PUBLIC EXPENDITURE EFFICIENCY IN HEALTH CARE IN LATIN AMERICA AND THE CARIBBEAN

HIGHLIGHTS FROM AN IDB WORKSHOP ON PUBLIC EXPENDITURE EFFICIENCY AND OUTCOMES

IDB
Inter-American Development Bank

JEL codes: H51, I18

Keywords: fiscal policy, governance, health care efficiency, Latin America and the Caribbean, public health expenditure, public policy

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The Social Protection and Health Division (SCL/SPH) and Fiscal Management Division (IFD/FMM) were responsible for the production of this publication.

English editing: Leslie Hunter

Design: www.souvenirme.com

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MARCH 10-11, 2016

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EXECUTIVE SUMMARY

Public health expenditure as a percentage of GDP increased 25 percent in the Latin American and the Caribbean (LAC) region between 2000 and 2014. This growth rate was significantly higher than the world average increase of 15 percent during the same period.[1] Hand in hand with this expenditure trend, many countries in the region have experienced improvements in indicators on health outcomes and access to health services, as measured by initiatives such as the Millennium Development Goals. For example, during the same period, average life expectancy rose from 71 to 75 years of age, under-five mortality rates fell by 43 percent, and the percentage births attended by a skilled health staff rose 7 percentage points (World Bank, 2017). Despite these achievements, equity in coverage and quality of health services in the region require greater improvements going forward.

Further progress in the health sector faces two main challenges. First, there are rising pressures on health expenditures stemming from population aging, an increase in the prevalence of chronic diseases, the implementation of universal health coverage, and the adoption of new technologies. Second, the current fiscal constraints faced by many countries in LAC highlight the need to improve the quality of health services through efficiency measures, rather than relying on continuing expenditure increases. Current and future investments must thus focus on promoting greater value for money and maximizing health outcome improvements per dollar spent.

Consequently, with the aim of guiding the Inter-American Development Bank's (IDB) work agenda on improving public health expenditure efficiency in the LAC region, the IDB held a workshop entitled "Public Expenditure Efficiency and Outcomes: Application to Health, Challenges and Opportunities for Improvements in Latin America and the Caribbean" on March 10 and 11, 2016. The workshop brought together professionals in public financial management and healthcare. It focused on understanding and measuring both technical and allocative efficiency, identifying measurable indicators of inputs and outputs under policy makers' control, and identifying challenges and opportunities for improvement, as well as potential priority policy areas in LAC.

Throughout the presentations, Peter Smith, Isabelle Joumard, and Jerry La Forgia introduced concepts and measures of health care efficiency. Smith presented key concepts, different measures of system and partial efficiency, and a roadmap for securing efficiency gains. Joumard placed the gains and importance of promoting efficiency in health policy into context and presented practical challenges in measuring efficiency of spending. La Forgia then presented advantages and disadvantages of commonly used efficiency measures at the hospital level, highlighting that the choice of measures should depend on the purpose of the analysis, the intended audience, and the relevant policy issues.

William Savedoff and Jillian Clare Kohler focused on governance in the health sector. Savedoff discussed measures of governance across three identified levels of governance: (i) the broad political economy; (ii) the structure of oversight and regulation; and (iii) the management of health sector organizations. The presentation highlighted the need to include all levels of governance when promoting policies to improve health outcomes. Kohler emphasized the importance of promoting good governance through transparency and accountability. The presentation provided insights on governance-related issues in the pharmaceutical sector and discussed examples of good governance initiatives carried out in LAC.

Amanda Glassman, Ricardo Bitrán, Panos Kanavos, Daniel Maceira, and Jéssica Niño de Guzmán reviewed some promising examples of policies to promote efficiency, as well as barriers to their successful implementation. Glassman presented a list of policies to promote efficiency and a strategy to prioritize them. Within the list of policies, she focused on allocation of funding and benefit plans. Bitrán brought forward the need to overcome myths on health care efficiency in LAC by means of context-specific analysis. Kanavos presented an international comparison of procurement policies which countries use to improve the efficiency of drug purchases (a key source of inefficiencies worldwide). Maceira talked about the need to further focus efforts on improving the management and provision of health services to improve health efficiency in LAC. Finally, Niño de Guzmán shared the experience of the Government of Peru in implementing results-based budgeting and how it has been associated with a decline in child malnutrition in the country.

The IDB would like to thank all the participants, the organizers and the presenters who made the event possible. The workshop and this publication discuss an important topic in the region, which needs to be further addressed in the policy arena and which will undoubtedly spark much stronger debates both in national governments and international forums going forward.

[1] World Bank (2017): http://data.worldbank.org/

OPENING STATEMENTS

ANA MARÍA RODRÍGUEZ-ORTIZ

We are proud to bring together people from different sectors, institutions, and countries and with different perspectives to this comprehensive multi-sectoral workshop at the IDB. When I look at the list of people who are presenting today, I think how amazing it is to bring all these fantastic minds together.

At the end of the workshop, we would like to accomplish three main objectives. First, a better understanding of how to tackle the public expenditure efficiency issue in the health sector. Put simply, we would like to understand, for example, how to increase healthy life years or decrease child mortality in LAC with the same level of public expenditure. Second, we want to understand how to better measure efficiency, and third, we want to discuss how to contribute to the implementation of efficiency reforms in LAC.

Why is it so urgent to focus on public expenditure efficiency in the region? Public expenditure in LAC has been consistently increasing over the last decade, but this trend is no longer sustainable due to a deteriorating fiscal balance and modest prospects for growth in the region. Furthermore, ageing, the epidemiological shift towards non-communicable diseases, and technological advances are creating greater demand for health services, which will pose even larger strains on public spending on health going forward. Therefore, we have no time. We have to start discussing solutions and move forward.

As manager of the Institutions for Development Sector at the IDB, I think that societies organized within a solid institutional setting have higher chances to live productive, peaceful, and happy lives. At the IDB we consider institutional-related issues to be absolutely critical and at the core of long-term solutions for efficiency. For example, in LAC we need to address how to tackle decentralization and fragmentation in the provision of services, how to improve the quality of fiscal institutions, and how to better manage institutional budgets and public procurement.

Under the current fiscal constraint scenario, the solution does not lie in cutting budgets blindly and jeopardizing public services. Instead, we need to find smart solutions to use the available resources more efficiently. This workshop provides lessons learned, best practices, and even bad practices, so that we can understand which mistakes we do not need to repeat. We hope this will inspire policymakers and offer a good basis for further strategic policy dialogues and public policy reforms regarding health expenditure in LAC. We believe that we need to invest better in healthy societies in LAC and we must start doing it now.

FERDINANDO REGALIA

Ana María has already mentioned the main objectives of this workshop. I would like to further stress a couple of crucial issues for improving efficiency of spending in LAC. There is a need to strengthen the analytical basis for discussions on public health efficiency. There is significant pressure on health expenditure due to demographic factors, epidemiological changes, new health technologies, and pledges for universal health coverage. Several times during discussions with ministries of finance, I have been asked for evidence-based recommendations to manage the existing pressures and improve efficiency. Yet the answer to this question is not always straightforward. As head of the Social Protection and Health Division at the IDB, I can say that we have done a significant amount of work in key efficiency-related areas, such as selection and prioritization of health technologies, or hospitals and models of care. Yet, I still feel that overall there is a big gap that we have to fill in terms of evidence-based knowledge to sustain smart discussions.

Further efforts must be made to bring together fiscal and sectoral specialists and share experiences more often. This is why we are here today. We aim to better understand what types of analyses have been carried out in LAC and what the IDB can do to strengthen countries' capacities to make optimal decisions. Furthermore, we are interested in figuring out the available range of policies to tackle efficiency and which of them are supported by strong evidence.

These efforts, in terms of reinforcing the analytical base and sharing experiences, will be beneficial for our work. There is much to do. This workshop is a great opportunity, as it is rare to have fiscal and health specialists working together and trying to bridge this knowledge gap.

GUSTAVO GARCÍA

The LAC region is entering a period of fiscal austerity, which can mean two things: On the one hand, it can imply undifferentiated budget cuts, without looking at the effects on performance or coverage of public services. On the other hand, it can create an opportunity to significantly improve efficiency. This would allow countries to do more with the same amount or less money.

Since the fiscal sector cuts across the whole public sector, we aim to maintain a broader view of the fiscal institutions throughout the discussions during this workshop. Recent evidence from other regions has brought forth several issues which should be kept in mind when devising policies to enhance efficiency of spending:

It is crucial to have a medium-term fiscal framework that translates priorities into quantitative targets to guarantee the sustainability of public expenditure. It is important to ensure planned fiscal policy measures, guaranteeing the most stable economic environment possible to avoid volatility of revenue and expenditure.

Another important aspect regarding fiscal institutions is related to the level of governance. There are varying degrees of decentralization across countries in the LAC region. However,

there must be clear consensus on the responsibilities of the different levels of government and the relative weight that these actors play in policy and service provision. This is a critical element in terms of understanding the effect of the institutional arrangements in the public sector. For example, many countries in the LAC region face a large level of overlapping in spending responsibilities across states, departments, and provinces. This will affect the efficiency of the public sector quite significantly, because it is often the case that these efforts are not adequately planned and are being repeated.

Public financial management processes have an important role to play. These affect efficiency by relating to the management of the costs of service provision. An example of good practice in the LAC region is the use of electronic procurement for goods and services. This has allowed procurement systems to be centralized and negotiation of better prices.

Another important element is budgeting for results. Budgeting for results means that what you obtain is going to feed back into the budget for the following year, promoting and reinforcing those sectors that are more efficient and reducing the allocation of resources in those that are less efficient. If you have budgeting for results, you can achieve a different level of transparency by informing citizens on the results obtained with the money that they pay through taxes. Transparency is not only about indicating that funds were used for the stated purpose; it also reveals what results were achieved.

In summary, there are many things that can be done to promote efficiency of spending. What is important to understand from the fiscal side is: what does the health sector need and what micro-level or specific results does it seek to obtain? By understanding this, we can provide better proposals to improve public sector management. Those are the issues that we would like to share with you so we can work together in the region and ensure that during this period of fiscal austerity in LAC, we can promote value for money by improving efficiency.

CAROLA PESSINO

These presentations begin with an introduction to the concept of efficiency. It is a deeply challenging concept to measure, diagnose and act upon, and there are many different techniques to estimate system efficiency. The case of LAC is particularly striking. When making comparisons of efficiency among countries in the region, there are some notable differences in performance between countries. However, when compared with more advanced countries, we are overall not performing so well.

