3. A Taxonomy of Strategies). Each of the seven strategy areas incorporates an understanding of the drivers of organizational behaviors and the underlying root causes of poor organizational performance. The taxonomy identifies the broad disciplinary background of each strategy area and then delineates their key constitutive elements. Further, and most usefully for those striving to improve organizational

performance, the taxonomy indicates the requisite conditions for effectiveness for the interventions to achieve their intended impact. Finally, the taxonomy provides specific illustrative examples of interventions in each area.

In exploring this taxonomy, it should be kept in mind that no one-to-one correspondence is implied between any particular strategy and performance shortfall. Any single strategy may be suitable to address multiple root causes of an observed performance problem. Likewise, an identified root cause may be amenable to strategies from more than one category. Nor are the strategies mutually exclusive—several strategies may be used together depending on an organization's environmental conditions and implementation capability.

A further point to emphasize is that the strategies in this taxonomy can be applied in many organizational settings. They are relevant to individual frontline service delivery organizations and are applicable to administrative or support organizations within a health system. The same strategy categories and many of the same specific strategies can also be used at a system level to improve organizational performance across an entire health system.

Table 3. A Taxonomy of Strategies

STRATEGY AREA	DISCIPLINARY MINDSET	KEY ELEMENTS	CONDITIONS FOR EFFECTIVENESS	EXAMPLES OF INTERVENTIONS
Standards and guidelines	Law, science, and ethics	• Identify processes that can be standardized • Develop standard operating procedures • Train staff on standards and guidelines • Incorporate adherence to guidelines into staff and institutional performance criteria	• Processes can be standardized • Adherence to guidelines can be assessed and monitored • Moral rationale exists for regulating behavior	• Clinical pathways • Standard operating procedures, e.g., admissions, warehousing, waste disposal, patient records
Organizational design	OB/OT, management	• Select functional or cross-functional structure • Determine lines of reporting for staff and the effective span of control for managers • Align responsibility and authority in each role	• Cross-functional collaboration is important for implementation • Organization is large and production/service delivery processes are complex	• Integrated care teams within hospitals for specific diseases, with dedicated management and administrative support
Education and training	Education and public health	• Provide high-quality pre-service training linked to competencies and socialization into norms of professionalism • Implement system to identify knowledge and skills gaps and to fill through in-service training • Facilitate staff access to new technical knowledge through information resources and learning events	• Skills and/or knowledge gap is root cause of implementation problem • Staff can be educated and are already interested/motivated	• In-service training for doctors, nurses, midwives • Provision of learning materials / access to new technical knowledge resources for clinical staff • In-country training programs

STRATEGY AREA	DISCIPLINARY MINDSET	KEY ELEMENTS	CONDITIONS FOR EFFECTIVENESS	EXAMPLES OF INTERVENTIONS
Process improvement and technology and tool development	Engineering, management	• Implement measurement of process indicators • Identify opportunities for process improvement • Identify and obtain needed tools, equipment, and materials • Develop and test new processes and technologies (consider borrowing solutions from other organizations)	• Human-proof/clever systems can be designed and implemented cost-effectively	• Data capture and feedback mechanisms • Cell phone/PDA disease surveillance • Reminder systems • Plan-Do-Study-Act (PDSA) cycles
Incentives (monetary or non-monetary)	Economics, behavioral psychology	• Define performance objective • Identify relevant incentives related to objective based on input from staff • Design incentive scheme and align staff authority with level required for target behavior • Implement incentive scheme and monitor performance	• Incentivized behavior is aligned with objective • Incentivized staff has control over outcome • Outcome is reliably measured • Gaming is limited • Incentives are affordable	• Payment conditional on achievement of targets, e.g., immunization, prenatal visits, assisted deliveries • Private wings in public hospitals to keep physicians from leaving hospitals for private practice • Creation of reliable monitoring systems for organizational outputs

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STRATEGY AREA	DISCIPLINARY MINDSET	KEY ELEMENTS	CONDITIONS FOR EFFECTIVENESS	EXAMPLES OF INTERVENTIONS
Organizational culture	OB/OT, sociology, anthropology, psychology	• Survey staff and management attitudes towards and beliefs about the organization and its work • Identify formal and informal structures, processes, group dynamics, and communication patterns that contribute to staff attitudes and beliefs • Develop (with input from all staff) a vision for the organization's objectives and the organizational culture that would facilitate achievement of those objectives • Determine changes needed to structures, processes, groups, and communication to create the desired culture	• Reference groups can be identified and engaged • Team-based work is required • Leadership	• Enhance supportive supervision and accountability • Strengthen teamwork • Embed quality improvement principles and practices
Leadership and management	OB/OT, management	• Establish leadership/management roles in health facilities including revised lines of responsibility and authority • Equip leaders and managers with necessary autonomy and authority to develop and achieve organizational mission • Develop problem solving skills at facility levels	• Government must be willing to devolve management responsibility and authority • Monitoring systems for accountability must be credible • Legal systems in place to ensure accountability and recourse	• Develop and support executive role at facilities (e.g., hospital CEOs) • Create community management committees for local health facilities • Training, mentoring, and coaching programs

Source: Bradley et al. 2010, Table 6.

Strategy 1: Standards and guidelines

Key elements of this strategy area include identifying processes that can be standardized, developing standard operating procedures, training staff on standards and guidelines, and incorporating adherence to guidelines into staff and institutional performance criteria. This strategy will be most effective in situations in which there is a clear consensus around the correct way to perform certain organizational tasks based on scientific evidence or on ethical or legal grounds. This strategy area is therefore most closely associated with disciplinary frameworks in the natural sciences, law, and ethics. Examples include clinical care pathways and standardized procedures for tasks such as record keeping, staff and patient safety, and procurement.

