Economic considerations on Cuba public health and its relationship with universal health*

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ABSTRACT
This paper presents, in the context of the Strategy for Universal Access to Health Care and Universal Health Coverage, some general considerations and economic measures addressing financing, efficiency and other economic challenges of public health in Cuba. Official Cuban government bibliographic sources were reviewed up to 2015. Time series analyses were adjusted to constant 1997 prices and the official exchange rate of 1 Cuban peso = 1 US dollar. The Cuban National Health System has a solid infrastructure, consisting of a wide network of health facilities that guarantee full coverage, access and equity in the services provided to the population by qualified human resources. An economic analysis was carried out under the conceptual framework of the strategy for universal health coverage and universal access, with emphasis in financing, efficiency and challenges of the Cuban public health system to maintain the right to health of its citizens, equity, coverage and access to services provided, including elimination of economic, sociocultural and gender barriers, as well as solidarity with the population of Cuba and the world.

It was concluded that universal health coverage and universal access are considered one of Cuba’s most valuable achievements, although a more efficient analysis of reliable and available sources is still needed, as well as research about strengths and weaknesses of the system regarding health economics and application of results to practice, updating and better use of resources and technologies, further application of lessons learned and facing a set of challenges.

Keywords
Health care financing; efficiency; health economics; Cuba.

Cuba participates in the Strategy for Universal Access to Health and Universal Health Coverage promoted by the World Health Organization (WHO) and the Pan American Health Organization (PAHO) (1, 2). The National Health System (SNS) is comprehensive, universal and free of cost, with three levels of care. At the primary care level, there are 451 polyclinics linked to neighborhood family-doctor-and-nurse offices in direct contact with the population, as well as other institutions. There are also 150 hospitals at the secondary care level, and 19 research and tertiary-care institutions. This creates a solid infrastructure with qualified human resources1 and a wide network of health care facilities...
guaranteeing full access and coverage for the whole population (3, 4).

After 1959, Cuba’s health indicators reached levels similar to those of the world’s top economies. Cuba’s greatest new public health challenges of the 21st century are not about improving access, coverage or the most important health indicators. They are about finding efficiency reserves.

Under the effects of the international economic crisis, and the economic and trade embargo imposed by the United States, Cuba is updating its economic model. Despite showing political and diplomatic strides, it still has not found solutions to problems such as the dual currency and exchange rate, low productivity or lack of foreign investment. Cuba is also confronting an aging population, low birth rates and the difficulties inherent in migratory processes (3-5).

The SNS is currently focusing on improving efficiency without diminishing excellence in services. In 2011, a plan was launched to reorganize, condense and regionalize health services in order to “consolidate actions and increase the effectiveness and efficiency of plans and programs, as well as the system’s ability to face foreseeable challenges related to an aging population and other health contingencies that may arise from climate change and its consequences” (6).

The purpose of this article is to discuss general considerations and economic actions regarding financing, efficiency and challenges of public health in Cuba, within the context of the Strategy for Universal Access to Health and Universal Health Coverage.

Development

The article is based on the results of a study reviewing official Cuban government bibliographic sources before 2015. Data were drawn from the National Statistics and Information Bureau (ONEI), Ministry of Public Health (MINSAP) documents, international agencies and other international references on Cuba within the scope of the National Health System (SNS) in the context of Universal Health Coverage and Access, financing and efficiency.

When necessary, all analyses used the official exchange rate of the Cuban peso (CUP) to US dollars (USD) at a 1:1 ratio. Time-series analyses were adjusted to constant 1997 prices using gross domestic product (GDP) deflators employed by ONEI (7, 8).

Cuba in the context of Universal Health Coverage and Access

The member states of PAHO are a heterogeneous group that includes highly developed countries, such as the United States and Canada, and poor countries, such as Haiti; states with large territories and small islands in the Caribbean. Their populations speak different languages and are ethnically and culturally very diverse. Some maintain indigenous ways of life and others have formed mainly through immigration, with strong Old World influence.

The right to health, equity and solidarity are the basic pillars of Universal Health Coverage and Access. These three values provide the ethical foundation of public health care policies. The “universal” attribute encompasses both coverage and access. It emphasizes the elimination of economic, sociocultural and gender barriers that limit such access. Its strategic guidelines also include expanding equitable access to health services, strengthening stewardship, governance and multi-sector cooperation, increasing financing and improving efficiency.

