The day after tropical storm Jeanne left over 2,200 dead and missing, the Cuban medical team was on the job. *MEDICC Review* spoke to Cuban ambassador in Port of Prince, Rolando Gómez González, who said they are in constant contact with the some 400 strong medical team who were unharmed in the disaster. Although the homes of the Cuban doctors in Gonaives were flooded along with 90% of the people in Haiti's fourth largest city, they had already started setting up emergency care stations. The city's hospital La Providence was under water.

In a subsequent conversation, *MEDICC Review* learned from Cuban medical team head, Dr Juan Carlos Chávez, that they treated 248 sick or injured people in the first couple of days in Gonaives. The demand was so overwhelming the Cubans had to seek more space where they could operate and care for people with more serious problems. Chávez said the day after, they attended 742 people and the day after that almost a thousand others.

According to Dr Chávez, the Cuban medical professionals are working hand in hand with the Panamerican Health Organization, the International Red Cross and local authorities. He explained further that a group of 45 doctors who were on vacation in Cuba were on their way back to Haiti with medicine and other health supplies.

Cuban doctors, nurses, lab technicians and specialists are located in all nine departments of Haiti. Pediatricians, gynecologists, surgeons and other specialists work in the provincial hospitals, while family doctors live and treat patients in remote and difficult areas, referring cases to the nearest hospital which is generally very far away.

Before Cuban health solidarity began in 1998, most rural Haitians had never been to a doctor in their life. At that time, there were only 2,000 Haitian doctors for a population of over 8 million. The vast majority of Haitian doctors have private practices in Port of Prince.

Cuba's Comprehensive Health Care Program plan offered to Haiti free of charge calls for hundreds of Cuban doctors to work in distant and difficult areas where local doctors don't want to. The Cubans not only treat the sick and ailing, they work with local authorities and community organizations to prevent disease. At the same time, young people from these poor regions, towns and neighborhoods study medicine in Cuba to return home and replace Cuban medical personnel. Some 500 young Haitians are currently studying medicine in Cuba.
To date, Cuban doctors have logged five million office consultations and saved 86,000 lives, according to Dr Chávez. Furthermore, where Cuban doctors operate, they have reduced the infant mortality rate from 5.23 for every thousand live births to 2.59 and for children under five from 159 to 39. The maternity mortality rate has been cut from 457 for every 100,000 births to 285. All in all, the Cuban medical team serves some 75% of the Haitian population.

The impetus for Cuba’s offer to help Haiti and other countries in the region was another pair of notorious hurricanes: In September 1998, Hurricane Georges ripped through central and southeast Haiti, taking more than 200 lives and destroying crops, infrastructure and hundreds of homes. A short time later, Hurricane Mitch wreaked havoc in Central America where countries like Honduras were ravaged. A rapid response was forthcoming from President Fidel Castro who offered a Comprehensive Health Care Program (CHP) for the victims of these catastrophes, eventually extending medical care to ever larger parts of the population. To read about this program in detail and the countries now benefiting from it, see International Cooperation Report: Making South-South Collaboration Count.

The impact of the Cuban medical team in Haiti goes beyond what statistics can convey, since they are on-hand to volunteer help whenever disaster might strike. In late May, for example, when torrential rains flooded towns like Jacmel and Marigot and others on the Haitian-Dominican border, over 3,000 thousand people perished or were missing. The Cuban doctors were among the first on the scene treating the sick and injured. In another extraordinary display of solidarity during the severe political violence at the beginning of the year, the Cuban medical team served an overwhelming number of wounded, free of charge. As violence reached a peak February 29th, the day President Jean Bertrand Aristide left the country, Cuban doctors treated over 400 patients in Port of Prince.

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Cuban Med Schools Open
With Record Enrollment

Nearly 30,000 medical students resumed classes in September at Cuba's 23 medical schools, a record number for the country. They are joined by another record 42,800 students in dentistry, university-level nursing, allied health sciences and clinical psychology.