Strategy 2: Organizational design

Strategies in this area address changing the design or configuration of existing organizations or creating and supporting new types of organizational arrangements. Such strategies encompass the selection of a functional or cross-functional structure, establishment of reporting lines for staff, determination of managers' effective span of control, and alignment of authority and responsibility in each role, as well as the design of systems of organizations (for example, referral networks), and the choice of whether to engage new types of organizations (for example, community health workers or nongovernmental providers). This strategy area is associated with the disciplines of management and organizational behavior and theory. It will be most effective under conditions in which an organization's formal structure can be designed to elicit desired behaviors from staff.

Strategy 3: Education and training

This strategy area focuses on equipping organization members with the knowledge and skills required for their roles. Key elements include providing preservice training linked to competencies, socializing new staff into norms of professionalism, implementing systems to identify and address knowledge and skills gaps, and facilitating staff access to new knowledge through information resources and learning events. This commonly used strategy area, informed by the disciplines of education and public health, will be most effective when the knowledge and skills needed for organizational performance can be identified, distilled, and transmitted, and when staff is willing and able to apply the acquired knowledge and skills.

Strategy 4: Process improvement and technology and tool development

Strategies in this area begin by identifying opportunities for improvement based on measurement of the individual steps in those work processes in which an organization is underperforming. Collecting data on each stage of a process can help pinpoint where inefficiencies or errors occur; data capture and feedback mechanisms are therefore critical to this strategy area. Once opportunities for improvement are identified, interventions may involve obtaining or developing the tools needed to improve the process, and then testing the new processes and technologies. Inspired by the disciplines of engineering and management, this strategy area will be most effective under conditions in which organizational tasks can be made more efficient and less susceptible to human error through the creation of better tools and work flow systems. Examples include the use of quality management approaches (for example, Total Quality Management, Six

Sigma), "Plan-Do-Study-Act" (PDSA) cycles, flow charts, and disease surveillance using mobile devices.

Strategy 5: Incentives (monetary or nonmonetary)

Strategies in this area involve two stages: the design of appropriate incentives followed by implementation of the incentive scheme. Components of incentive design include defining performance objectives, soliciting staff input to determine relevant incentives, and assuring that staff authority is at the level required to achieve the performance objectives. Components of the implementation stage include notifying staff of the incentive scheme, monitoring staff performance, and awarding incentives consistent with the parameters of the scheme. Drawing on theories from economics and behavioral psychology, incentive strategies will be most effective in situations in which staff behaviors of interest are shaped primarily by external rewards and punishments. Incentives are often monetary or otherwise material; however, they can also be nonmaterial rewards (for example, Employee-of-the-Month awards) that increase the esteem of the recipient. Incentives can be used to reward desired behaviors (positive incentives) or to punish undesired behaviors (negative incentives). Penalizing facilities by limiting the government budget allowance based on performance in the previous year is an example of a negative incentive approach.

Strategy 6: Organizational culture

Strategies in this area involve changing an organization's culture: the prevailing patterns of expected behaviors, attitudes, and norms, which develop among an organization's members based on shared experiences and, which members presume to be valid. Changing an organization's culture requires, first, understanding the current culture and the ways in which it impedes high performance. Assessing the current culture includes surveying staff about their attitudes toward the organization and identifying key communication channels and opinion leaders. Essential elements in the process of changing an organization's culture include developing a shared vision of the organization's objectives, adjusting formal structures and processes to support the desired culture, and working through existing networks and opinion leaders to introduce new ways of thinking about and conducting the organization's work. Informed by the disciplines of sociology, psychology, anthropology, and organizational behavior and theory, this strategy area will be most effective where staff behaviors of interest are primarily influenced (often tacitly) by social norms and informal interpersonal dynamics.

Strategy 7: Leadership and management

This strategy area addresses the need to build leadership and management roles and capacity within organizations. The approach is not focused on particular individuals but rather on leadership and management roles that could be occupied by different individuals within the organization at different times. Grounded in the disciplines of management and psychology, this strategy will be most effective under conditions in which tasks are complex, requiring strong coordination of subordinate roles, and in conditions in which the objectives of the organization are multifaceted and may be easily derailed. This strategy area is predicated on those in leadership and management roles, both formal and informal, having the necessary autonomy from external regulators and authority within the organization to achieve the organization's

mission. Interventions within this strategy area include creating executive roles within health service–delivery organizations (for example, hospital CEOs, management teams); providing training, mentoring, and coaching programs for leaders and managers; and establishing monitoring systems to hold organization-level managers accountable to agreed organizational objectives.

Sources for Strategy Options

The above taxonomy presents clear strategy areas, the disciplinary mindsets that inform them, their key elements, and crucially, conditions for effectiveness. It also provides a few examples of each. These examples are, of course, merely indicative and may not be applicable in different settings.

With the framework provided by the taxonomy, it is possible to move from identifying and confirming a strategy area that will address the performance problem at hand, to ascertaining the conditions for effectiveness but still be at a loss for specific strategy options. What are some sources of particular strategies or inspiration? Two promising sources are positive deviance and imitation with adaptation.

Positive deviants within the community

The central premise of a positive deviance approach is that solutions to problems that face a community often exist within that community, and that certain members possess wisdom that can be generalized to improve the performance of other members (see box 11. Positive Deviance: Childhood Nutrition in Vietnam). In the case of organizational performance, the community refers to a given group of health service–delivery organizations or a group of managers and workers within an organization. Positive deviants in health services are those organizations or individuals who consistently demonstrate exceptionally high performance in an area of interest.

Many of the strategies used by positive deviants rely on resources that already exist in the local environment. This can increase their adoption and sustained use. Importantly, the positive deviance approach allows for the explicit integration of real-life implementation issues and organizational context. In seeking to identify possible strategy options by looking within the community, the positive deviance approach attends not only to the processes and practices that are present in top performing organizations but also to the context (for example, organizational culture, leadership support) in which they are implemented.

