

# Complex humanitarian emergencies: A review of epidemiological and response models

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## ABSTRACT

Complex emergencies (CEs) have been the most common human-generated disaster of the past two decades. These internal conflicts and associated acts of genocide have been poorly understood and poorly managed. This article provides an epidemiological background and understanding of developing and developed countries, and chronic or smoldering countries' CEs, and explains in detail the prevailing models of response seen by the international community. Even though CEs are declining in number, they have become more complex and dangerous. The UN Charter reform is expected to address internal conflicts and genocide but may not provide a more effective and efficient means to respond.

**KEY WORDS:** Aid, armed conflict, complex emergency, disaster epidemiology, humanitarian assistance

A complex emergency (CE) is defined by the United Nations (UN) as a humanitarian crisis in a country, region, or society where there is total or considerable breakdown of authority resulting from internal or external conflict and which requires an international response that goes beyond the mandate or capacity of any single and/or ongoing UN country program.<sup>[1]</sup> Those suffering the consequences of the violence are primarily civilians (50–90%) and especially vulnerable populations of that include children, women, the elderly, and the disabled.

Since 1995, when internal armed conflicts numbered 45 annually, CEs have been declining in number. In 2003, they numbered 37 with more than 80% occurring in Asia and Africa. Crisis monitoring systems evaluate political and humanitarian indices to determine conflict trends. Countries at risk for crisis are divided into those deteriorating, improved, and unchanged, and recorded on a monthly basis. In mid-2005, 64 conflict-situation countries were unchanged, 8 deteriorated, and 2 improved. One country, Somalia, known for its protracted violence in early 1990s, currently shows evidence of a seriously worsening condition with escalating violence and loss of life, threatening the fragile peace.<sup>[2]</sup>

Humanitarian assistance is the aid to an affected population, which serves as its primary purpose to save lives and alleviate

suffering of a crisis-affected population. Humanitarian assistance must be provided in accordance with the basic humanitarian principles of humanity, impartiality, and neutrality. The majority of assistance is in keeping with the recovery and rehabilitation of basic public health infrastructure required both by civilian and military-aid providers under mandates of the international humanitarian law. These humanitarian aid missions have, in the recent past, been primarily focused on refugee and internally displaced populations (IDPs), most often in rural settings. In the last decade, rural populations, especially in Asia and Africa, have moved to urban areas, seeking security and social services. Currently, over 67% of the Africans live in cities. Urban public health infrastructure demands are more complex and have not kept up with the growing and increasingly dense urban populations. Consequently, humanitarian assistance is moving to urban centers; yet no humanitarian agency or organization possesses the capabilities and the capacity to support the type and complexity of public health infrastructure recovery required in urban settings.

Humanitarian aid is most effectively delivered by civilian humanitarian agencies under the UN leadership. The core competencies for military involvement in CEs is in (1) providing security for relief efforts, (2) enforcing negotiated settlements, (3) providing security for noncombatants, and (4) employing logistical capabilities.<sup>[3]</sup> Situations requiring humanitarian as-

sistance since the turn of the century have been plagued by increasing security demands. In both Afghanistan and Iraq, extreme insecurity has limited civilian agencies' ability to work. If there is an occupation, as there is in Iraq, the Fourth Geneva Convention obliges occupying forces to ensure the supply of food and other essential services. Military forces must be prepared to provide aid if it is too insecure for civilian agencies to operate. As soon as conditions allow, civilian agencies under the UN leadership should provide that assistance.<sup>[4]</sup> In Iraq, this has been problematic for the US and Coalition forces and since the start of the 2003 war there has been scant presence of the UN and NGO communities.

Assessing CE has been a difficult task. There are similarities but also major differences in the manner in which CEs present themselves, as well as the kind of response put forward by the international community. This article will provide an epidemiological view into CEs in three categories and will discuss three prominent but highly different ways of response.

