

CUBA'S SOCIAL SERVICES:
A REVIEW OF EDUCATION, HEALTH, AND SANITATION*

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INTRODUCTION TO CUBA'S SOCIAL SERVICES

Cuba has become internationally recognized for its achievements in the areas of education and health, with social service delivery outcomes that surpass most countries in the developing world and in some areas match first-world standards. Since the Cuban revolution in 1959, and the subsequent establishment of a communist one-party government, the country has created a social service system that guarantees universal access to education and health care provided by the state. This model has enabled Cuba to achieve near universal literacy, the eradication of certain diseases, widespread access to potable water and basic sanitation, and among the lowest infant mortality rates and longest life expectancies in the region.

A review of Cuba's social indicators reveals a pattern of almost continuous improvement from the 1960s through the end of the 1980s. Several major indices, such as life expectancy and infant mortality, continued to improve during the country's economic crisis of the 1990s, although other areas, such as incidence of certain diseases and over-65 mortality, were negatively affected. Today, Cuba's social performance is among the best in the developing world, as documented by numerous international sources including the World Health Organization, the United Nations Development Programme and other U.N. agencies, and the World Bank.

According to the 2002 World Development Indicators, Cuba far outranks both Latin America and the Caribbean and other lower-middle income countries in major indices of education, health, and sanitation:

Cuba in the 2002 World Development Indicators

Most recent estimate (latest year available, 1994-00)	Cuba	LAC	Low-Mid Income
Life expectancy at birth (years)	76	70	69
Infant mortality (per 1,000 live births)	6	29	33
Access to an improved water source (% of pop)	95	85	80
Illiteracy (% of population age 15+)	3	12	15

Cuba had a similarly strong rank in the Human Development Index compiled by UNDP, with a performance markedly above the regional average for Latin America and the Caribbean, as well as developing countries as a whole.

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Cuba in the 2002 Human Development Indicators¹²

HDI Index Categories	Cuba	LAC	Developing Countries
Life expectancy at birth (years)	76	70	64.7
Adult literacy rate (% age 15 and above)	96.7	88.3	73.7
Combined primary, secondary, and tertiary gross enrollment ratio (%)	76	74	61
GDP per capita ³	--	7,234	3,783
Life expectancy index	0.85	0.75	0.66
Education index	0.90	0.84	0.69
GDP index	0.64	0.72	0.61
Human development index value	0.795	0.767	0.654
GDP per capita (PPP US\$) rank minus HDI rank	35	--	--
HDI 2002 Rank	55	--	--

This paper is intended to provide a review of social service delivery in Cuba, with a focus on the development and maintenance of the country's education, health and sanitation system that has continued to produce impressive results under government control. This remained true despite the deterioration witnessed during the economic crisis of the 1990s, known in Cuba as the "special period." A review of Cuban and international sources leads the authors to the following observations on social service delivery in Cuba:

- **Dominance of public sector.** The Cuban government is exclusively responsible for developing, implementing, and financing all aspects of social service delivery. There are no accepted private service providers, and with occasional minor exceptions there are no fee-for-service arrangements allowed in the system. In essence, the government is charged with providing a universal safety net free of charge. While this approach at times hampers the efficiency of the system, and leaves citizens with little recourse when the service quality is mixed or poor, it has worked because the government has made the provision of education and health a top priority.

¹ Human Development Report 2002, United Nations Development Program, 2002.

² Cuba has included in the HDI since the late 1980s, and the country's rank dropped from 61st to 89th place due to the severe economic crisis in the 1990s. Cuba recently rebounded to 55th place, but the improvement is at least partially due to a change in the methodology used to account for GDP.

³ In lieu of calculating per capita GDP, the report uses the sub-weighted regional average for the Caribbean, which is \$4,519.

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- **Consistency of policy objectives.** Since 1960, Cuba's social policy objectives regarding provision of health and education have remained unchanged: universal and equitable access. This has allowed a stable policy climate where periodic innovations are driven by central policymakers in accordance with changes in economic and social conditions, not by shifts in policy objectives by leadership.

- **Policy goals are backed by government expenditures.** While not large in absolute numbers, Cuba has consistently spent a comparatively large percentage of GDP on provision of education and health benefits, as well as housing and pension systems. (See Appendices A, D, and F.) These levels were maintained even during the economic crisis of the 1990s, when spending on defense was cut sharply while education and health witnessed either smaller reductions or, in some years, increases.

- **Capacity for mobilization.** Due to the nature of Cuba's social revolution in 1959, and later consolidation of a top-down authoritarian government, Cuba has demonstrated a capacity for mobilizing the population in order to achieve its social objectives. In 1961, the country's massive literacy campaign cut the levels of illiteracy in half in the space of one year. The Cuban government has organized similar mobilizations around issues of public health, and this has enabled the country to respond effectively to pressing social problems, or even natural disasters.

- **Role of community participation.** Cuba's capacity for large mobilizations also extends to fostering community participation at the local level. In education, community participation and volunteerism form an essential component of the school experience for teachers, students, and parents. Through the "doctors in the community" program, Cuba ensures medical access even for inhabitants of rural areas. Mass organizations at the block level, such as the Federation of Cuban Women (FMC) and Committees for the Defense of the Revolution (CDR) – help to coordinate community participation as well as provide a limited outlet for policy feedback. Since 1988, Popular Councils have been organized to improve service delivery at the local level.

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- **Comprehensive evaluation and monitoring.** The Cuban government closely monitors health indices and educational attainment, and adjusts policies that are not producing desired outcomes. Cuba dedicates substantial resources to its research and evaluation processes, and uses the collected data as part of the feedback loop to determine the policies' effectiveness. The United Nations, WHO, and PAHO all consider Cuban data to be sufficiently reliable for use in their statistical compendiums.

- **Reliance on human capital.** Cuba has placed special emphasis on training and developing educational and medical professionals that are recruited and paid by the state. In the medical field, Cuba has developed a physician-based health care system that has allowed the country to maintain health indices even during times of equipment breakdown and medical scarcities. Similarly, the education system relies on maintaining and expanding teachers even if school infrastructure is deteriorated or educational materials are not available, or must be shared among students or classrooms.

- **Limited citizen input into policy.** While community participation and volunteerism play a vital role in implementing or enhancing social service delivery, the system is driven by a centralized top-down approach that provides relatively few opportunities for citizens to provide input into policy approaches. In the Cuban system, municipalities oversee social services but have little authority to raise revenues, make budgetary choices, or set independent priorities. Several recent initiatives point to increased decentralization, but overall the system remains driven from the top.

- **Macroeconomic shock of the 1990s severely impacted services.** The collapse of the Soviet Union resulted in a prolonged economic contraction and posed a severe challenge to the ability of the Cuban government to continue to provide social entitlements. This macroeconomic decline negatively affected education and health systems due to scarcity of resources, which resulted in nutritional deficiencies, lack of essential medicines and educational materials, inability to maintain equipment, and breakdown of basic infrastructure. While major social indicators were maintained or even improved – such as the increased doctor-patient ratio and decreased rate of infant mortality – other indicators such as rate of underweight infants and over-65 mortality rates rose during this period.

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▪ **Economic reforms have created new challenges.** In 1993, the legalization of U.S. dollar holdings introduced the dual currency system that is the main source of inequality in Cuba today. Social service providers, including education and health professionals, continue to be paid in Cuban pesos that are valued at far less than the U.S. dollar holdings available through the tourist sector and remittances, in effect inverting Cuba's income pyramid. As a result, doctors, teachers and other members of Cuba's professional class are paid in Cuban pesos that have little purchasing power in an increasingly dollarized economy. This has increased the risk of talent flight to the tourist sector or other dollarized segments of the Cuban economy, and introduced some inequality in services available to the average Cuban.

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The indicators and criteria used in this paper to evaluate the quality of the Cuban basic education system (preschool through 9th grade) are based on those used to evaluation systems region-wide by the Partnership for Educational Revitalization in the Americas (PREAL). PREAL emphasizes four major steps that Latin American countries must take to improve the quality and equity of education: set standards and evaluate progress toward meeting them, strengthen the teaching profession, invest more money in pre-school, primary, and secondary education, and give schools and local communities more control over and responsibility for education. Additionally, major indicators in evaluating the quality of and access to an education system include figures on literacy, schools, teachers, enrollment, completion, and assessment.

Today, Cuban education shows significant strength, with a thorough system of teacher and student evaluation and rigorous teacher training. In the face of economic hardship and severely limited resources after the collapse of the Soviet bloc and the tightening of the U.S. embargo, Cuba has demonstrated a commitment to education with sustained levels of investment and continued government focus on the improvement of the system. By all accounts, the education system has achieved universal access.