Financing and efficiency are the focus of this article, which examines several of its consensus elements: eliminating direct payments as a barrier to access, raising public expenditure on health to 6% of GDP, using collaborative solidarity-based financing, increasing efficiency of the health system and rationalizing the inclusion of technologies (2).

Looking at health financing regionally allows us to examine differences among countries with regard to the source of resources. In some countries, such as Colombia and Costa Rica, funding comes mainly from social security. In Haiti, a large portion comes from other private sources, while spending on private insurance predominates in the United States. In only five countries—Canada, Costa Rica, Cuba, the United States and Uruguay—public health expenditure is above 6% of GDP (9).

On average, governments in the Americas allocate 14% of public spending to the health sector, as a percentage of the total expenditure ranging from 7% to 23%. Out-of-pocket expenditures are a barrier to access and are considered the most regressive and inefficient source of funding. The amount of this expenditure also varies widely within the region, from 4.4% in Cuba followed by the United States, Suriname, Canada, Colombia and Uruguay, where it is between 10% and 20%. Variability is greater among the remaining countries in Latin America, with Venezuela presenting the highest percentage, above 60% (9).

There is more than one path to reach Universal Health Coverage and Access, because strategies are conditioned by contextual factors in each country. A health system is efficient if it is able to combine continuous improvement of its health indicators and an increase in wellbeing without entailing financial risk for its population. Available resources must be optimized to improve health indicators, while maintaining equitable access to health services. An ideal health system orients its policies toward producing what the society needs and expects regarding health and wellbeing. Both the government and society are implicated in this responsibility.

Cuba has obtained many quantitative results in the realm of Universal Health Coverage and Access. Certain health indicators rank Cuba among many developed nations, without any gaps in relation to regulatory criteria in measuring disparities such as gender, education, income, occupation, location (urban vs. rural), etc. Free, equitable and non-exclusive health care sets Cuba up for success in achieving Universal Health Coverage and Access goals (10, 11).

Financing public health in Cuba

The government of Cuba finances public health; health services are state-run through the SNS health care network. All expenditures are covered by the national budget allocated to the health sector (12).

One important element of health systems is health care financing, focused on raising, accumulating and allocating resources to cover the population’s health needs (13). Cuba’s financing system is designed to provide the whole population with access to quality services and to guarantee that use of these services do not entail financial difficulties for users. Its policies and actions are also implemented with a multisector and cross-disciplinary approach toward addressing social determinants of health and promoting the wellbeing of society. This is
in line with PAHO’s plans for financing health systems and services.

According to public health researchers and analysts, the SNS is an exemplary model (14). It is based on preventive medicine and provides services not only nationally, but also to developing nations. There are also characteristics particular to Cuba’s human resources training strategy in the field of health: medical sciences universities are part of the SNS and receive pedagogical and methodological support from the Ministries of Education and Higher Education. Instead of confining itself to market constraints, the epidemiological profile of the country is taken into account. Furthermore, in a gesture of solidarity, it opens up educational possibilities for young people from around the world who would be unable to access them in other contexts.

Information is presented regarding public health financing in Cuba using a time-series analysis of total public health spending as a percentage of GDP between 1996 and 2015 (Figure 1).

The State Budget Law and the health sector budget approved for 2017 confirm the continuing upward trend in health spending. Cuba’s national budget is the main plan regulating the distribution of a substantial part of the national income allocated to promoting the economy, increasing material and cultural wellbeing of the society, national defense and the functioning of government agencies and bodies. The analysis of its implementation, especially with regard to spending, is the main instrument available for identifying fiscal priorities in the use of financial resources (15).

During the period studied, public health and social welfare spending were affected by various factors. Even when the relationship is not deterministic, their influence was considerable. Two of these factors were especially influential: the economic crisis at the start of the 1990s, resulting from the disappearance of the socialist camp in Europe (16) and major investments in infrastructure and medical technology between 2004 and 2009 aimed at reducing the negative effects of the previous decade (17). After 2010, there was a cutback at the expense of the workforce until 2012. It has begun to grow once again in recent years.

Public expenditure expressed as a percentage of GDP is one of the most widely used indicators to demonstrate the importance governments give to health in their public policies. In comparison with other countries in the region, the values of health expenditure as a percentage of GDP in Cuba are high (18). Countries with “very high human development” and those belonging to the Organisation for Economic Co-operation and Development (OECD) have values above 7.0%, while countries with “average human development”, “low human development”, “least developed” and those of South Asia have values below 2.0%. The overall value is 6.0%, which matches the magnitude observed in documents discussing universal human development and is indicated as the threshold to be reached (Table 1) (18).

