# Morbidity and Mortality Among Iraqi Children from 1990 Through 1998:

## Assessing the Impact of the Gulf War and Economic Sanctions

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### Introduction

As tools of international pressure that fall between diplomacy and armed force, sanctions usually aim to achieve political ends at far less cost to the embargoing countries than would be incurred by warfare (67). In modern times economic sanctions became a more common tool of coercive foreign policy, as a prelude or alternative to warfare, after the end of the Cold War. Multistate sanctions, such as those imposed by the United Nations (UN), were applied only to Southern Rhodesia (1966) and South Africa (1977) prior to the end of the Cold War. Since then multistate sanctions have been applied against Iraq (1990), Somalia (1992), Libya (1992), the Yugoslav Federation of Serbia and Montenegro (1992), Liberia (1992), Haiti (1993), Angola (1993), Rwanda (1994), and Sierra Leone (1997). In the last fifteen years, the United States has also passed resolutions invoking sanctions against more than seventy countries with more than half of the world's total population.

### Has the Embargo Killed Iraqi Children?

U.S. and UN policies toward Iraq are greatly influenced by questions about the humanitarian impact of the embargo. Have Iraqi children been dying due to the embargo, as the government of Saddam Hussein argues? If so, to what extent has mortality increased? Is the humanitarian suffering in Iraq a tragic but necessary cost to prevent Iraqi aggression and the proliferation of weapons of mass destruction, as U.S. Secretary of State Madeleine Albright has argued? Or is it, as some UN Security Council members, and religious and peace groups argue, an excessive, unnecessary, and unjustifiable cost? Even the U.S. government believes there has been a serious increase in child deaths in Iraq. During U.S. embargoes against Haiti and Cuba, the State Department argued that reported mortality increases were not real. Regarding Iraq, it argues that the mortality increase is the fault of Saddam Hussein rather than the U.S.

As an editorial in the *Washington Times* on 5 December 1997 stated, "No one seems to be able to agree on exactly how big the 'starvation' problem really is . . . there is really no reliable source of information . . ." (1). Reports from the Iraqi government and its supporters suggest that more than a million excess deaths have occurred. International missions and humanitarian organizations since the end of the Gulf war describe Iraq in apocalyptic terms, imminently close to famine and social breakdown. **This study aims to establish minimum estimates for the**

**magnitude of mortality changes among under five-year-olds and to identify the mechanisms responsible for major mortality changes.**

The well being of citizens in an embargoed country is impacted by the resilience of that country's economic and social systems. The vitality of such systems is threatened by the stresses that an embargo places on the production, importation, and distribution of essential goods. But changes in the distribution of essential goods within the family and the mobilization of underutilized resources due to political or social policies modify the impact of resource changes brought on by economic sanctions. Such effects are indirect, difficult to isolate from other factors, and impossible to measure with precision.

Other sources of social stress often accompany embargoes, including economic inefficiencies, inequitable distribution of goods, civil conflicts, and population movements. These factors also threaten a population's health and impede the ability to measure changes in health care and health status. Even a dramatic decline in key resources does not always or immediately lead to increases in morbidity or mortality, however, due to the resilience of such "health assets" as public education, healthful behaviors, trained health workers, and infrastructure, which deteriorate only gradually (3). Infant mortality can decline even during periods of severe resource shortage if those scarce resources are distributed efficiently (2).

Social disruptions in Iraq have weakened the country's health system and vital statistics reporting systems. Further, information provided by the Iraqi government may not be reliable. Since 1990 the Iraqi health system's data management and processing capability has been greatly reduced. The system was computerized prior to 1990; it is now entirely dependent on paper records which are known to be incomplete. The government of Iraq's health reporting systems depend nearly exclusively on information generated from public hospitals. Besides problems introduced by growing delays, greater inaccuracies, and poorer diagnostic capacity in public hospitals, the information provided was increasingly incomplete because a growing proportion of all diagnoses from 1991 to 1997 were recorded in private hospitals and a growing but unknown proportion of all deaths occurred outside of hospitals (8). Press-oriented processions through Baghdad with small caskets, designed to denounce the U.S. and UN for culpability in deaths, demonstrates the political utility of poorly defined data on deaths among children for those opposed to sanctions (9,10).

In nearly all countries basic information on births and deaths is available only from the government. Faith in the veracity of such reports is tempered by checks on the completeness and accuracy of statistical information. Except for the survey work of the Iraqi Nutrition Research Institute, such checks have not been carried out by independent agencies in Iraq during the 1990s. Further, original data sets from some of the studies carried out in cooperation with international investigators, most notably the ***1996 Multiple Indicator Cluster Sample Survey (MICS)*** study jointly carried out by UNICEF and the Central Statistical Organization of the Iraqi government, have never been released to international investigators (35, 36). As a result, the credibility of these data cannot be adequately confirmed.