Enrollment in Cuba’s Medical and Allied Health Programs

<table>
<thead>
<tr>
<th>Field of Study</th>
<th>2002-02</th>
<th>2003-04</th>
<th>2004-05*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>19,557</td>
<td>22,031</td>
<td>25,745</td>
</tr>
<tr>
<td>Dentistry</td>
<td>1,761</td>
<td>2,146</td>
<td>2,259</td>
</tr>
<tr>
<td>Nursing B.S.</td>
<td>9,038</td>
<td>9,245</td>
<td>14,734</td>
</tr>
<tr>
<td>Allied Health Careers</td>
<td>253</td>
<td>300</td>
<td>6,969</td>
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<tr>
<td>Psychology</td>
<td></td>
<td></td>
<td>204</td>
</tr>
<tr>
<td>TOTAL</td>
<td>30,609</td>
<td>33,722</td>
<td>49,707</td>
</tr>
</tbody>
</table>

*Estimate as of September, 2004.  
Source: Viceministry for Medical Education, Ministry of Public Health, Havana

The biggest jump actually took place among allied health sciences enrollment, with students choosing from twenty one technical-level career paths destined to boost human resources in the country’s 440 community
clinics, refurbished last year to include expanded services in ultrasound, laboratory, x-ray and physical rehabilitation.

Some 16,000 Cuban physicians now serve in Latin America, Africa and the Caribbean, most of them family doctors, so increased enrollment of Cuban medical students is in part designed to ensure continued quality coverage at the primary level in Cuba. One third, or nearly 10,000 medical students, come from other developing countries, most of them on full scholarship through the Latin American Medical School Program begun in 1998. The program has attracted students from 27 countries and 101 ethnic minorities, 51% of them young women. Selection committees in each country choose students who show academic promise as well as commitment to be posted in underserved communities upon graduation, and they give priority to those who themselves come from disadvantaged backgrounds. The Program’s first 1,400 graduates will receive their degrees in August, 2005.

The Latin American school and medical school campuses in Havana and Pinar del Rio province faced mighty challenges for re-opening their doors in September, since western Cuba was battered by two major hurricanes in less than a month. “Charley” ripped through Havana, causing millions of dollars in damages, with the Latin American Medical School literally in the eye of the storm. Its shoreline buildings suffered significant roof and window damage. Level-5 “Ivan” came roaring through three weeks later, and 4,300 international students were evacuated to the national sports coliseum. “They brought their flags with them,” Eladio Valcarcel, advisor to the school’s director, told MEDICC Review. “And by the time they set up volleyball, basketball, and chess, it looked more like an international tournament than a hurricane shelter.” Radio Havana Cuba broadcast messages to parents, letting them know that their sons and daughters were safe.

The international students, including 70 from the USA (see U.S. Medical Students Back to School in Cuba, this issue), spend 2 ½ years at the Havana campus, then four years of clinical training with Cuban students at medical schools throughout the country.
US Medical Students Back to School in Cuba, Despite Restrictions

Despite the Bush administration’s squeeze cutting off most academic travel to Cuba, 70 US medical students resumed their studies in the Latin American Medical School program in Cuba this September, including 12 newcomers joining the program for the first time.

Under the new Bush rules, their door to a medical degree would have slammed shut. But 28 Black and Hispanic members of Congress dispatched an angry letter to Secretary of State Colin Powell on June 23rd, days before the new rules went into effect, arguing the need for the scholarships. “Our constituents could not and still cannot afford the high cost of medical education in the United States,” they wrote. A press report carried July 7 indicated that Powell himself interceded to give the students a waiver.

“We’re pleased,” student Narciso Ortiz of New Jersey told MEDICC Review. “This is a bonified medical school program, for the sole purpose of improving the health care situation in many places in the United States. The minority members of Congress know that, and supported us.”

In fact, it was Congressional Black Caucus member Bennie Thompson (D-Mississippi) whose request to Cuban President Fidel Castro brought the first US students to the medical school in 2001. Thompson said his district in rural Mississippi needed more doctors, and it would help to offer scholarships to students from the area committed to practicing in their hometowns upon graduation.

As a result, the Cuban government offered 500 full scholarships annually to US students from minority and medically underserved communities. The Interreligious Foundation for Community Organization/Pastors for Peace has taken on most of the recruitment drive for the program, with its Director, Rev. Lucius Walker, also garnering support for the students, including efforts to place them in residency programs.