### *Measuring severity*

NGOs, UN, UN agencies, governmental organizations (GOs), and donors evaluate the human impact of civil conflict for operational and policy purposes. These epidemiological-based evaluations measure direct impact owing to violence as well as indirect impact affected by the breakdown of health services (availability and access), public health infrastructure, population displacement, food insecurity, and their consequences. The World Health Organization (WHO) has underlined the importance of two measures; *death rates* and *nutrition indices*, as critical in assessing the severity of a CE [Table 1].

It is important for all planners and decision-makers to know who is dying in CEs. Initial assessments may report only crude death rates that indicate the rates for all age groups. The under-the-age-of-five death rate becomes critically important in assessing the impact of food shortages and infectious diseases on children, especially in developing countries. Increased under-the-age-of-five death rates compared with the overall crude death rate help identify that children are indeed more vulnerable than the rest of the population, and critical resources need to be channeled in their direction. On the other hand, a sudden or sustained genocidal aggression against civilian targets raises the adult death rates in comparison with children aged under 5 years.<sup>[5]</sup>

Aid agencies will focus on rapid assessments to identify where their resources will do the best in saving lives and preventing further morbidity. As the basis of assessments performed, these indices help in identifying needs, prioritizing interventions,

monitoring impact of aid, and revealing requirements for political and humanitarian advocacy programs. Rapid epidemiological assessment sampling methods are tools, based on standardized minimum essential data sets, used to assess the essential services required for survival (i.e., health, water, food, sanitation, and shelter).<sup>[6,7]</sup> Although these initial indices serve as broad indicators of the severity and nature of the conflict, overtime, additional epidemiological indices, and other variables will be necessary to clarify planning and response management. NGOs and UN agencies will gather additional age and gender indices, such as infant and maternal death rates, during their surveys and surveillance studies, to better assess the reality on the ground. This is the so-called *ground truth* that is necessary to identify the extent of vulnerable populations. In the absence of minimum standard data on essential indicators, humanitarian aid will neither be effective nor efficient. Emergency aid organizations will be expected to report indicator measures at daily planning and management meetings—the latter as a part of the information-sharing process and transition to NGOs and other humanitarian groups focused on sustainable development.

### *Epidemiological models*

There are three broad epidemiological models which, in the planning phase for relief, serve to orient planners to the immediate needs of a population in conflict even before an assessment is completed.<sup>[8]</sup> Like all CEs, specific vulnerabilities of refugees, IDPs, or age and gender groups may not be initially identified and may vary considerably within each model. These exceptions would be revealed during subsequent surveys and surveillance studies.

It is understood that populations will flee the violence within the country. In general, once the population crosses a border, resides in a conflict-free refugee camp, and is protected by services provided by the UN High Commissioner for Refugees (UNHCR) and other humanitarian groups, the death rates and other indices will improve. However, this is not so for IDPs (who must fend for themselves), which experience the highest of death rates among fleeing victims of violence. Understandably, among the IDPs, the subgroups of unaccompanied minors and orphans will experience death rates 100–800 times the baseline.

### *Developing country model*

Developing country CEs are primarily seen in Africa and Asia (e.g., Angola, Somalia, Liberia, Mozambique, and Congo). They are characterized in their health profile by acute-onset severe malnutrition, outbreaks of communicable diseases, and a failure of basic public health infrastructure (water, sanitation, food, shelter, and fuel). Despite the media attention placed on war-related violence, studies confirm that weapon-related violence accounts for no more than 10% of the deaths.<sup>[9,10]</sup> Ninety percent of the deaths are from preventable diseases, such as measles, diarrhea, acute respiratory illnesses, and malnutrition, which contribute to the frequently found death rates that are seven to seventy times the baseline of a comparable developing country at peace. Although these diseases are common to many developing countries, the deterior-

**Table 1: The WHO definition used to assess the management of severe malnutrition in major emergencies**

Severity of the nutrition situation	Prevalence of acute malnutrition (%)
Acceptable	< 5
Poor	5–9
Serious	10–14
Critical	≥ 15

rating public health conditions and malnutrition eventually lead to poor immunity and micronutrient-deficiency diseases. Starving children most often die from secondary infections such as measles. Without the protective cover of good public health practices and infrastructure, developing countries at war account for 75% of the epidemics seen in the world today.

