War is well known to have devastating consequences for life and health. Estimates of war-related deaths in the last century alone exceed 110 million. Modern weaponry is lethal, but the indirect effects of war such as disruption of civilian economies triggering starvation and disease, claim an even greater number of casualties. The recent report by Medact, the British affiliate of International Physicians for the Prevention of Nuclear War (IPPNW), entitled Collateral Damage: The Health and Environmental Costs of a War on Iraq, starkly attests to this pattern of human carnage in its assessment of the likely impact of war on Iraq.

The bloody battle of Solferino in 1859 inspired Swiss businessman Henri Dunant to launch the Red Cross to treat victims of battle, and to prod governments to the first Geneva Convention in 1864 designed to regulate war and the treatment of wounded and prisoners of war in a more humanitarian way. In the aftermath of the Second World War, with most of humankind horrified by the knowledge of experimentation by German and Japanese doctors on civilians and POWs, such codes began to extend to civilians. Only in 1977 did the Geneva Convention formally prohibit starvation of civilians as a weapon of war. Despite these measures, civilians have increasingly become targets in war, by some estimates making up over 80% of its casualties. This harsh statistic reflects the increasingly one-sided character of modern war. It speaks as well to the inherent vulnerability of civilians, particularly in poorer societies, to the economic disruption and chaos triggered by warfare.

Meanwhile, western public opinion becomes increasingly averse to casualties among our own forces. The response of our militaries has been to make war a sanitized video game. Bombing from up to 30,000 feet safeguards pilots and shields our civilian population from knowledge of the true costs of war, at the expense of civilian populations. Magnifying the dilemma of public ‘innocence’ of war are recent efforts to limit media coverage of civilian deaths resultant from regional destabilization and the possibilities of refugees increases at first glance to be scare mongering, the variation in numbers relates to the unpredictability of the consequences of an attack. For instance, a projected civil war and the possibilities of refugees increases the casualty figures substantially and any deaths resultant from regional destabilization are not included. In 1991, Iraq chose not to use its biological and chemical weapons. Though it is unlikely substantial quantities of viable chemical or biological weapons remain, with the survival of the regime at stake this time, similar reservations may no longer exist. Invasion may well prompt paramilitary strikes on US forces elsewhere, or on other regional terri-

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2. Famine and health history physician teaching in International Development Studies, Dalhousie University, who has traced the impact of economic sanctions on hunger and mortality from the earliest years of the economic embargo. In 1999, she visited Iraq to meet with UN officials and to witness directly the effects of sanctions on the Iraqi population.
Commentary

1991 war was catastrophic, estimated at $50-200 billion, while follow-through on economic recession – quite possibly in excess of the nearly one million shells deployed in 1991. While the radioactive toxicity of depleted uranium has not yet to be adequately assessed (claimed by Iraq to be responsible for leukemia and other cancer clusters around Basra in the South), its chemical toxicity is quite well recognized. Troop movements and landmines will affect sensitive desert ecology more directly.

US military costs are estimated to reach $80-200 billion, while follow-through on rebuilding commitments, as in the case of Afghanistan, may be small to negligible. Costs to Canadians will largely be indirect: rising oil prices, possible global recession more severe than that following the 1991 Gulf War, and increased security costs. The civilian costs of economic recession would be enormous for developing countries, the report points out, and will be borne most acutely by the poorest.

But it is civilians in Iraq who are the most vulnerable of all. Superimposed upon 12 years of destitution and malnutrition, a military assault on Iraq, the report concludes, will trigger civilian mortality much greater than the last. How this vulnerability has come about as a product both of the 1991 Gulf War and sanctions bears further analysis.

