

Special Report: This is the second in a three part series on health issues in the war with Iraq.

Observations on Health in the 2003 War with Iraq: Part II: Immediate relief phase

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Background

On March 19, 2003 coalition forces moved from Kuwait into southern Iraq beginning the recent war in Iraq. By April 14 major combat was declared over in and around Baghdad, and on May 1 President Bush declared that combat was over in Iraq. Many organizations, including British and American military units, United Nations (UN) agencies, non-governmental organizations (NGOs), and donor countries, had carried out extensive pre-war planning in anticipation of the humanitarian consequences of this war;¹ however, predictions of massive population displacement and streams of refugees crossing Iraq's borders into neighboring countries did not come to pass. Nor was there extensive destruction of social infrastructure or the use of chemical or biologic weapons. Other consequences of the war, such as the widespread looting of public facilities, including hospitals and pharmaceutical stores, were not widely predicted. It was these consequences which had a substantial effect on the health system. Moreover, general insecurity due to attacks by organized Iraqi militia, as well as general crime, interfered with many aspects of the humanitarian response to the war. This paper describes some of the civilian and military actions taken in Iraq during the immediate relief phase in order to prevent morbidity and mortality in the aftermath of the war.

Inter-organizational coordination

The Office of Reconstruction and Humanitarian Assistance (ORHA) was created by the US Department of Defense to be the overall authority for guiding relief and

reconstruction efforts in Iraq during and after the war. The prior Iraqi regime had concentrated decision-making in Baghdad and devoted a disproportionate amount of health resources to central Iraq. To some extent, this tendency was replicated by the coalition forces and ORHA. As a result, many areas in southern Iraq received minimal attention during this time. This attitude among the occupying powers led to their lack of ability to coordinate health activities in southern Iraq. Such coordination was largely left to United Nations (UN) agencies and non-governmental organizations (NGOs).

The Office of Foreign Disaster Assistance (OFDA), a part of the United States Agency for International Development (USAID), sent to the region an 80 member Disaster Assistance Response Team (DART) to evaluate and monitor conditions in the affected population and provide funds to meet emergency needs. The DART had extensive security and communications systems. In contrast, ORHA, under whose authority the DART was later placed, had not sufficiently planned for such support because of their expectations of a more secure environment within Iraq after the war. Moreover, the DART had extensive contacts with personnel in UN agencies and NGOs who were more familiar with the role of the US government in past emergencies. Because ORHA was a newly created and rather unique organization, neither ORHA nor other humanitarian agencies had experience relating to each other.

WHO assumed the role as lead agency for coordinating the restoration of curative health services in Iraq. Members of the DART, multiple UN agencies, NGOs, and military civil affairs units participated in WHO-led coordination meetings. The United Nations

Children's Fund (UNICEF) officially assumed lead responsibility for education, nutrition, water and sanitation, mine clearing, child protection, and primary health prevention. WHO and DART personnel created a standardized population based health assessment form to assess health facilities and health status in Iraq.

The International Red Cross organizations, the International Committee of the Red Cross (ICRC) and the International Federation of Red Cross and Red Crescent Societies (IFRC), continued the services they had provided prior to the war, including support for major hospitals. The Iraqi Red Crescent Society (IRCS), perceived prior to the war as a potential source of volunteers who could assist in post-war relief, was not functioning during or after the war. In the initial assessment of the IRCS four individuals separately claimed to be the head of the organization and demanded special protection and rights from coalition forces; none of these claimants were legitimate.

NGOs had, to some extent, coordinated planning with each other and with UN agencies before the war by meeting in Washington, D.C.; Amman, Jordan; and Kuwait City. The Humanitarian Operations Center (HOC) was a creation of the coalition forces and the Ministry of the Interior of Kuwait created specifically to provide essential security and logistic information to humanitarian organizations and to control certain activities such as entry into and travel within Iraq. During the war and shortly thereafter, the HOC also provided a forum for sharing updated information on the humanitarian situation. As mentioned above, WHO also provided guidance to NGOs by convening health coordination meetings in Kuwait City and later in Basrah in southern Iraq. During the

war almost 20 health-related NGOs with more than 250 international staff were either in place in surrounding countries or available for rapid deployment.² NGO resources included fully staffed field hospitals and 6 self-contained and staffed clinics which were on standby.

