

Review

Comparison of health care financing in Egypt and Cuba: lessons for health reform in Egypt

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مقارنة بين تمويل الرعاية الصحية في مصر وتمويلها في كوبا: دروس مستفادة للإصلاح الصحي في مصر

كريستيان غيريكة

الخلاصة: تصنف مصر وكوبا ضمن البلدان ذات الدخل المنخفض إلى المتوسط، التي مرت بتاريخ من الحكم الاشتراكي، ثم اتجهت إلى التحرر الاقتصادي منذ عقد التسعينات. وقد حققت كوبا وضعا صحيا نموذجيا، في حين أصبح الوضع الصحي في مصر أدنى مما كان متوقعا له بناء على مستوى الدخل. ويقوم الباحث في هذا المقال، بتحليل آليات تمويل الرعاية الصحية في كلا البلدين من حيث الفعالية والكفاءة والعدالة، وذلك بغية تعيين محددات نجاح النظام الصحي في كوبا، مما يمكن من استنباط دروس قيمة منها، يمكن الانتفاع بها في عملية إصلاح النظام الصحي القائمة حاليا في مصر.

ABSTRACT Egypt and Cuba are both lower-middle income countries with a history of socialist rule, which have embarked on economic liberalization since the 1990s. Cuba has achieved exemplary health status whereas health status in Egypt is lower than could be expected for its level of income. In this article, health care financing mechanisms in both countries are analysed on their effectiveness, efficiency, and equity, with the objective of identifying the determinants of success in the Cuban health system from which valuable lessons for current health reforms in Egypt may be derived.

Comparaison du financement des soins de santé en Égypte et à Cuba : enseignements pour la réforme de santé en Égypte

RÉSUMÉ L'Égypte et Cuba sont deux pays à revenu moyen inférieur qui ont une histoire de régime socialiste et qui se sont engagés dans un processus de libéralisation économique depuis les années 90. Cuba est parvenu à une situation sanitaire exemplaire tandis que la situation sanitaire en Égypte est en deçà des attentes par rapport à son niveau de revenus. Cet article analyse les mécanismes de financement des soins de santé dans les deux pays pour ce qui est de leur efficacité, efficience et équité, dans le but d'identifier les déterminants du succès du système de santé cubain dont on pourrait tirer des enseignements utiles pour les réformes actuelles du système de santé en Égypte.

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Introduction

Egypt's health status is surprisingly poor considering its level of national income [1,2]. Cuba on the other hand achieves an extraordinarily good health status with a comparable national income [3], and was able to maintain it through a prolonged period of economic crisis in the 1990s [4]. Although both countries are located on different continents and have very different cultures, a number of similarities exist. Notably, both countries have been under socialist rule since the 1950s/1960s and have embarked on economic reforms in the last decade. Both are lower-middle income countries according to the World Bank classification. In contrast to many other low- and middle- income countries, both countries have a tradition of training large numbers of health professionals, in particular doctors, and both are net exporters of health professionals.

The Egyptian government is currently considering policies to reform health care financing and has started pilot projects with the help of external funding and technical assistance, notably by the World Bank, USAID, private consultancies, mainly USAID-subcontractors, and the European Commission.

In this article the Egyptian and Cuban health care financing arrangements are compared in order to determine which successful aspects of the Cuban approach could possibly be translated into the Egyptian context. Health service delivery issues are beyond the scope of this study.

The paper begins with an overview of the two health care systems and their political and socioeconomic environments. A description of the assessment criteria is followed by a comparative analysis of the health care financing mechanisms in both countries. The paper concludes with a dis-

ussion of the implications of this analysis for the current health reforms in Egypt.

Country situations

Political and socioeconomic environment

Egypt and Cuba are both lower-middle income countries [5]. Since 1990, both countries have introduced measures of economic liberalization in socialist systems without major changes to their political systems [6,7]. National income levels and income distribution are very similar, although national income estimates for Cuba are somewhat uncertain, as the country does not collaborate with the World Bank or the International Monetary Fund and thus has not been assessed using the same methodology (Table 1).

The demography of the two countries differs markedly. Whereas Egypt struggles to cope with high population growth and associated problems like unemployment of young people, Cuba is facing problems of an ageing society similar to the situation in many developed countries. For other socioeconomic determinants of health there is a wide discrepancy between the two countries, especially concerning gender inequality (Table 1).