Box 11. Positive Deviance: Childhood Nutrition in Vietnam

Reducing childhood malnutrition in Vietnam is a goal of the international nongovernmental organization, Save the Children. Its researchers devised a strategy for improving childhood nutrition by observing the behaviors of positive deviants, and then acting to spread those behaviors.

Jerry Sternin and Robert Choo became intrigued when they noticed that the children of a set of mothers in one village seemed better nourished than other children in the village. They discovered that the first set of mothers gathered tiny shrimps and crabs from local rice paddies each day and added them along with sweet potato greens to their children's meals. The shellfish were plentiful and free, but conventional wisdom held that these foods were improper and perhaps even harmful for young children.

After discovering the mothers' practice, Save the Children launched programs to counter conventional views of these nutritious foods and train all mothers to gather them. Within two weeks of hands-on learning in many places, women saw that the foods did not make their children sick and that their children became healthier. Within two years, 80 percent of the children targeted for the project were no longer malnourished. Since then, Save the Children has rolled out this model to many other villages in twenty Vietnamese provinces.

The solution to the nutrition problem did not require many resources; rather it required community members to change their behavior and to start emulating the positive deviants (those with the same resources but without the problem of malnourished children). What is important is not the resources or type of food but the identification of relevant positive deviancy within each local community and the subsequent promotion of widespread behavior mimicking the behavior of positive deviants.

Source: Sternin and Choo 2000.

Other examples of the power of a positive deviance approach to improve health outcomes concern pregnancy outcomes (Ahrari et al. 2002) and condom use (Positive Deviance Initiative www.positivedeviance.org).

More information about positive deviance may be found in Bradley et al. 2009; Walker et al. 2007; Emery and Trist 1965; Susman 1983; Van de Ven 1995; Berta and Baker 2004; Greenhalgh et al. 2004; Auerbach et al. 2007; and Yuan et al. 2010.

Imitation with Adaptation

Another valuable source for innovative ideas is proven strategies demonstrated by those outside the community. Because the contexts in which these strategies were formulated and successfully implemented is different, it is imperative not simply to adopt those strategies, but rather to imitate with adaptations. The challenge is to discern what is applicable from elsewhere, and then determine how to adapt it to the local situation and context.

In some instances, this will be learning from the experience of health organizations in other countries or regions. A planner or manager could decide on a strategy area, and then search for particular strategy options demonstrated outside the immediate context. Many compendia of "what works" have become available in the health field as increased attention is being paid to learning and sharing across the international community (see box 12. Imitation and Adaptation).

Box 12. Imitation and Adaptation

Innovative organization strategies can be found in a variety of regional and global sources of information including published literature and online databases.

Improving Health Service Delivery in Developing Countries: From Evidence to Action by David H. Peters et al. (2009) compiles the results of systematic reviews of published literature on different service delivery–improvement strategies such as health worker training, strengthening pharmaceutical logistics systems, contracting, and decentralization.

Several online resources also collect and report the results of systematic reviews. These include www.healthsystemsevidence.org and www.thecochranelibrary.org.

Other online resources collect and disseminate a wide range of health care–delivery literature, such as at www.eldis.org.

Other sites focus on specific organizational strategies. Some of the global USAID-financed programs such as the Quality Assurance Project (www.qaproject.org), the CapacityPlus project (www.hrhresourcecenter.org), and the Health Systems 2020 project (www.healthsystems2020.org) are good sources for information of this type.

In addition to collections of papers and articles, a number of published manuals and guidelines provide practical ideas on design and implementation. Examples include *Designing and Implementing Health Care Provider Payment Systems* by Langenbrunner, Cashin, and O'Dougherty (2009); and *Performance-based Contracting for Health Services in Developing Countries: A Toolkit* by Benjamin Loevinsohn (2008).

Roberts et al. (2003), *Getting Health Reform Right: A Guide to Improving Performance and Equity* use the term "conditional guidance" for how one can use evidence on strategies, noting the importance of thorough gathering of relevant evidence on strategies from global experience and then adapting that evidence to local conditions.

Learning from others need not be restricted to the health sector. Quality management literature originally intended for conventional businesses and manufacturing enterprises has been applied far beyond those settings, including health facilities. Successful initiatives in other sectors may also be applicable in health, such as decentralization in education or contracting out in the public transportation sector. In a well-known example, WHO has advocated that surgeons in hospitals adopt checklists, copying a safety procedure followed by airline pilots.
See http://www.who.int/patientsafety/safesurgery/ss_checklist/en/index.html

Because new ideas are hard to invent, following proven approaches has much to recommend it. On the other hand, because local conditions vary, successful imitation involves adapting and adjusting ideas from elsewhere to local circumstances. Imitate and adapt is therefore an important qualifier to the recommendation to follow proven strategies.

PART VI. HOW TO CHOOSE STRATEGIES

Having noted the importance of context in seeing organizational performance, and explored which aspects of performance to measure and how, and then classified strategy areas into a taxonomy that includes their conditions for effectiveness, this Guide now turns to the process of choosing particular strategies. The material presented in this final section provides a means of integrating context into strategy selection, of ensuring chosen strategies address root causes, and of deriving criteria for final strategy selection.

As emphasized earlier, the process of selecting strategies to improve organizational performance is necessarily both a conceptual and a practical exercise. The diagram below (see figure 2. Conceptual Framework for Choosing Strategies) presents the overarching conceptualization of the process of strategy selection, while much of the material that follows provides the explicit steps to take and questions to ask through the process presented there. This includes determining the root cause of a performance problem and ensuring that any strategy under consideration has a direct and evident relationship to that root cause. It also entails exploring environmental conditions and implementation capabilities to ensure they can be aligned with strategies under consideration. Finally, it explores how to devise criteria-assessing strategies as well as methods for comparing different potential strategies.

