Antipersonnel Landmines: A Long Term Burden on Global Health

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A treaty concluded at the end of 1997 bans all manufacture, transfer, or use of antipersonnel landmines. Certain key countries, including the U.S., have withheld support for the treaty. Moreover, between 50 and 100 million APLMs lie in the ground in more than 60 countries. In the decades ahead, thousands of civilians will explode unmarked landmines in the course of their daily activities and most will die or be crippled for life. The diversion of scarce resources to the medical care and rehabilitation of mine victims reduces the potential for long term health improvement and promotion. [*M&GS* 1998;5:22-25]

Worldwide awareness of the awesome reality of antipersonnel land mines (APLMs) accelerated throughout 1997. The numbers of APLMs, their extensive distribution, their persistence for decades hidden in the ground, their indiscriminate targeting of children and civilians, the terrible trauma which they cause, and the great difficulties encountered in locating them and removing them safely, are all elements of an issue that has received increasingly wide publicity [1].

The poignant international reaction to the death of the Princess of Wales short months after her much publicised visits to mine-affected areas, with extensive coverage of her concern for child victims of APLMs, provided a dramatic opportunity for further review of the horror of this latest man-made epidemic and capped a mounting series of media reports during the previous two years. Recognition of the global importance of confronting the threat of APLMs was highlighted by the award of the 1997 Nobel Prize for Peace to the International Campaign to Ban Landmines (ICBL) and to its director, Jody Williams.

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Beyond the Ottawa Process

The Ottawa process, an innovative partnership of governments and non-government al organizations was initiated by Canada and was promoted by that country's Department of Foreign Affairs with an evangelical fervour not welcomed by governments usually friendly to Canada. On December 3, 1997 the Ottawa process culminated with the signing of a treaty that will ban all manufacture, transfer, or use of APLMs (See Oslo Treaty excerpts, page 26). The draft of that treaty received wide international support from the moment it was released to the public in September 1997, and significant diplomatic and moral pressure has been brought to bear on key nations that, for various strategic or political reasons, have so far refused to join a "fast-

track" process.

While affirming the need to eliminate APLMs in the long term, those nations (notably the U.S.) have demanded exclusions, exceptions, and delays in the implementation of the Ottawa Treaty. They claim irreplaceable strategic advantages for APLMs, as well as a military necessity for their use in particular situations, and they refuse to abandon the use of these devices until satisfactory alternative techniques are developed for "moulding the terrain"—the military task that APLMs are required to undertake [2]. These countries claim their own moral authority to continue the use of "smart" mines that self-neutralise or self-destruct in a short time. Such mines, their proponents maintain, do not remain around for long periods, thereby constituting a risk to innocent civilians [3].

Even if the moral force of global concern leads reluctant countries to join the treaty and to cut off the source of the epidemic, there remains an enormous legacy of inevitable trauma and human cost from the huge numbers of APLMs—as many as 100 million— that lie in the ground in more than 70 countries [4].

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The Inevitable Legacy

Part of the horror felt by those who have learned of the extent and the effects of the landmine epidemic is a frustration arising from the recognition that nothing anyone can do will prevent a continuing and inevitable saga of mutilation and death. A mine clearance leader said in 1996:

> "We are losing the battle. To get a grip on the situation we need three things: more money, new technology for detecting mines, and a halt to the use of mines" [5].

More funds are being devoted to mine clearance: while the UN Voluntary Trust Fund for mine clearance has received only a fraction of the US$76 million requested, Kuwait solved its landmine problem by spending US$800 million [5]. Better techniques for locating and removing mines using multiple detection modes are currently being developed and fewer mines are being laid. Inevitably in the decades ahead, however, thousands of innocent civilians will explode unmarked landmines in the course of their daily activities—clearing land, cultivating, collecting firewood, or simply playing in field or forest—and most will die or be crippled for life. Dedicated and energetic programmes for mine clearance and victim rehabilitation are in place in many badly affected regions, but the tasks are daunting in scope and demanding and dangerous in detail.

How shall we estimate the sum of damage done so far and still to be done by these small indiscriminate instruments of savagery? The long term effects of APLMs are extensively documented in some places, but across numerous regions in Africa and Asia—the most affected continents—statistics are rudimentary and efforts for the relief of victims or the removal of mines are almost nonexistent. In some regions, ongoing warfare makes humanitarian aid dangerous and unwelcome; in others, the physical environment itself is hostile to effective work within swamps, forests, or mountains with no usable roads. Nearly everywhere there is an inadequate health care infrastructure or a desperate poverty which forces subsistence farmers, their families, and their animals to work land before it can be declared safe [6].

The injuries caused by land mines to individual victims are compelling: no audience, lay or medical, will fail to be shocked by images of shattered and missing limbs and blinded eyes [7]; yet the indirect health effects of the APLM epidemic are more far reaching. Retrieval of an injured civilian may be long delayed by poor communication or by lack of money to buy transport; resuscitation may be ineffective, because family members from some religious and cultural traditions fear that donating blood will lead to a permanent loss of life force; skilled surgery with meticulous debridement, delayed wound closure, and myoplastic repair may be unavailable or unaffordable. All this means that in many situations a land mine injury will be fatal, and that those who survive, moving awkwardly with simple prostheses, will be a permanent reminder of ever-present danger and intractable fear.