Apart from this relative efficiency problem compared to other regions, we have several challenges in the health sector, not only within institutions, but also across the health system. This is due to fragmentation of the health system, contributory vs. non-contributory pensions, under-coverage, and others. There is a quality, efficiency, and equity trade-off together with an issue of incomplete information, which generates adverse selection problems. During the various presentations, we will have people from Europe and from LAC who will tell us what we can learn from more advanced countries, and what more advanced countries can learn from us.

CONCEPTS AND MEASURES OF EFFICIENCY IN HEALTH CARE

WHERE HAVE WE GOTTEN TO IN UNDERSTANDING HEALTH SYSTEM EFFICIENCY?

PETER C. SMITH
Emeritus Professor, Imperial College Business School and Center for Health Policy

Understanding and measuring efficiency is not straightforward. However, obtaining more clarity on these issues is a first step towards building effective strategies and roadmaps to tackle the main sources of inefficiency.

HOW DO WE MEASURE EFFICIENCY?

Efficiency in the provision of health care services aims at maximizing health benefits at minimum cost. **Measuring efficiency is complex** and can take many forms, as shown in Figure 1.

FIGURE 1. MEASURING EFFICIENCY IN THE PROVISION OF HEALTH CARE SERVICES

SYSTEM VERSUS PARTIAL MEASURES OF EFFICIENCY

System-level efficiency measures provide an indication of the performance of the whole health system, whereas partial measures of efficiency narrow down the focus into one area of interest (e.g., cost-effectiveness of individual treatments or practitioners or of specific institutional units like hospitals or health care centers).

Pros and cons of using system-level efficiency measures:

Pros: They provide a more general view of performance. This allows for international comparisons of what each country is achieving relative to other nations that spend similar amounts. It also supports the identification of key areas for possible efficiency gains within a health system.

Cons: They offer limited scope for policy action, as it is difficult to attribute poor performance to specific factors. Therefore, these measures may distract policy-makers from focusing on key parts of their system that require attention.

Since both approaches offer different insights on efficiency, it is important to complement system-level efficiency metrics with measures of partial efficiency.

TECHNICAL VERSUS ALLOCATIVE EFFICIENCY

- **Technical (production) efficiency** refers to the "waste" or leakage of resources during the production process. A production unit is technically efficient if it produces the maximum output possible given a set of inputs, or produces a given set of outputs at the minimum cost. Examples of technical inefficiency include unnecessary duplication of costs, excess prices for inputs, and avoidable readmissions.

- **Allocative efficiency** refers to the adequate allocation of the mix of inputs and outputs. Examples of allocative inefficiency include the poor use of trained clinical skills or the allocation of resources to treatments with low benefits relative to the costs.

- **Economic (cost) efficiency** combines technical and allocative efficiency by looking at the minimum cost of producing an output given the prices of the inputs. For this purpose, calculating unit costs is paramount.

THERE ARE MULTIPLE CHALLENGES WHEN TALKING ABOUT EFFICIENCY

- There are challenges to developing robust measures of comparative efficiency that: (i) are feasible to collect or estimate; (ii) offer consistent insight into comparative health system performance, and (iii) can be used to guide policy reforms. For example: there might be a technically efficient institution like a clinic, within a completely inefficient system (or vice versa).

- There are also no universal metrics to measure allocative inefficiency, as these depend on the specific unit used to measure allocation (private vs. public sector; preventive vs. curative; primary level vs. tertiary level; treatment A vs. treatment B, etc.).

- Regardless of the level of analysis used, attribution of costs and benefits to the organizations or individuals under scrutiny is not straightforward. There are social, economic, and geographical factors that affect the health system, for which policymakers cannot be held accountable. The key issue that arises from this is how to realistically determine the extent of a health minister's or policymaker's responsibility.

KEY MESSAGES AND POLICY RECOMMENDATIONS

01. MYTHS CONCERNING HEALTH SYSTEM EFFICIENCY

- It is not necessarily true that increasing the intensity in the use of resources leads to more efficiency. For example, a common belief is that having more patients per bed is a desirable policy. However, this could also lead to an insufficient inventory of free beds and generate other inefficiencies in the system.

- Improved efficiency can arise from higher levels of attainment at the same cost, as well as lower expenditure for the same level of attainment.

02. A ROADMAP TO SECURING EFFICIENCY GAINS BASED ON THE 10 LEADING SOURCES OF INEFFICIENCY

- **The World Health Report 2010 identified the 10 leading sources of inefficiency (Table 1).** From that point on, scholars and policy makers have increased efforts toward identifying a roadmap to secure efficiency gains.

- **Inefficiency can be tackled through six main different strategies which have been identified as a roadmap to secure efficiency gains by scholars and policy makers.**

- Depending on the source of the inefficiency, one strategy will be more effective than others. The following chart depicts a roadmap of what strategy to use to tackle each of them.

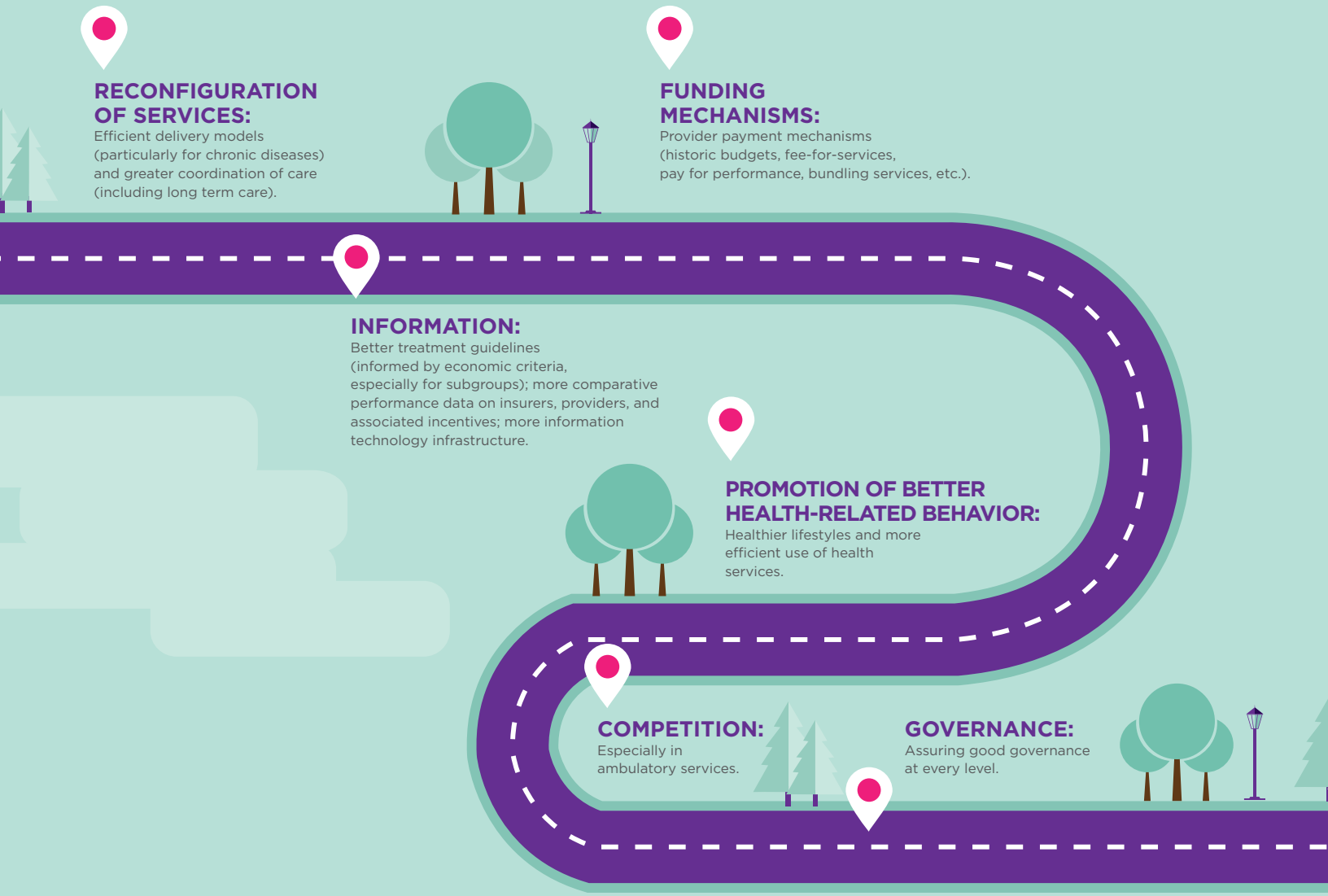


TABLE 1. STRATEGIES TO TACKLE THE 10 LEADING SOURCE OF INEFFICIENCY

Important sources of inefficiency

Somewhat important sources of inefficiency

TEN LEADING SOURCE OF INEFFICIENCY	RECONFIGURATION OF SERVICES	INFORMATION	FUNDING MECHANISMS	HEALTH-RELATED BEHAVIOR	COMPETITION	GOVERNANCE
01 Medicines: underuse of generics and higher than necessary prices for medicines						
02 Medicines: use of substandard and counterfeit medicines						
03 Medicines: inappropriate and ineffective use						
04 Health-care products and services: overuse or Supply of equipment, investigations and procedures						
05 Health workers: inappropriate or costly staff mix, unmotivated workers						
06 Health-care services: inappropriate hospital admissions and length of stay						
07 Health-care services: inappropriate hospital size (low use of infrastructure)						
08 Health-care services: medical errors and suboptimal quality of care						
09 Health system leakages: waste, corruption and fraud						
10 Health interventions: inefficient mix/ inappropriate level of strategies						

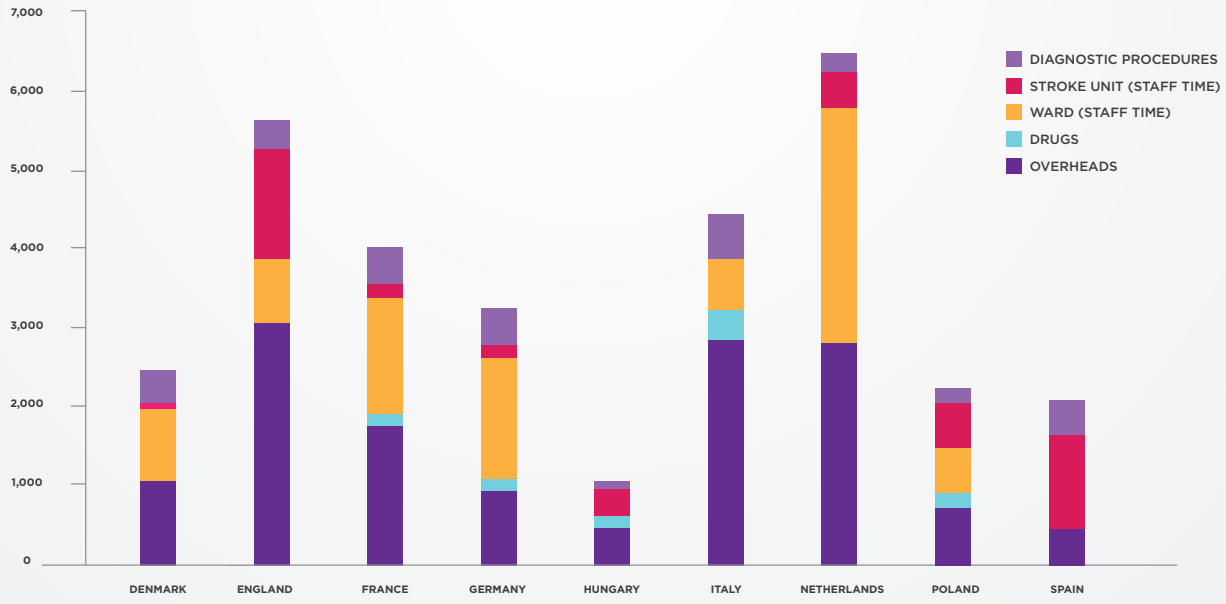
Source: Author's elaboration.