Figure 2. Conceptual Framework for Choosing Strategies

| Performance shortfall identified | → | **(1)** Analyze root causes | → | **(2)** Assess environmental conditions | → | **(3)** Assess implementation capability | → | **(4)** Develop strategy options |

CRITERIA FOR STRATEGY SELECTION

- Does the strategy address the root causes of the performance shortfall?
- Is the strategy feasible and acceptable within the environment?
- Can the strategy be implemented with the organization's current capability, or does it include steps to build the required capability?
- Are the conditions for optimal effectiveness of the strategy present?

(5) Select strategy using criteria derived from (1), (2), and (3)

Performance objectives achieved

Strategy Implementation

Source: Adapted from Pallas et al. (2011), Figure 2.

Diagnosing Causes of Poor Performance

Diagnosing the causes of poor performance is essential to selecting a strategy. The root causes of an organization's poor performance are the underlying or systemic factors that precipitate the causal chain of behaviors and events that ultimately produce an observed shortfall in performance. If root causes are left unaddressed, organizational performance problems—the eventual manifestations of symptoms of those underlying causes—are likely to recur.

Several methods exist for analyzing root causes. Some of these employ formal techniques and tools such as Pareto diagrams, "fishbone" (or Ishikawa) diagrams, and logic trees (see box 13. Some Formal Tools for Root Cause Analysis). These formal tools can be used to group causes into categories. They can help to dissect an occurrence into its contributing factors and component parts and pinpoint where an error or failure occurred.

Box 13. Some Tools for Root Cause Analysis

Among the many formal tools available for conducting root cause analysis are Pareto diagrams, fishbone (or Ishikawa) diagrams, and logic trees.

Pareto diagrams are based on the idea that a small number of factors cause the majority of undesirable outcomes. Pareto diagrams are bar charts that display the frequencies of reported causes in descending order. They can be used to identify common causes when multiple adverse events are being investigated.

Fishbone (or Ishikawa) diagrams group disparate elements contributing to an adverse event into broader causal categories. Examples of categories of causes include people, process, equipment, and environment. Fishbone diagramming does not illustrate a temporal sequence of events in the causal chain nor does it display the importance or commonality of a particular issue.

Logic trees arrange each set of hypothesized causes in progressively lower levels, ending with the bottom-most level designated as the root causes. The hypothesized causes are checked using data collected during the root cause analysis. Any hypothesized causes not supported by data are then eliminated.

For further discussion of root cause analysis in the context of health service–delivery organizations, see Elizabeth Bradley, Chapter 1, "Hospital Leadership and Governance" in Federal Democratic Government of Ethiopia (2010).

A similar technique is presented as a "health system diagnostic tree" in chapter 7, "From Diagnosis to Health-Sector Reform" of Roberts et al. (2003).

Formal tools prompt analysis of cause and effect relationships by exploring why a given event occurs at each level of investigation. As it repeats the question, "Why?" the inquiry moves further toward root causes. That is, an inquiry into an undesired outcome reveals a proximate cause for a problematic event. The inquiry then focuses on that proximate cause, asking why it occurred. The answer from that level is then itself investigated. As the inquiry is repeated at each

level, the process moves further along a causal chain and closer to root causes. While the causal chain may be traced back almost indefinitely, in practice, several iterations of the exercise generally yields a level of root causes that are addressable by the entity in which the poor performance is being investigated.

Whatever formal method is employed in root cause analysis, it is advisable that the team conducting the inquiry includes organization leaders as well as the frontline staff most familiar with the processes and systems under review. Several advantages follow from this participation. For example, conducting an open session to construct a causal diagram allows everyone to brainstorm and contribute ideas, and generates many ideas quickly. It also builds group understanding as members are exposed to and appreciate others' viewpoints, with the diagram's structure making room for all perspectives. Open participation can also check any tendency to rely on assumptions or speculations rather than evidence in ascribing causes. Finally, the process helps alternative approaches emerge. Identifying multiple causal factors may help to generate multiple strategy options.

Some tools for root cause analysis emphasize the importance of identifying a single major cause and focusing remedies on that cause. Other tools emphasize that several causes may be relevant at the same time, calling attention to the need for multiple strategies to improve performance. For more complex organizations or processes, or analysis at the level of systems of organizations, several root causes are more likely to be important and need several change strategies to improve performance.

While diagnosing the causes of performance problems may involve formal tools and techniques, it is not always the case. Recent work in systems thinking and complexity science suggest other paths. This work shares with formal root cause analysis an interest in examining the underlying systemic causes of performance problems rather than their mere manifestations and symptoms. It gives greater emphasis, however, to dynamic connections between the parts of any complex system. More attention is directed to the sensitivity of the component parts of a system to changes elsewhere in the system. When systems thinking addresses causality, it conceptualizes processes and outcomes as nonlinear, additive, and unpredictable. Researchers working in this area are developing methods to apply systems thinking to health system reform (see box 14. Resource on Systems Thinking for Health Systems).

Box 14. Resources on Systems Thinking for Health Systems

Roberts et al. (2003) *Getting Health Reform Right: A Guide to Improving Performance and Equity* presents an analytical framework emphasizing multiple channels of strategy.

A recent publication on systems thinking for health systems is *Systems Thinking for Health System Strengthening* (de Savigny and Adam 2009).

Another effort to apply systems thinking to public policy is "Exploring the Science of Complexity: Ideas and Implications for Development and Humanitarian Efforts" (Ramalingam et al. 2008).