The timing is certainly right: the September 20th publication of the Sullivan Commission’s report - titled “Missing Persons: Minorities in the Health Professions” - documents the dire need for more minority students to gain entrance to health careers. The study, led by former US Secretary of Health and Human Services Louis W. Sullivan, MD, recommended 37 concrete actions to address the root causes of the problem, which can be summarized as follows: while African Americans, Hispanics and Native Americans together constitute over 25% of the US population, they make up only 9% of the country’s nurses, 6% of its doctors and 5% of its dentists. They account for less than 10% of university-level nursing faculties, 8.6% of dental school faculties and an even more dismal 4.2% of medical school faculties.

The numbers of under-represented minority graduates in US medical schools has actually fallen, constituting 11.4% of graduates in 2000, and 11% in 2002.

The Report concludes that failure to reverse this under-representation could place the health of at least one-third of the nation’s citizens at risk as health care providers become further disconnected from the minority populations they serve. “There is a direct link between poorer health outcomes for minorities and the shortage of minority health care providers,” notes the Report in its Conclusion.

One of the Report’s central recommendations is to shift financing of the health professions from student loans to scholarships, to ease the burden on repayment and encourage students not to abandon health care delivery as a profession. Over the last 20 years, the debts carried by medical school graduates have increased six-fold, notes the report, with 50% of 2001 graduates owing more than $100,000, and minority students two to three times more likely to carry the extra burden of unpaid undergraduate loans.
The Latin American Medical School program is one scholarship already available.

Click here for the full Sullivan Commission report:

Click here for comments on the report

Click here for interesting testimony to the Commission

US Company Licenses Three Cuban Cancer Vaccines

CancerVax Corporation, a California company, has entered into a licensing, development and marketing agreement for three innovative cancer vaccines developed by Cuba's Center for Molecular Immunology (CIM). The agreement was signed on July 15, between CancerVax and CIMAB, S.A., the commercial arm of CIM.

Authorization for the deal from the U.S. government represents a limited breakthrough in the tough sanctions the United States has imposed on Cuba for more than 40 years, prohibiting such cooperation between a US and Cuban company in the development of biotechnology. In 1999, the U.S. government granted a license to the British company SmithKline Beecham PLC (now GlaxoSmithKline) to market a Cuban vaccine against meningitis B, once the product receives FDA approval (MedICC Review, July 1999). Since the early 1990s, Cuba has sold millions of doses in Latin America, including Brazil, Argentina and Columbia.

According to specialists, the vaccines could prove valuable to fight breast, lung and colon cancer, among others. Published data from early Phase 1 and 2 studies of the lead candidate among the three vaccines, SAI-EGF, showed promising results in increasing the survival of patients with advanced stage non-small-cell lung cancer (Source: Journal of Clinical Oncology, Vol 22, No. 14S, July 15 Supplement, 2003:2514; Abstract No: 2514; Annals of Oncology, Vol 14, 2003). Based on these results, David Hale, chief executive of CancerVax, has expressed confidence that the SAI-EGF vaccine could be approved for marketing as early as 2008 or 2009. The other two vaccines, SAI-TGF-alpha and SAI-EGFR-ECD, are currently in preclinical development.

The vaccines consist of immunotherapies designed to stimulate the body’s immune system to recognize and attack cancer cells. The SAI-EGF vaccine is designed to attack epidermal growth factor receptor, one of the receptors related to the regulation of cell growth. Research has shown that the EGF signaling pathway is linked to cancer cell growth in the development of many solid tumor cancers, including lung, breast, ovarian, pancreatic and prostate cancers. The other two, SAI-TGF-alpha and SAI-EGFR-ECD are in preclinical development.

Under the agreement, CancerVax's wholly owned subsidiaries Tarcanta, Inc. and Tarcanta, Ltd. (Ireland) will carry out the clinical trials of the vaccines in the United States and Europe necessary for the marketing and distribution of the drugs. According to Dr. Augstín Lage Dávila, Director of CIM, if the clinical trials prove successful and the vaccines are approved for distribution, they will be produced both by CancerVax and CIM in the United States and Cuba, respectively. CancerVax will have rights under license to market the vaccines in the United States, Canada, Europe, Japan, Australia, New Zealand and Mexico.

The two preclinical vaccines were previously licensed by CIMAB, S.A. to the Canadian firm YM BioSciences Inc. for development. Under a three-way agreement with CancerVax the licenses held by YM Biosciences will be transferred to CancerVax.