03. PROMOTING BEST PRACTICES ON THE ROAD TO EFFICIENCY: THE HEALTH BASKET PROJECT

- To assess efficiency, it is **paramount to have accurate and comparable estimations of costs.** The Health Basket project developed, tested, and used a methodology which allowed costs of 10 common treatments ("case vignettes") provided in nine European countries to be compared. These case vignettes include appendectomy, hip replacement, cataract, stroke, and others. To guarantee comparability, the case vignettes depicted typical patients (defining their specific age, gender, and relevant comorbidity) and were developed for inpatient and outpatient, primary and secondary care levels, and elective and emergency settings. For each vignette, a questionnaire was developed to collect detailed information on the services that a similar patient would have received, as well as the costs associated with the services provided.

- Figure 2 depicts the comparison in costs of treating a stroke across different European countries, for the case vignette "stroke."

FIGURE 2. BREAKDOWN OF STROKE COSTS (€)



Source: Health Basket Project.

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HEALTH CARE SYSTEM EFFICIENCY: LESSONS FROM OECD COUNTRIES

ISABELLE JOUMARD
Senior Economist, Head of the India and Tunisia Desk, Economics Department
Organisation for Economic Co-operation and Development

In the absence of reforms and in light of increased expected health expenditures, there is an important case to be made for greater efficiency in spending. To achieve this, policymakers should focus on context-specific policies, driven by better information and data on health care systems.

WHY DOES EFFICIENCY MATTER FOR HEALTH POLICY?

There has been a steady and **rapid rise in health spending** during the past two decades across OECD countries. This is expected to continue in the future, both in the OECD and in other regions of the world. For example, average health expenditures as a share of GDP are projected to grow by 6 percentage points by 2060 in OECD countries, in the absence of further reforms. In the case of Brazil, Chile, and Mexico, growth can reach 7 percent. These trends can contribute to the fiscal challenge that many countries face.

Previous analysis carried out by De la Maisonneuve and Oliveira Martins (2013) suggests that the **main factors driving the increase in health expenditures** are:

Longer life expectancy: the share of population aged over 65 and over 80 in OECD countries is expected to double between 2010 - 50, a trend which will be more pronounced in Latin American countries.

Income elasticity of health spending, considered a major driver of healthcare costs: higher income per capita in the region has affected the increase in health expenditures.

Other residual factors, including the relative prices of health care services, technology, governance, and policies: it is estimated that half of the expected increase in average healthcare spending in the OECD will be driven by the residual component.

These factors are expected to continue driving up healthcare costs in the future. This brings forward the need to promote policies that enhance efficiency of spending in health, as exploiting efficiency gains could help contain future spending and contribute to further raising the health status of the population.

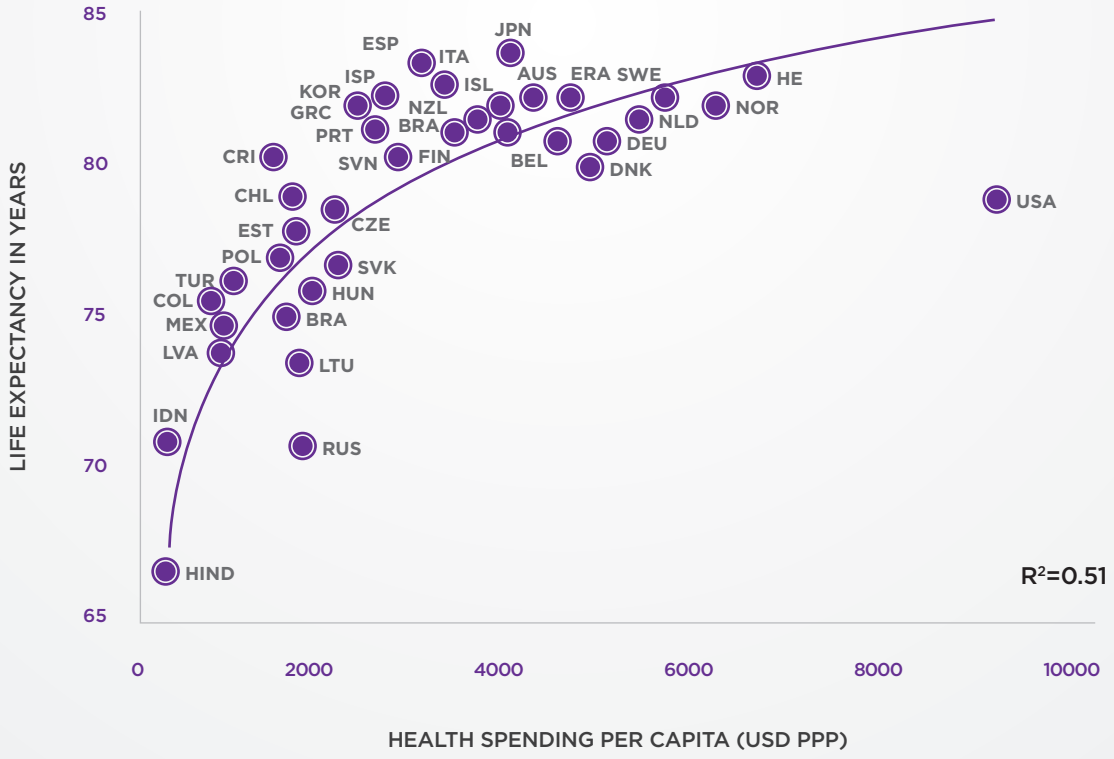
WHAT CAN BE GAINED FROM PROMOTING EFFICIENCY OF SPENDING IN HEALTH?

The direct correlation between higher spending and improvements in healthcare outcome /output indicators is not clear (as seen in Figure 3 for the case of life expectancy). Therefore, **other policy related factors are likely to play a role in achieving a better health status.**

These trends, together with the importance of the residual factor in driving up health costs, suggest **large potential benefits can be gained by policies to promote greater efficiency**.

Evidence shows that if countries were to continue improving health outcomes as they did between 1997 and 2007 and incorporate efficiency gains, public spending savings could be around 4 percent of GDP for the United Kingdom, around 3 percent of GDP for the United States, 1.3 percent for France, and 2.5 percent in Canada between 2007 and 2017.

FIGURE 3. LIFE EXPECTANCY AND HEALTH SPENDING PER CAPITA



Source: Joumard et al. (2010). ECD

WHAT ARE THE PRACTICAL CHALLENGES OF MEASURING EFFICIENCY OF SPENDING IN HEALTH?

Measuring efficiency of spending in health is challenging because:

- There are a large mix of funding sources and actors involved in the health system which interact in diverse and complex ways.
- There is no obvious way to define health care outputs and outcomes.
- People's health is affected by various factors outside the health system (e.g., diet, sanitation, pollution, socioeconomic status, etc.).

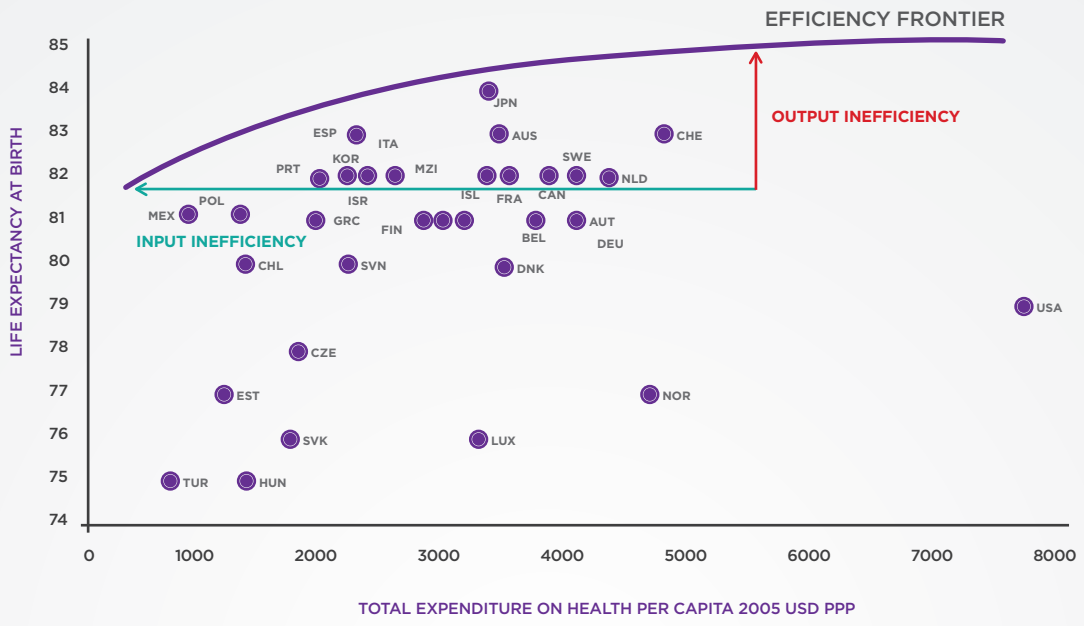
Outcome indicators used in health normally include raw mortality-related indicators (life expectancy at various stages, premature mortality, or potential years of life lost from different conditions, infant mortality, and many more); indicators relating to quality of healthcare (such as health-adjusted life expectancy or disability adjusted life expectancy); indicators related to diseases avoidable through effective care (amenable mortality); and other health-related indicators (such as sick leave or public satisfaction).

Input indicators generally include health care resources (which can be measured in physical or in spending terms), lifestyle factors (diet, tobacco, and alcohol), and socioeconomic indicators (income, education, or pollution).

