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The roles of the health sector and health workers before, during and after violent conflict

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Starting with a view of war as a significant population health problem, this article explores the roles of health workers in relation to violent conflict. Four different roles are identified, defined by goals and values – military, development, humanitarian and peace. In addition, four dimensions of health work are seen as cross-cutting factors influencing health work in violent conflict – whether the health worker is an insider or outsider to the conflict, whether they are oriented to primary, secondary or tertiary prevention of the mortality and morbidity of war, whether they take an individual clinical or a population health approach, and whether they are oriented to policy and whole-sector change or not. This article explores the nature of these roles, the influence of these cross-cutting dimensions, the challenges of each role and finally commonalities and possibilities for cooperation between roles.

Keywords: war; violent conflict; peace; humanitarian; military medicine; peace through health; insider/outsider; prevention

Context

In January 2010 a number of civil society organisations and research institutions are collaborating to host an international conference – 'Global Response 2010' – in Denmark on the topic of health and violent conflict[1,2]. The aim of the conference is to facilitate the generation of new knowledge and actions to address health issues in the context of violent conflict. In preparation for the conference, the organizers undertook a number of reviews of some of the current themes in the field of violent conflict and health, to gain an overview of existing knowledge and to identify research challenges and

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key questions to be addressed during the conference. This article is based on an overview of the current and potential role of health workers and the health sector before, during and after violent conflict.

Introduction

It is estimated that armed conflict will become the 15th leading cause of death and the 8th most common cause of disability globally by 2020[3,4]. In 2008 16 major international violent conflicts took place, two more than the previous year[5]. The World Health Organisation (WHO) has estimated that 300,000 deaths a year can be directly attributed to armed conflicts[4]. Many more deaths occur as a result of the indirect consequences of war, such as famine, lack of clean water, forced migration, lack of access to basic health services, or increased prevalence of depression, substance abuse and suicide. The number of people experiencing physical or mental illness and subsequent lifelong disability is several times higher than the mortality rate[4]. Clearly violent conflict is a serious health issue both for the public health community and for individual health workers who are confronted with the immediate and long-term consequences for human health.

For the purpose of this article we identify four areas where health workers can and do play key roles within situations of armed conflict, broadly: 'military'; 'humanitarian'; 'development'; and 'peace-through-health'. The latter represents an area that all four authors have worked in over the past decade. This list is by no means exhaustive, and people can and do shift between these areas and roles; however, here we analyse these roles with regard to their main purpose, the values which underpin them, the evidence supporting their methods and the particular challenges health workers face in performing their roles within these areas. We also begin to discuss how these roles could be extended – a major area for further discussion at the conference in Copenhagen.

In addition to these areas, we also identify four cross-cutting 'dimensions' which relate to the scope and focus of interventions; the characteristics of the health workers involved; and the phase of the violent conflict in which they are mainly involved. We have called these dimensions 'insider/outsider'; 'individual/population health'; 'policy and sector-wide intervention'; and 'primary/secondary/tertiary prevention'. In the discussion around the role of the health care workers in the four areas we have incorporated an analysis of these four dimensions. This is summarized in Table 1. Clearly these roles – with the exception perhaps of peace-through-health – extend beyond the health sector and are not restricted solely to health workers. Our primary interest here, however, is the subset of activities and challenges in these areas which are related to health.

The article begins by elaborating on the four aforementioned dimensions before moving on to examine each of the four areas where health workers

Table 1. Overview of four roles in four cross-cutting dimensions of health work in violent conflicts.

	Insider/outsider	Primary, secondary or tertiary prevention	Individual/ population health	Policy and sector-change dimension
Military	Insider: local/regional forces	Not applicable for fighting parties	Individual, but with population approach to own troops	No
	Outsider: international forces	Secondary/tertiary in peace-keeping missions		
Humanitarian	Outsider, although often employ locals	Secondary, but increasingly all	Individual, but increasingly both	No, but moving in that direction
Development	Both	Tertiary, but increasingly all	Both	Often
Peace-through-health	Both	All, with an emphasis on primary	Population, but sometimes both	Yes

have had key roles. Based on these discussions we propose a number of recommendations for future research and actions to strengthen the effectiveness of health workers in situations of violent conflict.