Attention to the causes of performance problems is essential—in whatever manner is most useful to the problem at hand or accessible to the actors involved. Once causes are diagnosed, strategy areas that address those causes can be identified. It is imperative that interventions are designed from within the strategy areas that correspond to the identified root causes (see table 4. Correspondence between Root Causes and Strategy Choices).

Table 4. Correspondence between Root Causes and Strategy Choices

STRATEGY AREA	ROOT CAUSE OF PERFORMANCE GAP						
	Evidence about best practice does not exist or has not been disseminated	Authority and accountability for action is not formally aligned with staff responsibilities	Staff do not have required skills and knowledge for assigned tasks	Tools and technology that allow staff to perform at standard are lacking	Staff are not motivated to perform assigned tasks	Organization does not support staff in performing assigned tasks	Staff lack guidance and vision for their work
Standards and guidelines	X						
Organizational design		X					
Education and training	X	X	X		X		
Process improvement and technology and tool development				X	X		
Incentives					X	X	
Organizational culture					X	X	X
Leadership and management	X	X	X	X	X	X	X

Source: Bradley et al. 2010, Table 7.

All strategies proposed for consideration should have a direct relationship to the underlying causes of performance problems. That is, it should be clear both how and why a strategy would have a positive impact on the problem that is being addressed. For example, proposals that advocate organizational redesign should be put forward when it has been established that a root cause of poor performance is that authority and accountability are not formally in accordance with staff responsibilities. Strategies involving incentives are appropriate when the diagnosed root causes include a lack of motivation among staff members to perform assigned tasks or a lack of organizational support for staff in performing assigned tasks. Where several root causes have been identified, each root cause should be linked to at least one strategy intended to address that cause. One strategy could impact several causes, and one cause may require several strategies for a higher likelihood of positive impact.

Assessing Environmental Conditions

Every organization or set of organizations has a specific constellation of environmental conditions that influences the applicability and likely effectiveness of a given performance improvement strategy. Mapping this array of environmental conditions can reveal potential pitfalls in strategies that otherwise seem well suited to the organization's internal dynamics. Environmental conditions include the distribution of political power, the prevailing economic outlook, demographic and epidemiological transitions, health care financing and reimbursement systems, the structure of health care markets, and health system–governance arrangements.

In assessing environment conditions for the purposes of selecting among possible strategies, relevant questions include:

- Which changes in environmental conditions are likely in the short, medium, and long terms?

- How are other organizations responding or proactively changing?

- Which factors in the environment enable or constrain performance?

- Which environmental factors, if any, are mutable?

These types of questions could be addressed via several methods. Organizations could solicit expert external advice to assist them in mapping environmental trends of which they may be unaware. Organizations can also convene internal discussions among their members or external discussions with other organizations in their industry. Identifying current and possible future trends in environmental conditions can help decision makers not only choose strategies that are in alignment with their environmental conditions, but also avoid strategies that are likely to become rapidly obsolete.

While environmental conditions are generally conceived as contemporaneous, an organization's historical record can also be an important contextual factor, particularly the history of an organization's past efforts to improve performance. Those efforts can offer successes to emulate as well as missteps to avoid. The success (or lack thereof) of past performance improvement programs can also be an important contributing factor in organization members' willingness to

try new strategies. Assessment of an organization's historical experience should answer questions such as the following:

- Which performance interventions have been tried before? What were the results?

- Why did those interventions succeed or fail?

- How are conditions today similar or different than in the past?

- Which lessons can be learned to apply going forward?

Answering these questions typically involves collecting data from an organization's members, either via survey, interview, focus group, or facilitated larger group discussions. One challenge in assessing historical context is that an organization's members change over time. In some cases, there will not be any members with institutional memory of prior performance improvement efforts. In these cases, it may be relevant to draw on members' past experiences in other organizations, which may provide applicable lessons for strategy design and a gauge of members' likely degree of receptivity to new performance improvement initiatives.

Assessing Implementation Capacity

An organization must be able to implement the selected performance improvement strategy. Implementation capability should be evaluated prior to final strategy selection and in light of the strategy options under consideration. The purpose of the assessment is to identify which strategies could be successfully deployed given the organization's ability and motivations. Assessments of implementation capability should answer the following questions:

- Which organizational resources (for example, staff, technology, expertise, leadership) would be necessary for change?

- Are the needed resources available? Are there any slack resources not currently committed to technical production?

- Do staff perceive a need for change, and are they motivated to change?

- Do staff perceive themselves to be capable of implementing change?

- Is there senior management and stakeholder support for the change?

Answering these questions will require both quantitative and qualitative data collection, which could be accomplished by actors who are internal or external to the organization.

The existence of slack resources merits particular attention. An important part of assessing implementation capability is understanding the degree to which slack resources exist and can be mobilized, as well as which mechanisms the organization might use to compensate when slack resources are exhausted. Slack resources are physical, human, or financial resources within the organization that are not currently committed to technical production and that, if deployed, could move the organization toward its theoretical, optimal production frontier. The existence of slack

resources may indicate either enhanced or diminished implementation capability. An organization can activate and direct its slack resources toward performance improvement efforts; however, if slack resources arise from inefficiencies in the organization's operations, they may be a symptom of diminished implementation capability, which may limit performance improvement efforts.

Deriving Criteria for Selecting Strategies

The criteria for strategy selection derive from all the foregoing assessments of root causes, environmental conditions, and implementation capability (see figure 2, above). The selected strategy(ies) should address the root cause(s) of the organization's performance gap, be feasible and acceptable given environmental conditions, and be implementable using the organization's current capability or include provisions for feasible and cost-effective development of the required implementation capability. The strategies' conditions for effectiveness should also be present (See table 3, above).

What if multiple strategy options exhibit these characteristics? Potential strategies may then be compared using more specific criteria derived from the review of organizational context. Such criteria might include political feasibility, acceptability within community norms, cost effectiveness given health system financing and payment arrangements, time required to implement, and support from leadership and management.