There are different methodologies to measure health system efficiency. Popular quantitative approaches include panel regressions (which measure the residual and the fixed effect in a typical health production function) and data envelopment analysis (DEA). For example, as seen in Figure 4, the DEA creates an efficiency frontier and provides an overall picture of output and/or input inefficiency through a ranking of countries. The results can then be used to create possible measures of input and output inefficiency in a sample of variables. However, this estimation method is sensitive to the measurement errors and outliers in the sample.

However, measuring overall system efficiency scores is not enough. It should be complemented with more detailed indicators to get a proper understanding of the drivers of efficiency and possible policy interventions. In the health sector, measures of equity of access to services, prevalence of certain diseases, and level of hospital care are possible indicators which could be used for this purpose.

FIGURE 4. CONSTRUCTING AN EFFICIENCY FRONTIER FROM A DEA



Source: OECD Health Expenditure and Financing Database and WHO.
Available at: http://stats.oecd.org/index.aspx?DataSetCode=SHA; http://apps.who.int/gho/data/node.home

POLICY RECOMMENDATIONS

- **Information on institutional arrangements and policies are important.** To obtain a better picture of the efficiency gaps in Latin America, more information on policies and institutions is required.

- **Output and input indicators should include both monetary and physical indicators chosen on a case by case basis.** Quality of care and equity considerations are also important. The selection of indicators and the efficiency analysis should be carried out with the relevant institutions and government partners and tailored to the specific questions at hand.

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EFFICIENCY MEASUREMENT, TOOLS AND METRICS: EXAMINING HEALTH CARE WITH A FOCUS ON HOSPITALS

JERRY LA FORGIA
Chief Technical Officer, Aceso Global

No one size fits all. There are different options for assessing efficiency at the hospital level. The final choice depends on the purpose of the analysis, intended audience, and policy issue.

ADVANTAGES AND DISADVANTAGES OF THE MAIN OPTIONS TO ASSESS HEALTH CARE EFFICIENCY AT THE HOSPITAL LEVEL

One of the basic objectives pursued by most hospitals is to improve efficiency. **The assessment of efficiency at the hospital level is fundamental for its improvement.** It provides the means to define what hospitals actually do and compare that with the original targets or competitors' performance to identify opportunities for improvement. Different options are available for assessing health care efficiency at the hospital level. Table 2 presents these options with their advantages and disadvantages by level of analysis: macro financial and service performance, organizational performance, and internal analysis.

TABLE 2. OPTIONS TO ASSESS HEALTH CARE EFFICIENCY AT THE HOSPITAL LEVEL

	METHODS TO ASSESS EFFICIENCY	ADVANTAGES	DISADVANTAGES
MACRO FINANCIAL AND SERVICE PERFORMANCE	COMPARATIVE BENCHMARKING ANALYSIS	It is a powerful tool to achieve performance improvements, because it usually engages policy makers and hospital managers. It provides a good snapshot of comparative performance, which supports the process of identifying gaps, trends, and areas for improvement. It is usually based on standard indicators.	It provides little actionable guidance. Data are often absent, incomplete, or limited in developing countries. Risk-adjusted benchmarking requires more data efforts (data on severity of diseases and patients' characteristics are needed). The cost of carrying out benchmarking analysis is usually high mainly due to data collection efforts.
ORGANIZATIONAL PERFORMANCE: SERVICE PRODUCTION	DATA ENVELOPE ANALYSIS (DEA)[a] AND STOCHASTIC FRONTIER ANALYSIS (SFD)	It provides a ranking of the different units of analysis. This snapshot is useful to identify who are the best and worst performing units in terms of efficiency. Multiple inputs and outputs can be included in the analysis, which is an important value added, especially at the hospital level.	DEA estimates relative efficiency, not absolute efficiency. The same hospital may be ranked differently depending on the sample. Results are sensitive to measurement error and outliers. A fairly large sample size is required but most countries have limited data at the hospital level.
	MANAGEMENT SURVEYS[b]		
INTERNAL ANALYSIS	COST VARIATION ANALYSIS[c]	It is used to identify variation in costs among hospitals and potential sources of efficiency. Studies on variation in health care are gaining a lot of attention at the international level.	It requires robust cost accounting systems and large samples. There is a need to adjust for case severity or complexity. Similar input quality and prices are assumed.
	FINANCIAL (UNIT) COST ANALYSIS	It provides detailed information on how hospitals are spending their resources. It offers comparison opportunities with other hospitals. It is relatively easy to collect budgetary/administrative data.	Hospitals costs might simply reflect rise/decline in budget or number of patients. Analyzing costs does not yield insights on productivity, if costs are not linked to production. It averages costs by cost centers.
	ECONOMIC (UNIT) COST ANALYSIS	It links costs to production, providing information on productivity at the hospital level. It enables deployment of staff and shortages to be measured through surveys based on time motion of patients.	Developing a structured survey for economic cost analysis is complex and labor intensive. It is expensive. Samples are usually small.

Source: Editors' elaboration

[a] Advantages and disadvantages refer to DEA.
[b] Management surveys do not analyze efficiency per se; they analyze management practices. A good example of high-quality management survey is the World Management Survey (WMS), which can be used to explore productivity and efficiency. According to the WMS, good management is strongly correlated with better clinical and financial performance.
[c] Cost variation analysis. There are several ways to measure variation in costs of procedures and treatment, from simple comparisons of extreme values to measures that take into account the entire distribution of values. Commonly used statistics are: range, standard deviation, coefficient of variation, and systematic component of variation.

RECOMMENDATIONS

- **Efficiency assessments at the hospital level require good conceptualization.** Limited analysis has been conducted in LAC so far due to poor conceptualization and limited knowledge on how to explore, explain, and decompose efficiency gains and losses.

- **The choice of efficiency measurements, tools, and metrics used depends on the purpose of the analysis, the intended audience (hospital managers, policy makers), and the relevant policy issues.** Policymakers, hospital managers, and researchers should be aware of the different options available and their advantages and disadvantages.

- Systematic data collection efforts and studies on hospital performance management and efficiency are limited in LAC and frequently based on local ad-hoc surveys. **Countries in the region are urged to take steps to improve data collection for health care efficiency analysis at the hospital level.**

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GOVERNANCE

HEALTH SYSTEM GOVERNANCE: MECHANISMS AND PERFORMANCE

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The combination of good governance structures and processes leads to improved health outcomes. Without one of these elements, health policy cannot be successful.

WHAT IS GOOD GOVERNANCE IN THE HEALTH SECTOR?

Good governance is crucial for better health system performance, as **most health care indicators are indirectly related to governance** (these include both structures and processes).

It is useful to frame governance on three different levels:

- **The broad political level:** Where the "rules of the game" (formal and informal) are tested; particularly those that result in major changes to health systems over time. Examples of aspects to be tested at this level include the process of deciding to supply universal coverage or to adopt different models of health insurance.

- **The negotiating level:** Where these rules of the game and the broad structures are agreed on. In the public health and social security systems, the discussion at this level is mainly about prices and volumes. In Latin America, there are two factors that strongly determine how the negotiating level of governance works:

  - A segmented public-sector system. Where a negotiation dynamic takes place between the various public institutions (such as the ministry of health and the social security institutes) to determine tasks and responsibilities.

  - The coexistence of the public and private sectors with few policies and regulations in place. Therefore, the private sector can drive up costs and shift professional time away from the public sector.

- **The management level:** It deals with budget processes, strategies, planning, procedures, technical review mechanisms, and others, once the rules of the game have been set.

To promote good governance, policymakers must therefore engage with all the different governance levels described above. This is a complex procedure, yet it must take place to achieve effective health policies. Otherwise, as seen in Box 1, public health problems persist, and existing solutions are not effectively applied.

BOX 1: EVIDENCE OF GOVERNANCE FAILURES: TOBACCO USE

There are 800,000 tobacco-related deaths per year in Latin America, which is more than malaria- or AIDS-related deaths. This is a great loss given that there is evidence of incredibly cost-effective interventions to mitigate this problem, such as taxes on tobacco.

However, there are not enough public health policies that promote these solutions. Governance-related measures to reduce tobacco consumption are not scaled up to higher governance levels and often remain invisible in the policy agenda. They are also often considered secondary and do not have feedback or advocacy tools. Consequently, the opportunity to apply policy actions that could be extremely effective at a low cost is foregone and more lives are lost. This could be considered a failure of the governance system.

WHAT SHOULD BE CONSIDERED WHEN MEASURING GOVERNANCE?

Measuring governance is part of a strategy to learn which practices are effective, or at least robust, across different contexts. **It is known that having governance structures alone does not guarantee an adequate or more efficient functioning of the system. Instead, they must be linked to processes** that will actually make the health system more efficient and improve health outcomes.

When measuring governance in the health system, it is thus important to distinguish between structure and process indicators and outcome indicators. The former provide measures of the presence of necessary governance structures that determine whether a health system has the potential to be more efficient: for example, having a national health strategy or a central drug list. The latter measure whether governance structures actually lead to better health outcomes.

POLICY RECOMMENDATIONS: WHAT STRATEGIES SHOULD WE USE TO IMPROVE GOVERNANCE?

- **Pay attention to the three levels of governance.** Even when working at the lower levels of the governance system, it is important to keep in mind the broader top level for policies to succeed.

- **Include the private sector when talking about public expenditure efficiency**, as it is partly determined by the private sector.

- When measuring governance, **distinguish structure and process indicators from outcome indicators.** Measures of governance structures alone will not indicate whether certain practices have the potential to make the health system more efficient.

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HOW TO DESIGN INSTITUTIONS FOR TRANSPARENCY AND ACCOUNTABILITY: SOME EXAMPLES FROM THE PHARMACEUTICAL SECTOR

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Greater transparency and accountability in drug pricing and procurement mechanisms are key to promoting good governance in the health sector.

GOOD GOVERNANCE AND THE PHARMACEUTICAL SECTOR

Good governance is key for the pharmaceutical sector; albeit, it has a variety of definitions. The United Nations Economic and Social Commission for Asia (UNDP) defines good governance as **"the exercise of economic, political, and administrative authority to manage a country's affairs at all levels, comprising the mechanisms, processes, and institutions through which that authority is directed. Good governance is, among other things, participatory, transparent, accountable, and efficient. It promotes the rule of law and equal justice under the law. It requires the involvement of the private system, civil society, and the state and is a prerequisite for sustainable human development"** (UNDP, 1997). Good governance and its critical role in anticorruption is thus a growing priority for international institutions and their member governments.

