

# CUBAN HEALTHCARE AND BIOTECHNOLOGY: REFORM, A BITTER PILL TO SWALLOW OR JUST WHAT THE DOCTOR ORDERED?

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The *Lineamientos*, having been debated throughout the provinces, resulted in a final version editorially massaged with some deletions and additions that was adopted by the Cuban Communist Party (PCC). While the acknowledgement that reform is called for and the effort to produce the guidelines themselves are laudable, the document that was approved is largely disappointing as the guidelines are very broad in scope, with 313 proposals covering virtually all the major sectors of the Cuban economy and society (VI Congreso del Partido Comunista de Cuba). Moreover, the guidelines lack organization, clarity and prioritization, as to when and how they are to be implemented. This is crucial. If, when and how they are implemented will determine whether they will result in material improvement to the Cuban citizenry or will only be cosmetic and lacking in sincerity of intent.

The document approved by the PCC is replete with repetition and contradiction. Introducing the Resolution on the Guidelines on Economic and Social Policy to the National Assembly, Delegate Murillo Jorge said: “The economic policy of the Party will be based on the principle that only Socialism is capable of overcoming the difficulties and preserving the conquests of the Revolution. The update of the economic model will give top priority to planning, which will take into account market tendencies”

(Murillo Jorge). No matter which part of the *Lineamientos*, the message is the same—consolidate, phase-out, close facilities, lessen reliance on costly importation and increase exportation to realize more revenue. Yet they fail to take into consideration some of the unintended consequences of certain reforms. This paper will examine selected approved guidelines that I view as having the most material relevance—directly and indirectly—to Cuba’s healthcare and biotechnology sectors.

## HEALTH CARE SYSTEM

Cuba’s health care system, while generally lauded and held up as a model for other developing countries, now is showing serious signs of deterioration. Cuba’s ability to deliver basic health care to its citizenry is becoming increasingly more challenged. Consolidation or closing of hospitals, polyclinics and maternity centers are resulting in longer wait times and further distances to travel for care.<sup>1</sup> Those facilities that remain open continue to deteriorate, lack the most fundamental medical equipment and medicines, and are in desperate need of updating. Meanwhile, Cuba continues to actively promote its medical tourist business by building modern facilities with state-of-the-art equipment and pharmacies fully stocked with the best medicines.

Longer wait time for services and farther travel distances to clinics and hospitals may result in delaying

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1. The number of hospitals in the nation decreased from 270 in 2001 to 219 in 2009.

care, causing easily treatable conditions to worsen thus becoming more expensive to treat or even untreatable. While infant mortality has declined, maternal mortality has increased due, in part, to the legalization of abortion. As maternity centers close, the incidence of low birth weight babies (LBW) may increase and so may maternal mortality due, in part to nutritional and pre-natal care issues.

Cubans are being discouraged from self-medication and asked to use medical services instead. Though not clearly articulated, it can be inferred that use of state clinics will provide more accurate utilization data and potentially serve as a disincentive for Cubans to use the black market for the provision of some of their health care and medicines. A basic mechanism of the free market is working as more demand for goods and services in the black market is driving up prices (Sánchez Sáenz). Nevertheless, it is almost certain that as more medical facility closures occur and rationing of medical care increases, it will cause the black market for medical goods and services and goods to grow in importance.

Training and distribution of specialists and allocation of medical facilities are to be adjusted to meet the medical needs of each of the provinces and municipalities. Additionally, teaching and the use of clinical epidemiological methods and study of the social environment will be consolidated to aid in the rational use of medical technology for the diagnosis and treatment of illnesses and improved working conditions of health personnel is being called for. Training of medical specialists will be done in accordance with the needs of the country and those that flow from international commitments.<sup>2</sup>

## SOCIAL POLICIES

Recognizing the serious, growing and costly implications of its ageing population, Section VI of the guidelines (on Social Policies), calls for the need to study the set of issues related to demographic change and for the development and implementation of strategies to deal with these issues while articulating the goal of reducing the contribution of the State budget in financing social security.