The epidemiological pattern will result in overall high crude death rates, with the majority coming from under-the-age-of-five deaths. Additional age and gender death rates will further define the nature and extent of vulnerability.

### *Smoldering or chronic country model*

This model is seen in countries that have been in conflict for many years such as Sudan and Haiti. These countries share a history of many years of chronic violence, social and political unrest, poor maintenance of basic public health infrastructure, little access to health and education, and a below-sustenance-level economy. The baseline health profile is for chronic malnutrition and stunted growth. There are few indigenous health-care providers. Women lack basic reproductive health measures such as safe birthing practices and tetanus immunizations, leading to high maternal and infant mortality rates. Expatriate health workers and NGOs have worked in these countries for years and their projects often represent the only public health protective infrastructure available. When an armed conflict suddenly forces increased plight, the health profile exhibits acute-onset malnutrition on top of an already compromised and chronically deficient population. A more rapid deterioration of preventable illnesses and complications leads to rises in the death rates. Because of the chronically high vulnerability, even natural disasters are more deadly. As an example, Haiti has experienced marked deforestation with loss of the tree-root structures that protect a country from floods. In recent times, uncontained severe flooding following hurricanes has resulted in over 3000 preventable deaths. This epidemiological model can be confusing in that it reveals priorities in both emergency relief and critical development. Unfortunately, the international aid response has been primarily focused on emergency relief, with little emphasis being placed on long-term development.

This model will show death rates comparatively higher in the under-the-age-of-five population. However, with the recent violence in the Sudan, the adult population suffered high and violent death rates, fleeing rebel forces. Once refugees reached the “relative” safety of camps, high under-the-age-of-five death rates again peaked from inadequate public health protections and communicable diseases.

### *Developed country model*

CEs in developed countries such as the former Yugoslavia, Iraq, and Chechnya are characterized by high rates of advanced-weaponry-related deaths. These CEs occur in relatively healthy populations with preconflict health profiles similar to that seen in the western industrialized countries. With increasing violence, populations will flee. However, the elderly populations often resist displacement from their ancestral homes despite the surrounding violence and often suffer complications of

untreated chronic diseases such as diabetes, heart disease, high blood pressure, and undernutrition. Rape, childhood, adolescent assassinations, and psychological traumas are a common consequences of ethnic cleansing. Epidemics, common to the developing and chronic smoldering country models, are rarely seen. Even with a deteriorating public health infrastructure, the educated population in developed countries is aware of the need for basic hygiene and hand-washing.

In this model, high crude death rates will be expected as adults die from war-related injuries. There will be comparatively low under-the-age-of-five death rates if public health protections remain intact. However, in Kosovo, age- and gender-specific studies showed excess deaths rates in patriarchal males and young males of military age. These studies have been used as Hague war crime trial evidence of age- and gender-targeted ethnic cleansing.<sup>[11]</sup> The longer a developed country model CE is allowed to go, the more severe the effects on public health infrastructure and access. The health profiles begin to deteriorate and merge with those characteristically seen in the developing and chronic smoldering country models.

## *Response models*

### *Background*

The UN Charter, written in 1945, deals with post-World War II cross-border wars. The Charter language has historically contended that no nation is allowed to use force against a sovereign nation. Article 2 of the Charter claims that nothing contained in the present Charter shall authorize the UN to intervene in matters that are essentially within the domestic jurisdiction of any nation or shall require the UN members to submit such matters to settlement. The UN Charter language does neither deal well with nor efficiently act on either internal conflict or genocide. Only the Security Council can call on violence to stop violence and has acted, albeit slowly, to some major internal conflicts. The UN Charter ensures that when violence is used it must be consistent with the rule of proportionality in that only enough force can be used to overcome the violence and must not be excessive. Actions of the Security Council are restricted to those allowed under UN Charter, Chapters VI (peace-keeping [PK]) and VII (peace enforcement [PE]).<sup>[12]</sup> These actions have had mixed success and have led to increasing criticism of the UN, resulting in a call for overall reform of the UN Charter and the Security Council itself.