Transparency and accountability are two key complementary aspects of good governance. The former gives citizens access to information, whereas the latter refers to mechanisms that make institutions responsive to their public, demanding that institutions or organizations answer to those who will be affected by decisions or actions taken by them. Lack of transparency and accountability in the pharmaceutical sector can result in inefficiencies, an improper medicine supply, medicine shortages or surpluses (that may expire prior to being used), price mark-ups (which limit access), poor-quality medicines, and corruption (Vian et al., 2017). These issues are usually front and center in the media as well as embedded in political discourse.

The effects of promoting good governance in the pharmaceutical sector can have large externalities on efficiency of spending. **Three out of the 10 leading sources of inefficiency in the health sector are related to drugs**, according to the World Health Organization,[2] which results in increased costs and reduced drug effectiveness. Medicines are a large source of expenditures in health. They account for 20–30 percent of global health spending, which is expected to continue growing in the future. The IMS predicts that global **spending on pharmaceuticals will rise by as much as 32 percent over the next five years to $1.4 trillion in 2020.**[3]

CORRUPTION IN THE PHARMACEUTICAL SECTOR

Whereas it is not possible to change human nature, it is feasible to design institutions which enforce certain behaviors then promoting good governance through transparent and accountable institutions is key to fighting corruption.

In the pharmaceutical sector, corruption can take place in any of its decision points, from research and development to service delivery. **The drug procurement process is particularly vulnerable to corruption**. For example, it can manifest through tiered pricing and open formularies, and it may also be present in a tendering process (which includes a pre-bidding stage of procurement, a needs assessment, a definition of contract characteristics, and the selection of a procurement method).

POLICY IMPLICATIONS

Promoting good governance through greater transparency and accountability and reducing the chances for corruption can be done by:

- **Supporting publicly available information on medicine pricing**, which can reveal potential areas of abuse, limit price variations over time, and mitigate price differences caused by asymmetrical information among medicine suppliers and purchasers. However, public information must be accompanied by the appropriate accountability mechanisms. Box 2 provides examples of medicine price information initiatives in the Latin American region.

- **Improving transparency in purchasing mechanisms**. This can be done through the promotion of public sector procurement to increase competition among suppliers, make use of reverse auctions and web-based procurement portals, as well as publish information.

- There is need for **information sharing and accountability** to promote good governance, particularly in the health sector. Information shared should be coherent and relevant. Effective governance systems should be able to take action if this information reveals public sector inefficiencies or corruption. This is particularly the case for medicine pricing and purchasing mechanisms.

[2] http://www.who.int/whr/2010/10_chap04_en.pdf

[3] http://www.imshealth.com/en/thought-leadership/quintilesims-institute/reports/global-medicines-use-in-2020

BOX 2: TRANSPARENCY-PROMOTING INITIATIVES IN LATIN AMERICA

Medicine Price Observatory (MPO), Peru: As part of the Medicines Transparency Alliance, this online platform provides real-time information on medicine prices. It is estimated that about 6,000 institutions, as well as policymakers and civil society, have used the MPO. It has also helped address the problem of falsified and substandard medicine entry into the market by notifying authorities of unregistered products.

Banco de Precos de Saúde, Brazil: This is a free and open online information system which records and stores the price of medicines and health products purchased by Brazilian public and private institutions. All federal hospitals are required to publish the prices of medical supplies. However, the type of information available is limited and the availability of information had no effect on the prices of medicines.

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POLICIES TO PROMOTE EFFICIENCY

A LIST OF POLICIES AND A STRATEGY TO CONSIDER OPTIONS FOR PROMOTING EFFICIENCY

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When dealing with health efficiency, the real challenge lies in strategically prioritizing reforms.

OPPORTUNITIES FOR EFFICIENCY GAINS IN LAC

Even though public health care spending increased over the last few years in LAC, this funding did not necessarily result in interventions that provide the most value for money. There is an opportunity to incorporate more cost-effective interventions in the region. For example, women with breast cancer are diagnosed at very late stages in LAC compared to the United States. On the other hand, some LAC countries spend significant amounts of money on services that have been determined to be cost-ineffective, such as analogue insulins. Therefore, significant opportunities remain for LAC to improve efficiency in health spending.

POLICIES TO PROMOTE EFFICIENCY

There is a long list of policies to promote efficiency in health care proposed at the international level. Table 3 provides stakeholders with a snapshot of available options, which can be categorized in four main groups: allocation of funding, modification of incentives, managerial reforms, and enhancement of transparency and accountability. Given the vast number of policy options available, the real challenge for policy makers is to be able to strategically prioritize reforms.

TABLE 3. POLICY OPTIONS TO PROMOTE EFFICIENCY

ALLOCATION OF FUNDING (REALLOCATION OF FUNDING OR ALLOCATION OF NEW FUNDING DIFFERENTLY)

OPTIMIZATION
BENEFIT PLANS
TARGETING
FOCUS ON PREVENTION AND PRIMARY HEALTH CARE

MODIFICATION OF INCENTIVES

SUPPLY SIDE	DEMAND SIDE
INCENTIVE - COMPATIBLE CONTRACTS	CO - PAYMENT
PROVIDER PAYMENT/REIMBURSEMENT	TOBACCO TAXES
RATIONAL USE OF GENERICS	SUBSIDIZED VEGETABLES
PRICES REGULATION	
POOLED PROCUREMENT	
HARD GLOBAL BUDGETS	
FISCAL INCENTIVES	

MANAGERIAL REFORMS

ENHANCEMENT OF TRANSPARENCY AND ACCOUNTABILITY

PERFORMANCE EVALUATION SYSTEMS BASED ON BENCHMARKING
SUPERVISION PLANS

ALLOCATION OF FUNDING

Two policies within the category "Allocation of funding" offer significant opportunities for efficiency gains in LAC: optimization and benefit plans.

OPTIMIZATION

- Optimization consists of reallocating funds to achieve a greater impact, given budget constraints. Mathematical modelling is a useful tool that provides evidence on how to achieve a successful reallocation of funds. A model can project the optimal funding mix to reduce a disease's incidence and then compare that projection to the current funding mix.

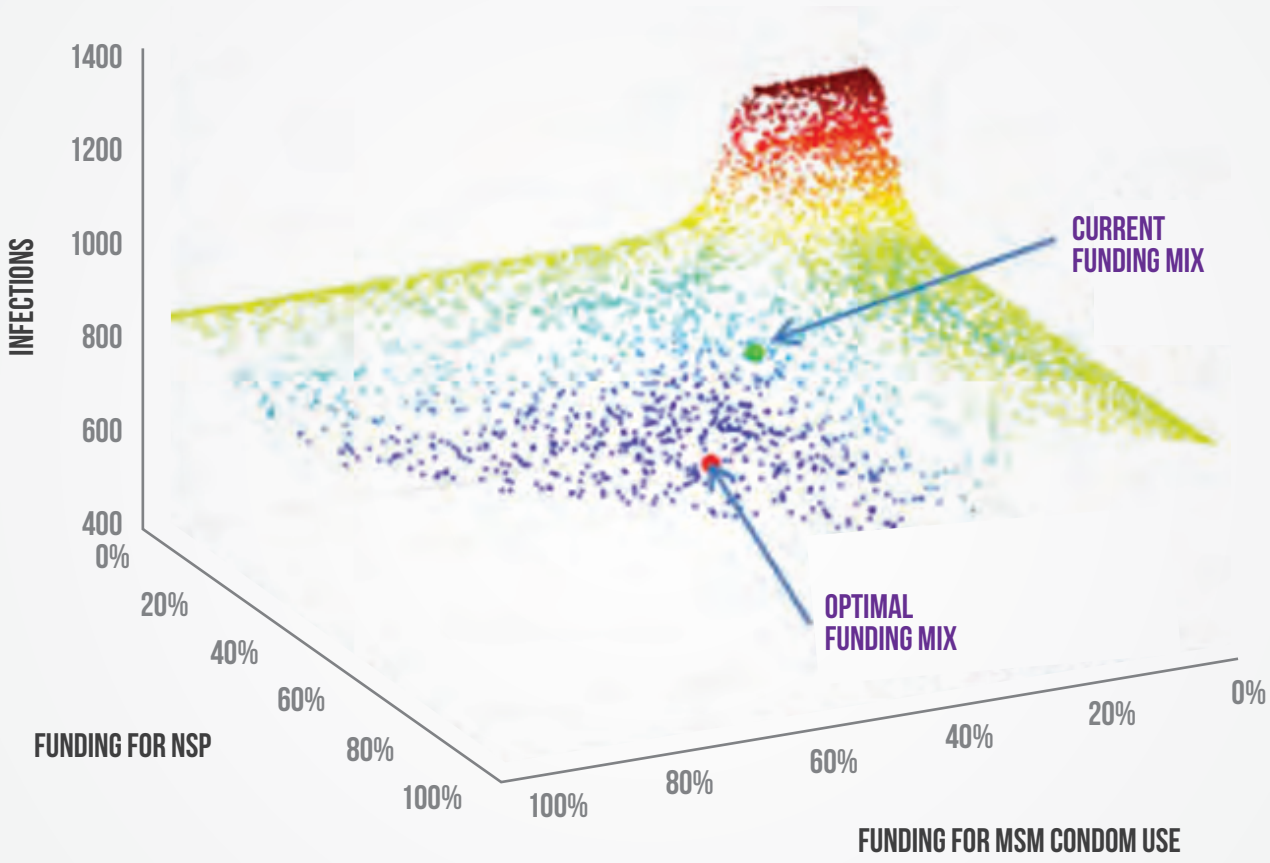
- Figure 5 depicts an example applied to HIV resource optimization in Belarus, prepared by the Optima modelling team. The distribution of funding between condom use and a non-specified program is shown on the horizontal axis; the number of infections is shown on the vertical axis. The dots in the multidimensional space represent the number of infections associated with each funding mix. This model identifies the funding mix that reduces infections the most and provides evidence for a more efficient allocation of funding.

BENEFIT PLANS

- According to the available evidence, benefit plans are another effective option for promoting efficiency in LAC as they accomplish the following:

  - Maximize health, enhancing value for money.
  - Inform provider commissioning or payment and budget expansion.
  - Facilitate regulation of private health insurance.
  - Cut costs and reduce waste and harm.
  - Enhance equity and reduce care variations.
  - Improve accountability between payers, providers, and patients.