Cuba ranks second to Canada in its ageing population at approximately 13.2% over 65 years of age in 2011 with 15.2% projected by 2016. The large numbers of Cubans that will become even more dependent on social security will add to the financial burden of the State (Vincente). An ageing population brings about increased chronicity and costlier medical care. It also increases the demands on the social security safety net.

The food ration card is to be phased out in an orderly fashion. Meanwhile, free meals will continue to be provided to those who are deemed to be at-risk. The intention of the state to limit its contributions to social security coupled with the planned phasing out of the food ration card will result in more nutritional deficiencies and concomitant nutrition-related illnesses from which certain portions of the population often are not able to recover, as in the case of the elderly. Nevertheless, the approved version of the *Lineamientos* makes clear the intention to retain social safety nets for the elderly and infirmed. The larger question is whether the social safety nets over the longer term can be sustained if Cuba's economy fails to improve and/or it loses one of its important economic/political partnerships, such as the one with Venezuela.

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2. However, Mesa-Lago argues that if Cuba were serious about training and redistribution of its medical personnel to meet the needs of Cubans, then it would readjust the number of physicians and other ancillary health personnel sent abroad as part of the medical diplomacy program. Further, while Cuba continues to provide scholarships to foreign students studying health sciences which creates a financial burden, data show declining immunization rates with regard to triple vaccine and tuberculosis; many physicians in Cuba have shifted to other occupations due to low salaries paid by the state. The result is a domestic shortage of doctors, decrease in access to services and long waiting lists for surgery. Mesa-Lago further states that "the island's potable water and sewage systems have seriously deteriorated. Hospital infrastructure has also worsened and there is a severe scarcity of medicine, most of which are only accessible through purchase in hard-currency stores or 'dollar shops'" (Mesa-Lago 62–63).

## MEDICAL TOURISM AND DIPLOMACY

Despite consolidations and closings of clinics and hospitals and lack of ambulances to transport patients due to lack of spare parts, the medical tourism industry continues to grow in importance for Cuba. This sector continues to gain traction and generate revenue from cash-paying patients seeking treatment in Cuba. Medical facilities used to treat tourists are equipped with state-of-the-art equipment and fully stocked pharmacies. There is no evidence that shows that revenues earned from services provided to medical tourists are being used to maintain and update medical facilities used only by Cubans. Medical tourism is understandably a growing source of irritation to Cubans citizens, who are not allowed use of those facilities.

Medical diplomacy earns Cuba both cash and political goodwill in developing countries. It also invokes the ire of Cuban citizens, who either must endure longer wait times to obtain care or receive care in seriously dilapidated clinics lacking basic medical equipment, supplies and drugs.<sup>3</sup> Adding to the ire of Cubans is that members of the armed forces and state security, as well as top government and communist party officials, belong to different health services networks. These networks provide higher-quality services than the general health care system that serves the general population (Mesa-Lago 51–81).

The stark contrast between the facilities reserved for cash-paying medical tourists and the facilities that Cubans are allowed to use draws a sharp line in the sand between the haves and have-nots in Cuba. Citizens' ire over these inequities coupled with medical diplomacy is causing them to call into question the legitimacy of socialism in its ability to provide adequately for them.

The illness of Venezuela's president Hugo Chávez's cannot be ignored, as his fate most certainly will have a tremendous impact on Cuba's future. If Chávez were not able to recover sufficiently to continue ruling and his successor does not share Chávez's love affair with Cuba, potentially the approximately 40,000 Cuban workers now in Venezuela—mostly health-care personnel—could be sent back to Cuba, further burdening Cuba's already precarious economy. In any event, due to a number of factors, including Chávez's health, Venezuela's credit rating has been lowered.<sup>4</sup>

## BIOTECHNOLOGY SECTOR

While Cuba's health care system continues to erode, Cuba's biotechnology sector remains a bright light on an otherwise bleak economic horizon. Biotechnology is the second most significant source of commodity exports behind nickel. While it is difficult to determine the retail value of products in USD, it has been estimated that the value of biotechnology products will increase from \$711 million in 2011 to an estimated \$1,044 million in 2016 (Vincente).