In spite of the good pre-war transportation infrastructure in Iraq, various difficulties with transport also limited assessment and intervention. The procedure for obtaining non-military permits to cross the frontier between Kuwait and Iraq required the completion of specific forms before the planned crossing; however, the HOC frequently changed the number and nature of these forms leading to some confusion and delay. The road from Amman, Jordan to Baghdad remained closed and insecure for weeks after fighting had stopped. Air transport was only possible with special permission of the Coalition Forces Air Component Command in Qatar. The first non-military humanitarian flight landed in Baghdad on April 24, 2003, 10 days after the fighting in Baghdad was declared over.

More than one million mines were placed in southern Iraq during the 1980-88 war with Iran and additional mines were placed, primarily in southern Iraq, during the 1991 War. Many new mine fields were identified as coalition forces advanced toward Baghdad. The designation "secure" by UN and NGO security coordinators often required the identification of potential mine fields and removal of unexploded ordnance. Such identification and removal was often a lengthy process, and this requirement sometimes delayed entry into affected areas of Iraq.

Rapid health assessments

Rapid assessments are necessary in virtually every emergency to assess population needs in several sectors, including health, nutrition, water, sanitation, shelter, human rights, infrastructure and building conditions, and others. Rapid assessments also assess local resources which may be used to meet population needs. Humanitarian assistance should always be based on identified needs in the emergency-affected population which cannot be met by local resources. Humanitarian organizations need to identify those critical needs which, if unmet, will result in excess mortality and morbidity.

The coalition forces which entered Iraq from Kuwait included military civil affairs units responsible for maintaining liaison with and providing services to the civilian population in areas of military action and newly occupied territory. In the US military, civil affairs units consist largely of reserve troops from a variety of civilian backgrounds.

Throughout the war, civil affairs units used a standardized rapid assessment form which was created during pre-war planning by the United Nations Office for Coordination of Humanitarian Affairs. This form was meant only for initial assessments and collected basic data on the degree of destruction of buildings, population displacement, sanitation, shelter, water supply, health and nutrition facilities, utilities, local economy, and security. The form did not have a health focus, nor did it collect data on the health status of the civilian Iraqi population.

Often more specific assessments are carried out to evaluate the health status of the affected population and the condition of the health system. Such rapid health assessments in Iraq were carried out by a variety of organizations. Because of security restrictions on civilian humanitarian organizations, military civil affairs units were the major source of information about the status of health and health facilities in Iraq during most of the war. Although these units sometimes included physicians, nurses, or other healthcare professionals, few of whom had public health training or experience in rapid health assessment. Moreover, most civil affairs units had been deployed into Iraq before the standardized health assessment methodology and data collection form were created by WHO and the DART. As a result of these factors, most of the civil affairs health assessments did not follow a standard format.

Because of this lack of standardization, health data collected by civil affairs units varied considerably regarding the types of information collected and the amount of detail. Some included only a few sentences in multi-sector assessments while others described the condition of one or a few health facilities in great detail. In addition, most health assessments by civil affairs units concentrated on the evaluation of hospitals and medical equipment and contained little or no information on primary health centers, public health capacity, or civilian health status. Moreover, communications difficulties also hindered the use of these health assessments. Some reports were classified and unavailable to humanitarian organizations. For those which were available, restrictions on the use of military communications channels made it impossible to contact the civil affairs

personnel who performed the assessments to obtain clarification or pose additional questions.

Another factor limited the use of rapid health assessment data gathered by civil affairs units. Rapid health assessments are usually done by organizations to identify needs which can be met by that organization's intervention. In contrast, civil affairs units were consistently unable to meet some of the most pressing needs discovered by their rapid health assessments. Civil affairs units did not usually have the orders nor the necessary personnel or budget to provide large-scale health interventions. Also, because coalition forces moved rapidly within Iraq, their accompanying civil affairs units may have conducted assessments only to be moved to a new location before they could take any action. As a response to these difficulties, personnel in the HOC attempted to review assessment reports to identify high-priority needs and match available humanitarian resources to those needs; however, the variable quality of civil affairs assessments and the limited access of humanitarian organizations to many areas in Iraq resulted in many needs identified initially remaining unmet.