Consequences of the Gulf War

Financially for Iraq, the impact of the 1991 war was catastrophic, estimated at $170 billion in destruction.1 The country’s GDP fell from $66 billion in 1989 to 1/200th of this level – less than $245 million – by 1992. Massive bombing extended far beyond direct military targets to systematic destruction of almost all of the country’s civilian infrastructure: roads, railways, bridges, hospitals, water and sewage treatment facilities and factories, reducing the country to a “pre-industrial state”.6 Baghdad, a city of 5 million, was left virtually without electricity for 3 months: no refrigeration, ventilators, air-conditioning, thereby critically damaging vaccines, blood supplies and medicines. In the first year after the war, more than 170,000 children under five years of age died from diarrhea, infections and malnutrition. In post-war uprisings – encouraged and then abandoned by the US – a further 20,000-35,000 Kurdish and Shiite civilians died, and 1.8 million refugees fled.7

Sanctions

But as devastating as the 1991 war was, it is continuing sanctions that have taken the greater cumulative toll on the health of the civilian population of Iraq: a systematic blocking of imports which has thwarted reconstruction of water and sanitation infrastructure, electrical power generation and transportation, and has ensured ongoing strangulation of the civilian economy. For more than a decade, the majority of Iraqi households have been without work, eking out bare survival on a monthly income of less than US$2-5. Through the 1990s, the impact of pervasive destitution was documented by UNICEF in soaring rates of child malnutrition and hospital deaths.

Since 1991, Iraq has experienced a resurgence of epidemic infectious disease: cholera, hepatitis, typhoid, malaria, directly attributable to the intentional destruction of civil water and sanitation systems.8 Chlorine, considered ‘dual use’ (of potential military utility), was for years prohibited and still remains difficult to access, even though supplies are under direct monitoring and supervision by UN officials in Iraq. Most of the hundreds of thousands of excess deaths, however, have been attributable to simple diseases, respiratory infections and diarrhea, exacerbated by the frequently contaminated water and rendered lethal through malnutrition: both acute and chronic.

From the beginning, food and medicines have been formally “exempted” from the embargo. This technical exemption, however, has been meaningless in practice because of lack of funds under the Oil-for-Food programme. Through most of the 1990s, revenues permitted Iraq for the sale of its oil amounted to less than 30 cents per capita per day.9 This sum was inadequate to meet even bare minimum caloric needs, let alone health care, education, agriculture and all other needs required to run a country of 20 million.10 Euphemistically termed “humanitarian relief”, the programme has in fact been one of institutionalized immiseration, in “unequivocal violation” of fundamental human and humanitarian rights guaranteed under the UN Charter.11 Recent lifting of the ceiling on oil sales has increased this amount, but total funds available remain well below the UN definition of absolute poverty.12

It was not until 1999, however, that indisputable data on child mortality in Iraq under sanctions became available: UNICEF’s cross-country survey documented a rate of 131 deaths per 1000 live births: in effect, nearly one child in seven dying before reaching the age of 5 years compared to an estimated 40 per 1000 in 1989.13 Based on this rate, UNICEF estimated that 500,000 ‘excess’ deaths in the under-5 population had occurred above expected levels between 1991 and 1998. Including figures above age 5 and, subsequent to February 1999, where high prevalence of malnutrition persists gives a general estimate of 1.5 million excess deaths to date.7

1 Ongoing deterioration of already severely degraded oil infrastructure continues to limit Iraq’s oil production, with the import of tools and spare parts blocked or ‘on hold’. From 1996 to April 2001, the oil revenues channelled by the UN Security Council to the UN Compensation (War Reparations) Fund ($12.4 billion) exceeded the total value of goods received by Iraq under Oil for Food ($12.1 billion) (UN, 18/05/01). OFF contracts placed on indefinite ‘hold’ by the US member of the Sanctions Committee currently exceed $5 billion.
† Though similar mortality surveys have not been conducted for children above the age of 4 years, nor for the adult population, it is clear that ‘excess’ mortality under sanctions has not been limited to young children alone. Hospital death records through the early/mid-1990s show a parallel increase in absolute numbers of deaths in older children and adults as for children 0-4 years (UNICEF 1998), a mortality profile typical of famine historically. Based on these data, a general estimate of total civilian excess mortality approaches one million. These estimates apply only to mortality before February 1999. Given continuing high prevalence of malnutrition until most recently, death rates between 1999 and 2002 are unlikely to have declined substantially, adding a further ‘excess’ 300-500,000 deaths: thus the figure of 1.5 million. In November 2002, UNICEF reported some recent decline in acute malnutrition, from 11% to 5.4%, with chronic malnutrition at 24%, though both rates remain much higher than in 1990.
These figures convey the power of economic sanctions to harm civilians and, among them, the weakest. Even at this, they represent only one aspect of civilian suffering. Embargoed Iraq is a society where destitution and despair by the mid-1990s had brought soaring rates of psychiatric illness as hunger and physical insecurity ravaged families and social cohesion steadily unravelled. Child illiteracy, very low pre-sanctions, has steadily climbed as parents withdraw children from schools to help support the family.