Cuba's biotechnology sector has been described by international experts as "the envy of the developing world" (Thorsteindóttir et al. 19–24). It is a favored child of the State and continues to be the recipient of priority funding (Cuba provided funding to support its biotechnology sector even during the economic crisis that followed the collapse of the Soviet Union). Similarly, Cuba nurtures its investment in human capital—scientists—working in this sector, providing them with housing in modern apartment buildings, bus service to and from their homes, etc.

Recognizing the importance of biotechnology to its economy and global prestige, Cuba plans to sustain and develop research and development in biotechnology, medical equipment, software, bioinformatics and nanotechnology. Cuba is heavily reliant upon

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3. Causing irritation to Cuban citizens is, for example, the announcement in June 2010 that the Cuban government would begin to downsize its health staff to "to establish rational, flexible staffs that respond to the real interests of Cuba" ("Cuba Gov. Downsizes Health Staff").

4. "Political risk has been a constant issue in Venezuela, where change in economic rules and nationalization of companies are common. Uncertainty about the health of President Hugo Chávez, who had surgery in Cuba earlier this summer to remove a cancerous tumor followed by chemotherapy treatment, has added to those risks, S & P said in a statement" (Standard & Poor's).

importation of raw material used for domestic biopharma production.<sup>5</sup> Plans are to promote new technologies in neuroinformatics, cognitive neuroscience, neurotechnology, nanotechnology, robotics and telemedicine. This has far reaching profit revenue potential as significant products are being developed in the neurosciences that reportedly are ripe for exportation and can potentially enter global markets relatively soon. Pharmaceutical production increased particularly in 2008 by 51.5% reaching about 615.7 million pesos or \$665 million (Vincente).

Cuba's biotechnology exports are growing but not without some hitches. Ecuadorean President Rafael Correa reportedly has pledged that his country will buy up to \$1.5 billion worth of Cuban-made medical drugs and vaccines in 2011 ("Ecuador buying"). Correa has stated that his government will give Cuban-made products priority over those made by pharmaceutical multinationals, as a way to support Cuban healthcare development; only with respect to products that Cuba cannot supply will Ecuador turn to multinational pharmaceutical companies. Ecuador heretofore had not been able to purchase Cuban medicines due to the lack of registration of Cuban products in Ecuador; however, Cuba is in the process of setting up a Havana-based medical registry for the ALBA bloc (of which Cuba and Ecuador are members) which would address this issue.

The transaction of pharmaceuticals with Ecuador recognizes other "economic benefits" that Ecuador might reap, such as doctors sent there from Cuba as part of Cuba's medical diplomacy program, Cuban support in training 10,000 Ecuadorean primary-care community physicians and technicians, and construction of a pharmaceutical plant in Ecuador. Cuba has provided full-tuition scholarships to hundreds of medical students from Ecuador, established the Man-

uela Espejo program for disabled people in the South American country, and implemented the Operation Milagro eye surgery program in Ecuador, jointly with Venezuela. There are currently close to 1,000 Ecuadorean citizens studying medicine at the Latin American Medical School in Havana. The proposed plant will use Cuban technology and likely be operated by a Cuban joint venture with ENFARMA, the Ecuadorean state pharmaceutical company.