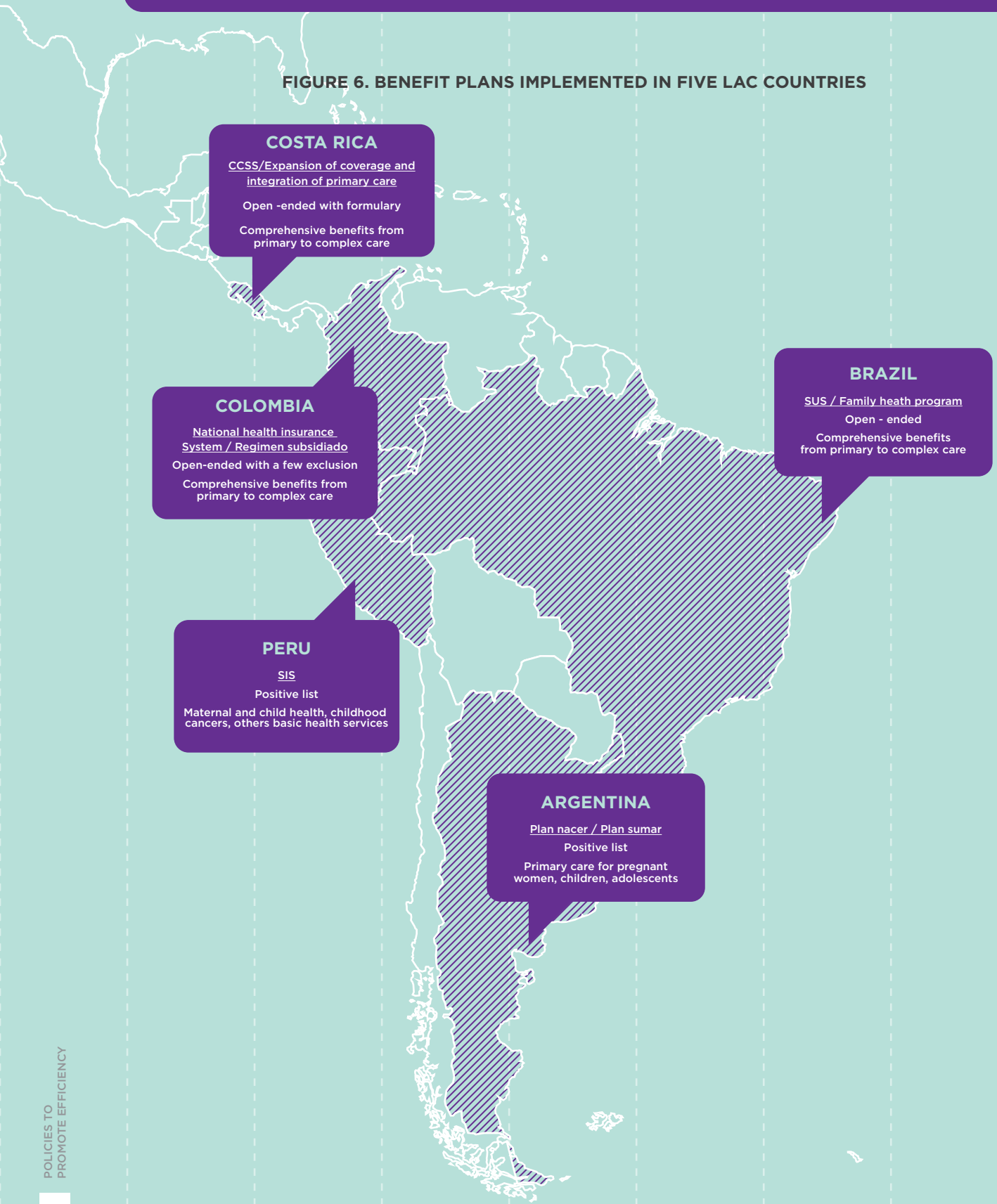
FIGURE 5. DISTRIBUTION OF FUNDING AND NUMBER OF HIV INFECTIONS IN BELARUS



Source: Wilson et al. (2013). Available at: http://optimamodel.com/pubs/belarus-report.pdf

Several LAC countries are implementing benefit plans with different designs. Figure 6 summarizes the main features of these plans for five LAC countries:

FIGURE 6. BENEFIT PLANS IMPLEMENTED IN FIVE LAC COUNTRIES



Source: Author's elaboration

A STRATEGY TO PRIORITIZE EFFICIENCY REFORMS

Given that almost every aspect of a health system influences efficiency, countries need to be strategic in prioritizing reforms. This can be achieved through the following:

- **Focusing on reforms that are both relevant and feasible.**
- **Being clear about the expected final outcome of the efficiency reform** (e.g., improving health versus improving financial protection).
- **Keeping in mind that efficiency challenges are local.** The nature of efficiency challenges varies based on the structure of health and payment systems. For example, if public provision is based on global budgets, the efficiency challenges usually deal with waiting times, implicit rationing, low quality, and high out-of-pocket expenditure. If the public or mixed provision is based on fee-for-service, the efficiency challenges deal with cost escalation, overproduction, and induced demand.
- **Considering that cost-effectiveness and affordability are context specific**. For example, purchasing a quality-adjusted life year with Trastuzumab (a drug to treat breast cancer), would be cost effective in the United States and the United Kingdom but not in Bolivia.

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IMPROVING HEALTH SECTOR EFFICIENCY IN LATIN AMERICAN COUNTRIES

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To improve health efficiency, analysts should avoid recommending a laundry list of standard solutions. Solutions need to better take evidence and the LAC context into account.

EFFICIENCY MYTHS

Finding solutions to increase efficiency is becoming urgent for countries in LAC to sustain improvements in health under a fiscally constrained scenario. Scholars, consultants, and analysts from various organizations are supporting LAC countries to identify solutions to improve health efficiency. Unfortunately, too often they end up repeating a laundry list of supposed solutions, such as the following:

- **Adopt a basic package of cost-effective services to promote a shift from expensive and ineffective hospital services to cost-effective primary health care**
- **Reallocate human resources for health so that rural and remote facilities get the resources they need**
- **Develop and implement treatment protocols in public and private health facilities**
- **Adopt an essential drugs list with generic products**
- **Involve the private sector through public–private partnerships to improve efficiency**

Even if these solutions could work for some LAC countries, they are frequently not supported by sound evidence. Scholars, consultants, and analysts often do not answer key questions, such as: "What are the costs and possible results associated with the intervention?"; "How long does it take to achieve the desired results?" In fact, the supposed solutions sometimes reveal themselves as myths. Two examples of such myths are provided below.

MYTH 1

Contracting private sector providers leads to efficiency gains.

In 2014, Yip and Hsiao conducted a review of the advantages in terms of efficiency of contracting private providers, thus favoring market competition between public and private providers.

The scientific literature about the effect of market competition on hospital efficiency has shown mixed results depending on the institutional context. Limited evidence supports the idea that the presence of private providers leads to positive spillover effects on public hospital efficiency.

Despite this lack of evidence, several country health system assessments continue to recommend this solution.

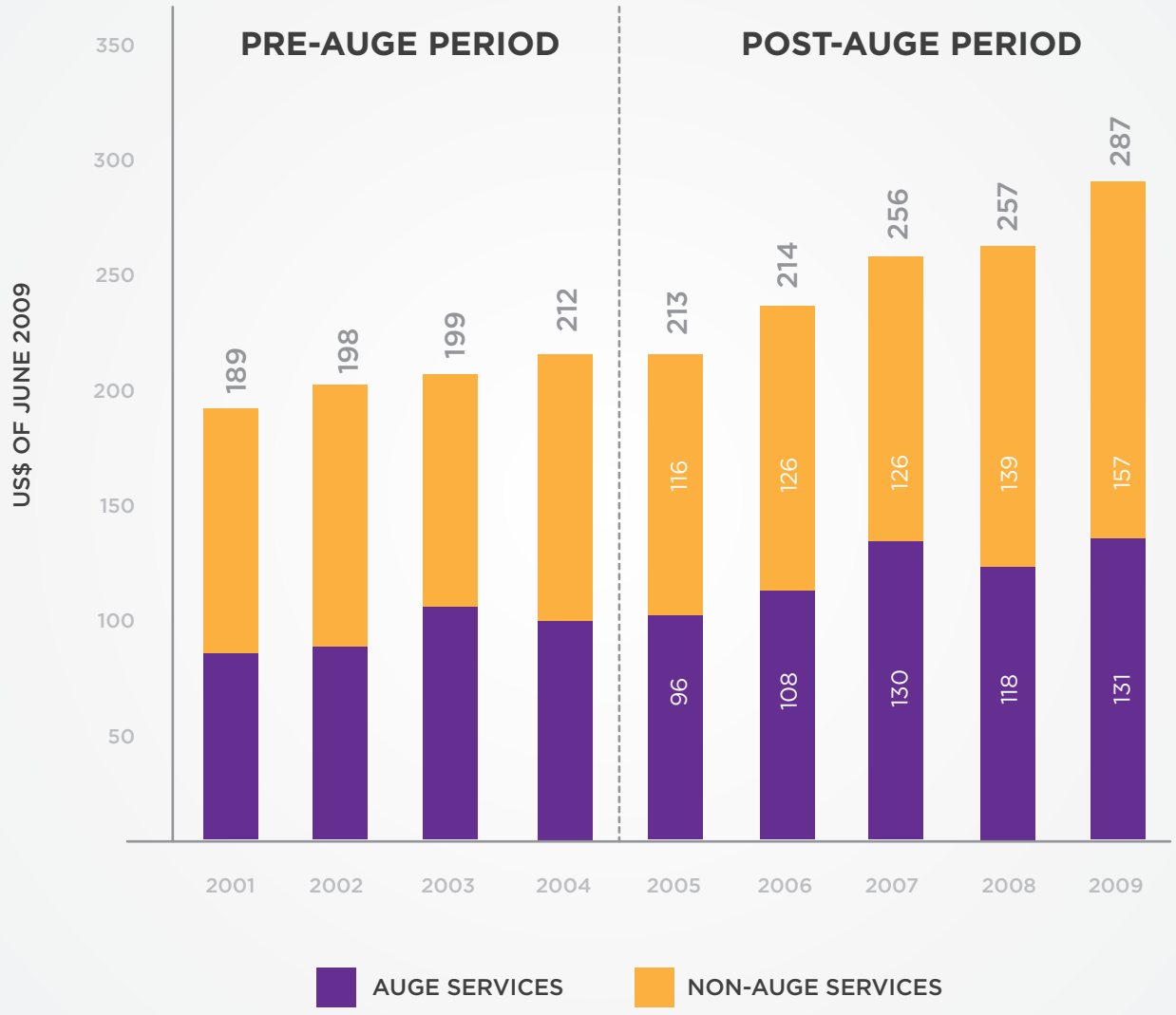
MYTH 2

There was a shift in public spending toward priority health services after the Chilean health reform "Universal Access with Explicit Guarantees (Acceso Universal con Garantías Explícitas, or AUGE)."

The AUGE reform (2005) defined a basic benefits package for social health insurance consisting of guaranteed and explicit treatment for 56 priority health problems. The reform also set upper limits on waiting times and out-of-pocket payment for treatment.