Beyond inadequate, sanctions have also been flagrantly punitive. IPPNW doctors on missions have observed cancer patients dying untreated without painkillers, diabetics without insulin, children without access to leukemia drugs which had been freely available prior to the Gulf War, lack of immunizations or delivery systems, little access to blood tests and a complete lack of sterilization facilities. Morphine and IV bags and even textbooks, medical journals, light-bulbs, toys and sheet music, have been routinely embargoed by the US member of the Security Council sanctions committee as of potential ‘dual use’ to the Iraqi military.

The underlying cause of the disaster is fundamentally economic: stranglehold of livelihood, where oil revenues continue to be channeled into an external escrow account, unavailable for funding civil services or investment to rebuild, to provide work and livelihood. The consequences are staggering. De-development on a scale to bring a country once had a health and education system and per capita income close to that of southern Europe, to one on par with Haiti in less than 10 years and the consequent drop in UNDP ranking from 50th to 126th is unprecedented.

Suffering and death of this magnitude has in turn made denial and a shifting of responsibility inevitable on the part of those Security Council members who continue to veto lifting of sanctions. Yet can public health professionals agree with the two senior UN administrators of the Oil for Food programme did not think any justification of this policy was possible. Denis Halliday and Hans Von Sponeck each resigned in protest and have since devoted their lives to opposing sanctions. They are not alone. Military, civilian, church and NGO leaders across the world have spoken out under the banner, “not in our names”. Indeed the New England Journal of Medicine has published commentaries questioning sanctions.

Contemplation of war under such conditions is morally unconscionable and violates all tenets of international humanitarian law. Indeed, perhaps the greatest ethical contradiction in the current rush for war on Iraq is the fact that alternatives exist. What are these alternatives?

**Alternatives**

Full and ongoing UN weapons inspections in Iraq must be supported, but also protected from manipulation by member countries of the Security Council. Arms export control measures must receive serious commitment as should work towards a region free of weapons of mass destruction and general disarmament as mandated in Resolution 687.

Economic sanctions must be lifted immediately to allow a rebuilding of Iraq's infrastructure, as an essential base for the civilian population to press for political change. We can simultaneously work to increase civil processes and strengthen civil society in Iraq. Iraq cooperation with the international community should be rewarded with reintegration.

Finally, the West must actively support negotiations for a just and lasting peace in the Middle East. The suspicion of Western intentions, fueled by their longstanding military support of Saddam Hussein throughout the 1980s and by US administration attempts to misinform about links between Iraq and Al Qaeda, must be honestly addressed. As well, we must abandon double standards with respect to weapons of mass destruction, including our own. This is no defence of the Iraqi government, members of which are responsible for horrific war and political crimes. But among these crimes we cannot include the epidemic of hunger and death in civilian Iraq. This crime belongs to our governments.

One of the first tenets of medicine is *primum non nocere*. A chorus of international legal experts have argued the illegality of a ‘pre-emptive’ war on Iraq. The consequences for domestic and regional instability are unknown and the financial cost astronomic. “Collateral Damage” shows that it would also be immoral and a health, humanitarian and environmental catastrophe against a people who have already suffered too much.

**REFERENCES**