Health systems

Egypt

Egypt has a complex health system, with many different public and private providers and financing agents. There are four main financing agents: i) the government sector which is understood in Egypt to refer to the various ministries and departments of the government; ii) the public sector, consisting of financially autonomous organizations owned by the government, the largest being the Health Insurance Organization (HIO)

Table 1 Socioeconomic and demographic indicators for Egypt and Cuba, 2000

Indicator	Egypt	Cuba
<i>Socioeconomic</i>		
Population (millions)	64	11
Area ('000 km ²)	1001	110
Gross national income per capita (current US\$)	1530	746 to 2975 (estimated)
Gini coefficient	0.29 (1995)	0.27 (1978)
Rural population (%)	53	25
Adult illiteracy in males (%)	29	2.3
Adult illiteracy in females (%)	51	2.3
Unemployment (%)	12.5	7.9
<i>Demographic</i>		
Total fertility rate (births per woman)	3.3	1.6
Crude birth rate (per 1000 population)	28.4	12.7
Crude death rate (per 1000 population)	6.4	7.2
Dependency ratio (%)	67	45
Percent population below 15 years	35	22
Percent population 60 years and over	6.3	13.4

Sources: [4,5,8,9,10,11].

and Curative Care Organizations (CCO); iii) private organizations, such as private insurance companies, unions, professional organizations, and not-for-profit nongovernmental organizations (NGOs); and iv) households [12,13]. Health care providers in the government sector are the Ministry of Health and Population (MOHP), teaching and university hospitals, HIO, and the Ministries of Interior and Defence. Public providers are HIO, CCO and other public firms. The private sector consists of both not-for-profit and for-profit providers, such as private clinics, hospitals and pharmacies [12]. NGOs are currently one of the fastest growing sectors [13].

In the Egyptian financial year 1995, health spending totalled Egyptian pound (LE) 7.5 billion or 3.7% of GDP, equivalent to LE 127 (US\$ 38) per capita [12]. Public financing, mainly from general taxation, contributed 1.6%, private financing 2.1% of GDP [12]. In 1999, government revenues totalled 23.6% of GDP. Central tax revenues

accounted for 15.6%, transferred profits for 3.2% and other, not-tax revenues for 1.8%. Local revenues accounted for 2.9%. Since 1994 total revenues have decreased steadily from 30% of GDP, and tax revenues from 17.9% respectively [14].

Social insurance, which accounted for 18% of public funding [12], is mandatory for formal government and company employees, who contribute 0.5% and 1% of their base salary, and their employers 1.5% and 3% respectively [13]. Firms, private insurance and syndicates raised 5% of funding, and household spending accounted for 51% [12].

Almost all public monies passed through financial intermediaries before being transferred to providers, whereas more than 90% of household expenditures consisted of direct out-of-pocket payments to private providers and pharmacies [12]. There were three major financing channels: i) from Ministry of Finance (MOF) to MOHP facilities through the MOHP budget (LE

1337 million); ii) from Social Insurance Organization (LE 448 million) and MOF (LE 434 million) to HIO; and iii) from households (LE 3780 million) directly to private providers and pharmacies [12].

The use of funds at provider level is summarized in Figure 1. Less than 60% of MOF funds were actually spent in MOHP facilities [12]. The rest was transferred to teaching and university hospitals, HIO and CCO. MOHP facilities thus only received 19% of all health sector resources, or 0.7% of GDP [12]. Of all resources, 56% were spent in the private sector, most of it for the purchase of drugs (63%) or paying for private ambulatory care (17%). Less than 10% of private funds were used to purchase inpatient care [12].

Despite the radical economic policy shift, there has been little change in the overall financing and structure of the health system since 1991. The only notable changes were the expansion of social insurance coverage to 10 million schoolchildren in 1993 [13] and an increase in total health spending from 3.4% to 3.7% of GDP [12].

Cuba

Cuba's health system represents the archetype of a public integrated system, with

funding through general taxation, public ownership of all health services, and health professionals who are direct state employees [15]. Financing for the National Health System (Sistema Nacional de Salud - SNS) is almost completely covered by public funds [4]. With the Ministry of Public Health (Ministerio de Salud Pública - MIN-SAP) as steering agency, the SNS is organized at three levels (national, provincial and municipal), which mirror the country's administrative structure [15]. Coverage is universal, as all citizens have the right to all health benefits.

Health care provision is exclusively public with a ban on private practice [7]. This includes all kinds of health and social welfare provision, from primary care to drug-exporting companies [15].