When analyzing the behavior of health and social welfare spending as a percentage of GDP, it can be seen that between 1996 and 2004, this indicator had relatively low values, close to 6%. It then steadily increased to 13.8% in 2009, then decreased to 9.1% (due to adjustments to the salary budget) and bounced back to 10.4% in 2014 due to the salary increase for health care workers (7). It also includes the free solidarity-based humanitarian aid provided by Cuba to many countries permanently or under unforeseeable conditions. This is justified by the Cuban government’s responsibility to prioritize its own population’s health (Figure 1).

In Cuba, salary is a major component of the health expenditure, due to the high number of workers within the system. The number of workers in the health sector grew in accordance with health expenditures until 2010, when the payroll for SNS workers was reduced by more than 150,000 jobs as a result of the transformation process in the sector. Most jobs affected were administrative and not directly linked to health care processes (6). This led to a recovery in budget implementation and per capita spending, related to a policy of wage increases in the health system and new investments (3).

Another aspect to analyze is spending distribution for budgeted activity5 in selected budgetary items showing available official information regarding distribution of state expenditures by budgeted activity between 2008 and 2015 (Figure 2) (7).

Public health and social welfare have had high fiscal priority, with percentages generally exceeding 25% of the total expenditure of budgeted activity. At 28% in 2017, this amount is

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5 This refers to the activities of sectors that are beneficiaries of the national budget. They include production activities, business services, real estate and rental activities, public administration, defense, social security, science and technological innovation, education, public health and social welfare, culture and sports, and other community service, association and individual activities.
only comparable with education, another important objective of Cuban policy, which has a clear influence on public health. One positive aspect is that Defense and Social Security funds have remained stable. However, it is noteworthy that the areas of science and technological innovation, included in the “Other” category, have been decreasing (7).

Another element related to financing is out-of-pocket health spending. The country does not have a national health accounts system, nor does it have information from household survey results that provide an objective and reliable view of this indicator.

The main source of household health spending in Cuba is associated with population aging. Resources are lacking to provide care for a population with high life expectancy, and therefore, a higher burden of comorbidities associated with old age. Hospital care—although guaranteed—is not the resource needed. Families generally bear the financial burden in this respect. Studies show that out-of-pocket spending is a sensitive indicator of Cuban household economy and, therefore, should be considered in economic analyses of the health sector (19).

Efficiency and other economic challenges for public health in Cuba

The right to health, equity and solidarity are essential principles and values of universal health coverage and access, adopted by Cuba through conscious practice extending beyond its borders, but that also placed the SNS in continuous tension attempting to balance these values with efficiency. PAHO/WHO acknowledges that there is a need to shift toward a new paradigm of social protection based on the three principles and values mentioned above (20).

These principles and values are part of Cuba’s health system and are stated explicitly in its constitution and legal foundation. It is not based on a contributory logic and therefore, there are ongoing efforts to strengthen and optimize the public system, preserve non-exclusion and promote multisector policies aligned with the principle of social determinants of health (21).

Efficiency is a topic that is increasingly present in the agendas of decision makers in health systems (20, 22). It is estimated that between 20% and 40% of health care spending in countries is wasted because of inefficiency (10). To grasp the meaning of these percentages, we can take the following

### TABLE 1. Public health expenditure, 2014

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Public health expenditure* (% of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human development groups</strong></td>
<td></td>
</tr>
<tr>
<td>Very high human development</td>
<td>7.5</td>
</tr>
<tr>
<td>High human development</td>
<td>3.4</td>
</tr>
<tr>
<td>Medium human development</td>
<td>1.8</td>
</tr>
<tr>
<td>Low human development</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Developing countries</strong></td>
<td>3.0</td>
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<tr>
<td><strong>Regions</strong></td>
<td></td>
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<tr>
<td>Arab states</td>
<td>3.0</td>
</tr>
<tr>
<td>East Asia and the Pacific</td>
<td>3.0</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>3.7</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>3.6</td>
</tr>
<tr>
<td>South Asia</td>
<td>1.6</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>2.4</td>
</tr>
<tr>
<td>Lesser-Developed Countries</td>
<td>1.8</td>
</tr>
<tr>
<td>Small Island Developing States</td>
<td>5.3</td>
</tr>
<tr>
<td>Organisation for Economic Co-operation and Development (OECD)</td>
<td>7.7</td>
</tr>
<tr>
<td>Cuba</td>
<td>10.4</td>
</tr>
<tr>
<td>World</td>
<td>6.0</td>
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GDP: gross domestic product

* Health expenditure, current and capital, from government budgets (central and local), external loans and subsidies (including donations from international agencies and non-governmental organizations) and social security (or mandatory) health insurance funds, expressed as a percentage of GDP.