Another source of some health information in inaccessible areas of Iraq consisted of Iraqi nationals who had worked for WHO and UNICEF before the war. These Iraqis were able to occasionally provide telephone reports to their evacuated international colleagues in Cyprus, Kuwait, and Jordan. Of course, such contacts entailed substantial risk for those nationals in areas still controlled by the Saddam led government.

Security was the major constraint to adequate health assessment. Assessments were frequently delayed because evaluation of the security situation in each newly conquered area of Iraq was often slow. The UN Security Coordinator, the DART, and many of the NGOs had their own particular security criteria and required their own, sometimes cumbersome, security assessments. For example, UN policy required permission from the UN headquarters in New York City before an area could be declared secure and UN personnel could enter.

Many initial rapid health assessments by humanitarian organizations were rushed and somewhat incomplete. In areas newly open to humanitarian personnel, security constraints prevented assessment teams from remaining overnight or establishing offices, leaving only a few hours of one day to complete the assessment. Moreover, security conditions sometimes made previously accessible areas inaccessible. For example, on April 10, 2003, two members of the DART were ambushed while assessing the status of Baghdad hospitals. DART personnel subsequently left Baghdad and could not return until two weeks later. Several days thereafter, during an assessment of the headquarters of the Iraqi Ministry of Health in Baghdad, a civil affairs health team was ambushed and all occupants were injured. Even when good assessments of health facilities could be done, continued looting often made them rapidly obsolete. For example, in An Nasiriyah, an assessment of a military hospital by civil affairs personnel demonstrated the presence of modern x-ray and surgical equipment. The following day, everything in the hospital was looted leaving the building an empty shell.

The example of Umm Qasr illustrates two additional problems encountered with initial rapid health assessments. First, Iraqi officials in newly conquered areas were often reluctant to cooperate with persons carrying out assessments. During the first health assessment in Umm Qasr by the DART, performed on March 26, hospital authorities expressed doubts about how long the coalition forces would remain in Umm Qasr and the forces' ability to remove Saddam's regime in Baghdad. Baathist authorities in Basrah, still under siege by the British military, repeatedly telephoned Umm Qasr to threaten the town's leadership if they cooperated with coalition forces or accepted any assistance from humanitarian organizations. Second, multiple assessments were not always followed by assistance. Between March 20, when Umm Qasr was conquered, and April 7, when Basrah came under full control of coalition forces, the only area of Iraq accessible to humanitarian organizations was the narrow strip of land around Umm Qasr adjacent to the Kuwait border. Many humanitarian organizations with personnel in Kuwait conducted assessments in Umm Qasr while waiting for more of Iraq to open to humanitarian activities. This resulted in multiple uncoordinated assessments being performed at the hospital in Umm Qasr by many military and humanitarian assessment groups.³ The hospital director became so frustrated that at times he closed the hospital and refused to meet with humanitarian personnel until at least some of the assistance promised during prior assessment visits had been delivered.

The status of health and health facilities

The public health system

Basic public health activities carried out by most governments include monitoring the population health and nutritional status by carrying out public health surveillance and surveys; providing vaccination against specific communicable diseases; detecting and treating patients with chronic infections, such as sexually transmitted infections and tuberculosis, who may infect many other persons; investigating and controlling outbreaks of disease; providing potable water; ensuring adequate sanitation and disposal of human feces; and others. The capacity to carry out such public health activities in Iraq had been eroded by the Iran-Iraq war in the 1980s, the Persian Gulf war in 1991, and the lack of maintenance. The goal of the immediate relief effort in Iraq was to return these public health activities to the level of functioning before the 2003 war. Further improvements above this level, although badly needed, would require substantial additional rehabilitation and reconstruction and take much longer to accomplish.