In 1997, health spending totalled pesos 125.3 million or 6.7% of GDP, equivalent to US\$ 139 per capita [4,10]. Financing from general taxation contributed 5.5%, and private household financing 1.2% of GDP [10]. Private financing for public health services is a new phenomenon in Cuba, which was introduced in 1990 [10]. It consists of modest out-of-pocket co-payments for drugs prescribed for outpatients, hearing, dental and orthopaedic

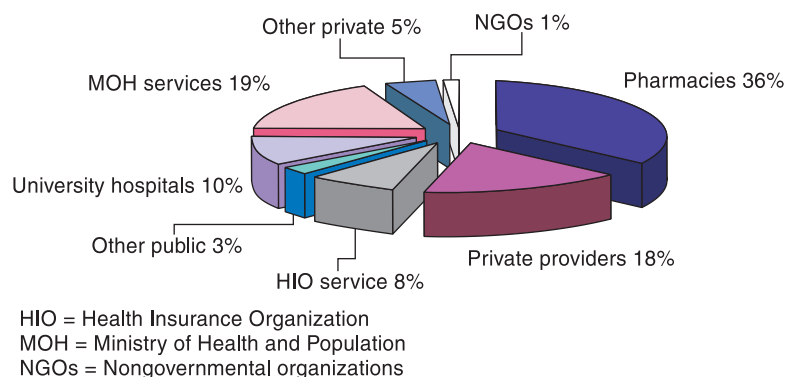


Figure 1 The Egyptian health expenditure: use of funds (Source: [12])

prostheses, and medical devices such as wheelchairs and crutches [4].

Before 1990, the Soviet Union and other socialist economies in Eastern Europe represented Cuba's main export markets and source of foreign aid needed because of the economic embargo imposed by the United States of America (USA) [7]. After the collapse of socialism in the Soviet Union and Eastern Europe, Cuba faced a grave economic crisis, during which its GDP decreased by as much as 35% in 1993 [4], resulting in severe shortages of various basic commodities including food, pharmaceuticals, soap and insecticides [7]. An epidemic of optic and peripheral neuropathy, probably caused by vitamin deficiency, hit the country in 1992/1993 and affected more than 50 000 people. To counteract the health effects of the economic crisis, the Cuban government increased health expenditure steadily as a percentage of public spending from 6.6% in 1990 to 10.9% in 1997 [16].

Assessment criteria

The analysis follows the three E's framework for comparative evaluation of health systems: effectiveness, economy and equity. Here, effectiveness is defined as improvement in health status. Economy is defined as efficiency at the macro- and micro-economic level, where aspects of productive and allocative efficiency are assessed. Both vertical and horizontal equity aspects will be considered. Horizontal equity will be assessed according to the ability-to-pay principle, but not the benefit principle, and according to the principle of equality of opportunity. The ability-to-pay principle requires payment to be organized not according to the benefit received, but in such a way that individuals pay according to their means, whereas the benefit principle

requires that those who benefit from a service should pay for it, and that the amount paid should in some way be related to the benefit received [17].

Comparative analysis

Effectiveness

Health status improvement

The effectiveness of health care to improve health on a population level is not directly measurable, as observed improvements in population health cannot be attributed to any single determinant. Furthermore, there is good evidence that the contribution of other factors towards good health, such as education, safe water, sanitation and housing, is more important than that made by health care [1,18]. Thus, a general description of the health status in Egypt and Cuba is given here (Table 2), together with a summary of health trends over the past two decades (Table 3). This is not meant to imply that health care is necessarily the driving factor behind those changes.

Cuba and Egypt are on very different levels of the health development curve. Health status in Cuba was already comparable to a country belonging to the Organization for Economic Cooperation and Development (OECD) in 1978 and continued to improve at a rate comparable to OECD countries despite the severe economic crisis. In Egypt, substantial health improvements occurred in the 1980s and 1990s, such as the reduction in infant mortality by more than 60% (Table 3). The country has also been very successful in controlling infectious diseases [21]. However, compared to other countries at its level of income, Egypt's health indicators were and remain poor [1,2,12], whereas Cuba's health status still exceeds the health status of countries of comparable income and the health status of

Table 2 Basic health status indicators in Egypt and Cuba

Health status indicator	Year	Egypt	Cuba
Life expectancy at birth (years) (male)	2001	65.3	74.7
Life expectancy at birth (years) (female)	2001	67.8	79.2
Infant mortality rate (per 1000 live births)	1998	51	9
Maternal mortality ratio (per 100 000 live births)	1990	170	95
Probability of dying			
under age 5 years (male) (per 1000 live births)	2001	46	11
under age 5 years (female) (per 1000 live births)	2001	44	8
between ages 15 and 59 years (male) (per 1000 population)	2001	230	142
between ages 15 and 59 years (female) (per 1000 population)	2001	160	90
Healthy life expectancy (HALE) in years at birth (male)	2001	56.4	64.7
Healthy life expectancy (HALE) in years at birth (female)	2001	57.0	68.5

Sources: [16,19,22].

regional comparators, best demonstrated by under-five mortality (Figure 2).