Four dimensions of health work in violent conflict

The insider/outsider dimension

A violent conflict and the possible role that an individual health worker or organization can play to prevent or mitigate its negative effects can look very different depending on whether the intervener is an 'insider' or an 'outsider'. From a healthcare perspective, an insider can be defined as a health worker who lives in, and belongs to, the region in which the violent conflict is taking place. Although health workers from a country or region in violent conflict may choose to be neutral, they will still be perceived as an integrated part of the 'system' and not all parties to the conflict may be able to see beyond their apparent identity.

The insider may have a much better understanding than an outsider of the issues that are involved in the conflict, the needs of the population, as well as the challenges to the health system. They may have critical knowledge necessary for conflict analysis; knowledge of potential pitfalls and dangers; and cultural knowledge, all of which are essential for success. The insider has an invaluable network of contacts, including decision-makers. Local health workers often receive recognition and respect from the population, and may have access to key personnel. On the other hand, insiders may lack access to the knowledge and resources of an international network, or other outside contacts, as well as funding. They may be aligned with one side or be seen to be so and, finally, they may be in personal danger if they engage in peace processes.

An outsider, by contrast, is a health worker who does not live in the region of the conflict. The outsider's strengths are the connections to an international network of resources. These connections may have a number of benefits, including protection from danger for insider worker colleagues. Outsiders may bring a different perspective to people 'stuck' in intractable conflict and habituated to the situation and they may even be able to act as mediators between hostile parties as health is conceived as 'neutral ground'. However, they may lack the local perspectives and understanding of the conflict context. The deficits of the outsider may be the very strengths of the insider. It is important for outsiders to recognize their deficits and to look to insiders to complement them. Collaboration between insiders and outsiders can therefore make a strong team. Failure to do so can create tension between health workers in war zones and reduce their effectiveness. The fact that outsiders are able to flee the scene at times when things get 'hot' may also create some resentment. Ritchie et al.[6] investigated the insider–outsider dimension in health research in a post-war development context. They

emphasize the importance of transparency in team relationships and in team-participant relationships. With transparency, the potential problems of hidden bias can be transformed into a range of interpretive perspectives, enriching rather than distorting knowledge development. However, little has been written on this topic and there is a need to explore it more systematically and to support these observations with more evidence. Below we consider the potential of insider–outsider understanding when exploring the various roles of health workers in a context of violent conflict.

Primary, secondary and tertiary prevention

In medicine primary, secondary and tertiary prevention are standard phrases referring to the stage of disease in which an intervention is made. Primary prevention seeks to prevent a disease from occurring; secondary prevention seeks to limit the consequences of a disease after it has started; and tertiary prevention seeks to rehabilitate the patient after a disease has occurred, so that the long-term consequences are as limited as possible. This health terminology has been transferred by some researchers to conflict prevention and peace-work, when primary prevention in a situation of actual or impending violent conflict means reducing those factors leading to eruption of war or strengthening protective factors; secondary prevention means de-escalating a violent conflict and mitigating the damage to

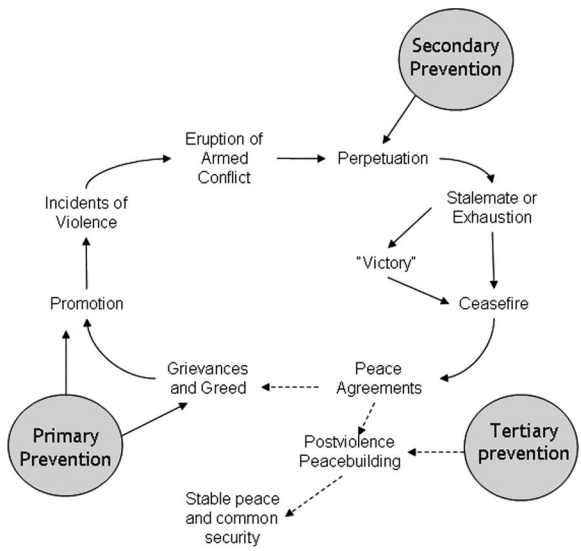

Figure 1. Cycle of violence.
Source: Arya N. Healing our planet: physicians and global security. Croat Med J. 2003;44(2):139–147.