Population health status is also determined by public utilities, including sewage disposal and water treatment. Prior to the 2003 war, civil engineers and technicians, with the support of UN agencies and NGOs, kept old and poorly maintained water and sanitation systems functioning, albeit at a relatively low level. Despite these efforts, the rates of many waterborne diseases were higher during the 1990s than before the 1991.⁴ During and after the recent war in April 2003, many water treatment and distribution systems were damaged during fighting or not functioning due to the lack of electricity to operate pumps. Electrical generation facilities in many cities were disrupted during the war, and

many water and sewage treatment plants lacked spare parts or fuel for their emergency generators. In addition, some water treatment and distribution systems were damaged by theft of essential parts by looters. Although immediate repairs were begun by civil affairs units, a contractor engaged by USAID was responsible for the major repairs needed to fully restore water and sewage treatment plants in Iraq's cities.

The routine disease reporting system in Iraq consisted of individual case reporting for selected diseases from health facilities to public health authorities at the governorate level. Cases of diseases which had epidemic potential, such as cholera, were reported by telephone immediately upon diagnosis. Non-epidemic diseases were reported monthly by mail. During the war, disease reporting ceased completely. Some health facilities were destroyed or looted and therefore ceased to function at all. Those facilities which continued providing health services were overloaded because of an increased number of patients and a loss of health workers. Keeping patient registers and reporting cases of disease were sacrificed to maintain patient care. Although the looting of hospitals received much attention in the media, the looting and destruction of public health facilities, including the loss of laboratory equipment, office furniture and supplies, and disease surveillance records, was also severe.⁵⁻⁸ As a result, many public health authorities could not receive disease reports, perform laboratory testing, or carry out the usual periodic analysis of surveillance data. Moreover, the normal means of communication, such as telephone, mail, or fax, no longer existed.

With the support of WHO, DART, and NGOs, public health officials from several southern provinces restarted emergency disease reporting from hospitals. This system was gradually expanded to include disease reports from other health facilities, including primary health centers. Nonetheless, these systems were not functioning at the time of the end of combat on May 1.

WHO coordinated investigations of reported disease outbreaks, and the Kuwaiti Ministry of Health Epidemiology Laboratory offered laboratory support for investigations. Before the emergency surveillance system was functioning, outbreak reports often consisted only of rumors or anecdotal descriptions from individual health care workers. One such report will illustrate some of the obstacles to carrying out outbreak investigations. On April 16, 2003, a health coordinator from an international NGO reported to his Kuwait-based staff that a hospital director in An Nasiriyah had seen a sharp increase in the number of patients with watery and bloody diarrhea. DART staff and the health coordinator interviewed health workers in An Nasiriyah and collected stool specimens for culture and microscopy on 18 and 19 April. Because all public health records had been destroyed, and disease surveillance had ceased with the start of the war, there were no data available to indicate how many cases of diarrheal disease had been seen in the recent past. Stool specimens were obtained from eight patients for culture and from four of the eight patients for microscopy. Of these eight patients, culture demonstrated *Shigella flexneri* in one and enteropathogenic *Escherichia coli* in another. A third had many pus cells on microscopy but a negative culture. One patient had many *Giardia lamblia* trophozoites on microscopy. Although no definite conclusions could be reached from

such limited data, it appeared that many pathogens were causing diarrheal disease in the population.

By May 1, WHO had received reports of 12 outbreaks of communicable diseases, including eight of diarrheal disease, from various places in southern and central Iraq. Of the eight outbreaks of diarrheal disease, cholera was suspected in four and dysentery was the predominant syndrome in one. These 12 reports came from journalists, NGO personnel, and civil affairs officers who had interviewed local health care workers. None of the reports were based on comparison of case counts to baseline disease rates. In early May, a cholera outbreak was confirmed in Basrah governorate.⁹ Appropriate case management, surveillance, and health education were organized by a task force lead by the Basrah office of WHO. An assessment of these efforts by ORHA showed that Iraqi public health officials, with assistance from WHO, UNICEF and NGOs, had controlled the transmission of cholera and prevented any mortality.¹⁰

During and after the war, vaccination programs were endangered by the loss of the cold chain from theft of equipment, lack of electricity or fuel to run generators, or the theft or destruction of the vaccine store itself. Even in those areas where central vaccine stores were maintained, refrigerators were looted from hospitals and primary health centers, thus impairing their ability to locally store vaccine and offer vaccination.⁸ Although vaccine coverage in young children was relatively high before the war, a prolonged period without vaccination services will allow the accumulation of a cohort of susceptible children.

