

MEDICC Review

Cuba Health Reports

The Story Behind Cuba's Decline in Infant Mortality

By Gail Reed

January 21, 2007 -- Fewer infant deaths in two of Cuba's most unlikely regions are mainly responsible for the country's 2006 record-low infant mortality announced earlier this month. Cuba closed last year with an infant mortality rate of 5.3 per 1,000 live births, down from 6.2 in 2005, largely because of progress made in the eastern provinces and the capital of Havana.

The historically lesser-developed eastern region – home to Cuba's highest mountains, most precarious water supply and generally most difficult living conditions – registered significant drops in infant mortality in 2006. And rates for five out of the six provinces in this region not only decreased, but were below 5.0 (Camagüey, Las Tunas, Holguín, Granma and Guantánamo) with only Santiago de Cuba turning in a higher rate (7.9 from 7.2 in 2005).[1] Santiago has also registered significantly higher maternal mortality rates in the last few years.[2] This problem, in addition to higher than expected 2006 infant mortality rates in a few provinces, are the subject of ongoing analysis by Cuban authorities.



Sleepless in Havana

The big Cinderella story, however, was Havana City (population 2.2 million and a province unto itself according to Cuba's political-administrative divisions). With infant mortality hovering between 6.6 and 7.1 since 2001, it seemed progress had stalled. But then the rate dropped to 4.9 in 2006, making Havana one of a handful of the world's capitals where infant mortality registers below national rates.

Dr Yamila de Armas, Vice Director of Havana's Health Department in charge of the city's medical services, credits the breakthrough to a tighter organization of services, more individualized, patient-centered focus on high-risk mothers-to-be, and lastly, to the introduction of improved technology. She also points to simultaneous reduction in infant mortality and late fetal deaths: "When both decline, you know you're on the right track," she told *Cuba Health Reports*.

Table 1: Infant Mortality Havana, Cuba, Selected Indicators (2005-2006)

Indicator	2005	2006
Total births	18,953	18,083
Deaths <1 yr	132	88
Infant mortality (x1,000 live births)	6.7	4.9
Late fetal mortality (x1,000 live births)	10.1	9.6
Low birthweight (%)	5.6	5.4

Source: Statistics Division, Havana City Province Health Dept, *Boletín Diario, Programa de Atención Materno Infantil (Summary, 1/1/06-12/31/06)*.

Dr de Armas credits the results to a process begun in November 2005 involving specialists at primary and secondary care levels, in what she calls a "taking off the kid gloves" overhaul of treatment protocols and best practice guides. "We included pediatricians, ob-gyns and others in the polyclinics, and maternity and pediatric hospitals," she notes. "We pulled the protocols out of the drawer and began reviewing them against our practice and our results, which were of course different in different institutions, in different services."

In some cases, protocols themselves were changed. "But more important," Dr de Armas told *CHR*, "the protocols came to life: each one was ratified or reformed according to the evidence-based consensus among all these professionals actually working in the services, not something imposed from above."

Like all capitals, Havana is complex, beset by great transient populations, and in Cuba's case, serious public

transportation woes and crowded housing conditions. Thus, the country's commitment to provide universal health care faces special challenges, not the least of which is keeping track of pregnant women, and especially those at risk.



Dr. Yamila de Armas: "taking off the kid gloves"

"We started by looking at the gaps," says Dr de Armas, "figuring out how to better care for these women *before* they become pregnant, to better control conditions such as hypertension that can present risks during pregnancy. And once we found a woman with risk factors who had become pregnant, then we looked for ways to maximize individualized care for her beyond what we were already doing. That meant following her closely through the system, from family physician to polyclinic and hospital level, and composing a team of physicians responsible for her care from the beginning."

An innovation introduced along these lines was the "partogram" ("delivery-gram"), or the critical route outlined for every pregnant woman at risk. "Each patient was first identified as at-risk at the primary care level by her family doctor and her polyclinic ob-gyn," explained Dr de Armas. "The hospital where she would give birth was

notified at that point, and from then on the specialists at both levels began to work together on her care." As a result, each month in a given geographic area, the hospital and surrounding primary care providers met to discuss patients nearing their due dates, to review whether the actions foreseen were proportionate to the level and nature of risk for each.