Efficiency

Macro-efficiency

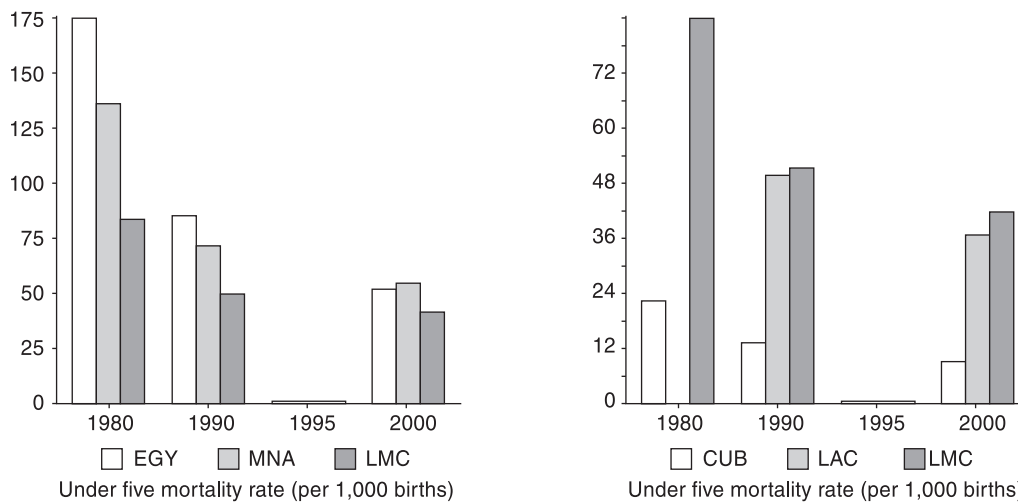
Macro-efficiency refers to the proportion of national income devoted to health care. According to economic theory, health services should be funded up to the point when the value of the last health intervention equals the marginal value derived from the next best alternative use to which the resources involved could be put. As in reality neither can be measured on a system level, there is considerable uncertainty about what constitutes the appropriate level of funding for a given country. Pragmatic approaches compare national health expenditure with i) regional averages or ii) averages for countries with similar national income, whilst taking effectiveness into account. Table 4 summarises the two approaches for Egypt and Cuba.

With total health care spending at 3.8% of GDP, Egypt spends on the lower side

Table 3 Health trends in Egypt and Cuba as illustrated by differences in health indicators between 1978 and 1998

Health indicator	Egypt	Cuba
<i>Infant mortality rate (per 1000 live births)</i>		
1978	131	23
1998	51	9
% change (1978–1998)	–61.1	–0.9
<i>Male life expectancy at birth (years)</i>		
1978	53	71
1998	65	74
% change (1978–1998)	22.6	4.2
<i>Female life expectancy at birth (years)</i>		
1978	55	75
1998	68	78
% change (1978–1998)	23.6	4.0

Source: [19].



EGY = Egypt; MNA = Middle East and North Africa; LMC = Lower middle income countries; CUB = Cuba; LAC = Latin America and Caribbean

Figure 2 Under-five mortality rates per 1000 births in Egypt and Cuba in comparison to regional rates and all lower-middle income countries, 1980–2000 (Source: [20])

Table 4 Total health spending and life expectancy in Egypt and Cuba compared to regional averages and the average for all lower-middle income countries, latest available data (1990–2000)

Area	Total health spending (% of GDP)	Life expectancy at birth (years)
Egypt	3.8	67
Regional average (MENA)	4.6	68
Cuba	6.7	77
Regional average (LAC)	6.5	70
Lower-middle income country average	4.7	69

Sources: [10,20,22].

GDP = gross domestic product.

MENA = Middle East and North Africa.

LAC = Latin American and Caribbean.

of what is seen in lower-middle income countries, and less than most countries in the Middle East and North Africa region. Its life expectancy lies below the regional and lower-middle income country average. With a total health expenditure of 6.8% of GDP, Cuba spends just above the regional average and attains one of the highest life expectancies in the developing world (Figure 3).

Micro-efficiency

Micro-efficiency refers to the health system's ability to use whatever resources it has to maximum effect. Assessment of micro-efficiency is organized under two categories: productive and allocative efficiency.