As with root cause analysis, some methods for comparing strategies are more formal than others. Applicable formal methods for rating strategies include qualitative and quantitative matrices (see box 15. Formal Matrices to Compare Strategy Options). Both types of matrices can help to organize information and make trade-offs more explicit. Before strategies are compared and rated, a system for weighting criteria and aggregating scores across criteria should be established. By displaying the criteria used to judge strategies and the ratings achieved by those strategies, matrices help keep the decision-making process transparent. Final decisions are then easier to explain, both within an organization and to external stakeholders. Estimating values for matrices, whether numerically or descriptively, is not a perfect science. Each rating is an approximation—an expression of judgment and preferences—perhaps an informed guess, not an exact measurement. Thus, matrices should be used as guides to frame collective discussions.

Box 15. Formal Matrices to Compare Strategy Options

In a qualitative matrix, the ratings might be, for example, high, medium, or low for anticipated annual expense; and unclear, fair, good, or excellent for probable impact on productivity. In a quantitative matrix, numerical scores may be assigned to convey the ranking. One advantage of the quantitative matrix is that scores can be summed or weighted across criteria to facilitate the process of identifying the most desired strategy. One drawback is that numbers may be presumed to indicate actual absolute measurements rather than a relative scoring. An illustration of qualitative and quantitative matrices is included in the Liberia case study below.

Other methods for comparing strategies involve modeling and estimates. These can be essential where empirical studies using facility- and field-based research are not available for all strategies

under consideration. In these instances, comparisons of several alternatives become possible using estimation tools such as projection or simulation models. These present hypothetical comparisons based on explicit assumptions (see box 16. Comparing Strategies Using Models and Estimates).

Box 16. Comparing Strategies Using Models and Estimates

Modeling can be a useful approach to estimate the effects of different strategies on specific intermediate outcomes.

Statistical models (for example, econometric models) would typically use data from both the supply side (health facility data, for example) and the demand side (household or patient survey data, for example) to estimate the effect on outcomes of specific variables related to strategies. These estimations could be used to predict the effects of changes in these variables from implementation of strategies. For example, if, using existing data, one could estimate the effect on utilization of a priority service at clinics from adding a network of community-based health workers in clinic areas; then, in principle, one could model statistically the predicted effect on utilization from adding such workers in other areas. It may be possible to develop such predictions for several different strategies and compare them in terms of costs and effects. These types of analyses are often done as part of the preparation of large service delivery–improvement programs.

Models may also incorporate a mix of statistical and descriptive evidence. Marginal Budgeting for Bottlenecks (MBB) is a modeling method, which is widely used for estimating the effects of service delivery–improvement strategies and can be used in comparing strategy options. MBB compares the current levels of access, utilization, and quality of services for a population with the achievement of full "effective coverage," (which is reached when all those in need of a service receive it at an adequate level of quality). MBB then models different strategies to improve a series of successive steps toward effective coverage; first it increases access, then use, and then quality. The methodology estimates the increase in effective coverage at each stage as well as the costs in moving toward effective coverage. The evidence for these predictions usually comes from a mix of statistical analysis, expert opinion, and descriptive modeling.

A limitation of the MBB tool is that it emphasizes a sequential approach whereas other strategies may act on some or all of the components at the same time, on both the supply and demand sides. With excellent data, this can be addressed, but often such data are lacking. However, an advantage of the MBB tool is that it is relatively easy to understand; the computations are fairly straightforward if the intervention package is not too complex.

See   http://www.who.int/pmnch/topics/economics/costing_tools/en/index12.html   for   more information.

Different methods for comparing strategy options can be useful. Both formal matrices and models can help to make the process of comparison explicit and transparent. They cannot provide a definitive answer indicating a single right strategy to pursue, but they are valued tools for reaching a decision that can be widely understood and endorsed.

The process of selecting a strategy (as diagramed in figure 2, above) is cyclical. This reflects the fact that the underlying causes of performance problems, the environmental conditions in which organizations are situated as well as the implementation capabilities of organizations all evolve over time. Further, a change in any one of these generates feedback that can affect the others. Thus, strategies to improve organizational performance will need to be periodically re-aligned through a continual process of performance assessment and intervention.

Choosing Strategies to Improve Performance: Two Examples

This section provides two examples of choosing strategies to improve the performance of health service–delivery organizations. The first, the development of family doctors in Poland, is at the level of a national health system. The second, lowering postsurgical infection rate in Monrovia, Liberia, is at the level of individual facilities.

Example I. Strategic organization change at the system level: the development of family doctors in Poland

The transition in the 1990s from a centrally planned economy and communist party rule to a market economy and democracy presented opportunities for significant reform in Poland's health care system. The organization of health care delivery at that time followed the Semashko model found in much of Central and Eastern Europe and the former Soviet Union. Primary care was delivered largely through multispecialty group practices in policlinics. Inpatient care was delivered through hospitals, either general or specialized. Public health services were the responsibility of offices within local governments. Most health care facilities were funded by public budgets and owned and operated as government organizations. The different parts of this public system were not well integrated. A relatively small but growing private sector had emerged as the capacities of the public system eroded, but this private sector was also fragmented.

The old Semashko-style system had several failings: the costs of outpatient units were high; outcomes did not meet patients' expectations; access to doctors was notably insufficient; continuity of care was limited; and too many patients were referred to specialists and hospitals. Health care was also not family-oriented, as mothers, fathers, and children had different doctors. The general opinion was that this system was not effective.