**Source:** Created by the authors from UNDP Human development report, 2016. Table 8. Health outcomes, p. 231 and ONEI for Cuba.

### FIGURE 2. Percentage distribution of budgeted activity spending per selected items, 2008–2015

![Graph of percentage distribution of budgeted activity spending per selected items](image-url)
TABLE 2. Lessons learned by analysis of scope and actions

<table>
<thead>
<tr>
<th>Scope and Access</th>
<th>Analysis</th>
<th>Actions</th>
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<tbody>
<tr>
<td>Cuban health system and Universal Health Coverage and Access</td>
<td>There is a clear need to integrate Universal Health Coverage and Access strategies into SNS development and align them with Cuba’s new economic model.</td>
<td>A process of transformation and continuous improvements was developed in the health sector, keeping in mind the Universal Health Coverage and Access strategies, aimed toward higher quality care, effectiveness and efficiency.</td>
</tr>
<tr>
<td>SNS Financing</td>
<td>It is noted that having adequate financial support to manage the SNS requires stronger budgetary control mechanisms. Scarcity of resources and difficulty obtaining them can be triggers for finding efficiency reserves.</td>
<td>Mechanisms were strengthened for controlling budgets and other economic processes in all SNS plans and actions.</td>
</tr>
<tr>
<td>Efficiency in the SNS</td>
<td>There is a clear need for promoting efficiency by working in specific program areas to use resources wisely. Addressing health problems is the responsibility of society as a whole.</td>
<td>Program areas that contribute to the improvement and wise use of resources were identified and strengthened, the medicines program was prioritized for its high sensitivity in the SNS.</td>
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SNS, national health system

example: if 30% of the budget allocated in Cuba for Public Health and Social Welfare was wasted in 2015 due to inefficiency, this would have represented about 3.2 billion Cuban pesos. No country or region in the world can allow this loss.

According to MINSAP, in 2015, 42.6% of the health budget was assigned to primary care, which resolves the majority of the population’s health problems (12). Any action that can be resolved at this level but is referred to another adds waste and inefficiency to the health system. Prioritizing investment in this level of care, raising the epidemiological profile, together with free services, eliminating financial barriers, targeting and protecting vulnerable groups or groups with higher levels of exposure to risk have been a priority. They are included in the fundamental strategies for achieving universal health coverage and access that guarantee a primary level of care that is not only strong and decisive but that also coordinates service networks.

In most countries in the Americas, one of the most important sources of inefficiency is the existence of segmented and fragmented health systems. In Cuba, segmentation was eliminated shortly after 1959 when the State took charge of the largest budget item, health expenditure. Fragmentation disappeared with integration of the SNS in 1970 and, definitively, with creation of the Cuban family medicine model in 1984 (23).

A sign of SNS maturity is the ability to identify factors that hamper efficiency and adopt measures to rectify them. This goal has been explicitly included in health programs (24). The Efficiency and Rational Use of Resources Program has been especially relevant (25). Since 2009, its goals have included improving quality of services through intelligent use of resources, streamlining the workforce employed in health institutions, the stimulus plan for health sector workers, rational use of infrastructure, improvement of cost systems in SNS units, and control of waste and illegalities (26).

There is also a National Medicines Program that monitors the process, from medical prescription of approved drugs for specific morbidities to their distribution. Its regulations include creation of a basic medications chart that is analyzed and adjusted annually (27, 28).

Despite the accomplishments, there is no doubt that urgent financial challenges exist and must be addressed in order to improve results:

- Promote the study of payment systems as an efficiency incentive mechanism, specifically performance-based pay, not only for human resources in health but also for financing health institutions.
- Develop a national health accounts system that contributes to improved planning, creation and monitoring of new health sector strategies, distribution of resources and improved social accounting.