war-affected patients or populations; and tertiary prevention means rehabilitation of those damaged by war. This concept may extend to health facilities and health systems[7]. The prevention terminology can be applied to the various roles of health workers. As will be shown below, in some roles the activities of health workers are mainly focused in one of the three prevention phases – in others, activities take place in all phases.

The individual or population health dimension

The focus of the intervention may differ depending on the activity and the role of the health worker. They may be mainly treating individual patients or their activities may be targeted at achieving change on a population level. Until we succeed in abolishing war as a means of responding to conflict there will be a need to respond to the casualties of war, patient by patient. But wherever there is large-scale mortality and morbidity in a population there is a need for applying a public health approach. This involves use of epidemiological methods, both to measure the scale of problems and to locate causes as well as solutions; and a preventive approach, in all the phases of prevention described above.

Clinical and public health interventions focus on different values: clinical medicine emphasizes individual rights, duties and responsibilities, and autonomy of the patient, while public health focuses on public good and collective responsibility. Public health is particularly multi-disciplinary and depends on important contributions from fields such as sociology, anthropology and economics. Public health interventions are often in fields far removed from clinical medicine, for example in sanitary engineering or the planning of the layout of a refugee camp. Public health interventions have the potential for large scale, long-term effects and the possibility of influencing several generations.

The policy and sector-change dimension

This dimension addresses the level of engagement of the health worker in policy change and sector development. Health interventions in war and post-war settings may have a narrow vertical focus, for example on HIV/AIDS or on immunization of children, or a broad horizontal focus on developing and strengthening the health sector of a region or country as a whole. It is considered that changes in systems of health, education, human rights, social welfare, peace, and so on, are more likely to promote pervasive and durable effects on population health, there is some debate about the relative benefits and disadvantages of such approaches[8]. Moreover, when such interventions are led by outsiders there is a danger that interventions undertaken parallel to an existing health system may draw resources and competence out of the existing system and thereby undermine it in the long

run, whereas a policy change implemented throughout the health system may have more sustainable and wide-ranging effects.

The health worker may also seek to influence policy (for example, ending discrimination in health services to minority groups), the structure and function of health services (for example, promoting primary care) or health education (for example, nursing or health practitioner education). Policy and sector-wide interventions necessarily involve the intervening organization working with the state-provided health sector or other sectors in order to improve health, for example, urban water supply, social welfare, or education sectors. The support of state systems, on the other hand, may carry the danger of legitimizing an abusive regime or one of the conflicting parties, and may in this way support the war system[9].

The following section describes four areas where health workers have played key roles within situations of violent conflict. We cross examine them using the above four dimension in order to gain insight into the purpose, values, evidence and the challenges health workers face in undertaking these roles.

The four roles of health workers

Each of the roles we discuss here has their own distinct history. Health workers have participated in military operations for perhaps as long as war has been an organized human activity. The involvement of health workers in development efforts abroad or in the 'Global South' has roots stretching back to colonialism and missionary activities. Particularly relevant for this paper is the engagement in post-war health rehabilitation, which has been a more recent type of activity undertaken by the development sector. Health workers and health organizations have been providing humanitarian assistance since the time of the founder of the International Committee of the Red Cross (ICRC) Henri Dunant in the middle of the nineteenth century. Finally, over the last two decades there has been considerable progress in both the theory and practice of the peace-benefiting role of health workers. Whilst these histories inevitably affect the approaches and values which are embodied in the four roles, our primary concern in this article is to position them within contemporary debates around violent conflict and health.