The system also faces important challenges. The most present and persistent problem is the shortage of basic classroom materials, such as books, pencils, and paper. Second, though community volunteerism and participation is high and crucially important to the daily functioning of the Cuban education system, the centralized administration of the system leaves few means to address local complaints about schools or teachers. Low pay for teachers and the possibility of higher earnings in the tourist sector have promoted teacher attrition from the profession.

Overview of Cuban Education System

The basic tenets of Cuba's educational success are universal access (100 percent net primary enrollment), advanced teacher training, community involvement, and a comprehensive evaluation system implemented by the central government. Equal opportunity in education has been a primary goal of the Revolution since its inception. The Cuban government's education policy was characterized by the expansion of the education system throughout the 1960s, especially in rural areas. Education in Cuba is free and open to all Cubans. It is paid for by the

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government, as is the education of all teachers. Cuba has sustained a high level of investment in basic education, despite important shifts in education policy and difficulties presented during the Special Period. Schooling does not represent a material strain on any individual. However, the education system is extremely reliant upon high community involvement and volunteerism, as in many other sectors of the society.

The percent of GDP dedicated to education has always met or exceeded the changing levels recommended by UNESCO for developing countries. In the 1960s, Cuba's investment in education was about 4.2 percent of GDP, and it climbed to 7 percent in 1979.⁴ According to Cuban statistics, that amount reached 10 percent in 1997-98⁵ and 11.4 percent in 2002.⁶ Public spending per pupil on primary and secondary education in 1997 was about USD\$1000, which is about average for Latin American countries.⁷ Cuba pays its teachers about the same average salary that it pays other professionals, at a rate of 350 pesos a month, or about US\$13.50. It should also be noted that until 1999, when a 30 percent teacher salary increase was implemented, a full 40 percent of educational spending went to non-salary items. This percentage is comparatively high for the region.⁸

In accordance with the principles of universal access, Cuba has sought to provide educational facilities to special needs students and adults as well. According to Cuban statistics, the number of such schools servicing children with special needs (including disciplinary) increased from 8 before 1959 to 425 in 2000.⁹ Instruction is even available from "maestros ambulantes" for children who cannot leave their homes or who are hospitalized. The Cuban Ministry of Education maintains that special needs students should not be integrated into the normal school system, even though there is a growing international consensus on the integration of normal and special education. Cuba also has a program of primary and secondary education for adults. Those in adult education programs can receive university or technical education after completing 14 semesters of education.

⁴ Carnoy and Samoff, 173.

⁵ Lutjens, "Educational Policy in Socialist Cuba: the Lessons of Forty Years of Reform", 7.

⁶ Lutjens, "Practicing Care", 1.

⁷ PREAL, 23.

⁸ Gasperini, 7.

⁹ Ibid, 15.

Teachers and Teacher Training

Teachers are highly respected members of the community that receive relatively high pay by the standards of state employees, estimated at 350 Cuban pesos per month. Policies since 1970 have been greatly focused on the teaching profession. Since 1976, most teachers in Cuba have undergone a rigorous training program beginning in secondary school at a 4-year pedagogical institution. After these years, teachers receive 5 years of higher pedagogical schooling, during the last years of which they begin observing classrooms and assistant-teaching. Further in-service training is encouraged once teachers begin working full-time. This rigorous curriculum has not been a pre-requisite for all teachers, however, especially during Cuba's years of economic hardship. In many cases, young teachers-in-training play a central role in the provision of education in Cuba.

School Day

The amount of time that students spend at school and studying also contributes to the quality of their education. School days for Cuban students are very long, from 7:30 a.m. to 5:30 p.m., and the school year lasts up to 220 days. Anecdotal information suggests that this is a long year compared the rest of the region. An hour of work on research and study is expected of all Cuban students after school, as well.

Evaluation

Cuba invests considerable effort and resources into the assessment of education. Evaluation of the Cuban education system is carried out at all levels of government: national government assesses the provinces, provincial government assesses the municipalities, and municipal government assesses schools. Teacher evaluation includes monthly classroom visits by the chief of the pedagogical unit (*jefe de círculo pedagógico*), who can recommend further, in-service training in different areas. Further assessments are also conducted by a team of evaluators that includes members of the Cuban Communist Party (PCC), the teachers union, the school director, the Organization of Young Communists, and others. Municipal specialists in teaching methods (*metodólogos municipales*) are also utilized by schools to help resolve pedagogical problems. The system is comprehensive, although the literature reports that some teachers

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believe this to be an overly bureaucratic system of evaluation. In addition, standardized tests are administered to students in grades 2, 4, and 6 during primary school.

Community Norms

Several social factors contribute considerably to the success of the Cuban education system. These include a high premium placed on education by society, due to the values held and promoted before and after the Revolution (especially during the Literacy Campaign). The system could not function without the participation and volunteerism contributed by members of local communities. Through mass organizations, citizens help maintain, clean, renovate and sometimes build school buildings. They also help provide class materials such as book bags and notebooks. Teachers are expected to volunteer as school security at night and during weekends. Neighborhood study groups meet regularly at households that volunteer to host them. Community participation and support is therefore a crucial element in the daily success of the system.

Expansion of Education System

The total number of schools in Cuba increased dramatically over the last five decades, from 7,614 in 1950-51 to 12,207 in 2000-01. The increase in secondary schools reflects not only the fact that the many graduates from primary school then attended secondary school, but also a policy change in the mid-1970s that intensified the focus on secondary education. Similarly, the overall number of teachers in both primary and basic secondary schools has steadily increased. By 2000-01, primary teachers numbered nearly 80,000 from 17,355 in 1958-59. In those same years, secondary teachers had increased to almost 41,000 from 1,400. The increase in primary teachers mostly took place in rural areas. Between 1955-56 and 1974-75, the number of rural primary teachers increased about ten-fold, while urban primary teachers increased about five-fold. The current student-teacher ratio is about 42:1.¹⁰ But the Cuban government currently aims to achieve a student-teacher ratio of 20:1 by 2003.

Enrollment and Completion

¹⁰ Lutjens, "Practicing Care", 1.

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Cuba has dramatically increased enrollment in all levels of its education system. According to the World Bank World Development Indicators, primary school enrollment was only 51 percent in 1955, and in 1997, net enrollment was 100 percent.¹¹ Secondary school net enrollment went from 67 percent in 1985 to 82 percent in 1995.¹² Completion rates in primary education have increased considerably as well. Of the students who entered primary school in 1960-61, 14.4 percent completed it, whereas, of those that entered primary in 1975-76, the completion rate reached 71.5 percent. In the late 1990's, the overall dropout rate was 2.3 percent, though there were no dropouts in primary school.¹³ In 1997-98, repetition rates were 1.9 for primary, 2.8 for basic secondary, and 1.8 for pre-university.¹⁴

Cuba's performance in an international achievement test administered by UNESCO appears to authenticate Cuba's high level of performance at the primary levels.¹⁵ In 1998, UNESCO's Latin American office produced the Latin American Laboratory for Assessment of the Quality of Education, the only region-wide achievement test ever administered in Latin American countries. In this test, Cuba far outperformed the region in third and fourth grade math and language achievement. Even the lowest quartile of Cuban students performed above the regional average. "Only the highest scoring students from other Latin American countries matched the achievement of students in the lowest two quartiles in Cuba—a difference typically found between rich and poor countries."¹⁶

Evolution of the Cuban Education System

Scholars generally agree that Cuba's education attainment was among the highest in Latin America before the revolution of 1959. In 1953, only 20 percent of 20 to 29-year-olds had received no schooling, and 72 percent had some primary education. The total illiteracy rate in the

¹¹ PREAL, 29.

¹² Ibid. According to Wolff and Castro figures.

¹³ Gasperini, 14.

¹⁴ Ibid, 28.

¹⁵ Because the island's performance was so dramatically above that of other countries, UNESCO even administered the test a second time to check against an anomaly, and produced the same results. According to Benigno E. Aguirre and Roberto J. Vichot, authors of "Are Cuba's Educational Statistics Reliable?", the data presented by UNESCO on the number of teachers, students, and students -per-teacher ratios (STR) at all levels is comparable to those statistics published officially by the Cuban government (for the years 1969-1988). "UNESCO statistics are collected from official sources in Cuba and throughout the world"(371). In their view, "the Cuban students -per-teacher ratios in the pre-primary, first, and second levels of education do not make us question the reliability of Cuban education statistics" (375).

¹⁶ PREAL, 6.

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same year was just 23.6 percent.¹⁷ Most education figures were equivalent to levels reached in Central America (aside from Costa Rica) almost twenty years later. Nevertheless, “education was very unequally distributed and the educational system was stagnant in the years before the revolution. In 1953, urban illiteracy was 12 percent, and rural illiteracy, 42 percent.”¹⁸ As a result of this inequality, one of the first undertakings of the new Cuban government after the Revolution of 1959 was to rapidly expand the school system across the island, so as to make education universally accessible to all Cubans, especially in rural areas.