Fortunately, independent sources for data on many issues, including health and social measures in Iraq are available. On mortality, these sources include three pre-1990 demographic surveys carried out by the government of Iraq (26) or international consultants (28, 60), and surveys by academic researchers from other countries to assess child deaths in 1991 (29) and 1996 (45). On nutrition, these include national level assessments of nutritional indicators among children under five taken in 1991 (29), 1996 (35, 36), 1997 (47, 48), and 1998 (49). Information from these studies is supplemented by other surveys among convenient or at-risk populations (See Appendix B). Additional survey information is available on the quality of drinking water, breast feeding and weaning practices, literacy, the condition of hospitals, the price and availability of foods, and the transmission of infectious diseases.

**Experiences of Other Embargoed Countries**

Almost all sanctions regimes have provisions for exempting food and/or medicines. Nonetheless, with the exception of South Africa, all embargoes listed above led to limitations on the importation of foodstuffs and medicines (4). Most of the embargoes were also associated with capital shortages and limitations in the importation of consumption and investment goods. In many countries the embargo-related lack of capital was more important than direct restrictions on importing medicine or food. In some embargoed countries, including Cuba and Yugoslavia, the terms of the embargo prohibited the direct purchase of medicines. Although embargoed countries routinely blame shortages of essential drugs, medical supplies, and surgical equipment almost entirely on the embargoes, it has seldom been possible to demonstrate this directly.

Those most likely to be affected by sanctions include pregnant and lactating women, children under five years of age, and those with chronic diseases in need of ongoing medical services. When food and medicine become scarce, the risk of inadequate weight at the start of pregnancy, poor weight gain during pregnancy, micronutrient deficiencies, infectious conditions, and stress all increase. Each of these factors increases the risk of a poor pregnancy outcome. In Cuba, the percentage of low-weight births rose 19%, from 7.3% in 1989 to 8.7% in 1993, eliminating ten years of progress. The number of women with inadequate weight gains during pregnancy or with anemia also rose rapidly (5). A longitudinal study among rural Haitians showed an increase in the proportion of malnourished children from 5% to 23% from 1991 to 1992 (6).

Embargoes are often associated with a dramatic increase in the price of staple goods. It is estimated that the embargo on Cuba creates a virtual "tax" of 30% on all imports that must be purchased from smaller and more distant markets (5). The price of staple foods increased fivefold in Haiti from 1991 to 1993, unemployment rose rapidly, and the export of mangos, on which many of the poor farmers depended, was halted (6).

Those countries with the greatest import dependency have experienced the greatest declines in child nutrition. About half of all proteins and calories intended for human consumption were imported to Cuba during the 1980s; importation of foodstuffs declined by about 50% from 1989 to 1993. Reduced imports and a shift toward lower quality protein products are significant health

threats. Milk production declined by 55% from 1989 to 1992 due to loss of imported feed and fuel. A daily glass of milk that was provided to all children in schools and day care centers through age thirteen was reduced and is now provided only to children under age six. Per capita protein and calorie availability declined by 25% and 18%, respectively, from 1989 to 1992 (5). Several essential medical products are produced only in the United States and when exceptions to the embargo have been granted, serious delays occurred while foreign firms sought U.S. authorization for sale. Sometimes the purchased products expired or spoiled by the time they arrived.

Young children are more likely to suffer from poorer nutrition, increased infectious disease transmission, and a medical system with decreased capacity to respond to the increased needs under economic sanctions. Even in Cuba, where the medical system has aggressively tried to respond, and in Haiti, where up to a third of the population received medicine and food from international relief agencies, these trends were observed (4).

Weakened physical and medical infrastructures strain the capacity of a health system to respond to emergencies during childbirth. More women may give birth without medical assistance or in a facility lacking electricity, transportation, or equipment and supplies for emergency interventions.

Data on the effect of embargoes on women are limited. Maternal mortality among Cubans rose by 50% in the period from 1993 to 1994, when embargo-related shortages in that country's health system were most severe. Extraordinary governmental efforts to provide extra food rations to pregnant women and revamp birthing procedures reversed the trend toward rising mortality. In Haiti, it was shown that sanctions were responsible for increased demand on women's labor to generate money and engage in income-substitution activities, thus depriving children of the time and attention to assure healthy weaning and child care. In societies where women are less powerful or where abuse against women is widely tolerated, they are likely to bear the brunt of the increased burdens caused by an embargo.

The resources needed to maintain nutrition and essential medical care for women and young children are often minimal. Promoting breast feeding, guaranteeing access to food for women and children, preventing contamination of food and water supplies, ensuring immunization, and assuring stocks of a small number of emergency medicines could protect most women and children from the short-term threats posed by an embargo. Indeed, many families already boil water, immunize their children, and breast feed in response to the perceived health threats caused by embargoes. This mobilization of basic resources to protect the microenvironment of the child is likely responsible for the decreased infant mortality in Haiti (7), Nicaragua (2), and Cuba (5) during embargoes, even while mortality among those under five (Haiti) or over sixty-five (Cuba) rose.

Not all embargoes have been implemented aggressively, and even under the strictest embargoes, some goods get through. Yet all these embargoes have increased costs and reduced economic activity for target countries. Embargoes with the greatest impact on the health of the general