CancerVax won bipartisan support for the project in Congress as well as the endorsement of top oncology researchers, convincing the Bush administration to approve the license for what are considered to be
“revolutionary life-saving medications.” As stated by Senator Christopher J. Dodd, Democrat from Connecticut, “saving lives shouldn’t be a political issue.”

However, as a condition of the U.S. Treasury Department authorization, initial payments in the amount of US$6 million by CancerVax to Cuba’s CIMAB during the three-year developmental stage cannot be made in cash, but rather must be in food and medicines.

At the signing of the agreement, David F. Hale, chief executive of Cancer Vax Corporation, lauded the Cuban advances in biotechnology research: “I think there are other product candidates and technology in Cuba that could be helpful to the American people, not just the American people but people around the world."

Washington Fines US Company for Selling Children’s Vaccines to Cuba

In early June, Chiron Corp was slapped with a $168,500 fine by the U.S. Treasury Department for having shipped vaccines to Cuba for infants and children from its plants in Germany and Italy in 1999-2002. The vaccines included those for polio, haemophilus influenza, flu, rabies and a vaccine for measles, mumps and rubella.

The fine issued by the Treasury Department’s Office of Foreign Assets Control (OFAC) is the second highest civil penalty that is has imposed this year. In April, OFAC fined Alpha Pharmaceutical Inc. $198,711 for illegally exporting pharmaceutical products to Cuba from 1998 to 2003.

The vaccines sold by Chiron are employed in Cuba’s comprehensive immunization program that has eradicated polio, measles, rubella and mumps, and diphtheria, among other diseases (see Spotlight this issue).

In view of the success of Cuba’s comprehensive program, it gives some pause to note that the sanction against Chiron comes only two months after the Bush administration unveiled its program to “aid the Cuban people” in which it promised that once the current Cuban government is removed, the United States will launch a program to assure that all children under 5 years of age will be vaccinated against the very diseases prevented by these vaccines.

Further, OFAC has since granted Chiron a license to ship the vaccines, raising a question as to why it was fined so severely in the first place. Under previous administrations, inadvertent failure to complete the requisite paperwork would have provoked a mere warning.
Cuba Strengthens Primary Health Care In Mountains

Primary care services in the mountainous areas of Cuba’s eastern provinces were strengthened considerably this month with the arrival of a contingent of recently graduated medical doctors. The graduates - young physicians with the most outstanding academic results - come from all over the country and will serve in the mountains of the eastern provinces as part of their one- to two-year social service commitment following medical school.

This is the sixth such group of health professionals, made up of 99 physicians and 29 dentists committed to the continuation and improvement of health care delivery even in the most remote rural areas of Cuba. The experience is considered highly valuable from a professional standpoint, both in general terms and more specifically as background for possible future assignments in other countries of the world.

First Cuban-Made Cardiac Defibrillator Introduced

The first Cuban-made biphasic defibrillator was introduced at the 3rd International Congress of Emergency Medicine and Intensive Care held at the International Conference Center in Havana, September 18-23. The defibrillator or “CARDIODEF 2” was designed and manufactured at Cuba’s Central Institute for Digital Research (ICID).

With delegates from 11 countries attending, issues in intensive care and emergency medicine were discussed in depth, particularly with regards to the specialty’s recent growth and development. Cuba presented its experience in the creation of 121 community-based, municipal intensive care units and the resulting improvement in the delivery of emergency services at the community level, including communities in the most remote/rural regions of the country.

Simultaneously, the First Congress and General Assembly of the Latin-American Association for Cooperation in Medical Emergencies and Disasters and the First International Congress for Nurses in Emergency Medicine and Critical Care were also held in Havana. The closing session of the event was attended by important national and international figures in the field, and presided over by the Cuban Minister of Public Health, Dr. José Ramón Balaguer, who emphasized the urgent necessity for the nations of Latin American and the Caribbean to work more closely and systematically together. Dr. Balaguer emphasized the need to unify the efforts of the region’s scientists and health professionals for the purpose of developing better and more extensive services to the people of each/all of the countries, regardless of the level of economic development in any one particular nation. “This would be a true concept of integration,” the minister said in his closing speech.