In the early 1990s, a group of innovative Polish physicians working in Krakow and associated with the Jagiellonian University faculties of medicine and public health identified several causes of this poor performance. The number of specialists involved in primary care was excessive, and these specialists were not sufficiently trained to provide a complete package of services to families. Rigid organizational structures and weak management resulted in the fragmentation of physician and nursing services, public health services, and referral options. Salaries were low, and providers had few incentives to improve their abilities and performance.

After a review of local context and strategy options, these reform-minded physicians chose to pursue a strategy to reform the organization of primary care. The strategy entailed introducing a new type of provider and a new type of organization: the family medicine physician in individual or small group practice. With the introduction of family medicine, decision makers aimed to

improve patient satisfaction and patient orientation, access, and care continuity, as well as expansion of preventive care.

Family medicine in Poland expanded in the 1990s and now comprises a large share of the total primary care practice in Poland. According to a recent estimate, by 2005 there were 9,000 Polish physicians certified in family medicine compared to a total physician workforce of about 84,000 or about 11 percent of the total (NB: the share of family doctors among primary care doctors is higher). This number includes both newly-trained family physicians as well as retrained former specialists and general physicians. Most of these family medicine practices are privately owned by physicians. Solo practices are found mainly in rural areas and small cities, while group practices have been established in large cities. District nurses are employed by these practices. Patients choose their own primary care doctor and district nurse. Primary health care is paid for by the National Health Fund.

The development of family physicians and their practices in Poland is in part due to the initiative of physicians. It can be linked to explicit health system–reform strategies aimed at creating a receptive environment and increasing the capabilities of these providers. Major reforms in health care financing and the administrative and organizational structures supporting health care delivery have helped enable the family physician reforms. The development of national health insurance and regional insurance funds that pay providers a fixed amount per enrolled patient (capitation) along with opportunities for patient choice of provider has created a revenue flow for the new family physicians. It has also enabled them to reap the financial benefits of efficiencies in practice. Additional funding for public health services also helps support family physicians who integrate such services in their family practice. Decentralization of funding to provinces and some municipalities has enabled experimentation in local areas and led to further innovation.

The development of family physicians also required the significant development of new education and training resources, including curricula and training programs. The College of Family Physicians in Poland (http://www.klrwp.pl/eng/main.html) was established in 1992 and today plays a leading role in expanding education and training, professional collaboration, and scientific development of family medicine. The national government supported these efforts by establishing regulations to enable changes in primary care practice.

Today, family physicians are a well-established part of Poland's primary health care organization. There has been some, although perhaps not enough, effort to document the positive impact of the reforms that made this possible. There is evidence of improved quality of care, more comprehensive primary care practice, and enhanced patient satisfaction.

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This example outlines the specific steps taken in a systematic organizational improvement process, following the outline of figure 2.

Step 1. Define the problem

High postsurgical infection rates in two government hospitals in Monrovia, Liberia.

Step 2. Set the objective

Reduce postsurgical infection rates in these hospitals from 25 percent to less than 10 percent in the next 12 months.

Note that the objective may be considered a SMART objective. It is specific, measurable, and achievable based on experience in other surgical infection–reducing interventions; it is also realistic and time-specific. Setting the targets quantitatively allows for specific assessment of whether objectives were achieved within the given timeframe.

Step 3. Conduct root cause analysis

The hospitals come together to appoint a quality improvement team, comprised of clinical and administrative staff experienced in operating room care, to conduct a root cause analysis using several sources of data. First, they review the charts of all patients who had a postsurgical infection (within 48 hours of surgery) in the last two weeks. Second, they interview all staff involved in the cases to understand the context. Third, they meet to talk over qualitatively what any staff think might be causing the high infection rates. Fourth, they work with external technical assistance to review the operating room infection–prevention procedures and compare their current approaches to cleaning and sterilization, antibiotic use, and hand hygiene to the existing standards.

After synthesizing their data, the group report the following possible root causes:

- Poor adherence to clinical standards of hand hygiene
- Absenteeism in cleaning staff
- Broken autoclave equipment
- Poor supply chain for antibiotics
- Inadequate nursing training in support role for operating rooms
- Limited linens
- Poor training of staff nurses in postoperative area
- Poor layout of the operating rooms with poor ventilation and limited water supply

Step 4. Enumerate possible strategies

The team works together to identify possible strategies, which are alternative ways to go about reducing the infection rates postsurgically, recognizing that they will compare them and select the one that seems most effective and feasible.

Possible strategies:

1. Provide additional training for operating room staff on hand hygiene as well as for postoperative area nurses on how to identify possible risks of infection in patients.
2. Implement the safe surgery checklist, (which WHO has suggested can reduce complications in surgery). The checklist helps operating room staff to be sure they are operating on the right patient, have provided antibiotics, have counted sponges and equipment, and have implemented several other safety precautions.
3. Establish new cleaning routines for room, linens, and equipment before all surgeries and hold staff accountable for implementing new routines; improve the supply chain management to ensure proper flow of antibiotics; and implement the safe surgery checklist
4. Construct new operating rooms with new equipment, proper lay out, and water supply

Step 5. Conduct comparative analysis of the alternative strategies

Qualitative Decision Matrix

Alternative strategies	Effectiveness for reducing infections	Cost	Time to implement	Management support
1.Staff training	Modest	Modest	Modest	Good
2.Surgical checklist	Good	Modest	Modest	Good
3.New cleaning routines, staff accountability, supply chain, and surgical checklist	Excellent	Modest	Medium	Excellent
4.Construct new operating rooms	Modest	Higher	Longer	Good

Quantitative Decision Matrix[1]

Alternative strategies	Effectiveness for reducing infections	Cost	Time to implement	Management support	TOTAL
1.Staff training	1	3	3	2	9
2.Surgical checklist	2	3	3	2	10
3.New cleaning routines, staff accountability, supply chain, and surgical checklist	3	3	2	3	**11**
4.Construct new operating rooms	1	1	2	2	6

[1] Scale: 1 represents the best rating possible and 3 the worst rating possible for each indicator.