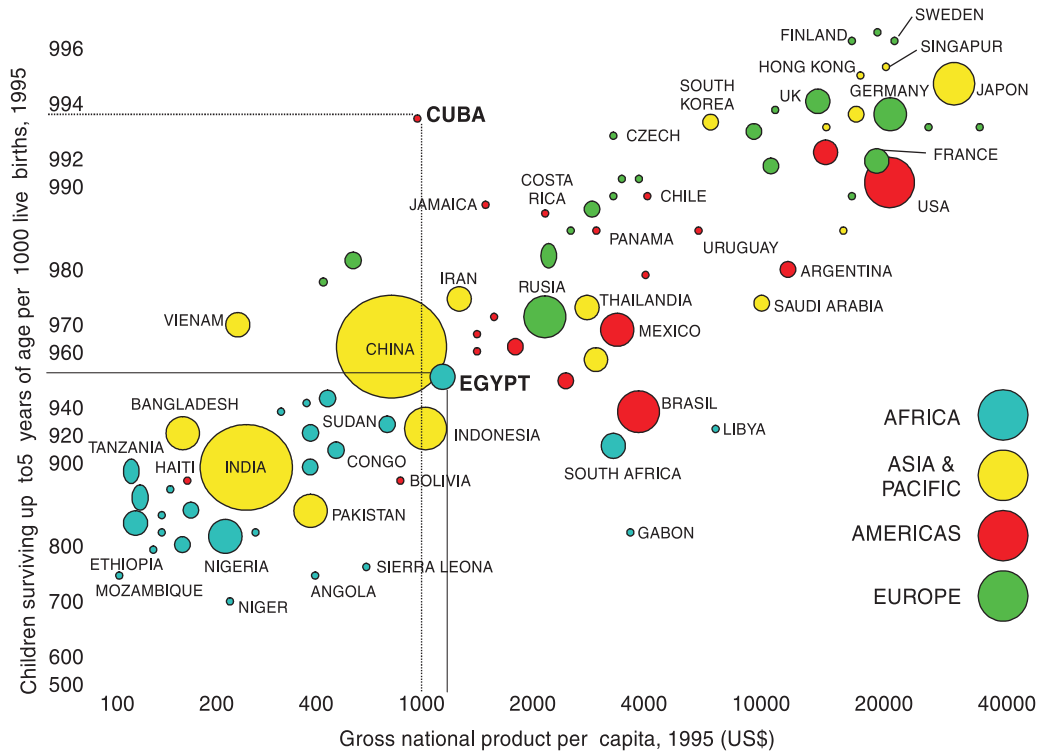


Figure 3 Under-five survival and per capita gross national product in 177 countries with more than 100 000 inhabitants. Source: Hans Rosling, Division of International Health Care Research, Karolinska Institute, Sweden

Productive efficiency

Productive or internal efficiency is achieved when the maximum possible improvement in outcome is obtained from a given level of resource inputs or when costs are minimized to obtain a given level of output. Prerequisites for productive efficiency are effectiveness and technical efficiency. Technical efficiency, which answers the narrow question of whether the same or a better outcome could be obtained by using less of one type of input, and which is a prerequisite for productive efficiency, will not be analysed separately.

Health professionals input mix

In Egypt absolute levels of doctors and nurses are 3 to 4 times lower than in Cuba. Furthermore, there are as many doctors and nurses, whereas in Cuba nurses outnumber doctors (Figure 4).

This indicates economic inefficiency in input mix in Egypt as services that could be provided by nurses at lower cost are provided by doctors. The inefficiency in input mix is even greater for general versus specialist medical care, as primary care services in Egypt are mainly provided by specialists (Figure 5).

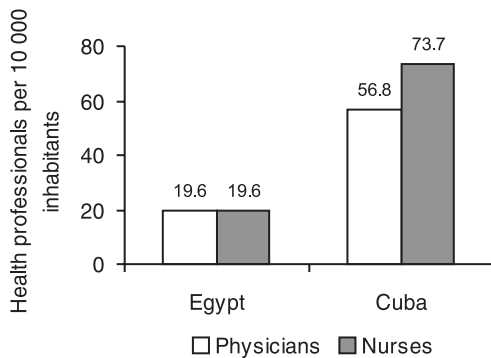


Figure 4 Number of health professionals per 10 000 inhabitants in Egypt and Cuba (Source: [13,16])

Hospital management

The average hospital occupancy rate of 49% in Egypt is clearly inefficient [25]. This is even worse in public hospitals where rates average 40% compared to 60%–70% in private hospitals [25]. The severity of inefficiency of such low occupancy rates in public hospitals is made clear if one takes into account that private hospitals in Egypt already struggle to remain profitable at 60%–70% occupancy rates [25]. The aver-

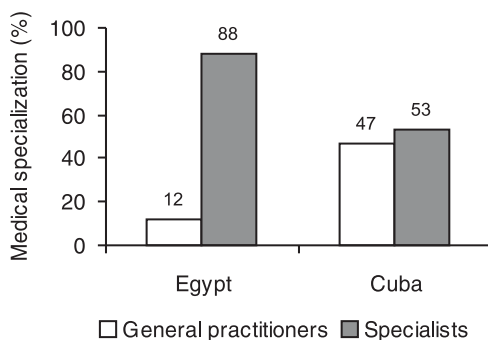


Figure 5 Degree of medical specialization in Egypt and Cuba (Source: [13,16])

age occupancy rate in Cuba of 71% [16] is approaching that of many countries in Western Europe which range between 61% in the Netherlands and 84% in Switzerland [26].