Just as Ecuador announced its large purchase of Cuban pharmaceutical products, the media reported that the Namibian government is returning a \$2.5 million batch of Cuban-made vaccines. Namibia is sending back to Havana 600,000 doses of Heberpenta<sup>6</sup> vaccines, saying that at the time it purchased them, it did not know the vaccines were not on the World Health Organization (WHO) list of pre-qualified medicine.<sup>7</sup> After finding out that Heberpenta was not on the WHO list, the Namibian health ministry attempted to swap the Cuban vaccines for WHO-approved vaccines but since a swap could not be arranged, Namibia donated the batch of vaccines back to Cuba. Namibian Health Minister Richard Kamwi defended the donation saying the \$2.5 million loss for Namibia was tiny compared to the help Cuba has provided ("Ecuador buying").

## FOREIGN INVESTMENT

Cuba's attractiveness to foreign investors remains negative. The Economic Intelligence Unit's Country Forecast for Cuba reports that "Cuba was one of the world's least attractive foreign investment destinations in the historical period 2005-09 and in spite of some improvements, will remain and extremely challenging place to do business in the forecast period 2010-14." The report goes on to say that the prognosis for foreign business will remain limited, owing

5. China is the leading supplier (31%), followed by India (13%), Belgium (9%), Germany (8%), Spain (7.4%), Switzerland (6.7%), and Latin American and Caribbean (13.8%, of which Argentina provides 3% and Chile 2.1%) (Vincente).

6. Produced and marketed by state company Heber Biotec S.A., Heberpenta prevents diphtheria, tetanus, whooping cough, hepatitis B and Haemophilus influenza type B. A mix of two widely used vaccines, according to the company Web site, Heberpenta "has demonstrated proven efficacy during its use with children, and is backed up by the application of best practices in production."

7. Namibia had previously bought a pentavalent vaccine from the South African subsidiary of Glaxo Smith Kline, but the pharma giant did not respond to Namibian requests late in 2010 when supplies were running low. Subsequently, Namibia let out bids and Cuba's Heberpenta turned out to be the lowest bidder.

to the dominance by the state. The limited space for private businesses, U.S. sanctions and monetary imbalances remain impediments to attracting foreign business. However, the report notes that investors who manage to surmount these difficulties benefit from low levels of crime and a highly educated labor force (Morris).

While crime for the most part is low, a culture of reliance on black markets and kickbacks to conduct business act as deterrents for businesses to operate in Cuba. Will the State offer enough of a carrot to incentivize black market operators to discard their old habits and practices and negotiate contracts with improved structure and terms? In a country where citizens have had to turn to black markets, back-room deals, and kickbacks to make ends meet, it is very difficult to change this culture overnight. Cuba's black market will only continue to grow as the social safety net is unable to protect all its citizens as the food ration card is phased out, more job cuts are implemented, and hospitals and clinics continue to be consolidated or closed. Thus, while the need for the adoption of "Best Business Practices" is crucial for Cuba to become a real player on the global market, the prevailing culture of black markets, informal exchange, and favors or *Blat* (Ledeneva 43–66) cannot be expected to change rapidly or at all. Perhaps the greatest threat to Cuba is corruption (Morales). To curb these problems and send a signal that corrupt practices will not be tolerated, actions have been taken to penalize executives found to have been taking kickbacks ("Cuban Airlines and Pharmaceutical Executives").

Corruption extracts a very heavy economic toll. Countries that have a high prevalence of corruption have higher rates of infant and child mortality and low birth weights. Corruption may be seen in medical procurement and distribution of medical supplies, diversion of resources into private hands, ghost workers and poorly paid personnel engaging in unregulated and often illegal provision of medical services in exchange for informal payment (Díaz-Briquets and Pérez-López 44). "Gifts" often are required to obtain medical care (Díaz-Briquets and Pérez-López 136). Díaz-Briquets and Pérez-López further

conclude: "As Cuba transitions toward a more accommodating political and economic environment, many favorable developments will have to come together to offset the country's ingrained corruption tradition and begin to create a culture of honesty and transparency" ... "Curbing corruption in a future Cuba will depend on ethical political leaders committed to the national interest and welfare of their fellow citizens rather than their own" (238).