The military role

The primary goal for health workers employed by the military is to protect or restore soldiers' effectiveness as fighters. In some countries military service is a part of standard medical training, and the field of military medicine has evolved into a separate specialization with its own evidence based methods in the same way as any other medical specialization[10]. Values

of health workers in the military include obedience to superiors and loyalty to the mission. In addition to this, health workers in the military are educated to act according to medical ethics as are all other health workers, and like the military in general they are bound by international humanitarian law. Therefore a particular challenge for health workers involved in military action is so-called 'dual loyalty', where there can be a conflict between duties to a patient and the principles of medical ethics on the one hand and obligations to the interests and goals of the military organization on the other[11]. Military health workers may face severe ethical dilemmas when they find themselves in situations in which they are witnesses to (or even accomplices in) human rights abuses or breaches of International Humanitarian Law, for example, the torture of prisoners-of-war to extract information. In such circumstances there may be a pressure to obey military orders, accept the decisions of superiors and conceal what they know.

Particularly since the Vietnam War, military health professionals have found themselves taking on new roles, raising another set of ethical dilemmas. In a number of armed conflicts counter-insurgency war strategies have involved the provision of health services to local populations for the purpose of 'winning hearts and minds', and thus winning the war[12]. Whilst these actions may lead to genuine benefits for the recipients of health services, they carry many ethical problems in terms of health, humanitarian and development ethics. Both medical and humanitarian ethics prescribe the provision of services irrespective of nationality, adherence to a faction of a conflict, or other factors which may influence the decision to treat. 'Winning hearts and minds' as a military strategy may only be provided to certain sections of the population according to strategic considerations. Development ethics prescribe the provision of equitable services in ways that will persist after the withdrawal of the outsider intervention, and the involvement of local populations in determining the goals, personnel and processes of interventions[13]. Military-provided clinics, for example, often only provide services in the short term, and are less likely to meet those values. Indeed they may create a situation of confusion, making non-military humanitarian actors legitimate targets in the eyes of opposing forces as the line between relief workers and military forces becomes blurred[14].

The military health worker can be either an insider or an outsider in the conflict, depending on whether they belong to the region where the armed conflict takes place, or they enter it from outside. Even when aligning to local/regional forces, and even when providing health services or relief to the civilian population the military health worker from an international force represents an outsider.

In terms of the individual/population health dimension it is clear that military medicine has primarily an individual approach, as do most other clinical specializations – treating individual patients. Nevertheless, military health workers perform at the same time public health tasks in regard to

their own troops, for example providing vaccination to soldiers or securing water and sanitation. Military medicine interventions are generally applied during a violent conflict or in a post-war period, which corresponds respectively to the phase of secondary or tertiary prevention; although it could be argued that peacekeeping missions (such as the KFOR mission in Kosovo) have a primarily preventive character, as they aim to prevent violence from breaking out once more. Whether they actually address the root causes of the problem however is debatable.

Military health workers do not usually work on a policy and sector-change dimension, even if, of course, the purpose of military action can be to change policy.

In recent years military interventions have increasingly been framed as peace interventions, illustrated most clearly in the prevalence of terms such as peacekeeping, peacemaking and peace-building. In this discourse military operations are meant to play a crucial role in protecting civilians, in preventing outbreak, escalation or continuation of war, or in helping to reconstruct the country and provide relief to civilians. Peace studies researchers have however argued that peacebuilding cannot be fulfilled by military forces which by default use power and weapons and are always partisan[9]. Nevertheless, even military health workers may actually have peace opportunities when for example working against power abuse and human rights violations amongst their own forces. It has also been suggested that the military could play an important role in documenting and sharing relevant information to verify estimates of mortality in violent conflict[15]. However, it is questionable whether civilian researchers would be willing to use information from the military or whether such information would be seen as biased towards one side of the conflict.