Cuba's education policy has gone through several evolutions since the Revolution, marked mainly by three different periods. From 1959 to 1970, Cuba experienced a period of rapid expansion known as the “First Educational Revolution.” Beginning in 1970, Cuba entered a period known as the Second Educational Revolution, which was followed by a policy of “Perfeccionamiento Continuo” which started in the mid-1980 and lasted through the end of the 1990s. In 2000, the Cuban government launched the next wave of reforms known as the “Third Educational Revolution.”

What Cuba refers to as the “First Educational Revolution” was initiated by a massive Literacy Campaign in 1961. During this eight-month-long mobilization, schools were closed nationwide in April so that 100,000 youth and 170,000 adult volunteers could teach reading and writing to the 979,207 illiterates identified on the island. By the end of the campaign in December of that year, more than two-thirds of these numbers reportedly had achieved basic reading and writing skills, and the Cuban government estimated a literacy rate of 97 percent.

The era of rapid expansion lasted until about 1970, and included the prolific construction of new schools, hiring of new teachers, and enrollment of new students. (See appendix) It was immediately followed by a period focused on improving the quality of new system, especially in the secondary and higher levels, called “perfeccionamiento.” This also involved the institutionalization and decentralization of the education system, as well as the implementation of Cuba's countryside study/labor programs (the “2nd revolution”).

A third era of policy, called “perfeccionamiento continuo,” lasted from the mid-1980s through the end of the 1990s, focusing on the development of pedagogical theory and technical

¹⁷ Carnoy and Samoff, 157.

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and vocational training. At the start of this era, the education system was described as an “inverted pyramid”, with too few graduates in agricultural specialties and other technical fields. The burden of employment that this placed on the economy was exacerbated during the financial crisis of Special Period, and efforts to use human and material resources efficiently were redoubled. Secondary school students were redirected to polytechnic vocational schools, and over 100 new agricultural schools at the higher secondary level were constructed. Significant cuts in the quota of university students were implemented, which contributed to the decrease in higher education enrollments by more than 50%.¹⁹

Since 2000, educational policies have been directed to furthering instructional technology in the classroom, curbing school and teacher shortages, and continuing to improve educational quality. The Ministry of Education has announced that televisions, video sets, and computers (1 for every 75 students) will be made available to every school.²⁰ He also announced that 734 primary and secondary schools in Havana were repaired in time for the 2002-03 school year, and 33 new schools and 2,600 classrooms were added, as well.

Faced with a teacher shortage, a salary increase was introduced in 1999. New secondary schools for those interested in teaching careers were created. In 2000-01, Schools for Intensive Training of Teachers were created. These schools give intensive teacher training for very short periods of time who then teach classrooms under tight supervision. The goal of this initiative is to “graduate 30,000 intensively-trained teachers in 5 years”²¹ The average age of these new teachers is 19. Many graduates of this program are choosing to pursue pedagogical studies at the university level, and the Cuban government pledges to halve the student-teacher ratio to 1 teacher for every 20 students by 2003.²² As part of the effort to improve the quality of basic education in Cuba, a new policy introduced only this year (and considered to be the “3rd revolution” in education) “reaffirms a commitment to the cultivation of caring practices in classrooms and schools”.²³ The aim of this policy is to improve values education, as well as to improve students’ abstract, logical and autonomous learning.

¹⁸ Ibid.

¹⁹ Lutjens, “Educational Policy in Socialist Cuba”, 5.

²⁰ Lutjens, “Practicing Care,” 7.

²¹ Ibid, 9.

²² Ibid, 10.

²³ Lutjens, “Practicing Care,” 5.

Organization and Structure of Cuban Education System

The Ministry of Education determines the curriculum, textbooks, and teaching norms for subjects in classrooms at all levels of education across the country, as well as educational principles, methodological standards and procedures, training, research and experimentation, technical advice, supervision, and statistical information.²⁴ Logistical, functional matters are managed at the municipal level and supervised at the provincial level. Such matters include repair, maintenance, operations, and provision of material resources. Teacher placement is determined at the provincial level. (See Appendix B for an overview of how regional and provincial education is organized in Cuba.)

Basic education in Cuba is organized into three categories: pre-primary, primary and secondary. Pre-primary education serves children aged 1 to 5 years and is comprised of day care centers (*círculos infantiles*) and one year of preschool that is meant to prepare a child for primary education. Primary schooling covers education from the first through the sixth grade, ages 6-11. Students remain with the same teacher during grades 1-4, and current reforms aim to increase these years with a single teacher to include the fifth and sixth grades as well.²⁵

Secondary education has several components: basic secondary, pre-university, technical and professional, and teachers' schools. All students are supposed to complete at least three years of secondary school, in order to achieve the nine total years of obligatory education the government requires. Upon completing primary school, most students attend basic secondary school for three years. Students who do not achieve required performance levels in primary school attend a technical school for two to three years. The completion of these years of primary and secondary schooling represents the 9 obligatory years of education for all Cubans. After this, a student can either attend pre-university in the tenth through twelfth grades, a technical school for up to 4 years, or a pedagogical school for 4 years. Students who attended a lower secondary technical school can attend 6 semesters (the equivalent of three years) in a "*Facultad Obrero-Campesina*". After these years of secondary school, an additional year at a polytechnic institute is required before entrance into universities or institutions of higher learning is possible. Both full-time and part-time students have access to higher education. Throughout lower secondary and even occasionally in basic secondary, there is at least some instance of teacher continuity in

²⁴ Lutjens, *The State, Bureaucracy and the Cuban Schools*, 82.

subject matter. For example, a student may have the same math or history teacher from grades 10 through 12.

The “schools in the countryside” programs comprise one component of basic secondary as well as pre-university education (grades 7-9 and 10-12). Beginning even before the 1970s, the government began erecting boarding schools in rural areas, where labor was combined with study as a permanent part of the curriculum. By 1981– 82, approximately 35 percent of secondary students were enrolled in the boarding schools.²⁶ Students who do not attend the boarding “schools in the countryside” still are required to perform labor through the 45-day “schools to the countryside” programs.

Community Involvement

Non-governmental stakeholders (parents, teachers, and other community members) appear to have relatively few means to affect change within the education system. Like the Ministry, the Cuban government is also broken into central, provincial, and municipal levels, each with its own assembly and administrative mechanism, which, at the two local levels (provincial and municipal), are called the Organs of Popular Power (*Poder Popular*). At the municipal level, delegates are elected to the assemblies directly by local constituents, mostly on the basis of their personal character and integrity, not as managers of social services.²⁷ Semi-annually, these delegates must report on the progress of their activities at “accountability sessions” during regular neighborhood meetings. Delegates must also be available for house visits from their constituents. At these visits, individuals may express complaints or suggestions, which the delegates then voice to their assembly or to other government officials. Delegates must then provide reports responding to these complaints at the neighborhood meetings. According to one author, “there is simply no mechanism for direct participation in designing and implementing solutions” to public issues.²⁸ Popular participation is exercised only through elections and the “accountability sessions”.

²⁵ Lutjens, “Practicing Care,” 10.

²⁶ Lutjens, “Educational Policy in Socialist Cuba”, 4.

²⁷ Malinowitz, 75

²⁸ Ibid, 77.

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Stanley Malinowitz writes that though the delivery of education services is “formally under municipal jurisdiction...[it is still] less accountable to the municipal assemblies and their delegates, and more to higher-level agencies.”²⁹ This would suggest that parents, teachers and other community members have relatively little ability to influence how their children are being educated. Malinowitz further reports that the “municipalities have little room to maneuver” when it comes to key decisions. One can conclude from this information, that the bulk of substantive educational decisions are made at the central, national level, despite extensive decentralization of logistical, functional matters to the municipal level. Additionally, though there is a mechanism through which local problems regarding these matters can be voiced and heard, it still seems that there is little that municipal government can do to solve these problems (especially regarding needed materials).³⁰

However, the broader community plays an important part in maintaining the Cuban education system. Community participation is crucial to the daily functioning of the school, and the implementation of national educational policy is dependent to a large degree on the voluntary contribution of human and material resources.³¹ While volunteer contribution is now a reality on a smaller scale, many tasks, such as school maintenance and provision of materials, are completed thanks to the mobilization of the community through mass organizations like the CDR (*Comités de Defensa de la Revolución*), FMC (*Federación de Mujeres Cubanas*), FEEM (*Federación de Estudiantes de la Enseñanza Media*), UJC (*Unión de Jóvenes Comunistas*), and ANAP (*Asociación Nacional de Agriculturas Pequeñas*).