By late 1999, and after a decade of silence in favor of unrestricted sovereignty of nations by previous SGs of the UN, SG Annan declared that a nation’s “sovereignty” could only be guaranteed under Article 2 of the UN Charter if governments protected all people under their charge. Even so, every new complex internal event requires debate and redebate within the Security Council and no action to intervene has ever been unanimously supported. In justifying Security-Council-sanctioned military intervention in internal conflicts, intervention has been reserved as an option only in situations of ongoing or imminent slaughter (genocide).<sup>[13]</sup> If justified, military action must be:

- a last reasonable option,

- primarily guided by a humanitarian purpose,
- conducted to maximize respect for international human rights law,
- reasonably likely to do more good than harm.

Despite the complexity of this UN bureaucratic process, supporters of the UN claim that by providing humanitarian action under the umbrella of the UN it provides a means to:<sup>[13]</sup>

- ensure validity of intervention,
- guard against unjustified action of one nation against another,
- end debate about the legality of the intervention once Security Council approval occurs,
- justify intervention on grounds of humanitarianism.

A critical barrier to a timely response to a conflict is that it takes 4–6 months to mobilize a UN force from willing members. The initial UN Charter, which in 1945 called for a UN Standing Task Force under Article 43 has never been implemented, leaving the UN dependent on UN member state forces. Even with the projected UN reform, there is little support for an Article-43-like force ready to respond, leaving the responsibility first to regional security and economic organizations such as the African Union, Organization of American States, and ASEAN.

### *Multinational response model*

This response would result from a Security Council Resolution to form a UN-led multinational, multiagency, and multiorganizational approach to the conflict. The multinational and multiagency response is usually made up of:

- UN (PK) and/or non-UN (PE) militaries,
- UN and the UN agencies,
- NGOs and PVOs,
- Red Cross Movement,
- Donor country agencies or GOs (e.g., USAID, ECHO, IDA, etc.)

PK interventions under Chapter VI of the UN Charter include the use of observers and civilian personnel to monitor an accord or agreement and the deployment of PK troops or civil police. Unfortunately, PK forces have enjoyed only limited success in controlling fragile peace processes before a formal peace agreement is signed. PE forces have recently been used exclusively by the UN because the conflict in the Former Yugoslavia revealed failures of the strict PK model. This model, albeit evolving over time, is based on the “right to intervene” and requires military intervention to stop the violence, reduce civilian mortality and morbidity, and strictly monitor human rights and international humanitarian law abuses until safe enough for the UN Agencies, NGOs, and international relief organizations to enter the theater of war. PE deployment to areas of conflict (e.g., Haiti, Kosovo, East Timor, and Liberia) characterizes the evolution of intervention as moving purely from one of humanitarian assistance to recognition that nothing is resolved without a political solution, which may necessitate the added provision of military security and protection. UN Coalition military duties are usually limited to providing:

- security,

- heavy lift logistics,
- engineering,
- airfield operations,
- public health infrastructure repair,
- emergency health and food through (e.g., air drops).

Once a peace agreement or accord is signed, a transition to a Chapter VI (PK) force is prescribed.

UN Agencies are independent of the Secretary General (SG) and the General Assembly and function under mandates to meet humanitarian needs under existing international law. The emergency responsibilities of these agencies have expanded tremendously over the past two decades owing to CEs. Major agencies are:

- *Office of the UNHCR*: Represented in over 100 countries, UNHCR is mandated to protect, repatriate, and resettle refugees who have fled across the border from both interstate and intrastate wars. UNHCR may, with designation by the SG, have the responsibility for IDPs.
- *World Food Program*: Is the food aid arm of the UN with the mission of providing emergency aid and long-term development assistance.
- *UN Children’s Fund*: Provides assistance, particularly health, nutrition, and education to children and women.
- *Office for the Coordination of Humanitarian Affairs (OCHA)*: Organized to provide coordination of the UN humanitarian response. Coordination is implemented through an Emergency Relief Coordinator, the designation of a lead agency role for one of the UN agencies, and the provision of an Interagency Standing Committee, a coordinating and policy-steering committee of representatives of UN agencies, NGOs, and the Red Cross Movement. For particularly large or complex conflict situations, such as Iraq and Liberia, the SG may appoint a special representative to the SG (SRSC) to coordinate and lead the UN response. The OCHA representative may authorize a UN logistic center and a Humanitarian Information Center (HIC) an interagency center for UN agencies, NGOs, and donor entities, serving as a hub for the collection, integration, and dissemination of information and data. The HIC provides coordination tools based on “Who does what and where.”

NGOs are defined by their voluntary, independent, and not-for-profit status. They are the major component of the aid system that directly represents the recipients or beneficiaries of aid in the field. NGOs vary in size, mission, and capability. They may specialize in water and sanitation, and food, health, shelter, and focus on specific vulnerable groups with specific skill sets for therapeutic feeding centers or reproductive health. Advocacy NGOs promote and monitor human rights’ protections and support efforts to uncover and record abuses. NGOs specializing in humanitarian relief have grown in number from 28 in the Kurdish crisis in northern Iraq to over 700 in Haiti.<sup>[7]</sup> Increasingly, NGOs provide the bulk of humanitarian assistance in the field. Over 90% of aid coordinated by the UN is provided by NGOs. Private voluntary organizations (PVOs) are

private, nonprofit organizations involved in relief and development activities. InterAction, which represents over 160 US-based NGOs, is an example.

*Red Cross movement* is an international organization that includes the International Committee of the Red Cross (ICRC), an all-Swiss private institution mandated to respond, under international law (Geneva Conventions), to victims of war and conflict. The ICRC is the largest and oldest of humanitarian organizations and will be involved wherever internal conflict or war occurs. The ICRC functions under the authority of the Geneva Conventions as a neutral intermediary to protect all victims. The ICRC has a unique mandate to monitor the treatment of prisoners and to assist in finding, tracing, and protecting those missing because of conflict. In the last decade, the ICRC has increasingly become a target for attacks. The Movement also includes the Federation of Red Cross and Red Crescent Societies (IFRC), which represent the interests of national societies worldwide. IFRC primarily deals with national disasters and assists refugees outside the area of conflict. With the termination of conflict, the ICRC will transfer many duties to the IFRC. Because of personnel shortages, frequently, IFRC-aid workers will be seconded to the ICRC during CEs.

#### *Civil-Military Coordination*

A certain degree of civil-military coordination and information sharing is required especially under the umbrella of PE. The UN uses open and transparent lateral organizations at the operational level for coordination of policy issues:

- **Humanitarian Operations Centers (HOCs):** An interagency policy-making body that coordinates the overall relief strategy and unity of effort among all participants in a large foreign humanitarian assistance operation. It normally is established under the direction of the government of the affected country or the UN. The HOC should consist of representatives from the affected country, the joint Task Force, the UN, nongovernmental and international organizations, and other major players in the operation.
- ***Civil-Military Operations Centers or Civil-Military Coordination Centers:*** These are defined as the meeting place between military forces, Government agencies, civilian authorities, international and regional organizations, NGOs, private voluntary organizations, and the population to request assistance, share information, and coordinate on how better to serve the humanitarian needs of the applicable indigenous population.

*Donor Countries:* Primarily representing western industrial nations, donor country agencies provide the bulk of funding to UN and NGOs and yield a great deal of political power in determining the direction of humanitarian aid. In recent years, they have mandated improved evaluation of the programs they support, including use of outcome indicators. The US Agency for International Development (USAID), its counterpart in Australia (AusAID), and JICO in Japan are some examples.