The humanitarian role

The humanitarian role is directly linked to the military – humanitarian action by health workers dates from the second half of the nineteenth century when Henri Dunant initiated the Red Cross movement after witnessing the scenes at the Battle of Solferino. According to the tenets of the Geneva Convention, the goal of humanitarian work in war zones is to extend compassionate action towards the suffering of all affected by the violent conflict without interfering in the fighting itself. Some of the most well-known humanitarian organizations are the International Committee of the Red Cross (ICRC), Doctors without Borders (MSF – Médecins Sans Frontières), the International Rescue Committee (IRC) and Save the Children. The work of the ICRC rests on values of neutrality and impartiality. Neutrality means not taking sides in the conflict and impartiality prescribes help based on need regardless of affiliation[16]. These values enable humanitarian actors to get access to the populations in need across the lines of the battlefield and to

operate in the midst of a violent conflict without becoming party to the conflict. Some humanitarian organizations have challenged the value of neutrality, most notably MSF who might speak out and condemn war action if it infringes International Humanitarian Law, whereas other humanitarian actors refrain from bearing witness because it may compromise their access. The debate about remaining silent to ensure access, or speaking out at the risk of losing access to the population in need is crucial as it addresses the responsibility of health workers to effectively promote health and life even in violent situations.

In the Do No Harm project, Mary Anderson illustrates many examples of humanitarian actors entering a context of violent conflict and, therefore, becoming part of that context. Despite their principle of neutrality, humanitarian actors inevitably do affect the conflict through the transfer of resources and through implicit ethical messages. For example, aid resources might be stolen by one warring party, and in this way prolong the violence; or, the attitudes and behaviour of aid workers may send signals of superiority or partiality[7,17]. These cautions certainly apply to the provision of humanitarian health care. However, there are ways in which humanitarian actors can avoid worsening a conflict, and even contribute positively to stabilizing the community in which they operate. Humanitarian workers can, for example, promote a culture of peace through their actions such as not using armed guards, promoting peaceful coexistence, humanizing 'the other' through their impartiality and by making a thorough analysis of factors that divide the community and those that connect it and considering carefully how their own actions affect these factors[17].

One of the key challenges facing the humanitarian community is the need to assess the beneficiary populations more accurately. In recent years methods for estimating mortality and indicators of morbidity and malnutrition have been developed and implemented as part of needs assessments before a humanitarian intervention[18]. However, the rapid assessments and surveys undertaken by humanitarian actors remain inadequate and there are calls for them to become standardized. Needs assessment is necessary for planning the best response to a given crisis and thereby for enhancing the quality and accountability of the humanitarian response. Efforts of standardization and evaluation of humanitarian assistance are being made by a coalition of large humanitarian organizations, such as the Sphere Project, which outlines minimum standards for relief operations[19]; and the 'Smart Indicators' project, which is currently identifying standardized indicators to be used in humanitarian needs assessments and evaluation efforts[20].

The need for the coordination of humanitarian efforts, which are often characterized by a plethora of actors engaging in a humanitarian emergency, is another well-recognized problem. There have been a range of efforts to strengthen coordination undertaken by the UN, such as the work of the UN

Office for the Coordination of Humanitarian Affairs (OCHA)[21], as well as by non-UN humanitarian actors, including the Inter-Agency Standing Committee (IASC)[22,23]. More recently, UN reform of the field coordination of humanitarian efforts has been implemented in several countries where the overall coordination of main clusters of work in humanitarian relief operations are coordinated by one lead agency – for example health, which is led by the WHO.

Another challenge for humanitarian workers has been ensuring the security of the populations in their charge as well as their own workers. Kidnappings and even killings of humanitarian workers have increased in the past 12 years[24]. This is probably linked to an increased involvement of military forces in providing humanitarian assistance, which makes the goals and identities of various actors in a humanitarian emergency less clear. This further challenges humanitarian workers, their principles, and their capacity to openly promote peace in the midst of violence of which they may themselves be targets.