We hope this analysis, particularly the experiences presented, contribute to a discussion with the scientific community about some crucial topics, and offer a clearer, current overview of Cuban reality, not only regarding achievements and accomplishments, but also barriers to overcome, summarized as lessons learned (Table 2).

CONCLUSIONS

Universal access to health care and universal health coverage are considered one of Cuba’s most valuable accomplishments, although more efficient analysis is needed using available but underutilized reliable sources. Health economics research on the strengths and weaknesses of the system is also needed, and its outcomes put into practice. Resources must also be updated and analytical skills modernized.

This article presents the main economic actions taken in the context of the Strategy for Universal Access to Health and Universal Health Coverage, with emphasis on financing, efficiency and
challenges of Cuban public health to preserve its citizens’ right to health; equity; coverage and access to services provided; elimination of economic, sociocultural and gender barriers; as well as solidarity with the people of Cuba and the world.

To do so, it examines lessons learned and addresses a set of challenges that to ongoing monitoring of Universal Health Coverage and Universal Access strategy indicators with regard to strengthening and developing financial instruments, optimizing health financing, decisive performance at the primary care level, and aligning Cuba’s economic model with payment mechanisms and the national budget, among others.

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REFERENCES

Este trabajo expone, en el contexto de la estrategia de salud universal, algunas consideraciones generales y acciones económicas sobre el financiamiento, la eficiencia y otros desafíos económicos de la salud pública en Cuba. Se revisaron fuentes bibliográficas oficiales del estado cubano hasta 2015. Los análisis de series temporales se ajustaron a precios constantes de 1997 y tasa oficial de cambio: 1 peso cubano = 1 dólar estadounidense. El Sistema Nacional de Salud cubano cuenta con una infraestructura sólida, constituida por una amplia red de instalaciones sanitarias que garantizan la cobertura total, el acceso y la equidad en los servicios de la población con recursos humanos calificados. Se realizó un análisis económico bajo el marco conceptual de la estrategia de salud universal con énfasis en el financiamiento, la eficiencia y los desafíos de la salud pública cubana para mantener el derecho a la salud de sus ciudadanos, la equidad, cobertura y acceso en los servicios que se prestan, incluso la eliminación de las barreras económicas, socioculturales y de género, así como la solidaridad con la población cubana y del mundo. Se concluyó que en Cuba se considera la salud universal como una de sus más valiosas realizaciones, aunque se requiere del análisis más eficiente de fuentes fiables y disponibles, la investigación y aplicación de resultados a la práctica sobre las fortalezas y debilidades del sistema en materia de economía de la salud, actualización y uso de los recursos y tecnologías, así como profundizar en las lecciones aprendidas y enfrentar un conjunto de desafíos.
<table>
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<th>RESUMO</th>
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<tr>
<td><strong>Considerações econômicas sobre a saúde pública cubana e sua relação com a saúde universal</strong></td>
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<tr>
<td>Este artigo apresenta, no contexto da estratégia da saúde universal, algumas considerações gerais e ações econômicas sobre financiamento, eficiência e outros desafios econômicos da saúde pública em Cuba. As fontes bibliográficas oficiais do estado cubano foram revisadas até 2015. As análises das séries temporais foram ajustadas aos preços constantes de 1997 e à taxa oficial de câmbio 1 peso cubano = 1 dólar norteamericano. O Sistema Nacional de Saúde cubano possui uma sólida infra-estrutura, constituída por uma ampla rede de instalações de saúde que garantem cobertura total, acesso e equidade nos serviços da população com recursos humanos qualificados. Uma análise econômica foi realizada no marco conceitual da estratégia de saúde universal que enfatizou o financiamento, eficiência e desafios da saúde pública cubana para manter o direito à saúde de seus cidadãos, equidade, cobertura e acesso no serviços prestados, eliminação de barreiras econômicas, socioculturais e de gênero; bem como a solidariedade com a população cubana e o mundo. Concluiu-se que, em Cuba, a saúde universal é considerada uma das suas conquistas mais valiosas, embora requer a análise mais eficiente de fontes confiáveis e disponíveis, pesquisa e aplicação de resultados para a prática dos pontos fortes e fracos do sistema em termos de economia da saúde, atualização e uso de recursos e tecnologias, além de aprofundar as lições aprendidas e enfrentando um conjunto de desafios.</td>
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| Palavras-chave               | Financiamento da assistência à saúde; eficiência; economia da saúde; Cuba |