AUGE contributed to improve access to treatment for the public insurer's (Fondo Nacional de Salud, or FONASA) beneficiaries as confirmed by the increase in the production of AUGE health services. However, there is no evidence of the expected shift in public spending toward the benefits package. As seen in Figure 7, the cost per beneficiary increased for both the AUGE (benefits package) and non-AUGE services after the reform. The expected shift in public spending from non-AUGE to AUGE services did not happen due to political pressure, which led FONASA to increase also non-AUGE spending.

FIGURE 7. FONASA'S ESTIMATED COST PER BENEFICIARY FOR AUGE AND NON-AUGE SERVICES, 2001–2009 (US$ OF JUNE 2009)



Source: Ministry of Heath (2012). "Estudio impacto GES (AUGE)".

HOW CAN MYTHS BE DEBUNKED?

To unveil the myths behind health care efficiency and propose effective solutions, scholars, consultants, and analysts should: (i) explore the available evidence; (ii) develop context-specific analysis; and (iii) take into account possible alternatives and consequences. Multilateral organizations, such as the IDB, can support LAC countries to debunk myths and identify evidence- and context-based solutions. In particular, multilateral organizations can accomplish the following:

- Generate and disseminate information about health sector efficiency in LAC countries
- Provide guidance and training on possible sources of inefficiency in the health sector
- Gather and disseminate evidence about successful interventions to improve efficiency in the region
- Conduct country assessments on efficiency to generate practical knowledge on how to diagnose inefficiency and prioritize interventions

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PROCUREMENT POLICIES FOR PHARMACEUTICALS: THE INTERNATIONAL EXPERIENCE

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Drug procurement is a key element in efficiency of spending in health. The optimal pharmaceutical procurement policy should include both demand- and supply-side interventions, with different mechanisms for purchasing in-patent and off-patent drugs.

THE IMPORTANCE OF DRUG PROCUREMENT PROCESSES AND REGULATIONS

Medicines are the second most important item in a country's health care budget after salaries. Therefore, processes and practices related to pricing, procurement, and the use of drugs can have a very large impact on the efficiency of health care systems around the world.

The national drug policy is a central piece of regulation in drug procurement. It should ensure equity to access, quality of medicines, and a rational use of medicines. From a planner's perspective, medicine purchasing should adhere to the following principles: (i) equity, (ii) macroeconomic efficiency based on budget constraints, and (iii) microeconomic efficiency based on resource allocation and value for money.

In many countries, however (particularly in Sub-Saharan Africa, Southeast Asia and in LAC), assumptions about pharmaceutical procurement policies and regulatory frameworks do not hold. These assumptions include the existence of a third-party player (at the national, regional or local level), a national drug policy, or an effective regulatory system (that guarantees safety, efficacy, and quality). Not all these structures and regulations are always present in a country.

SUPPLY- AND DEMAND-SIDE INTERVENTIONS FOR DRUG PROCUREMENT

The price and volume of purchased drugs has a large impact on the cost of medicines. Both prices and volume are impacted by pharmaceutical procurement policy and can be modified through interventions from either a demand and/or a supply side perspective.

Supply-side regulations and incentives include a variety of measures that affect drug suppliers in a market. These include pricing regulations, barriers to entry for suppliers and products into a market, profit restrictions, health technology assessments (HTAs), direct negotiations, or risk sharing. However not all countries can implement the same types of regulations and incentives.

For example, HTAs are commonly used internationally to determine the value of a drug and thus its price. The development of effective HTAs can be precluded, however, if there is a limitation in the data and information available to develop indicators and criteria.

Demand-side regulations and incentives focus on addressing the behavior of physicians, pharmacists, and patients when deciding to use or promote the use of drugs.

For example, physicians can face drug budgets, pharmacists can promote generic substitution, or patients can have fixed co-payments. Demand-side interventions rely on good information systems.

Without good feedback and information systems linked to policy practices, it is virtually impossible to control actors in the health system and to determine whether medicines are used rationally.

DIFFERENCES BETWEEN PROCUREMENT PROCESSES FOR IN-PATENT AND OFF-PATENT DRUGS

Procurement processes vary based on whether drugs are in-patent or off-patent.

In-patent drugs have patent protection, which can create monopoly power. These amount to about 20–25 percent of all medicines consumed in a developed or middle-income country and account for 60–80 percent of total pharmaceutical expenditure.

Off-patent drugs do not have patent protection (these include generics drugs). These typically sum up to 75 percent of all medicines consumed in a developed or middle-income country and account for 20–40 percent of total pharmaceutical expenditure. Their lower cost can thus highlight possible areas of saving for the health sector.

Table 4 summarizes the main existing procurement mechanisms based on international evidence. The optimal policy approach should use a combination of mechanisms based on the composition of in-patent and off-patent drugs procured.

TABLE 4. PROCUREMENT MECHANISMS

TYPE OF DRUG	POSSIBLE PROCUREMENT MECHANISMS
IN-PATENT DRUGS	Rate of return regulation: prices are set by regulating expected profits. Price setting and negotiation: external price referencing and cost-plus pricing are used for price setting and negotiation. Value assessment through HTAs: cost-effectiveness pricing, assessment of clinical benefits, and value-based pricing. Controlling use: the volume of purchases is negotiated ex-ante by suppliers and the health care system to define the utilization of medicines.
OFF-PATENT DRUGS	Price capping: limits to prices are agreed on. Internal reference pricing: it groups similar medicines as a referencing mechanism for prices. Free pricing and competition: prices are set through competition processes between providers. Tendering: prices are set through public tendering processes. In the case of generic drugs, it is important to carry out a coordinated action that goes beyond price and volume and includes considerations on the information system, the regressive margins for dispensing, generic substitution, and other key aspects. However, only four or five countries worldwide apply this holistic approach, including Denmark, Netherlands, South Africa, Sweden, and the United Kingdom.

POLICY IMPLICATIONS

- **Voids in regulation preclude guaranteeing safe medication purchasing** (particularly for off-patent medicines). There is a need to focus on creating and strengthening regulatory frameworks for procurement practices in many countries.

- **Interventions in the pharmaceutical industry should not be one-sided.** Supply-side strategies need to be complemented with actions on the demand side.

- **Procurement policies should promote a combination of mechanisms based on the share of inpatent and off-patent medicines.** For example, tendering process for generics have been shown to be successful. However, this mechanism is not advisable for in-patent medicines because the discount would be too low. A different procurement mechanism would be more advisable.

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PUBLIC EXPENDITURE EFFICIENCY AND OUTCOMES: GENERAL LATIN AMERICAN AND CARIBBEAN TRENDS AND APPLICATIONS TO HEALTH CARE NETWORKS IN ARGENTINA

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LAC countries should focus more on management, provision of health services, and patients' perspectives to improve efficiency in health care.

LAC health care systems show profound differences between and within countries that affect both public expenditure efficiency and health outcomes. The most important differences are related to the following:

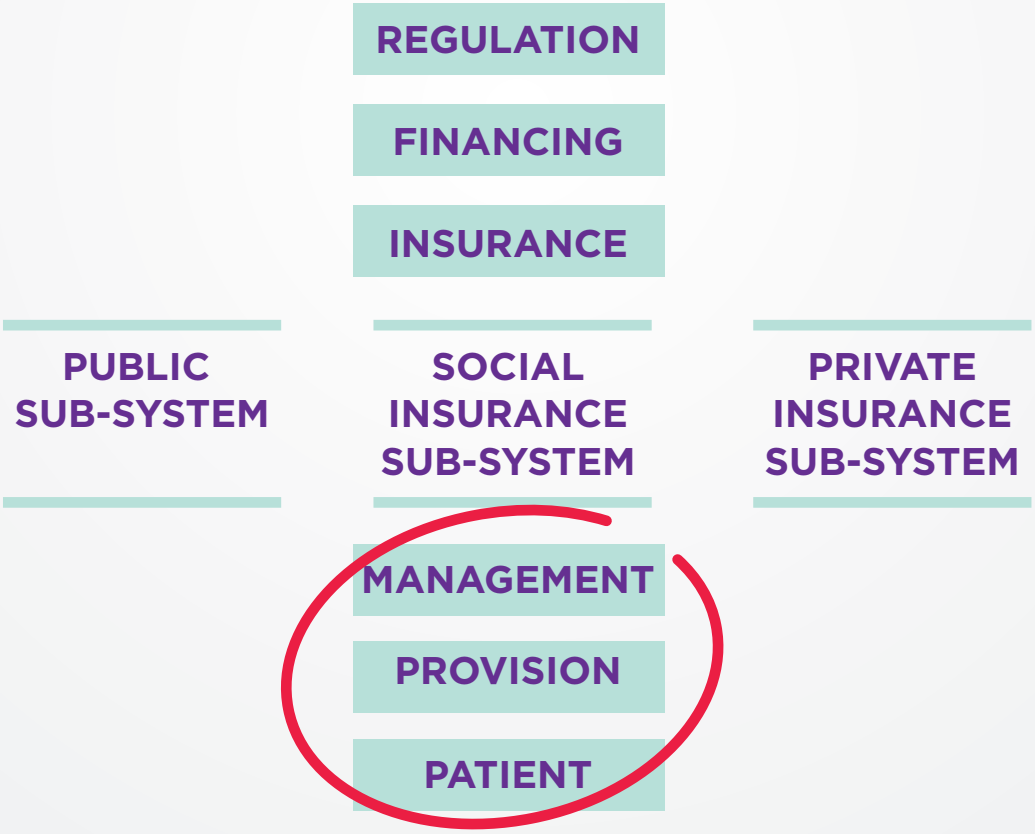
- **Total health spending capacity**
- **Participation of government vs. out-of-pocket in financing health care**
- **Incidence and degree of coordination among the different subsystems (public, social security, and private)**
- **Regulatory capacity of LAC governments**
- **Quality of management**

Differences between health systems in LAC can be analyzed based on two dimensions (Figure 8). The horizontal dimension refers to the interactions and the degree of coordination among the public, private, and social security subsystems, where equity issues can be identified. The vertical dimension refers to health system functions (regulation, financing, insurance methods, management, and service provision), which are related to efficiency in resource allocation.

LAC COUNTRIES' FOCUS WHEN ADDRESSING EFFICIENCY

Policymakers and researchers have been focusing on financing and insurance when addressing issues of efficiency in LAC. Current evidence supports the importance of these functions, but calls for **more attention to management, provision of health services, and the analysis of patients' perspective.** This analysis identifies behavioral differences across various groups in taking care of their health and seeking care, based on their access to information, income levels, and formal education. Nonetheless, taking actions to improve all health system functions is paramount to improving health efficiency in LAC.

FIGURE 8. HEALTH SYSTEMS DIMENSIONS



Source: Maceira (2001).