In addition to the core values of humanity, neutrality and impartiality, which are the basis for humanitarian assistance, humanitarian work rests on international legal regulations[16]. Henri Dunant conceived of an international agreement that would allow for the treatment of sick and wounded soldiers and for the protection of military hospitals and those who service them. This treaty was founded in 1863 and is known as the first Geneva Convention. Since then, other Geneva Conventions have been added progressively (up until as recently as 2005) to expand the protection of life, health and dignity in times of war. This body of law, limiting the means of conducting war, is an outstanding human achievement. Many see the Geneva Conventions as steps towards the eventual outlawing of war itself as a means of responding to conflicts. These laws have been used to support the banning of biological weapons and landmines, and were important arguments in the near-outlawing of nuclear weapons by the World Court in 1996[25,26]. They form the framework of any subsequent examination of the behaviour of armed forces, especially in relation to civilians. The currently controversial Goldstone Report on the actions of both parties to the conflict in the attack of the Israeli Defence Forces on Gaza in 2008–09 is an example of how this framework can be applied[27].

The humanitarian role has shifted from that of the traditional provision of emergency health services to targeted beneficiaries to an increased focus on disease prevention (HIV/AIDS and tuberculosis), campaigns for access to essential drugs, and even weapons control. Therefore whilst humanitarian action has traditionally dealt with 'secondary prevention' in violent conflicts, these newer types of activities described above could certainly qualify as primary or even tertiary prevention. Moreover, humanitarian assistance is often provided by outsider agencies and expatriate workers, though the majority of international humanitarian organizations also

employ local staff, which is an opportunity for combining the insider and outsider roles with the potential for strengthening the interventions as discussed above.

The development role

The goal for health workers who focus on development in post-war societies is to improve the health standards of the affected population in the longer-term, beyond the acute health needs created by the war. The field of health in a development context has a long history, going back to imperial and religious missionary interests in the study of tropical disease and health service provision in colonial states. Since then the world has changed and with it the focus of health workers engaged in the Global South. Traditionally, development workers have focused on poverty alleviation and improvement of human welfare through health services, education, agricultural methods and the promotion of business and industry. Now the scope of development work is broader, including the links between poverty, weak states, violent conflict, religion and climate change, to mention but a few of the contemporary issues.

Over time there has been an important evolution in the values of the development sector with a major shift from the determination of goals and processes by donors and outsider actors to determination by the population served and insider actors, with a high value set on collaborative processes, local 'ownership' and sustainability[13]. This necessarily entails attention to cultural competence, and is seen as a way of addressing some of the problems associated with the outsider status of traditional development actors.

The development sector has a strong tradition of working at policy and sectoral levels, as demonstrated for example by the introduction of the Sector-Wide Approach (SWAp) strategy[28,29] whereby development aid is given to an entire sector, such as health, based on a strategy developed by the recipient government in consultation with donors about the specific requirements of that sector. This opens up possibilities of inducing long-term change through collaboration and cooperation.

In relation to the individual/population health dimension, health development work rests strongly on a public health tradition, where the focus of interventions is prevention and population health on a large scale. Thus development activities often go beyond the scope of health-specific interventions, for example by focusing on the reconstruction of health services in a post-war community. There is however an increasing blurring of the development and humanitarian agendas. For example, MSF, despite their humanitarian mandate implying short-term relief, also address issues such as access to medicines, and treatment of chronic conditions such as tuberculosis, HIV/AIDS and malnutrition. At the same time, development

organizations such as Oxfam have integrated development and humanitarian work, in addition to advocating for policy changes. Protracted violent conflicts inevitably increase the duration of, and need for, humanitarian assistance, thus blurring the boundaries between development and humanitarian aid as well as distorting the distinction between peace and war time. From our perspective, this has also had an impact on the stages of prevention paradigm: whilst the development sector has primarily been active after a violent event (tertiary prevention), today health workers with a development-related role may be active before, during and after a violent conflict and thereby they may engage in all three forms of prevention.