Coordination between providers and across subsectors

In Egypt, financing and management is completely fragmented with 29 different public agencies involved [25]. This precludes efficient and equitable risk pooling as well as a consistent policy focus or consistent incentives for efficiency [25]. Duplication of services and administrative structures is common.

Cuba on the other hand has one integrated system under central control. This brings with it a different set of inefficiencies typically seen in large public institutions, like a mismatch between central planning and local needs resulting in waiting lists; the government tries to counterbalance this through a decentralization process and improvements in information flow between the different levels of the system [16].

Incentives for efficient institutional and provider behaviour

The fragmentation and subsequent lack of coordination of the Egyptian financing system result in strategic behaviour among provider institutions [25]. On the individual provider level, public salaries are so low that multiple job-holding is quasi-universal among Egyptian doctors. The potential for earnings in the private sector is also modest given the relative over-supply of physicians [27]. There is indirect evidence that some doctors limit their commitment to public services to work in private practice [27].

Cuban health professionals are all state employees and private practice is banned. Although some perverse incentives like self-referrals to private practice are thus

not seen, the usual inefficiencies associated with low remuneration levels and public salaries are to be expected, such as inappropriate referrals, low motivation and reduced courtesy towards patients [28].

Availability of medical equipment, supplies and adequacy of buildings

There are reports from both countries that both adequacy of health care facilities and supply with essential drugs or maintenance of medical equipment are problematic [16,25]. These problems have intensified in Cuba during the recent economic crisis, in particular repair of high-tech medical equipment is a considerable problem [16].

Allocative efficiency

Allocative or external efficiency refers to the way resources are divided between alternative uses within the health sector. It implies productive efficiency. The theoretical foundation of allocative efficiency rests on the Pareto criterion: a resource allocation is efficient if it is impossible to move to an alternative allocation which would make some people better off and nobody worse off. Among other conceptual difficulties, strict adherence to this principle would preclude changes that would make many people much better off at the expense of a few made slightly worse off [24]. An operational utilitarian decision rule is often used instead: allocative efficiency is achieved when resource allocation maximises social welfare [24].

Incentives to provide cost-effective procedures

Economic theory would predict that in Egypt, where most primary care services are provided by the private sector, preventive services with positive externalities like immunizations would be undersupplied as price signals do not reflect the social and

financial costs of production. Indeed only 79% of children receive the complete Expanded Programme of Immunization (EPI) schedule in Egypt [9] compared to 99% in Cuba [16]. As payments in the private sector are predominantly fee-for-service, supplier-induced demand is likely to occur in Egypt.

Other measures to encourage cost-effective behaviour are taken in Cuba. For many prevalent conditions standardized treatment plans have been developed [16]. An essential drug list with 904 compounds is applied [16], whereas in Egypt irrational and over-prescribing is an important problem which is reflected in pharmaceutical consumption and spending being 50% higher than in comparable countries [25].

Distribution of expenditure on different levels of care

In Egypt, public health is poorly targeted, as the focus is on expensive tertiary care [25] and primary care is largely left to the private sector. The reverse is true in Cuba, where the hallmark of the system is the integration of public health into service delivery, in particular through primary care services [23]. In Cuban primary care, one family doctor, often with a nurse partner, cares for around 150 families, whom they know intimately and put as much effort in keeping them healthy as in providing care when they are sick [23].

Equity

Vertical equity

Vertical equity is concerned with the redistribution of income or consumption from the rich to the poor. Health care financing in Egypt is highly inequitable with 57% of expenditures being paid by households, mostly in the form of direct out-of-pocket payments to providers [12]. Out-of-pocket payments are the most regressive type of

contribution to health care. Even the distribution of the 43% public spending is regressive. The poorest income quintile receives 16.4% of public health expenditure compared to 23.6% for the richest quintile [29]. Less than 40% of the general population, and only 15% of those over 15 years of age benefit from social insurance coverage [13,25]. Social insurance with nearly 50% contribution from general revenues resembles more a subsidized public finance scheme than a true insurance that only benefits formal sector workers [12], and even excludes spouses and children of employees [13]. As with other forms of insurance, both adverse selection and patient and provider moral hazard are likely to occur in Egyptian health insurance schemes. A positive feature is the protection from catastrophic illness costs through the safety net offered by MOHP services.

Cuba on the other hand finances 83% of health services out of general taxation [10], which is the most progressive way to finance health care. User charges only exist in the form of modest co-payments for drugs and medical supplies. User fees were only put in place during the economic crisis to raise funding and not as a measure to curb demand. Payments are very limited to avoid catastrophic illness costs and minimize financial barriers to access, and an exemption scheme for the poor is operated [16].