THE ARGENTINE CASE STUDIES

Case studies in Argentina confirm that the key issues affecting efficiency in public expenditure are related to several health system functions, including management and provision of services.

The following are some key issues in Argentina:

- **Lack of coordination** between the different levels of care (i.e. primary, secondary, tertiary). This leads to inefficient resource allocation, duplication of costs, underutilization of heath care centers, and over-utilization of hospital emergency rooms.

- The Argentine health system has a **double risk transfer mechanism**: (i) administrative: from municipalities to provinces, and (ii) clinical: from health care centers to hospitals. This mechanism constitutes a dual agency model because health centers depend administratively/financially on the municipality but have to comply with the referral and counter-referral systems within the health care network (where hospitals and primary health centers belong to different levels of care). This dual agency model, combined with a **highly decentralized system**, affects health care efficiency. Beyond supporting decentralization as an instrument to improve empowerment of subnational authorities, coordination and effective managerial skills are needed to increase efficiency for stronger governance.

- **Formal mechanisms for provision of services are weak in the public sector**. For example, there is a lack of shared protocols for referral and treatment and well-defined human resource strategies, as well as non-systematic monitoring and evaluation. Under such scenarios, informal referral mechanisms based on verbal agreements between hospitals, health centers, and physicians have contributed to sustained organization and coordination of the health care networks.

- Hospitals are required to admit patients with low clinical risks, rather than referring them to other intermediate local hospitals or sending them back to primary health care centers. This can cause **congestion at the hospital level** and affect efficiency in resource allocation. Congestion can also have an impact on equity by preventing low-income patients from accessing proper treatment. A possible solution to avoid this problem of overcrowding is applying "downstream vertical integration," through either integration in property or integration in control. Vertical integration in property occurs when the levels of care to be integrated belong to the same authority (national, provincial, or municipal). Vertical integration in control occurs when these levels of care are not in the same political sphere, but are governed by either normative or financial coordination agreements. A relevant Argentine example of vertical integration in property consists of a provincial hospital that created its own intermediate health care center, which is responsible for identifying and referring patients based on risk levels. This allowed for better use of resources within the system.

LESSONS LEARNED FOR LAC

- The key issues for researchers and policymakers when dealing with productivity and management of health care networks in LAC are as follows:
  - Structure and absorptive capacity at the health care center level
  - Structure and absorptive capacity at the hospital level
  - Formal and informal linkages among the different levels of care

- As seen in the Argentine case study, policymakers can leverage informal mechanisms in the provision of services to strengthen health care networks. This can be done when there is lack of coordination, a dual agency model is being implemented, and/or formal rules are not well established. LAC countries should keep pushing for the development of formal mechanisms and stronger regulatory frameworks, while leveraging informal mechanisms as a temporary solution.

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RECENT DEVELOPMENTS IN RESULTS-BASED BUDGETING: THE CASE OF PERU

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Results-based budgeting is an important tool that can lead to better efficiency and effectiveness of spending. Its application in Peru has contributed to improving the quality of spending as well as outcomes in child health.

A CASE OF RESULTS-BASED BUDGETING IN PERU: PROGRAM FEATURES

Results-based budgeting (RBB) reorganizes the budgeting allocation process by linking funding and performance in the public sector. Budget funds are allocated based on results and priorities, not on historical levels of inputs. This tool can thus be particularly important in the context of LAC, where more spending is required in health, despite a historically low level of spending and current fiscal restrictions.

Peru has been applying RBB since 2008. Its budget programs include the following elements:

- **A program design that is centered around evidence**, which encourages public entities to work toward the achievement of results in priority areas.

- **Capacity to carry out an analysis of the intervention's effectiveness**; for example, analyzing the achievement of outcomes based on outputs, processes, and interactions showed greater results than the analysis focused on inputs alone.

- **Identification of the most effective key interventions**, which are output-based, with clear costed and budgeted priorities and organized around outcomes. Budget increments are then assigned according to these interventions.

- **Managing user service points**; since RBB is a bottom-up approach, financing requirements and input controls are based on user service points. Resource requirements are calculated based on criteria such as population dispersion, percentage of indigenous population, and

poverty incidence, among others. Criteria based on information availability is key for this process.

Monitoring resource availability as well as outcome and output indicators, using tools such as measures of effectiveness, efficiency, and quality. The National Institute of Statistics and Informatics (Instituto Nacional de Estadística e Informática, or INEI) monitors outcome and output indicators. Administrative databases such as the Administrative Management System (Sistema de Gestión Administrativa, or SIGA) and the Financial Management System (Sistema de Administración Financiera, or SIAF) monitor resource availability.

RBB, IMPROVEMENTS IN SPENDING AND RESULTS ACHIEVED IN REDUCING CHILD MALNUTRITION

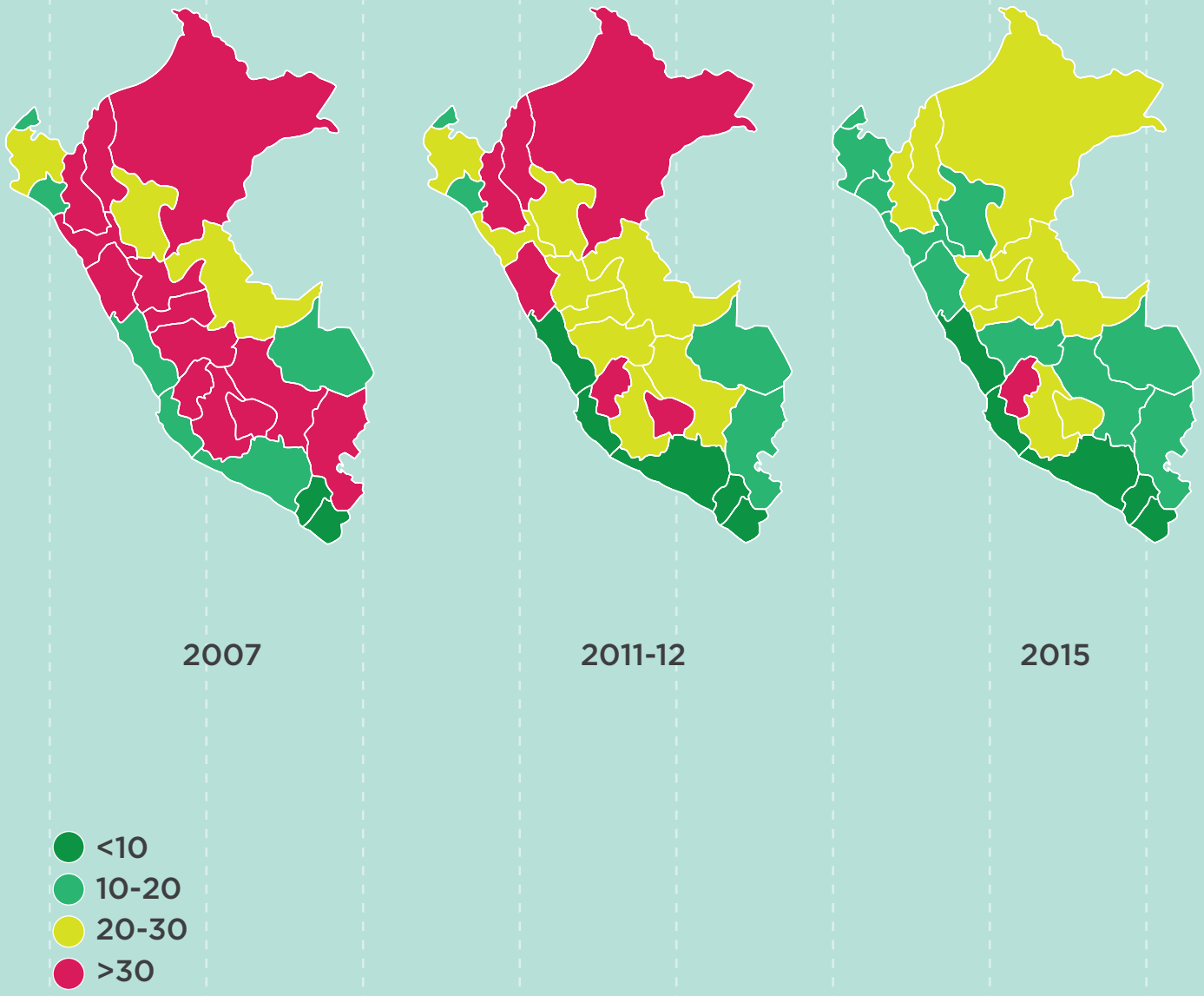
The use of RBB in the health sector was considered important in promoting better public policy toward reducing child malnutrition (from 27.5 percent to 14.4 percent between 2007 and 2015). In this period, there was a 134 percent increase in the budget allocated to mother and child health and other nutrition programs, an improvement of transparency in resource allocation, and better spending execution in the health sector.

An impact evaluation carried out by the Ministry of Finance in 2011 found a direct link between the key RBB interventions and how these led to improved health results: As seen in Figure 9, the prevalence of chronic child malnutrition for children under 5 was drastically reduced between 2007 and 2015. The use of RBB may have also contributed to the improvement in other health outputs, such as increased coverage of control for child development and growth programs for children under 36 months of age (from 24 percent to 54.9 percent between 2007 and 2015) and an increase in pneumococcus and rotavirus immunization for children under 12 months (from 25 percent to 78 percent between 2009 and 2015).

The evidence generated and data gathered through RBB allowed for greater monitoring of inputs, their geographical distribution, and the results obtained. It has therefore created a powerful tool to improve the effectiveness of spending, as well as to monitor how child health and malnutrition has evolved across time.

Despite these successes, there are areas needing improvement in the application of RBB in Peru. First, there must be greater emphasis on applying RBB within a decentralization agenda. Regional governments require a greater emphasis on capacity building, resource programming and distribution, as well as on mechanisms for budget allocation strengthening. Second, there is a need to improve the existing tools for programming, implementing, monitoring, and evaluating results to better align inputs, outputs, and outcomes. Finally, the allocation of available resources should be increasingly based on criteria such as population size, existing gaps, poverty, dispersion, and indigenous peoples. This is a gradual process, but it must not be discontinued.

FIGURE 9. PREVALENCE OF CHRONIC MALNUTRITION IN CHILDREN UNDER 5 BY REGION, WHO PATTERN (2007–15)



Source: Instituto Nacional de Estadística e Informática, https://www.inei.gob.pe/

POLICY IMPLICATIONS

- The areas of improvement presented in the previous section must be prioritized. **More evidence on good practices is required** to promote further achievements of RBB in government outcomes.

- **Policymakers should consider how to use the available evidence on the success of RBB in health to expand RBB to other sectors**. Even if RBB is not directly applied across all sectors, the notions of evidence-based policy which it builds upon should be expanded beyond health.

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