Hospitals and clinics

Like the public health infrastructure, the clinical and curative health infrastructure in southern Iraq had been eroded by damage during the two previous wars and lack of maintenance. However, despite these poor conditions, essential primary, secondary, and tertiary health care was being provided by dedicated physicians, nurses, and other health workers. As part of rapid health assessments, civil affairs and humanitarian personnel often interviewed hospital directors and staff who consistently expressed three major priorities: security, water, and electricity. Water and electricity supply in many cities were compromised as described above. Security was needed to protect health facilities from widespread looting.

Additional concerns included the lack of personnel in health facilities and the lack of money to pay health workers. In some facilities, many health workers had fled to other parts of Iraq, such as Baghdad, or not returned to work after the war. For example, in the major hospital in Umm Qasr, only 4 of the 40 physicians normally on staff regularly reported for work after coalition forces took control. In contrast, in Basrah and other areas most physicians and surgical nursing staff manned their posts during the conflict and health facilities functioned well.

Security was often the major impediment to restoring the function of health facilities. The looting of hospitals was often complete and destructive, including patients thrown to the floor as their beds were stolen. This involved the removal of key electronic

components for large expensive pieces of sophisticated diagnostic equipment, such as magnetic resonance imagers (MRI) and computerized axial tomography (CAT) scanners. Valuable computers and other equipment were stolen, and other equipment which could not easily be removed, such as dialysis machines and cardiac monitors, were destroyed on site. In some hospitals, even wiring and light fixtures were removed. Prior to the war, military hospitals were often the best equipped, especially in the south. These were among the first to be looted.

Looting and insecurity did not only affect hospitals. Several public health laboratories, primary health clinics, pharmacies, and medical warehouses were also looted and destroyed in the first few weeks after the war. However, such looting was not universal. Although the contents of the central pharmaceutical stores in Dhi-Qar and other governorates were completely lost, the major medical warehouses in Baghdad and two of three pharmaceutical warehouses in Basrah governorate remained intact. Some warehouses, such as the ICRC warehouse in Baghdad, which was filled with contingency medical supplies, were guarded by local volunteers. Insecurity often delayed resupply and replacement of looted supplies and equipment. Both ICRC officials and Iraqi hospital administrators throughout Iraq objected to the delivery of valuable equipment and supplies until adequate security could be assured in order to not attract looters and endanger the facilities' personnel.

At least initially in those hospitals which were not looted, shortage of pharmaceuticals was not reported frequently. The Iraqi government officials in charge of the Oil-for-

Medicine program had distributed large amounts of basic medications in anticipation of the war. After the war, some hospitals reported shortages of cancer chemotherapeutic agents and drugs to treat chronic diseases, such as asthma, diabetes mellitus, hypertension, and cardiac disease. Many organizations, including DART, WHO, and UNICEF, had prepositioned drugs largely in the form of WHO New Emergency Health Kits. Because these kits contain only basic antibiotics and analgesics, medications for chronic diseases were not immediately available to humanitarian organizations.

Nonetheless, organizations rapidly ordered medications from overseas or purchased them from the Kuwaiti Ministry of Health. Some hospitals also reported a lack of anesthetic agents and oxygen to perform surgery. A major effort was made by at least two humanitarian organizations to supply oxygen from Kuwait and to reactivate an industrial oxygen generation plant in southern Iraq.