Horizontal equity

Horizontal equity concerns goals like minimum standards for goods or services, for which supply in a free market would not meet social demand because of failure of one or more of the standard assumptions as is the case in health care, or equal access to these goods and services and the closely related concept of equality of opportunity.

For Egypt, there is plenty of evidence of horizontal inequity by income, gender and

geography. Because of the high percentage of out-of-pocket payments, ability to pay is a major barrier to accessing health services. MOHP, the different social insurance organizations, and private providers all offer different benefit packages, which is counter to the goal of equal treatment for equal need. Public spending is strongly biased towards males, who receive 20% more per capita funding than females, although utilization rates are higher for women as in most countries [29]. This is largely due to the pronounced pro-male bias in HIO spending, where males receive almost three times the level of benefits as women [29]. Per capita public spending is 67% higher in richer urban areas compared to poorer rural regions [25].

There is also an important geographic disparity of service delivery in Egypt. Utilization rates for ambulatory and hospital care are nearly double in urban compared to rural regions [30]. These inequities in financing and delivery are certainly one reason for infant and child mortality being three times higher, and maternal mortality being five times higher in rural compared to urban areas [25].

Cuba on the other hand is one of the few developing countries achieving real universal coverage. This is exemplified by 100% of women receiving prenatal care and attended deliveries by trained personnel [16] compared to 39% of mothers receiving prenatal care and 46% attended deliveries in Egypt [9]. There is little variation in health indicators and health care utilization between urban and rural populations. For instance, in 2001 infant mortality ranged from 4.4 to 9 deaths per 100 000 births in the 14 provinces and the Isla de la Juventud, with urban rates (Habana City with 6.7 deaths) close to the average of 6.2 deaths [31]. Data on health expenditure or health status variation by income class are not

available. However, major disparities are unlikely given the overall social structure in Cuba.

Implications of key findings

From the comparison between Egypt's and Cuba's health systems, valuable lessons can be derived for health sector reform in Egypt. Although both countries made a rhetoric commitment to universal coverage and access to care [13,16], – after the revolution and again in the 1980s in Cuba and in the 1980s in Egypt – only Cuba designed its health system to achieve these goals.

The first lesson is that it is possible to achieve excellent health status which is equitably distributed in a lower-middle income country. This was only possible because the Cuban government committed sufficient public funds to health care.

Egypt's current total and public spending on health is clearly macro-inefficient, and to overcome this, the government would have to raise public spending on health substantially. At the same time, it would have to make sure that the prevailing inequities in financing are reduced. Vertical equity can only be improved through a reduction in out-of-pocket payments and an increase in the provision of services funded through mechanisms based on solidarity and risk pooling. From the two main options that already exist in Egypt, general taxation and social insurance, funding through taxation is more progressive and was the route chosen in Cuba.

The second lesson is that the current fragmented financing and provision system creates more inefficiencies than a single, public integrated system, which of course is not without problems. Parallel subsystems are clearly micro-inefficient as they create perverse incentives, duplication of services and higher administration costs as well as

lower purchasing power of fund-holders. This is best exemplified by the 40% occupancy rate in public hospitals, which are often located side-by-side with health insurance organization hospitals and private hospitals.

The third lesson is that if too much leeway is left to the private sector, services will not be provided in an externally efficient or equitable way. Cuba went to the extreme of banning private medical practice, successfully. The political feasibility of such an extreme measure in Egypt is probably low. However, much stronger regulation of the private sector is urgently needed. An impressive amount of resources in this under-funded system is wasted for inappropriate and expensive pharmaceuticals and for providing tertiary care of low cost-effectiveness, whereas the most basic, highly cost-effective interventions are not available to everyone. The emphasis on cost-effective, basic public health interventions in primary care has been very successful in Cuba. Prospective provider payments, both on an institutional and individual level, that provide incentives for efficient behaviour have to be implemented. Other measures, such as treatment guidelines, essential drug lists and quality assurance mechanisms, which are all in place in Cuba, should also be instituted.

The fourth lesson is that horizontal equity in financing and delivery is key to good health. Cuba made a particular effort to overcome financial and geographic barriers to accessing health care. This involves again the minimization of out-of-pocket payments, but also a process of active redistribution of funds and delivery to disadvantaged regions and groups.

Finally, health care cannot be seen in isolation. Equitable investment in other sectors, in particular education, housing, water and sanitation, and improved traffic

regulation are certainly equally important to improve population health in Egypt and in other countries in the Eastern Mediterranean region.