Impact of the Special Period

Cuba's period of economic hardship following the collapse of the Soviet Union is known as the “Special Period” and began in the early 1990s and lasted through 1996. At the same time, the U.S. embargo was tightened through increased financial penalties for those conducting trade with Cuba. This confluence of events resulted in significant hardship for the island's economy and society. Resources at all levels have been scarce and have forced the system of education, along with all other sectors, to cut back spending drastically. Even today the island's GDP remains below pre-1989 levels. While the special period forced Cuba to accept market-based

²⁹ Ibid, 71.

³⁰ Malinowitz, 76.

³¹ Lutjens, “The State, Bureaucracy and the Cuban Schools”, 131.

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economic reforms, politically is only resulted in a renewed commitment to socialist values and an emphasis on teaching socialism to the next generation of Cuban students.

There is no doubt that the education system has been strapped for finances. According to Mesa-Lago, Cuba's education budget in real pesos has contracted by 38 percent in the 1989-1997 period."³² This has caused major shortages in educational materials such as books, pencils and paper. It has also restrained new construction, maintenance of existing buildings, transportation and even meals. Programs have been implemented to promote energy conservation, including the opening of adult education classes during the daytime and on weekends. Drives have been mobilized for necessary classroom materials. Students have been called to volunteer for park maintenance, recycling collection, and even agricultural work, among other tasks. And some of the financial burden of education has been redistributed to parents and university students (such as paying for school lunches and uniforms).

The teaching profession has been impacted by the new emphasis placed on tourism during the period of economic contraction. There is a large economic incentive for teachers and other trained professionals to leave their fields and work in the tourist sector, which operates in U.S. dollars. This has meant a teacher shortage in recent years which may affect overall educational quality in the future. While there is no hard data on teacher attrition, a World Bank report estimates an attrition rate of 4 to 8 percent.³³

The political goals of the Cuban government were also manifested in the education system during the Special Period. In the face of policies that opened up spaces for petty capitalism, foreign investment, legalization of the dollar, and an important tourist industry, the government sought to reinforce its commitment to socialism and buttress that of all Cubans. Education was at the forefront of this shift. Curriculum changes have increased the focus on the history of Cuban socialism and civic education (2 hours of values training daily). Additionally, schools now include new Departments of Values Formation ("*Cátedras de Formación de Valores*").

Despite the extraordinary financial difficulties that Cuba has faced during the Special Period, figures in enrollment, schools, and teachers have been recovering. Education has

³² Mesa-Lago, "Growing Economic and Social Disparities in Cuba", 14.

remained an enduring priority of the Revolutionary government, which is working to ensure that its successes continue on into the uncertain future.

Current and Future Challenges

Despite its notable achievements, the Cuban education system also faces serious challenges. The lackluster performance of the Cuban economy has resulted in major constraints on infrastructure investment, and throughout the 1990s, the country faced a shortage of necessary classroom materials and the poor upkeep of school buildings. Shortages existed for everything from pencils, paper, and textbooks. According to Cuba's Report to the U.N. Secretary General on General Assembly Resolution 56/9 (III part), "notebooks and pencils distributed during 2001-2002 school year represented only 50% of 1989's distribution levels."³⁴ Less surprisingly, computers and other technological materials were also in short supply. Schools have been in disrepair, as have been the desks and chairs that fill them. Many students and teachers, however, have been effectively frugal in their use of available materials as they save paper and pencils. However, the promotion of new policies may signal improvements in the near future.

As stated earlier, the dual currency system also poses a major problem for Cuba because the peso wages paid to Cuban teachers are extremely low in an increasingly dollarized economy. Teacher attrition rates grew to 4 to 8 percent annually in the late 1990s,³⁵ causing a teacher shortage. This constitutes a significant potential challenge to maintaining the current educational system and confronting possible economic restructuring in the future. Artificially low wages are a problem that affects almost every profession in Cuba, causing major economic hardship for teachers and other professionals alike. Furthermore, the legalization of the U.S. dollar in the mid-1990s has created a dual currency system where most items of value are available in the dollar economy, but state workers such as teachers are paid in Cuban pesos, valued at \$26 CUP to \$1USD. The creation of a parallel dollar economy has driven teacher attrition to sectors where the U.S. dollar is available, such as tourism, and to a lesser extent, foreign-owned joint ventures.

³³ Gasperini.

³⁴ Cuban Report to the U.N. Secretary General on General Assembly Resolution 56/9 (III part).
<http://www.granma.cu/documento/ingles02/063-3i.html>.

³⁵ Gasperini, 7.

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Cuba's educational system also contains a strong ideological component, and there is considerable debate on how and whether the government-mandated curriculum affects skill development in the area of critical thinking. Sheryl Lutjens writes that even as the policies of "perfeccionamiento" put more stress on merit and technical expertise in university admissions, "entrance to the university depended still on political commitment."³⁶ Strictly in terms of learning, the nature of the closed society does not necessarily hold direct consequences for the younger students aged 1-15. However, older students may have gaps in their knowledge as a result of censorship and limits placed on curriculum.

³⁶ Lutjens, "Educational Policy in Socialist Cuba", 5.

Review of Cuban Health Indices

Over the past forty years, Cuba's social policy has maintained a substantial focus on providing universal access to health care and raising health indicators to the level of highly industrialized countries. It has been observed that Cuban leaders view health indicators as measures of government efficacy, which has resulted in giving health care an unusually prominent place in Cuban government policies.³⁷ Monitoring the health data of the population plays an important role in the evaluation and shaping of health policy.

The Cuban Ministry of Public Health (MINSAP) collects all data and publishes a selection of this data on its website.³⁸ Data for health care statistics is collected by the Center for the Study of the Population and Development of the National Statistics Office, among other government agencies. Since 1960, health outcomes have steadily increased, life expectancy has increased from 64 in 1960 to 76 in 2001.³⁹ According to the Pan American Health Organization (PAHO) life expectancy at birth for 2001 is 74.7 years for men and 78.6 years for women.⁴⁰ The increase of life expectancy in Cuba has been driven by the reduction of the incidence of infectious diseases, with the eradication of certain illnesses such as polio, malaria, neonatal tetanus, diphtheria, measles, rubella and mumps, and the reduction of the incidence of infant and maternal mortality. Infant mortality rates in Cuba have decreased from 60 per 1000 live births in 1960 to 6.2 per live births in 2001.⁴¹ ⁴² Maternal mortality in 2001 stands at 33.9 deaths per 100,000 live births.⁴³ (Appendix A contains a health profile of Cuba with slightly different numbers; deviations are attributable to the years used for different international tabulations.)

Maintenance of living standards and increased access to health care are also major contributing factors to Cuba's positive health indices. Access to care includes 100 percent coverage in such areas as immunization programs, prenatal care, attendance of labor by skilled

³⁷ Feinsilver, 1

³⁸ <http://www.sld.cu>

³⁹ World Bank, 2002

⁴⁰ Cuba closely monitors the health indices of the population, and collaborates with the World Health Organization (WHO) and the Pan American Health Organization (PAHO) to improve its data collection processes. The WHO, PAHO and the United Nations all consider Cuban data to be sufficiently reliable for use in their statistical compendiums and other publications.

⁴¹ MINSAP, 2001

⁴² In comparison, the United States had an infant mortality rate of 26.0 per 1000 live births in 1960 and 6.9 in 2000, according to the Centers for Disease Control and Prevention.

⁴³ MINSAP, 2001

health professionals, and postnatal care for women and children. Today, the health care system is coping with an aging population. In the past four decades, the total population has increased by nearly 60 percent, from circa 7 million in 1960 to 11.2 million in 2001. The birth rate in Cuba, however, has dropped dramatically over the last decade and if current demographic trends continue the total population will begin to decline in 2025. The Cuban government has put much of its resources toward programs intended to reduce infant- and maternal mortality, and to improve life expectancy. Today, Cuba's mortality profile is comparable to those of industrialized nations. (See Appendix C for selected population and health indices.)

Structure of the Cuban Health System

The national health care system is organized on the national, provincial and municipal level. (See Appendix E.) The Ministry of Public health has the steering role of the health authority and oversees the functioning of the entire system. There is universal coverage, medical attention is free of charge on all levels and access to medical care is guaranteed by the Constitution. The Ministry is directly responsible for the administration of 5 national hospitals, 12 institutes, including the Pedro Kouri Institute, 20 medical and pharmaceutical institutes, 4 factories and 12 health care centers. The provincial and municipal administrative councils are responsible for 279 hospitals, 436 polyclinics, 27 stomatological clinics, 227 maternity homes, and 197 homes for the elderly.⁴⁴

The Cuban Ministry of Public Health was established in 1961 and found among its first tasks the nationalization of the health care system. Prior to the Cuban revolution, the majority of the population had only limited access to health care, although quality health care did exist in certain urban centers. In the last forty years, primary health care in Cuba has advanced in three stages, beginning with the municipal polyclinic, expanding through the "medicine in the community" program, and later, the family doctor program.