The peace-health role

'Peace though Health' and its alternative terminologies, 'Peace Medicine' and 'Health as a Bridge to Peace' involves the adoption of a public health perspective by health workers with respect to war and other forms of violence, seeking prevention or reduction of violence as a cause of death and morbidity, and promoting peace as a major determinant of health for all[7]. This is an area which has largely developed over the last two decades. The World Health Organization (WHO) initiated Health as a Bridge for Peace (HBP) in the latter half of the 1990s based on a programme developed by the Pan-American Health Organization (PAHO) in the 1980s. HBP incorporates a peacebuilding objective into health sector activities in post-conflict societies[30]. Parallel to this, researchers at McMaster University, Canada, developed the concept of Peace through Health, which has since been used in community projects around the world and been described in detail in several publications[7,31–33]. The ultimate goal for all health workers is the improvement or sustainment of health of their patients or communities. From a peace-health perspective, health workers engage in peace work as a means to this goal: they respond to the suffering in violent conflict, both present and projected, and attempt to prevent future suffering from this cause.

The values behind this approach are those of solidarity and humanity, but it could be argued that impartiality applies as well, if defined as giving help based on need. However, it is a fine balance to ensure that peace-health work does not become one-sided, which could fuel a conflict rather than solve it. In this context, a clear awareness of insider and outsider roles can be important as this affects the perception of the initiative. A systematic use of the strengths of both insiders and outsiders can inform the interventions and ensure that a thorough understanding of the conflict and the local context is integrated in the approach.

The basis of the peace-health perspective is the idea of multi-track diplomacy, where civilians play a peacebuilding role in one or more 'tracks' (judiciary, education, religion, media, etc.), alongside the 'track' of official diplomacy[32,34]. A number of methods have been suggested for peace-health

work, including the documentation of the health costs of war for advocacy purposes; mediation of conflict on the ground; healing of trauma combined with social reconciliation; advocacy to show the human costs of violent conflict; the redefinition of war as a humanitarian emergency; peacebuilding and stabilization of society through the health system by promoting integration, mutual understanding, respect and fulfilment of basic needs; and the education of health workers.

Many of these methods have been applied in practice. The McMaster group has undertaken various projects with children in Afghanistan, Sri Lanka and Croatia with a dual purpose of contributing to mental health of war-affected children and stabilizing the community through increased understanding of the commonalities of suffering and traumatic experiences on both sides through peace education[35–38]. The WHO has been actively engaged in rebuilding the health sector in post-war societies in the Balkans in a way which sought to increase integration and understanding between various ethnic groups[30]. For almost three decades International Physicians for the Prevention of Nuclear War (IPPNW) have met with decision-makers to advocate for the abolition of nuclear weapons. A coalition of civil society organizations including health professionals, and government diplomats spearheaded the International Campaign to Ban Landmines which led to the Mine-Ban Treaty, and health workers are actively engaged in advocating for a treaty on small arms control. Individual health workers are participating in mediation and conflict resolution on a daily basis when working in complex emergencies[7]. Medical students and other trainees in the health professions have shown an avid interest in working for peace through the health sector. For example, some have undertaken peer-training methods such as the Nuclear Weapons Inheritance Project, whereby medical students trained peers in the health consequences of nuclear weapons[39,40]. All of these methods, and their strengths and weaknesses, have been described in detail in previous publications by the authors[7,32]. It is clear from the wide range of activities included in this list that the various methods described here can all be seen as examples of prevention. Health workers with a Peace through Health role are intervening before, during and after violent conflicts, covering primary, secondary and tertiary prevention.

One of the difficulties with the peace-health role is in demonstrating that health workers are actually contributing to peace or the reduction of violence. In response, a number of methods and strategies for evaluating peace through health projects have been suggested[7]. The Peace through Health project in Croatia evaluated the health and peace dimensions by using before- and after-measurements, and showed modest positive effects on both mental health and ethnic tolerance of children who received the school-based intervention[38]. The Sri Lanka Butterfly Garden Project engaged in anecdotal case study evaluation[37] and the Afghan Peace through Health project is currently systematically evaluating its impact with a battery of instruments

measuring both the mental health and peace dimensions. The main challenge now is for these methods to be used and the results systematically reported.