Women with particular conditions were referred early on in their pregnancy to the hospitals best suited for delivering their newborns. Until then, for example, a diabetic woman would go to her municipal hospital to deliver, and only upon the onset of any complications, would she be transferred to the hospital housing the national reference center for diabetes. But in 2006, as a result of the "partogram," her case was transferred to the reference hospital months before her due date. The result was a specialized hospital team well-informed about her case from the start, an institution better equipped to deal with potential complications and an end to last-minute patient transfers.

Wider use of modern technology, such as high-frequency ventilators in perinatal services and greater emphasis on study, evaluation and continuing medical education complete the picture, explaining the increased survival rate for Havana's newborns.

Table 2: Infant Deaths (<1 yr), Havana Cuba: Main Causes

Cause	Deaths 2005	Deaths 2006
Congenital malformations	33	15
Hypoxia, anoxia, asphyxia	21	11
Other perinatal affections	22	10
Acquired sepsis	8	9
Hyaline membrane	2	3
ADD	6	2
Pulmonary hemorrhage	2	2
Congenital sepsis	7	1
Intraventricular hemorrhage	3	1

Source: Statistics Division, Havana City Province Health Dept, Boletín Diario, Programa de Atención Materno Infantil (1-1-06-31-12-06).

As Goes Havana So Goes the Nation

The level of organization, competency and technology in Havana's medical services has repercussions beyond capital-born babies, since most of the nation's tertiary referral institutions are located here for complex maternal and pediatric care. Such is the case with the Children's Heart Center at the William Soler Pediatric Teaching Hospital[3], serving as the hub of a national network for diagnosis and treatment of congenital heart malformations. Dr de Armas notes that better integration of the network with community genetics programs contributed to decreased infant mortality nationally in 2006 by identifying risks earlier.

In reducing the nation's infant mortality to a record low, Havana was joined by Holguín province, which registered the country's lowest rate at 3.8 per 1,000 live births. This accomplishment was particularly noteworthy, considering that the

province is still recovering from several years of critical drought. The lack of rainfall had seriously affected hygiene until kilometers of aqueduct were installed to link the region to new water supplies, and the rains finally came.

Meanwhile, the mountainous provinces of Granma and Guantánamo historically lagged behind others in this important health indicator. For example, in 1995, at the height of Cuba's economic crisis, when the nation registered 9.4 infant mortality, Granma's rate was the highest in the country at 10.9. However, they have caught up over the years, particularly by making it possible for mothers-to-be at risk to get round-the-clock care at maternity homes during their last months of pregnancy, and by offering nutritional supplements at workplaces and farming cooperatives, free of charge. The results are impressive: by 2006, Granma's infant mortality had declined to 4.4 and Guantánamo's to 4.8.

The highest infant mortality in 2006 came from central Ciego de Ávila province (9.0), which has traditionally registered rates well below the national figures. Health authorities are expected to spend the first quarter of the year analyzing both the success stories of Havana and the eastern provinces as well as the cases of the three provinces which registered an increase in infant mortality: Ciego de Avila (5.2 in 2005 to 9.0 in 2006), Santiago de Cuba (7.2 to 7.9) and the agricultural province of Havana, which surrounds the capital of the same name (5.7 to 6.1). ■

Notes & References

1. For further statistical information on infant mortality in Cuba, see [Cuba Health Data](#).
2. *Objetivos de Desarrollo del Milenio: Cuba, Segundo Informe*, Instituto Nacional de Investigaciones Economicas, La Habana, July 2005, pp. 49-54.
3. For more details on pediatric cardiology in Cuba and the national network, see *Pediatrics: The First Year of Life in Cuba*. MEDICC Rev. 2005 June;7(6).

Medical Education Cooperation with Cuba

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