Step 6. Select the strategy

Both the qualitative and quantitative decision matrices point to strategy number 3 as the best strategy based on several criteria (that is, effectiveness, cost, time to implement, and management support). Greater precision could be achieved by weighting various criteria (that is, perhaps cost is more important than time in one's evaluation of the optimal strategy—which could be addressed by weighting cost more highly than weighting time to implement). Additionally, one might conduct a sensitivity analysis, particularly on the values with the most uncertainty, to identify how much one could change the values and still select strategy number 3.

PART VII. USE THIS GUIDE TO CHOOSE AND IMPLEMENT BETTER STRATEGIES FOR IMPROVING THE DELIVERY OF HEALTH SERVICES

Good practice always relies on both clear conceptual thinking and definite operational steps. This Guide has provided specific suggestions for both. We encourage you to apply this guidance to improving performance on the ground—in clinics and hospitals, in districts and municipalities, in states, provinces, and countries.

Successful organization reform is difficult, but it can be done, even in resource-poor settings where change seems unlikely. The needs are urgent and the rewards of success can be substantial.

What can you do?

Form a team of creative thinkers and experienced doers

Successful change is a team sport. The approach of this Guide, in particular, will benefit from having multiple and diverse perspectives. If you are a planner or a manager inside a particular organization and have been there for a long time, you especially may be able to learn from the views and experiences of others.

Understanding the root causes of performance problems is a critical step in choosing the right change strategies. As some of the examples given suggest, developing a sufficiently rich analysis of causation may require both conceptual knowledge and practical experience in working with organizations and with the specific organization of your interest. Engage both thinkers and doers in your team.

There are a number of different techniques leading to root cause analysis as well as different team processes that may be useful to you. The UK's National Health Service Institute for Innovation and Improvement has a useful Web site with clear guidance on these. Take a look— http://www.institute.nhs.uk/.

Apply the ideas in this User's Guide to service delivery–performance problems that are important in your setting and important to you and those you hope to serve

Service delivery in health care is often a complex enterprise. There are different types of facilities and services, different patients, different health needs and diseases. Which performance problems matter? Where should one focus?

Choosing problems to solve is an important part of a successful change process. It is important to balance significance and feasibility. Significance requires one to think about consequences. How will improving service delivery affect health outcomes that matter for population health and the communities you serve? How will it affect the poor or disadvantaged populations specifically?

You may not be able to address all problems—which are the ones that, if addressed, could contribute important improvements in human well-being?

Feasibility also matters—sometimes the problems with the most significant consequences are also those that may be hardest to solve. To what extent are the factors that need to be changed under your control or susceptible to influence by your team? This is especially important for performance improvement strategies that may require systemic or system-level reforms in contrast to those that can be addressed at the level of individual organizations or facilities. You may need to develop an explicit strategy not only to implement organization change but also to achieve system-level changes that enable organization change. Political and policy strategies may be needed, not only technical ones.

Think about phasing. It may be important to demonstrate change at the individual facility level to motivate change at the system level.

Follow the guidance in part V—develop better strategies for improving service delivery performance

Figure 2 lays out graphically a set of steps you can follow to choose strategies more systematically and part V provides some practical guidance on how to carry out these steps.

Most successful organization reform programs follow such processes although these are not always so linear and explicit. The two examples at the end of part V—a systemic reform introducing a new model of primary care practitioner in Poland and strategic problem solving at the facility level in Liberia—illustrate this. The authors of this Guide hope to develop new and better documentation of these processes to facilitate wider application and greater cross-national learning.

Implement these strategies and evaluate your experience

Proof of concept must be demonstrated through effective organizational change and better results. Recent systematic literature reviews have found that there is a striking lack of good quality evaluation of organization change strategies. There have been significant advances in recent years in development and application of impact evaluation methods. Good practice in use of this Guide should include contribution to better and more evaluation of organization reform.

A recent World Bank publication, *Impact Evaluation in Practice* (Gertler et al. 2011), available at www.worldbank.org/ieinpractice, can be helpful.

Share with others in your country and elsewhere

In writing this Guide, the authors have diligently sought to avoid advice on which strategies to choose. Our focus has been on guidance in how to choose strategies. Experience has taught that the urgent need is to fit the right strategy to the situation. Good practice is to resist preconceived solutions looking for problems to solve.

But this means that the practice is the message. The correct answer to your question—what should we do to improve health service–delivery performance—is to choose the best strategies to address the causes of poor performance in your clinic, your hospital, your district, your country. And then to implement these strategies diligently based on the best available evidence and practice, and to evaluate and share your results.

Improving health service–delivery performance is a "must do" if we are to achieve urgent health, nutrition, and population goals in low- and middle-income countries—more resources and more technology will not be sufficient. Policy makers, planners, and practitioners need to strengthen their practice in choosing the right strategies and in carrying them out successfully. We can all learn from each other. This Guide can help foster a community of better practice to move us toward better health care services and outcomes for those most in need.

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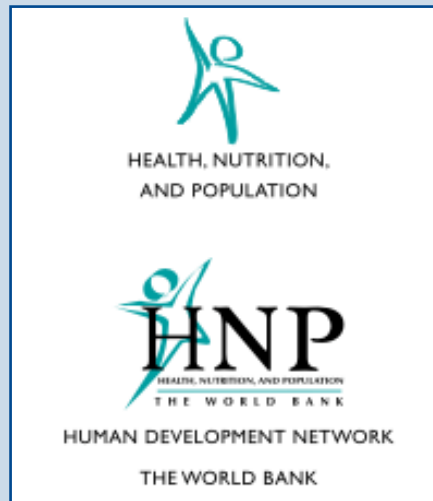
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