In spite of disincentives and barriers to entry, Cuba is becoming a location of choice for pharmaceutical companies. As of late 2010, there were approximately 38 major global pharmaceutical and medical device manufacturers from Asia, Latin American and Europe with offices in Cuba (Private Communication). The office openings may be in anticipation of lifting of the U.S. embargo and of the Helms-Burton requirements. Cuba is desperately seeking partners especially from developed nations such as in North America.

Despite barriers to penetrate foreign markets, the Centro de Inmunología Molecular (CIM) has completed a scale-up and process enhancement related to the manufacturing of Nimotuzumab in anticipation of greater demand for the product due to increased last-stage clinical activity and commercialization by licensees of the products. At a newly-commissioned manufacturing facility in Havana, Cuba can now produce Nimotuzumab through large-scale continuous perfusion fermentation (YM Biosciences). This development is critically important for Cuban biotechnology globalization efforts as Nimotuzumab is in clinical trials in the United States, Japan, Israel, India and several other locations and commercialization is underway in some countries.

## FOREIGN ECONOMIC RELATIONS

The section of *Lineamientos* dealing with foreign economic relations is replete with what Graduate Schools of Business and business consultancies call "Best Practices." This section calls for the development of a strategy for the exportation of goods and services, particularly professional services, calling for the creation of appropriate legal frameworks and efficient commercial structures to promote joint ventures with foreign capital to guarantee the optimal

use of the potential created by the country. Absent from the framework is any mention of incentives to be offered to those achieving improved negotiations that result in better contracts.

## SCIENCE AND TECHNOLOGY

The *Lineamientos* call for the creation of legal conditions to enable science to develop new products and services, efficient production and exports. Collaborations and alliances are particularly important with regard to the development of Cuba's biotechnology sector.

Cuba will seek to improve and supplement the legal/regulatory framework for two-way international collaboration and establish the requisite financial records and statistics to support cost analysis. If Cuba is to work in global markets, then it must get a better handle on its cost data in order to negotiate business contracts that make sound business and economic sense. Lack of such data will impede Cuba's ability to attract global business.

If Cuba is to enter new markets and progress globally, then it will need to adapt, adopt and adhere to "best business practices" such as Memoranda of Intent for commercial decisions and better formulation of business contracts. Another "best practice" foreseen in the *Lineamientos* is the registration of patents in Cuba and in principal foreign markets, achieving international certification of products and processes.<sup>8</sup>

Cuba needs to exercise care in selecting its business partners in order not to create disincentives for certain developed countries to do business with the island because of alliances with countries such as Iran. Cuba needs to wean itself of dependence upon Chávez and Venezuela, particularly in the face of Chávez's illness and the prospect that his successor might not share Chavez's love affair with the Castro brothers. Additionally, Cuba needs to diversify and expand beyond the Bolivarian Alternative for the Peoples of the Americas (ALBA) that is controlled by Venezuela and instead work on integration of Cuba further into Latin America, the Caribbean, and developed countries.

## CONCLUDING REMARKS

One of Cuba's most challenging tests is only beginning. If it fails in the eyes of the citizenry, it will have dire consequences. While it is laudable that Cuba recognizes that the wolf may now be at the door and reform can no longer be postponed, the hard part is if, when, and how the reform guidelines are implemented and whether they will result in any material improvement in the daily lives of Cubans. Woe unto Cuba if she fails to meet the raised expectations of its citizenry. Effective implementation will require investments in physical and human capital. Failure has the potential to create enough disenchantment that could lead to internal strife as Cubans consider taking matters into their own hands to effect changes promised but not delivered by the State.

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8. It should be noted that the United States Patent and Trademark Office has awarded Cuba several patents (see [www.USPTO.org](http://www.USPTO.org)). Intellectual property protection is both a legal and a financial issue ("Intellectual Property").

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