The post-war conditions in many hospitals in the south led the U.S. military to request the donation of field hospitals from donors. At one time shortly after the war, 31 countries had offered to send self-contained field hospitals to Iraq. Because such donations often lead to needless short term parallel and redundant health structures, WHO in collaboration with most of the humanitarian organizations working in health, formulated a policy to discourage such assistance.¹¹ As a result, several nations offering field hospitals subsequently agreed to substitute support for pre-existing Iraqi hospitals. Such support included replacement of medical equipment lost in the looting, training of health care workers, and educational exchanges of Iraqi health workers with health workers from their countries.

Health status of Iraqi civilians

In spite of deficiencies in the available data, qualitative data from rapid health assessments, Iraqi health professionals, and humanitarian personnel indicated that, in general, there was no overwhelming health emergency during and early after the war. Nonetheless, as described above, there was little surveillance data or other disease case counts with which to evaluate the immediate post-war health status of the civilian Iraqi population. Coalition forces did not record, or at least did not release, estimates of the number of Iraqi casualties, either military or civilian. Using a methodology developed for the war in Afghanistan to monitor journalists' reports of war-related civilian deaths, one organization estimated that between January 1 and May 1, 2003, 5966 – 7661 civilians had been killed by fighting in Iraq.¹²

Conclusions

Security is always a paramount concern when providing humanitarian relief during civil or military conflict. In addition, security is also compromised in situations involving sabotage, looting, or other criminal activity which often accompanies a conflict-induced breakdown in social order. Although insecurity, social disorder and looting occurred in Iraq after the 1991 war, the coalition forces did not predict such problems during the most recent war and failed to provide sufficient security for clinical and public health facilities. As a result, although the coalition forces were careful to spare as much social

infrastructure as possible, including health facilities, from direct destruction during the war, many such facilities were rendered unusable by post-war looting and lawlessness. In Iraq, as in other conflict situations in the past, security became an overriding concern which inhibited interventions necessary to maintain the health of the affected population.^{13,14}

In addition to clinical facilities, public health capacity was also a casualty of the recent war in Iraq. Disease reporting and outbreak investigation were severely hampered because the collection of health data needed to monitor the population's health status ceased or became very difficult. Without such essential information, specific health programs could not most efficiently target the highest priority health problems.

Investigations of reported disease outbreaks were difficult because local records providing background disease rates were lost in the looting, because patient registration and disease reporting ceased, and because insecurity and lack of access did not allow investigation of reported outbreaks. In spite of these difficulties, some efforts were made to restart public health surveillance.

The situation in Iraq after the war illustrates that lack of basic public utilities, including electricity and water, may have a substantial impact on the ability of health workers to provide needed health services. Iraq and other complex emergencies in the past two decades have demonstrated that public health no longer refers strictly to those services provided by health workers and public health personnel, but also needs to include all

those functions, including transportation, communication, the judiciary, public safety, and other essential services, that collectively allow a town, city or nation to function.¹⁵

As demonstrated by the recent war in Iraq and recent emergencies in the Democratic Republic of the Congo, Liberia, Kosovo, and elsewhere, the contexts and needs in different conflict situations can be very different. Some emergencies affect populations with a very low pre-existing level of health infrastructure, such as in the Democratic Republic of the Congo and Liberia. In such cases, the priority needs may be for relatively simple interventions, such as latrines, water supply, simple primary care services, vaccination for young children, and other basic emergency interventions. Other emergencies result in large population displacements which may remove the population from a sophisticated health infrastructure, such as occurred in Kosovar refugees who fled to neighboring countries. In these populations, the expectations among the emergency-affected population may be much higher than in other populations. In Iraq, because of a history of relatively sophisticated health care and the extensive pre-war preparations taken by health facilities, the needs of the health system were rather narrow and unique.

Because of the great differences among emergencies, there is no one standard set of interventions, one group of organizations, or one list of relief supplies which are appropriate in all emergency situations. The drugs in the WHO New Emergency Health Kits which were prepositioned in countries surrounding Iraq were, in large part, not useful during or shortly after the war in Iraq. In contrast, Iraqi health workers needed

drugs to treat chronic diseases and cancer. Each emergency situation demands specific and timely assessment to identify the specific health priorities and needs in that situation.

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