PAHO to Publish Results of Cuba-Venezuela Cooperation

Dr. Renato Gusmao, representing the Pan American Health Organization (PAHO) in Venezuela, has announced the organization will publish the results of the Venezuelan community health program known as “Barrio Adentro” or “Inside the Barrio.” The program has brought free health care to the poorest in Venezuela since its inception in April, 2003, and now covers some 17 million people. The physicians, mainly 13,000 Cuban family doctors, now live with families in the neighborhoods they serve. The program offers
preventive orientation and vaccinations as well as curative medical care, and includes special services in
dentistry, ophthalmology, and cardiology.

Dr. Gusmao noted that PAHO decided to publish the study after the last meeting of the World Health
Organization in Geneva, where numerous health ministries requested more information on the program.

At an August workshop evaluating the results of Inside the Barrio, Venezuelan President Hugo Chavez
called the program unprecedented, and told participants that his government is sticking to its goal of building
5,000 family doctor offices throughout the country by the end of the year, despite the fact that only some 500
had gone up to date.

Venezuela’s Minister of Health and Social Development, Roger Capella, said that Inside the Barrio is an
attempt to respond to the historical lack of social infrastructure for the majority of Venezuelans. He called the
Cuban cooperation “a shining example of South-South cooperation,” and referred to the fact that some
1,300 young Venezuelans will soon graduate from Cuban medical schools to join Inside the Barrio, which
has been sorely lacking in homegrown physicians, who so far have shown little enthusiasm for taking on
such rugged duty in poorer neighborhoods.

The PAHO representative praised Inside the Barrio for helping to “knock down social and economic barriers,
providing access to healthcare for the majority of Venezuelans.” “Inside the Barrio,” he said, “permits the
planning of a health care system based on the needs of the population, not just on how much they have or
how much they can afford.”

International Society of Orthopedic Surgery
And Traumatology Holds World Congress
In Cuba

The World Congress of the International Society of Orthopedic Surgery and Traumatology and the
Association of Orthopedic and Traumatology Research (SICOT/SIROT) was held in Havana, September 26-
29. Delegations from more than 50 countries attended the event, bringing together thousands of specialists
in the field. The choice of Cuba as the Conference venue is considered to be a recognition of the island
nation’s prestige at the international level in this area of medical specialization.

Latin American Parliament’s Health Commission Meets
in Havana

Two of the 13 Commissions of the Latin American Parliament (PARLATINO) met in Havana at the
International Convention Palace September 9-10. The Health and Energy Commissions brought together
some 60 Latin American legislators and representatives of the Pan-American Health Organization (PAHO)
and the Latin American Economic Commission (CEPAL), to debate the most important issues confronting
the region in relation to Health and Energy.

Cuban Physician, Dr. Nidia Diana Martínez-Piti, Chair of the Health Commission and Director of Havana’s
“William Soler” Pediatric Hospital, stated that the principal challenge facing the Latin American Parliament is
the accelerating plunge into poverty impacting the entire region. Dr. Martinez noted that even today as we
enter the 3rd millennium, access to public health constitutes the single most serious problem. In particular
she cited the resurgence of diseases such as dengue fever and malaria and the almost complete lack of
services available to the poor, the indigenous populations of the region and residents of rural areas.
The Commission discussed the region's health indicators which have regressed considerably over the past two decades with regards to access to public health services: a consequence, according to Dr. Martinez, of the application of neo-liberal policies that have created havoc with public services.

Statistics published by the World Health Organization demonstrate what Dr. Martinez called “the dramatic situation in Latin America and the Caribbean,” where 82 million children have not received basic vaccines/immunizations and 152 million people do not have access to clean drinking water nor to basic sanitary conditions. She further stated that the only way to confront the challenges facing the region is for the parliaments, legislative bodies and/or national and local governments to assume responsibility for the welfare of their people by establishing institutional reforms which take into consideration equality, quality, efficiency, sustainability and social participation.

Access to health services as a basic human right stood out as one of the main issues of debate at the meeting and was reaffirmed by Ricardo Alarcón, President of the Cuban National Assembly, when he stated “We have many needs, the problems are too complex and apparently hard to resolve but it is a must for all Latin American Parliaments to try to meet their people's expectations.

For details on PARLATINO, see: www.parlatino.org

Healthy People, Healthy Planet: Cuba Works To Protect Ozone Layer

Cuba's Technical Ozone Office (OTOZ) celebrated International Day for the Protection of the Ozone Layer this past September 16 by announcing that methylbromide has been completely eliminated in national tobacco cultivation. Used extensively since the 1980s, specialists here estimate that some 400 tons of the toxic fungicide - a major contributor to the depletion of the ozone layer - were pumped into the environment each year. Scientists estimate that if all facets of recent international accords are implemented by 2010, the ozone layer has a chance to recover to pre-1980 levels by 2050.