The polyclinic system was established as both the backbone of the Cuban health system and citizen's entry point into the healthcare system. Coverage was divided by sectors, and polyclinic staffed by several specialists and nurses served a population of 25,000-30,000.⁴⁵ In the next phase, Cuba's health care system extended the reach of the polyclinics into the community

⁴⁴ MINSAP, 2001

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using teams of internists, pediatricians, obstetricians, gynecologists, nurses, psychologists and other health care professionals to visit patients at home, at school and at work.⁴⁶ The creation of these teams was possible as the need for acute care decreased, due to the successes of immunization programs and the efficacy of the polyclinics. Cuba's health care system is founded on a community-based approach of diagnosis and prevention of common illnesses.

In 1984, the Cuban government established a family doctor program to extend the reach of Cuba's health care system further into the community. The program was adopted in 1985,⁴⁷ and emphasizes training doctors in primary health care and placing doctor-nurse teams in communities to provide care for groups of 120 – 150 families. The teams monitor the health of the populations; provide health education; and provide longer term care for patients in their community. By putting medical personnel in nearly all areas of Cuba, the program has improved treatment adherence and reduced health care expenditures associated with hospitalizations.

In 1991, the Ministry of Public Health produced a document on the objectives for improving the health of the Cuban population, and in 1996 these goals were further modified into five strategies and four priority programs. The five strategies consisted of the following: reorientation of the health system towards primary care, and especially the family doctor and nurse program; the revitalization of hospital care; strengthening of technology and research institutions; development of program on homeopathic remedies; and greater emphasis on the systemic aspects of care, such as health transport. These stated priorities were accompanied by the strong promotion of programs related to maternal and child health, chronic and non-communicable diseases, communicable diseases, and elderly care.⁴⁸ The programs were designed both to maintain the country's strong health indicators as well as address areas where quality of care suffered during the economic contraction, such as care for the elderly.

In 2001, the Cuban Ministry of Public Health reports that the country will have 30,725 family doctors in 17,217 communities, 1413 schools, 724 childcare centers, and 958 work places.⁴⁹ The ratio of family doctor to patient is one doctor for every 365 Cubans. In total, MINSAP projections indicate that currently Cuba employs 358,569 health care workers, which

⁴⁵ Feinsilver, 36

⁴⁶ Santana, 114

⁴⁷ Feinsilver, 40-42

⁴⁸ "Country Health Profile 2001: Cuba," Pan-American Health Organization, 2001.

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represents 5.6 percent of the entire Cuban work force, with 1 health care worker for every 31 Cuban citizens. According to PAHO, family doctors provide 97 percent of national coverage and 74 percent of outpatient consultations.⁵⁰

The Cuban health care system is financed by the government, which provides a range of services to the population, including primary care, normal medical attention, dental services, and hospital care that requires more advanced technologies. In addition, pregnant women receive all necessary diagnostic testing and drugs, and some selected programs also provide free medicine as part of outpatient services.⁵¹ The Cuban health care system is entirely funded by the Cuban government, but international aid also plays a role in the availability of medicine. Approximately 11.0 percent of Cuba's state budget and 6.1 percent of GDP is allocated for the health care system, according to numbers available for the year 2000.⁵²

Immunizations

In the early 1960s, a massive campaign was mobilized immunize against polio. 87.5 percent of the Cuban population aged 15 and younger was immunized during the week of February 25, 1962.⁵³ A second dose was administered two weeks later, and in 1969, booster doses were given when a decline in immunity was observed. The observation of the Cuban population and the high immunization rate have led to the eradication of several more vaccine-preventable diseases, as illustrated in the table below.

Reported Cases of Vaccine -Preventable Diseases (1980-2000)

	1980	1990	2000
Diphtheria	0	0	0
Measles	3,924	12	0
Pertussis	131	70	0
Polio	0	0	0

Source: WHO Vaccines and Biologicals Global 2002 Summary Country Profile

⁴⁹ MINSAP, 2001

⁵⁰ Pan-American Health Organization, 2001.

⁵¹ Pan-American Health Organization, 2001.

⁵² PAHO 2002, 210

HIV/AIDS Prevention and Treatment

Cuba exhibits the lowest rate of prevalence for HIV/AIDS in Latin America, with an estimated prevalence rate of 0.03 percent according to UNAIDS/WHO. This achievement is particularly impressive given that the Caribbean has the highest infections rates in the world outside of sub-Saharan Africa; by comparison, Haiti and the Bahamas respectively have prevalence rates of 6 percent and 3.5 percent.⁵⁴ Founded on a well-developed primary health care system, Cuba's HIV/AIDS strategy focuses on epidemiological surveillance and control, scientific research and biotechnology production, and prevention and treatment, with a focus on preventing mother-to-child transmission. Cuba embraced awareness of HIV and AIDS early in the epidemic; by 1983 the country prohibited the import of blood and blood products, and by 1986, the year that the first HIV-positive case was diagnosed in Cuba, blood donations started to be screened for HIV.⁵⁵

Screening and patient surveillance played an important role in containing the spread of the disease. Since 1986, the sexual partners of HIV-positive patients have been enrolled in a Partner Notification Program and tested quarterly for a period lasting one year after the last known sexual contact with an infected individual. Also in 1986, Cuba initiated a sanatorium program to separate HIV-positive individuals from the general population; in 1993, the strategy changed focus to a combination of in-patient and ambulatory care. Cuba's health care and treatment for individuals with HIV/AIDS includes AZT for pregnant women to prevent mother-to-child transmission, and highly active antiretroviral therapy (HAART) for patients who meet clinical criteria.⁵⁶ Official estimates of the number of HIV-positive Cubans have ranged from roughly 2,385 to 3,775 in recent years.⁵⁷

Impact of the "Special Period" on Cuban Health

During the macroeconomic crisis, the Cuban government continued to allocate a large percentage of GDP on the health system, ranging from 5 to 9 percent in the mid-1990s and eventually exceeding 10 percent by 2000. However, while the budgetary spending remained even

⁵³ Más Lago, 681

⁵⁴ UNAIDS, 2002, 21

⁵⁵ Arachu Castro, Paul Farmer, and Lorena Barberia, "Control of HIV/AIDS in Cuba," Briefing Paper for the Carter Center, April 2002.

⁵⁶ Castro, Farmer, Barberia.

or increased, the real value of these budgets declined sharply. In 1989, the peso was pegged at 1:1 rate with the U.S. dollar, yet by 1992 this exchange rate declined to 120 Cuban pesos to \$1USD.⁵⁸ While the peso later recovered its value to 20 to the dollar (in 2001 it dipped to 26:1), the loss of purchasing power radically reduced ministry budgets, and made medical imports extremely expensive. Health care expenditures remained large in terms of percent GDP, in real per capita terms expenditures shrank by 75 percent in 1989 to 1993, and in 1999 they were still 21 percent below the level ten years earlier.⁵⁹ Lack of access to hard currency resulted in a steep drop in the foreign exchange spent in the health sector, dropping from US\$227 million in 1989 to US\$56 million in 1993.⁶⁰

As a result of this budgetary contraction, several of the country's health indicators were negatively affected in the early 1990s. Maternal mortality rose from 26.1 to 55.7, and the mortality rate of the population over 65 rose from 48.4 to 55.7, although it has more recently declined to near the earlier level.⁶¹ Tuberculosis reemerged and the AIDS rate also rose during this time, although the majority of diseases remained in check. Problems with sanitation also emerged as basic chemicals to treat potable water, such as chlorine, could no longer be purchased because of Cuba's declining economy. In the period 1989 to 1994, the amount of potable water fell from 90 percent to 40 percent.⁶² Cases of certain diseases, such as tuberculosis, saw a significant rise in prevalence during the special period. Tuberculosis, as one example, rose from 5.5 cases per 100,000 Cubans in 1990 to 15.3 cases per 100,000 citizens in 1994.⁶³ Cases of amoebic dysentery increased 500 percent between 1990-1993.⁶⁴ By 1993, the health care system was again able to chlorinate the water supply and by 1994 the rate of amoebic dysentery had decreased to its level of 1990.

More recently, in 2000, the European Commission Humanitarian Aid Office (ECHO) reported that Cuba's healthcare system faced the following challenges: "At the cost of great budgetary efforts and at the expense of drastic reduction in the quality of life of the population (being access to energy and to decent hygiene), Cuba has been able to maintain at a high level its

⁵⁷ In March 2001, MINSAP Epidemiology Chief Manuel Santin was quoted as saying there were 2,385 HIV+ cases. On November 30, 2001 Health Minister Carlos Dotres estimated the figure to be 3,775.