Countless acres of farmland in Mozambique can no longer be cultivated because they are covered with more than 2,000,000 landmines. Removing the mines will take years; in the meantime, many more innocent victims, including children, will be injured or killed. *Photo: Michael Christ.*

Long Term Social Consequences

The Impact on Families

Where the victim has been the principal family breadwinner, the family economy will rapidly run down and desperate measures—begging, prostitution, or crime—may be invoked to maintain survival. The injury of any family member will divert attention from the daily struggle for existence and will reduce the capacity of the family to respond to change and, within their milieu, to retain some measure of that control basic to health [8]. Despair is not a characteristic commonly attributed to rural subsistence societies; the grinding demands of daily labour require a steady courage, but a sudden and major decline in family fortunes and a threat to its resilience is inevitable in the face of a land mine injury. Williams urges us to recognise what the presence of land mines "does psychologically to whole communities that are used to providing for themselves, used to being independent, who have lost the ability to provide for themselves, to provide for their families and to be part of the larger community" [9].

Public Health Burdens

At a regional level, the diversion of scarce resources to the succour of mine victims reduces the potential for long term health improvement and promotion—whether immunisation of infants, safe sex campaigns, malaria control programs, construction of safe water supplies, or training of village-level health personnel [8]. The cost in Afghanistan of providing prostheses over a period of 40 years for a child injured at age 10 has been estimated as almost half of a normal lifetime income for a worker in that country [10].

Even in the absence of landmine injuries there are significant social and public health consequences. Infectious diseases move freely (e.g., in Cambodia up to one quarter of the population were infected with malaria and a simular number with tuberculosis [11]), but health teams are restricted to safe areas. The forced removal of wide tracts of arable land from productive use further lowers standards of living, reinforcing latent fears and contributing to population displacement with all its attendant risks of local hostility and disruption. The reconstruction of railways, bridges, and roads following cessation of conflict is impeded; internal markets fail to function effectively; prices remain abnormally high; schools remain closed.

Environmental Impact

The risk of overcultivation in unmined areas is high; forests are felled and cleared in a desperate search for alternative sources of income when traditional agricultural areas cannot be used. Health, economy, and environment are intimately linked. Not only is land rendered unsafe to cultivate through the use of landmines, but the very structure of fragile soil may be impaired. An assessment of the use of landmines in the Gulf War revealed irreversible damage to ecosystems, including prolonged direct damage through shattering or displacement of soil and increased vulnerability to wind and water erosion. The severe and long term effect of landmines on land usage, on water supply and on infrastructure make them the most toxic of all manufactured pollutants [12].

Unintended Yet Predictable Outcomes

APLMs remind us of how vulnerable human populations are to measures initiated by sectional interests distant in time or place from those populations, when narrow and immediate advantage is pursued without attention to the wider ecology or to the longer term future. APLMs demonstrate, with compelling force, that community health can be a major casualty of complex undertakings that were not intended, even by the experts who led them, to produce such casualties. The bloody shattered limbs of children who have

stepped on mines, or who have discovered attractive objects that exploded on handling, excite our sympathetic concern. Yet these traumas have arisen from a demand for immediate advantage in a military conflict justified at some previous time by military judgements, whether sober or desperate, of which few people were ever aware.

The partnership between governments and non-governmental organisations to ban APLMs, led by Canada on the one hand and the ICBL on the other, promises to bring to fruition an urgent process of international agreement that has been conducted outside of the tedious consensus procedures of the UN and its committees. How successful this process will prove now that the treaty has been signed by more than 100 countries remains to be seen. If the treaty is ratified and brings in the important states that so far have remained aloof, it will constitute a persuasive model for action that could be applied to other major global risks to health. Such risks will continue to arise whenever individual nations, armies, or commercial conglomerates—concerned only with the promise of useful advantage or quick return—give inadequate study to the long term impact of their ventures.

The diplomats who have been addressing the landmines issue leading up to Ottawa label the advocacy of NGOs as naive. Some governments pay lip service to elimination as an ultimate goal, while continuing to advocate for exclusions, exceptions, and special circumstances. Specifically, the U.S. claims that APLMs are an essential component of the UN strategy for the defense of South Korea against a potential invasion from the North; that APLMs in a "package" or "system" to prevent dismantling of anti-vehicle mines should be allowed; that entry into force should be delayed until alternate defense techniques are in place; and that any nation should be able to withdraw from the treaty in a time of conflict (an absurd twist of logic that agrees to the banning of APLMs as long as militaries do not "need" them). Only in the Committee on Disarmament, these diplomats tell us, will the main players in this grim business (countries such as China, India, and Pakistan) come together to negotiate. As with nuclear weapons, however, such approaches to diplomacy may amount to little more than clever ways to circumvent the terms spelled out in the Ottawa treaty.

The Role of Physicians

Physicians—whose professional interest in the issue is on the ground, in the dust beside the victim, in the bouncing truck carrying him many miles to the nearest hospital, in the makeshift theatre where surgery leaves him limbless and doomed to desperate poverty—are not constrained by protocol or by measured steps to modify single words on paper, important though these matters sometimes are.

Physicians need to be impatient, urgent, and outspoken. We deal with the blood of landmine victims and their blood speaks powerfully. But the blood is not on our hands: it stains those who delay and prevaricate, those who protect a narrow financial, political, or military advantage at such tragic human cost.

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