## Landmines and explosive remnants of war: a health threat not to be ignored

Antony Duttine<sup>a</sup> & Elke Hottentot<sup>a</sup>

Landmines and explosive remnants of war (ERW) continue to kill, injure and destroy lives and livelihoods. They cause an estimated 11 to 12 casualties daily and are not confined to a single part of the world. The six countries with the highest landmine and ERW casualties in 2011 - Afghanistan, Cambodia, Colombia, Myanmar, Pakistan and South Sudan belonged to different regions.1 Twenty years after the establishment of the International Campaign to Ban Landmines and 15 years after the monumental Mine Ban Treaty, the world has yet to overcome this scourge, which harms far more innocent civilians than military personnel.<sup>1</sup>

In a paper in this issue of the Bulletin, Durham et al. note that in Global Burden of Disease (GBD) studies, the true number of landmine and ERW casualties has historically been underreported.<sup>2</sup> Their paper was written before the release in December 2012 of the GBD 2010 report, which fails to specifically discuss accidents caused by landmines and ERW and categorizes them under "collective violence".<sup>3</sup> In line with the Landmine Monitor's reporting on landmine and ERW casualties, the disability-adjusted life years (DALYs) attributable to collective violence have declined.<sup>4</sup> However, the problem of landmines and ERW persists and it would be a grave misjudgement to consider it solved.

The health community has a major role to play in matters pertaining to landmines and ERW. The most apparent is ensuring an adequate health-care response, both immediate (e.g. acute trauma care and surgery) and long-term (e.g. rehabilitation), to the physical and psychological trauma of people injured by landmines and ERW casualties. Most of these people live in poverty, which tends to get worse after the accident. Furthermore, health services equipped to treat people with landmines and ERW injuries are often found in urban areas only, yet most accidents occur in rural and remote areas.

Those who survive but with permanent disabilities, often face social and environmental barriers that can preclude their full and equal participation within their communities. With many health campaigns and calls to action to promote child health and survival, it is worth noting a substantial proportion of civilian landmine and ERW accidents occur in children – 42% on average, according to the *Landmine monitor 2012*.<sup>1</sup>

Landmine and ERW contamination can also undermine the health of a population indirectly by destroying food security as well as access to safe water and to vaccination and health facilities in general.5 These weapons can also prevent community-based health teams from carrying out their activities. As succinctly noted by Maddocks, "infectious diseases move freely ... but health teams are restricted to safe areas".6 The tragic deaths of two polio workers recently killed by a landmine blast in Pakistan drives this message home, especially now that the international health community has focused its attention on health worker safety.7

Today we understand that to improve the health of a population, we must address the social determinants of health. Landmine and ERW contamination is among these social determinants. The social detriment it causes is incompatible with sustainable development and with the three fundamental aspects of human well-being: economic development, environmental sustainability and social inclusion.8 The indirect impact of landmines and ERW on health are not reflected in GBD studies or captured by data gathered in accordance with the International Classification of Diseases. Durham et al. call for better integration of mine action and health reporting systems to better inform resource allocation and planning. Similarly, WHO Director-General Margaret Chan, in her commentary in the special edition of The Lancet on GBD 2010, warned that national health information is not fully

integrated into global data collection: "… we need to agree on common standards for documentation and sharing of data … that maximises benefits to countries".<sup>9</sup>

Assisting the victims of landmines and ERW by providing them with health care and ensuring their thorough integration into society is an obligation under two major disarmament treaties - the 1997 Mine Ban Treaty and the 2010 Convention on Cluster Munitions - and is one of the five pillars of mine action. The other four are clearance of landmines and ERW, stockpile destruction, advocacy for a universal ban and mine risk education. Despite this, victims continue to face a dire situation in most countries contaminated by landmines and ERW.<sup>10</sup> Moreover, direct international support for victim assistance has decreased sharply; it dropped by almost 30% from 2010 to 2011, the year when it reached its lowest level since funding for monitoring mine action was initiated.1 At a time when countries are seeking to address their health problems through integrated approaches, all sectors must focus their attention on the fight against landmines and ERW.

## References

Available at: http://www.who.int/bulletin/ volumes/91/3/13-118885

Correspondence to Antony Duttine (e-mail: aduttine@handicap-international.us).

<sup>&</sup>lt;sup>a</sup> Handicap International,14 Avenue Berthelot, 69361 Lyon, Cedex 07 France.

## References

- Landmine and Cluster Munition Monitor [Internet]. Landmine monitor 2012. Geneva: LCMM; 2012. Available from: http://www.the-monitor.org/ lm/2012/resources/Landmine\_Monitor\_2012.pdf [accessed 6 February 2013].
- Durham J, Hill PS, Hoy D. The underreporting of landmine and explosive remnants of war injuries in the Cambodia, Lao People's Democratic Republic and Viet Nam. *Bull World Health Organ* 2013;91:234–236.
- GBD study operations manual. Geneva: World Health Organization; 2009. Available from: http://www.globalburden.org/GBD\_Study\_Operations\_ Manual\_Jan\_20\_2009.pdf [accessed 6 February 2013].
- Murray CJ, Vos T, Lozano R, Naghavi M, Flaxman AD, Michaud C et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012;380:2197–223. doi:10.1016/S0140-6736(12)61689-4 PMID:23245608
- Kakar F, Bassani F, Romer CJ, Gunn SW. The consequence of land mines on public health. *Prehosp Disaster Med* 1996;11:2–10. PMID:10160454

- Maddocks I. Antipersonnel landmines: a long term burden on global health. Med Glob Surviv 1998;5:22–5.
- Rodriguez A, Ali Z. Land mine blast kills 2 polio workers in Pakistan. Los Angeles Times Online 31 January 2013. Available from: http://articles. latimes.com/2013/jan/31/news/la-bomb-blast-kills-two-polio-vaccinationworkers-in-northwest-pakistan-20130131 [accessed 6 February 2013].
- Sachs JD. From millennium development goals to sustainable development goals. *Lancet* 2012;379:2206–11. doi:10.1016/S0140-6736(12)60685-0 PMID:22682467
- Chan M. From new estimates to better data. Lancet 2012;380:2054. doi:10.1016/S0140-6736(12)62135-7 PMID:23245596
- Voices from the ground: landmine and explosive remnants of war survivors speak out on victim assistance. Lyon: Handicap International; 2009. Available from: http://reliefweb.int/report/afghanistan/voices-ground-landmine-andexplosive-remnants-war-survivors-speak-out-victim [accessed 6 February 2013].