⁵⁸ Richard Garfield and Timothy H. Holtz, "Health System Reforms in Cuba in the 1990s" in *Healthcare Reform & Poverty in Latin America* (London: University of London, 2000), p. 121.

⁵⁹ Mesa-Lago, 2002.

⁶⁰ "European Union Humanitarian Aid to the Cuban People," European Community Humanitarian Organization, 1997.

⁶¹ Mesa-Lago, 2002.

⁶² Ibid.

⁶³ Garfield and Holtz, 117

⁶⁴ Houriet: 32

main social indicators (e.g. frequency of utilisation of health services). On the other hand, the country's infrastructure and services have deteriorated and demand resources, which significantly exceed current availability."⁶⁵

While the Cuban government implemented a number of economic reforms in the early 1990s, there are several which are particularly pertinent to the financing of the health system. As a result of the newly created private sector, the Cuban government established a tax system to help fund public goods. However, the private sector remains sufficiently small that the tax, while not insignificant, is not proportionally a large source of health care financing. A second strategy of soliciting donations from international sources played a major role in sustaining the health care system. In response to the economic decline, MINSAP established an office for receiving humanitarian donations, estimated at \$20USD annually by the late 1990s, which would account for about 9 percent of dollar health spending during the height of the crisis.⁶⁶

In the midst of dramatically deteriorated infrastructure and insufficient reserves to purchase medical goods from the external sector, the physician-based aspect of Cuba's health system clearly played a vital role in maintaining health indices. Despite the severe economic conditions, the family doctor program ensured that Cubans' access to medical expertise was not inhibited and that basic care was delivered. Cuban doctors and their patients were clearly operating under severe material constraints that diminished the level of technological and medical resources at the physician's disposal, but the system nonetheless held. An important corollary factor is that Cuba has among the lowest medical income standards in the world, especially given the dollarization of the Cuban economy. This meant that the physicians that formed the core elements of Cuba's health care model were also among the least expensive aspects of the system, a fact that remains true today.

Future Challenges to Cuba's Healthcare

Despite its considerable achievements in maintaining the basic health indicators, Cuba's health care system faces several continuing challenges. The access to medical equipment and medicine has become restricted as many pharmaceutical companies were acquired in the early nineties by U.S. firms. In 1992, the U.S. passed legislation that prohibits subsidiaries from trading with Cuba. If Cuba is able to purchase medicines, through intermediaries, it is usually at highly inflated prices. Shipping, as mentioned in creates another problem for obtaining medicine.

⁶⁵ Artundo and Coenegrachts, 14-18

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A 1997 report by the American Association for World Health, the U.S. Committee for the WHO and PAHO, identified malnutrition, water quality, access to medicines, equipment and medical information to be impacted by the U.S. embargo.⁶⁷

In addition, concerns about the future of Cuba's healthcare system include the existence of a *dual economy*, where those with access to dollars have access to better food, better services. University professors earn about 250 pesos per month and specialist doctors earn 450 pesos per month.^{68 69} Whereas hotel bellhops can earn much more merely by receiving tips in US dollars, and taxi drivers can earn up to fifty times a Cuban doctor's salary. Cuban doctors are generally prohibited from taking on secondary forms of employment to boost their income.⁷⁰

Lastly, in part driven by the long life expectancy of the Cuban population, the country's demographic trends demonstrate a shift towards an older population. As a result, the burden of health care will need to take into account greater costs of care for this segment of the population.

Overview of Sanitation in Cuba

In Cuba, water and sanitation services are divided among the National Institute of Water Resources (INRH) and Ministry of Public Health (MINSAP). The INRH oversees the infrastructure necessary to transport water and sewerage throughout Cuba, while the health ministry is charged with monitoring both the chemical and bacteriological quality of potable water in Cuba. In 1993, according to the Pan American Health Organization, special units of scientist were created to conduct epidemiological surveillance. These trend analysis units study and report the occurrence of acute events; strategic surveillance, including long- and medium – term behavioral studies, health situation analysis; and evaluation of user satisfaction with health services.⁷¹ The quality of potable water is also monitored by the provincial and municipal Centers for Aqueducts and Sewers, and for Hygiene and Epidemiology.

⁶⁶ Garfield and Holtz, 124.

⁶⁷ American Association for World Health, executive summary

⁶⁸ Ibid.

⁶⁹ One US dollar equals ca. 26 pesos.

⁷⁰ Garfield and Holtz, 127

⁷¹ PAHO: 207

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The framework for the INRH was established in 1989 by law 114 which gave the Institute the responsibility for water and sanitation works. Within the INRH, a specialized branch, the *Dirección Nacional de Acueducto y Alcantarillado* (national directory of aqueducts and sewage) is concerned with the development, performance and maintenance of Cuba's hydro-infrastructure, including aqueducts and sewer systems. The *Directorio* also advises on compliance with established norms on water management.⁷² The Ministry of Health is charged with setting the health standard for water and sanitation in Cuba. It therefore monitors the bacteriological and chemical quality of potable water, provides education on health and sanitation issues, develops and conducts studies on the environment and sanitation. The Ministry also coordinates environmental policies related to water and sanitation.

Cuba has 14 provincial microbiology laboratories that conduct studies on health and sanitation, their research is supplement by the research conducted by Cuba's 145 local laboratories. All laboratories report to the Pedro Kourí Institute of Tropical Medicine. According to PAHO, in 1999, 95 percent of the Cuban population had access to potable water, available through household connections to the water system or delivery of potable water to rural communities by truck. On average, 73.8 percent of Cubans had household connections to the water supply, of these households, 85 percent in urban areas had connections, and 40 percent of households had connections to the water supply in rural areas. The water that is supplied in Cuba comes from either underground sources, or surface water; 72 percent of the water supplied to the Cuban population comes from underground sources, 28 percent of the water supply is surface water. An estimated 93.6 percent of water supplied has been treated.⁷³

Delivery of potable water in Cuba is divided in three categories: domestic connection, public service, and easy access to potable water. Public service of potable water can be provided by water trucks which carry potable water primarily to rural areas. Easy access to potable water is defined as the ability to have access to potable water within 300 meters. As illustrated in the table on page 29, access to potable water differs significantly between the rural and urban populations of the country:

⁷² CEPIS-OMS

⁷³ PAHO: 207

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Sector	Total Population	Total Pop. with access		Domestic Connection	Easy Access
	In thousands	In thousands	%	%	%
Urban	8,376	8,230.8	98.3	83.5	14.8
Rural	2,761.7	2,111.3	76.5	38.5	37.9
Total	11,137.7	10,342.1	92.9	72.4	20.5

Source: INRH, 1998

The PAHO study estimates that 72 percent of the water supply in Cuba comes from underground sources, the remaining 28 percent is recovered from surface water. An estimated 7.1 million people receiving their water through aqueducts. Water trucks and other resources are used to transport water to the rest of the Cuban population, mostly located in the rural areas. However, the treatment of water is frequently hampered by the lack of necessary materials and poorly maintained equipment.⁷⁴ According to the Ministry of Health, Cuba has 154 installation that use chlorine gas to disinfect the water, and 839 installations use other forms of chlorine to treat the water (such as sodium or calcium hypochlorite.) In areas where there are problems with the treatment of water, family doctors supply families with chlorine powder to treat their water.

Sewage System

In Cuba, an estimated 91 percent of the population has access to some form of wastewater disposal. A 1998 report from the Caribbean Environment Program cited a Cuban study on the "National Inventory of Point Sources of Pollution" that 42 percent of the identified sources of pollution are human settlements and social facilities, while 33 percent and 25 percent are industries and livestock facilities, respectively. Only 54 percent of these polluting sources have some wastewater treatment system; the remaining percentage discharges their untreated waste waters to inland and marine waters.⁷⁵ The majority of the Cuban population uses septic tanks and latrines, and less than 20 percent of urban sewerage is treated. Cuba uses several technologies to treat its waste water, including rock filled filter plants, grease interception and septic tanks, and package plants that are primarily located in tourist areas. Many of these plants are suffering from lack of maintenance leading to concerns over untreated sewerage water leaking in to the water supply.

⁷⁴ Ministerio de Salud Publica

⁷⁵ UNEP

Cuba's ability to chlorinate its potable water was severely hampered after the loss of Soviet subsidies; 98 percent of the population was covered by chlorinated water systems in 1988, by 1994, due to the economic crisis, this number had been reduced to a mere 26 percent.⁷⁶ Diseases related to quality of potable water such as Typhoid, Hepatitis A, and various types of diarrhea-related diseases increased dramatically between 1991-1993. Cases of amoebic dysentery increased 500 percent between 1990-1993.⁷⁷ By 1993, the health care system was again able to chlorinate the water supply and by 1994 the rate of amoebic dysentery had decreased to its level of 1990.