#### *Unilateral and coalition response mode*

Unilateral responses are primarily UN Charter, Article 51 events, whereby a country claims right of self-defense by invading another country. The US, in the post-9/11 era, reasserted its dominant role in defining international security by increasing attention to protracted crises and “failed or rogue states” considered bastions of terrorism.<sup>[13,14]</sup> The US strategy against Saddam Hussein’s regime in Iraq called for action based on a worst-case scenario of WMD and a best-case scenario for regime collapse if rapid intervention would occur. The US, along with Coalition partners, disapproved of the political position and apparent lack of support from the UN Security Council and chose a unilateral non-Chapter VII approach to intervention in Iraq. A humanitarian crisis was considered unlikely. The Department of Defense was put in charge of postconflict humanitarian assistance and reconstruction side-stepping the conventional leadership of the US State Department, USAID, and its Office of Foreign Disaster Assistance (OFDA).<sup>[15]</sup>

With the unexpected collapse of the Iraqi health system and other services from looting and worsening security, little emphasis could be placed by the Department of Defense on recovery of essential services mandated under the Geneva Conventions. Reconstruction projects designed to install water and sewage pipe, remove and landfill solid waste, generate short-term employment, and immediately improve the lives of the population were delayed. Immediate postconflict aid initiatives were directed at contractor driven large-scale infrastructure reconstruction projects. This approach faltered but gained success only when the coalition military began to work with the USAID Office of Transition Initiatives (OTI) who have trained experts in postconflict transitions. This combined a quick-response capability (military) with USAID’s seasoned expertise in dealing with local hires and other cross-cultural necessities such as facilitating needed jobs into the community.

Owing to security problems, few NGOs and UN agencies have established a strong presence in Iraq. Under international law, extreme insecurity may limit civilian agencies’ ability to work. This has been the case in Iraq with NGOs and UN agencies. International law obliges occupation forces to ensure the supply of food and other essential services until it is secure enough for the civilian agencies to enter the country.<sup>[16]</sup>

#### *International collective security model*

Currently, the UN Charter is undergoing revision and reform. In early 2000, several nations frustrated by UN Charter inactions in internal conflicts and genocide proposed an international collective security approach, otherwise referred to as the “Responsibility to Protect” (R2P) model. Under this model, political will to take action in a sovereign nation-state where protection is either not exercised or refused would be based, not on the “right to intervene,” as seen in the previous models, but on the concept of “responsibility to protect.” This model addresses circumstances in which the UN Charter “doctrine of noninterference” in a nation’s internal affairs would



be redefined in favor of international intervention.<sup>[17]</sup> Circumstances of intervention would occur:

- in large-scale loss of life, either actual or apprehended, or
- where there was genocidal intent through deliberate nation action, nation neglect, or a nation's inability to prevent genocide.

Under these circumstances, the UN would:

- have the obligation to intervene,
- authorize force if necessary,
- if the UN failed to or was unable to intervene, a collective intervention of the "willing" could occur.<sup>[17]</sup>

Although not yet an operational reality, it is anticipated that UN reform will address these policy and operational requirements outlined in the Collective Security Model.

### *Limitations to existing response models*

There has always been concern over the efficiency of the multinational model. Critics claim:

- inconsistencies from weak UN political guidance,
- lack of UN operational authority over troops of donor countries,
- deficiencies in operational command and control,
- insufficient logistical support components,
- lack of political will to sustain the mission beyond the end of the initial military intervention.

Forces from UN member states offered for Chapter VI and VII operations usually are infantry level forces lacking logistical, transport, communications, engineering, and medical and public components critical to military force support and humanitarian operations in support of civilian action.

The anticipated UN Charter reform may or may not fully address all issues confronting humanitarian intervention within a sovereign nation. Concern regarding the potential of the collective security model is that it will not be value-added unless critical reform in the UN Charter is realized. Without an Article-43-implemented UN Standing Task Force, military requirements from donor countries for UN missions will remain unchanged.

Concerns of the unilateral model are that humanitarian needs of the occupied country have not been met because the war remains active and security issues prevent repair of essential services. Few, if any, indices other than performance indicators are being recorded and monitored. This compromises an accurate assessment of the progress of the occupation aid efforts. However, it currently appears that a unilateral approach may continue to occur as a vehicle of response in future crises.

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