Several complementary initiatives in keeping with the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer previously enacted in Cuba include the cessation of importing chlorofluorocarbon-emitting equipment, converting and updating refrigerator production technology and the training of specialists in innovative, environmentally protective practices and technology in a program called Life Shield. To see the full text of the Montreal Protocol, see http://www.unep.org/ozone/Montreal-Protocol/Montreal-Protocol2000.shtml.

Cuba to Participate in International Alzheimer’s Study

More than one thousand Cuban seniors, 65 years of age or older, have been included in a project of the World Association for Alzheimer’s. The study involves research in the area of risk factors and their associations with more advanced stages of the disease.

The study, in which 36 countries are participating, will involve seniors in the province of Matanzas as well as those who reside in several municipalities of the City of Havana. It will include physical, neurological and genetic testing, as well as descriptive surveys.

Approximately 20 million people throughout the world - including some 100,000 Cubans - suffer from Alzheimer’s disease which causes the progressive and unstoppable deterioration of the higher mental functions integrated at the level of the cerebral cortex.
RESEARCH AND DEVELOPMENT

Vaccines: Plants May Replace Animals For Clinical Trials

Cuba’s Genetic Engineering and Biotechnology Center (CIGB) is developing its first “plantibody,” a plant-generated antibody that can replace the use of laboratory animals to produce antibodies for pharmaceutical research. According to Dr. Carlos Borroto, an expert in biological science and assistant director of CIGB, a selected gene can be inserted in a plant, which acts as a bioreactor, to produce antibodies for the production of vaccines. In addition to overcoming the ethical issues concerning use of animals for the production of antibodies, the use of plants may be cheaper and cleaner.

According to Borroto, immunization is based on the principle that, confronted with a foreign molecule, the human organism reacts to counteract it. Each protein has its specific antibody, called a monoclonal antibody, and these antibodies are utilized to combat certain illnesses and cancerous cells, as well as in the purification of vaccines.

Cuba expects to register its first “plantibody” by the end of 2004.

Cuba Demonstrates Effectiveness of its Synthetic Haemophilus Influenza Vaccine

Cuba has begun mass production of its pioneering synthetic vaccine Haemophilus influenzae type b (known as Hib) after phase II clinical tests showed the vaccine provided 99.7% long-term protection against the bacterium that causes meningitis and pneumonia in infants. Hib is known to cause the death of up to 600,000 children under the age of five each year, primarily in developing countries. Although the conjugate vaccine that uses a natural molecule to produce the antigen was developed more than 13 years ago, approximately 90% of the world’s children are still not protected against the deadly disease.

Announced in November 2003, the vaccine is the first synthetically produced antigen for human use and is considered to be safer and purer than vaccines developed from live bacterium or virus. As reported in Science Magazine (July 23, 2004, www.sciencemag.org), John Robbins, an immunologist with the U.S. National Institute of Child Health and Human Development, a co-inventor of the first Hib vaccine, the Cuban vaccine represents an important scientific achievement that will “pave the way for a new generation of vaccines” against other diseases.

The breakthrough was the result of six years of collaborative efforts between Cuban scientists at the University of Havana, the Finlay Institute, the Tropical Medicine Institute, the National Center for Bioreagents and the Center for Genetic Engineering and Biotechnology (CIGB) and Canadian scientists at the University of Ottawa. Patents for the development and method of production of the vaccine are held by the University of Havana and the University of Ottawa with patents pending in more than 40 countries.

Once all the clinical developments of the World Health Organization had been met, the Cuban National Control Authorities registered the vaccine in November 2003, thereby permitting large-scale commercial production. It is now marketed under the name Quimi-Hib. Cuba has already produced more than one million doses of the vaccine that is being used to vaccinate all Cuban breastfeeding infants who will receive a booster dose after a year and a half.

Vicente Vérez Bencomo, the vaccine’s principal creator, explained in an interview published by Granma International (January 14, 2004) that use of the vaccine in Cuba’s National Immunization Program "will save the country $2-3 million a year in imports."