There are still difficulties with sanitation in Cuba due to the current economic situation. Solid waste transportation is hampered due to lack of fuel, which in turn has led to mini dumps in urban areas, this, of course is a cause for concern for epidemiological reasons. Rural areas dependent on delivery of potable water by trucks are also more vulnerable, as their source of potable water is not assured.⁷⁸

⁷⁶ Garfield and Holtz: 117

⁷⁷ Houriet: 32

⁷⁸ PAHO: Regional Core Health Data System 2001

APPENDIX

Appendix A: UNAIDS/WHO Cuba Country Summary

Indicators	Year	Estimate	Source
Total Population (in thousands)	2001	11,237	UNPOP
Population Aged 15-49 (in thousands)	2001	6,121	UNPOP
Annual Population Growth	1995	0.4	UNPOP
% of Urban Population	2000	75	UNPOP
Average Annual Growth Rate of Urban Population	1995-2000	0.6	UNPOP
GNI Per Capita (in US \$)			
GNI Per Capita Average Annual Growth Rate			
Per Capita Expenditure Health	1991	83	World Bank
% of Government Budget Spent on Health Care	1998	10.3	WHO
Total Adult Literacy Rate	1997	96	UNESCO
Adult Male Literacy Rate	1997	96	UNESCO
Adult Female Literacy Rate	1997	96	UNESCO
Male Primary School Enrolment Ratio	1996	107.9	UNESCO
Female Primary School Enrolment Ratio	1996	104.2	UNESCO
Male Secondary School Enrolment Ratio	1996	76.4	UNESCO
Female Secondary School Enrolment Ratio	1996	85.4	UNESCO
Crude Birth Rate (births per 1,000 pop.)	1995-2000	13	UNPOP
Crude Death Rate (deaths per 1,000 pop.)	1995-2000	7	UNPOP
Maternal Mortality Rate (per 100,000 live births)	1995	24	WHO
Life Expectancy at Birth	1995-2000	76	UNPOP
Total Fertility Rate	1995-2000	1.6	UNPOP
Infant Mortality Rate (per 1,000 live births)	1995-2000	8	UNPOP
Under 5 Mortality Rate	1995-2000	10	UNPOP

Source: UNAIDS/WHO Epidemiological Fact Sheet, 2002.

APPENDIX

Appendix C. Selected Population and Health Data

Cuba's Population in Millions, 1960 – 2001

Year	1960	1970	1975	1980	1985	1990	1995	2001
Total	7.03	8.57	9.30	9.78	10.06	10.60	10.98	11.22

Source: Cuban Ministry of Public Health (MINSAP, 2001)

Age Distribution of Cuba's Population (2001)

Age group	<1	1 – 4	5 - 14	15 - 49	50 - 59	>60
Percentage of population	1.3	5.3	15.0	54.2	10.3	13.9

Source: Cuban Ministry of Public Health (MINSAP, 2001)

Infant Mortality in Cuba (1975-2001)

Deaths per 1,000 live births

Year	1975	1980	1985	1990	1995	2001
Number of deaths	27.5	19.6	16.5	10.7	9.4	6.2

Source: Cuban Ministry of Public Health (MINSAP, 2001)

Causes of Death in Cuba (1970-2000) per 100,000

	1970	1975	1980	1985	1990	1995	2000
Heart Disease	205.4	185.0	174.4	182.3	170.2	156.0	134.2
Malignant Tumors	122.4	114.4	111.1	113.9	112.8	108.4	115.7
Strokes	85.6	63.1	57.7	59.7	55.6	55.2	53.7
Influenza and Pneumonia	45.3	44.6	40.1	42.0	28.7	30.1	35.7
Vascular Disease	36	33.9	24.9	22.9	24.1	23.7	22.4
Diabetes	13.3	11.8	11.6	15.2	18.8	18.5	10.7
Infectious and Parasitic diseases	45	17.0	10.1	11.4	9.6	13.5	6.6

Source: Cuban Ministry of Public Health (MINSAP, 2001)

APPENDIX

Appendix D: Health Expenditures in Cuba (1994-2000)

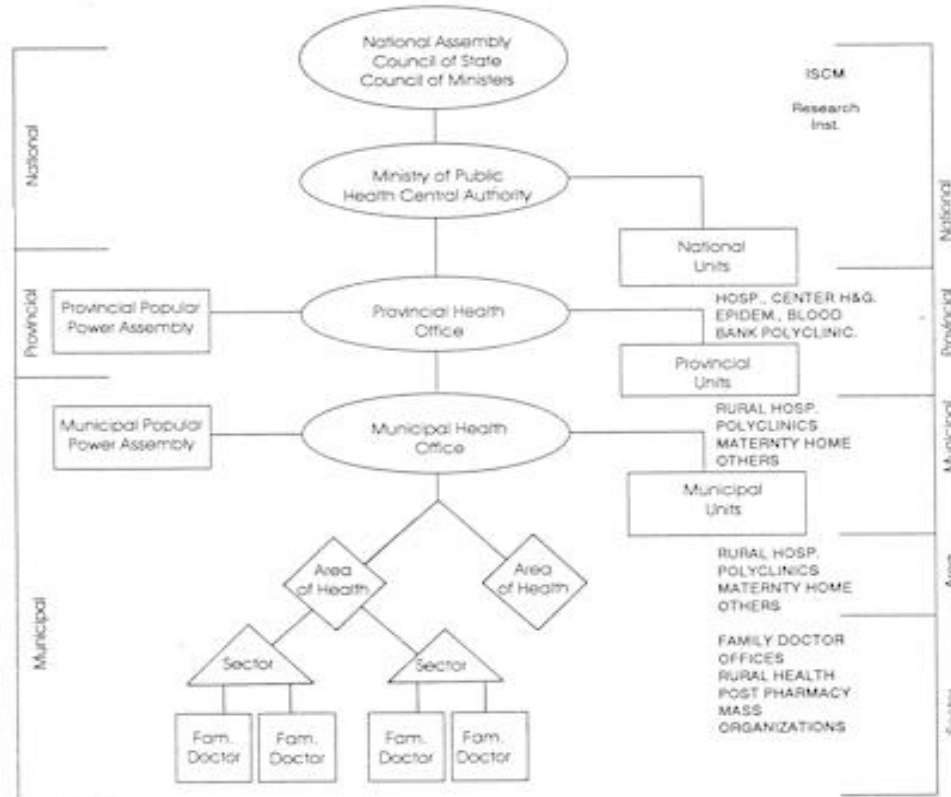
Year	Health Expenditures (millions CUP)**	GDP* (millions CUP)	Health Expenditure As % of GDP	Percent of national Budget	Expenses per Citizen (CUP)
1994	1,061.10	19,198	5.5	7.5	106.42
1995	1,118.30	21,737	5.4	8.0	111.31
1996	1,190.30	22,814	5.2	9.3	119.03
1997	1,265.20	22,951	5.5	10.0	125.31
1998	1,344.90	23,900	5.6	10.3	132.44
1999	1,553.10	25,503	6.1	11.1	153.52
2000	1,683.80	27,634	6.1	11.0	165.99

Sources: PAHO, 2002, and MINSAP. **Cuban Peso

APPENDIX

Appendix E: Structure of Health Care System

ADMINISTRATIVE AND TERRITORIAL STRUCTURE OF CUBA'S
NATIONAL HEALTH SYSTEM, INCLUDING LEVELS OF MEDICAL ATTENTION



APPENDIX

Appendix F. Nominal and Real Social Expenditures: 1989-1998 (in millions of pesos)

Expenditures	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Nominal										
Education	1,650	1,620	1,504	1,427	1,385	1,335	1,359	1,421	1,454	1,510
Healthcare	904	937	925	938	1,077	1,061	1,108	1,190	1,265	1,345
Social Security	1,094	1,164	1,226	1,348	1,454	1,532	1,594	1,630	1,636	1,705
Housing ⁷⁹	406	383	281	248	260	315	411	462	488	566
Social welfare	101	96	88	96	94	94	119	128	135	145
Total	4,156	4,200	4,024	4,059	4,268	4,337	4,591	4,831	4,978	5,271
CPI	1.443	1.509	1,830	3.515	6.578	5.575	2.940	2.883	2.904	2.903
Real Total	2,880	2,784	2,199	1,288	648	778	1,561	1,676	1,714	1,815
Per capita ⁸⁰	272	260	204	106	59	71	142	152	154	163
Index ⁸¹	100.0	95.9	75.0	39.1	21.8	26.1	52.2	55.9	56.9	60.0

Source: Mesa-Largo, Carlos, "Growing Economic and Social Disparities in Cuba: Impact and Recommendations for Change," 2002. Institute for Cuban and Cuban-American Studies: Miami, FL.