References

1. Hertz E, Hebert JR, Landon J. Social and environmental factors and life expectancy, infant mortality, and maternal mortality rates: results of a cross-national comparison. *Social science and medicine*, 1994, 39:105–14.
2. World Bank. *World Development Report 1993: Investing in health*. New York, Oxford University Press, 1993.
3. Halstead SB, Walsh JA, Warren KS. *Good health at low cost*. New York, The Rockefeller Foundation, 1985.
4. Perfil del sistema de servicios de salud de Cuba. [Profile of the health services system of Cuba.] Washington DC, Pan American Health Organization, 2001: 1–21.
5. World Bank. *World development indicators database*. Washington DC, World Bank, 2002.
6. A survey of Egypt: new and old. *The Economist*, 1999, March 20th:S1–18.
7. Mesa-Lago C. Social welfare reform in the context of economic-political liberalization: Latin American cases. *World development*, 1997, 25(4):497–517.
8. *Eastern Mediterranean Region Country Profiles: Egypt*. Cairo, World Health Organization/Eastern Mediterranean Regional Office, 2000. Available at: <http://www.emro.who.int/emrinfo/CountryProfiles-egy.htm> (accessed 11 September 2005).
9. Rannan-Eliya RP et al. *Expenditures for reproductive health and family planning services in Egypt and Sri Lanka*. Washington DC, The POLICY Project, The Futures Group International Inc., 2000: 1–84.
10. *Health expenditures for Latin America and the Caribbean*. Washington DC, Pan American Health Organization, 2002.
11. World Health Report 2000. Health systems: improving performance. Geneva, World Health Organization, 2000.
12. Rannan-Eliya RP et al. *Egypt national health accounts 1994/95*. Cairo and Boston: Department of Planning, Ministry of Health and Population, Arab Republic of Egypt, and Data for Decision Making Project, Harvard School of Public Health, 1998.
13. Rafeh N. Private health insurance in Egypt. In: Schieber GJ, ed. *Innovations in health care financing*. Washington DC, (World Bank Discussion Paper No. 365), 1997:115–25.
14. *Monthly economic digest Feb. 2000*. Cairo, Arab Republic of Egypt, Ministry of Economy, 2000.
15. *Health in the Americas: Cuba*, Vol. II. Washington DC, Pan American Health Organization, 1998.
16. *Profile of the health system of Cuba*. Washington DC, Pan American Health Organization, 1999.
17. Le Grand J. Financing health care. In: Feachem Z, Hensher M, Rose L, eds. *Implementing health sector reform in Central Asia*. Washington DC, World Bank, 1998: 75–85.
18. Cochrane AL, Saint-Leger AS, Moore F. Health service “input” and mortality “output” in developed countries. *Journal of epidemiology and community health*, 1978, 32:200–5.

19. *The World Health Report 1999. Making a difference*. Geneva, World Health Organization, 1999.
20. *HNP Stats*. Washington DC, World Bank, 2002.
21. Sallam I. Health care in Egypt. *Lancet*, 1998, 352:1632.
22. *World Health Report, 2002: Reducing risks, promoting healthy life*. Geneva, World Health Organization, 2002.
23. Bourne PG. *Asking the right questions: lessons from the Cuban healthcare system*. Health Equity Network Lecture. London School of Economics and Political Science, 2003.
24. Palmer S, Torgerson DJ. Definitions of efficiency. *British medical journal*, 1999;318: 1136.
25. Project appraisal document for a proposed credit in the amount of SDR 66.8 million (US\$90.0 million equivalent) to the Arab Republic of Egypt for a health sector reform program. Washington DC, World Bank, 1998.
26. Busse R. *Health care systems in transition: Germany*. Copenhagen, European Observatory on Health Care Systems, 2000.
27. Berman P. *Understanding the supply-side: a conceptual framework for describing and analysing the provision of health care services with an application to Egypt*. Boston, Harvard School of Public Health, 1999:1-34.
28. Saltman RB, Figueras J. *European health care reform. Analysis of current strategies*. Copenhagen, World Health Organization Regional Office for Europe, 1997.
29. Rannan-Eliya RP, Blanco-Vidal C, Nandakumar AK. *The distribution of health care resources in Egypt: Implications for equity*. Boston, Harvard School of Public Health, 2000.
30. Department of Planning/Ministry of Health and Population/Arab Republic of Egypt and Data for Decision Making Project/Harvard School of Public Health. *Health care utilization and expenditures in the Arab Republic of Egypt 1994-95*. Cairo and Boston, Ministry of Health and Population, Arab Republic of Egypt, and Harvard School of Public Health, 1998.
31. *Anuario Estadístico, 2001*. [Statistical yearbook, 2001.] La Habana, Ministerio de la Salud Pública [Havana, Ministry of Public Health], 2001.