Note: Author's calculations based on nominal expenditures (not adjusted for inflation) from ONE 1998, 2000; CPI from Togoeres 1999; and population (used to estimate per capital figures) from ONE 2001.

¹ Housing from social services is included.

^bIn pesos.

^c1989=100.

BIBLIOGRAPHY

Bibliography for Cuban Education System

Aguirre, Benigno E. and Vichot, Roberto J. "Are Cuba's Educational Statistics Reliable?" in Cuba in Transition: Papers and Proceedings of the Annual Meeting of the Association for the Study of the Cuban Economy (ASCE). Bethesda, MD: Association for the Study of the Cuban Economy. 1996.

Cánovas, Lesbia. Cuba, Educación Para Todos: Evaluación EFA 2000. Havana: ICCP, Ministerio de Educación. 2000.

Carnoy, Martin and Samoff, Joel. Education and social transition in the Third World. Princeton, N.J.: Princeton University Press. c1990.

Comité Estatal de Estadísticas. Anuario Estadístico de la República Cuba. Habana: 1985.

Comité Estatal de Estadísticas. Compendio del Anuario Estadístico de la República Cuba. Habana: 1972, 1974, 1975, 1976

Comité Estatal de Estadísticas. Cuba en Cifras. Habana: 1980, 1981, 1982, 1999, 2000.

Comité Estatal de Estadísticas. Statistical Guide. Eng. translation of Guía Estadística. Habana, 1988.

Cuban Studies v. 25-31. Pittsburgh: Center for Latin American Studies, University of Pittsburgh, University of Pittsburgh Press. 1994-2000.

Cruz-Taura, Graciela. "Rehabilitating Education in Cuba: Assessment of Conditions and Policy Recommendations." Prepared for the Cuba Transition Project, Institute for Cuban and Cuban-American Studies, University of Miami. 2002.

De Moura Castro, Claudio. Ugly Schools, Good Schools?. Washington, DC: Inter-American Development Bank, 1999.

BIBLIOGRAPHY

Donoghue, Eileen F. and Bruce Vogeli. "Cuba's schools for the Mathematically and Scientifically Talented: a New Export from Cuba" in *Gifted Child Today* v. 21, no. 3. Mobile, Ala.: GCT Inc. May, 1998.

Fitzgerald, Frank T. Managing socialism: from old cadres to new professionals in revolutionary Cuba. New York : Praeger. 1990.

Gasperini, Lavinia. "The Cuban education system: Lessons and Dilemmas." Washington, DC: World Bank Group, Country Studies. 2000.

Gómez, Fernando Jiménez. "Algunos aspectos de la planificación de la educación en Cuba" in *Revista Interamericana de Planificación* v 16. Bogotá, Colombia: Sociedad Interamericana de Planificación. March 1982.

Jimenez, Paco, ed. Educación especial e integración escolar y social en Cuba. Archidona: Ediciones Aljibe, 1999.

Johnston, Laurie. "Education and Cuba Libre, 1898-1958" in *History Today* v. 45 July-Dec. London:?. 1995.

Lara, José Bell, ed. Cuba in the 1990's. Habana, Cuba: Editorial Jose Marti, 1999.

Lobe, Jim. "Finance: Learn from Cuba, Says World Bank". Inter Press Service. April 30, 2001.

Lutjens, Sheryl. "Educational Policy in Socialist Cuba: the Lessons of Forty Years of Reform" in Cuba: construyendo futuro by Mayra Paula Espina Prieto et al. Barcelona: El Viejo Topo: Fundación de Investigaciones Marxistas. 2000.

Lutjens, Sheryl. "Restructuring Childhood in Cuba" in Children on the streets of the Americas: homelessness, education, and globalization in the United States, Brazil, and Cuba by Mickelson, Roslyn Arlin. London; New York: Routledge. 2000.

BIBLIOGRAPHY

Lutjens, Sheryl. The state, bureaucracy, and the Cuban schools: power and participation. Boulder, CO: Westview Press. 1996.

Malinowitz, Stanley. "Public and Private Services and the Municipal Economy in Cuba" in *Cuban Studies* 27. Pittsburgh, PA: University of Pittsburgh Press, 1998.

McDonald, Jane A. "Forty years after the revolution: a look at education reform in Cuba" in *International Journal of Educational Reform*; 9, No. 1. Lancaster, PA: Technomic Publishing. January 2000.

McGee, B. "A Skewed Utopia: Cuba's National Library" in *Index on Censorship* v. 28, no. 2. London: Writers and Scholars International, March-April 1999.

Mesa-Lago, Carmelo. "Cuba in the Human Development Index in the 1990's: Decline, Rebound and Exclusion." Presented at the Bildner Center, Columbia University. 2002.

Mesa-Lago, Carmelo. "Growing Economic and Social Disparities in Cuba: Impact and Recommendations for Change". Miami, FL: Institute for Cuban and Cuban-American Studies, University of Miami. 2002.

Mesa-Lago, Carmelo. Market, socialist, and mixed economies: comparative policy and performance: Chile, Cuba, and Costa Rica. Baltimore: Johns Hopkins University Press. 2000.

Mesa-Lago, Carmelo. Portfolio performance of selected social security institutes in Latin America. Washington, DC: World Bank. c1991.

Ministerio de Hacienda de Cuba. Anuario Estadístico de Cuba. Habana: 1956, 1957.

Ministerio de Educación de Cuba. Informe del Ministerio de Educación. Habana: 1963-1964.

Oberg, Larry R., compiler. Human Services in Postrevolutionary Cuba: An annotated international bibliography. Westport, Connecticut: Greenwood Press, 1984.

BIBLIOGRAPHY

Partnership for Educational Revitalization in the Americas (PREAL). "Lagging Behind: A Report Card on Education in Latin America." Washington, DC. 2001.

Torres, Carlos Alberto. "Estado, educación no formal y socialismo en Cuba, Nicaragua y Granada" in *Desarrollo Económico* 31. New York. Jan-Mar 1992.

Torres, Carlos Alberto and Puiggros, Adirana. Latin American Education: Comparative Perspectives. Boulder, CO: Westview Press. 1997.

Bibliography for Health and Sanitation in Cuba

Dunning, Thad. "Structural Reform and Medical Commerce: The Political Economy of Cuban Health Care in the Special Period" [how to quote a paper]

Garfield, Richard and Timothy H. Holtz. "Health System Reforms in Cuba in the 1990s". In *Healthcare Reform & Poverty in Latin America*, edited by Peter Lloyd Sherlock. London: University of London; Institute of Latin American Studies, 2000.

"Guyana-Forum Britain urged to back Caribbean regional fight against HIV/AIDS," *Financial Times* (April 4th, 2002)

Houriet, Sylvie. "*Evolución Macroeconómica y Salud en Cuba*" Washington, D.C. World Bank, 1999.

Jatar-Hausman, Ana Julia. "The Cuban Way: *Capitalism, Communism and Confrontation*." West Hartford, CT, Kumarian Press, Inc., 1999

Más Lago, P. "Eradication of poliomyelitis in Cuba: a historical perspective," as published in *Bulletin of the World Health Organization*, 1999. (Washington, D.C., World Health Organization, 1999)

BIBLIOGRAPHY

Ministerio de Salud Publica (MINSAP). *Anuario Estadístico 2001*. Havana, Cuba, 2001.

<http://www.sld.cu/anuario/anu01/indice.html>

Miñoni, Arialdi et al. "Deaths, Final Data for 2000," published in *National Vital Statistics Report Volume 50, Number 15*. (Atlanta, GA, Centers for Disease Control, 2002).

"Not Here," *The Economist* (May 6th, 1999).

Pan American Health Organization (PAHO), *Country Health Profile: Cuba*. (Washington, D.C., Pan American Health Organization, 2001).

Pan American Health Organization (PAHO). Health in the Americas: 2002 Edition, Volume II. (Washington, D.C., Pan American Health Organization, 2002).

Reed, Gail. "Health News From Cuba," *MEDICC Review* Vol. III, no. 1,2, (2001).

<http://www.medicc.org/Medicc%20Review/2001/summer-winter/news1.html>

Santana, Sarah M. "Cuban healthcare system: responsiveness to changing population needs and demands," *World Development* (U.K., 1987): 15, 113-125

Schweimler, Daniel. "Cuba's medical success story," *BBC News* (September 10th, 2001).

The 2002 World Development Indicators CD-ROM. International Bank for Reconstruction and Development/World Bank

"What ails Cuba's health service," *The Economist* (November 12th, 1998)

World Health Organization (WHO). "Vaccines and Biologicals Global 2002 Summary Country Profile, Vaccines, Immunization and Biologicals," (Washington, D.C., World Health Organization, 2002).