Peace through Health work has applied a population health and preventive approach from the beginning and some of its interventions have been directed to policy and sector-wide initiatives. The nature of the health system may contribute to violent conflict (as in pre-apartheid South Africa)[41,42], or it may be one of the conflict issues (as in Kosovo)[43]. There may be an opportunity for the health sector to contribute to the healing of society by bringing formerly hostile groups together to give and receive health care. However, very little evidence exists on this topic[14]. An effort has been made to describe cases of health systems reconstruction in the Balkans and this resulted in the identification of a great need to prevent segregation of the health system in post-war societies[43,44]. The role of the WHO in rebuilding the health system in Bosnia-Herzegovina, using a Peace through Health framework, is especially well documented[30,45]. Lessons from the Eastern Slavonia and Kosovo cases suggest that prolonged involvement of outsider health workers is needed in a severely ethnically divided society to allow time for a unified health system to be established.

Another way the health sector as a whole can play a role is through the creation and communication of relevant knowledge[46]. Academic journals have increasingly covered topics of violent conflict and peace, which has contributed to the growth of knowledge in this field. *Medicine, Conflict and Survival, The Lancet, The British Medical Journal, The New England Journal of Medicine and the Croatian Medical Journal* have been outstanding in this arena. A deliberate attempt to make shared health knowledge a uniting super-ordinate goal has been made in the Middle East WHO medical journal, *Bridges* (http://www.bridgesmagazine.org). These efforts have sometimes been quite controversial, most particularly when covering health impacts of the war in Iraq and the violent conflict in the Palestinian Occupied Territories.

Discussion

The goals, values, regulations, evidence for and challenges of the roles of health workers in violent conflict has been described from four different areas and the use of insider–outsider, clinical or population interventions, limited or policy and sector-wide approaches and whether they engage in activities before, during or after war has also been discussed. The four areas where healthcare workers play key roles are very different and each contributes in its own way to addressing health consequences of violent conflict; they may also all have an impact on the conflict itself. Despite the many differences some commonalities and potential opportunities for cooperation do exist.

All four areas need to better document the health consequences of violent conflicts. For example, the humanitarian sector needs documentation

for planning relief operations, the development sector for planning reconstruction of the health system and for responding to health needs, and peace-health workers use documentation for intervention and advocacy purposes. Morbidity and mortality data gathering in situations of violent conflict is a highly contested area. For example, the military may be ambivalent about the documentation of mortality and morbidity, fearing its potential to erode support for war. However, indigenous anger over civilian deaths, such as in Afghanistan, suggests the importance of data-gathering, and the military may even gain an advantage from the availability of credible and generally accepted estimates of mortality. However, it is evident that often differing goals between the military and the other three perspectives in the use of such knowledge may prevent meaningful cooperation in data gathering. Possibly it would be more useful to cooperate on the development of universally accepted methods or even the foundation of an independent documentation institution, as suggested by Checchi and Roberts[18].

Health workers playing key roles in all four areas have a need to understand the direct and indirect consequences of their own presence and activities. The Do No Harm project revealed some of these consequences, and has been influential in both humanitarian and development approaches. Awareness of these consequences adds an extra dimension to post-war reconstruction and development work as the peacebuilding or destabilizing potential of projects is carefully assessed. There are a number of tools available now to assist with this analysis, for example, the Peacebuilding Filter developed by a team at the University of New South Wales School of Public Health and Community Medicine, which analyses and evaluates the peace potential of health projects[7]. We argue that all external actors have an obligation to assess the impact of their presence on the population affected, not only in terms of their intended impact on mortality and morbidity, but also the other ways in which they affect all other sectors of life, from economic to ecological concerns. An understanding of the broader context in which one operates and intent to have longer-term impact is the basic principle of a sector-wide approach. Therefore peace-health and humanitarian actors may be able to learn from the long-term experiences of the development sector in addressing change on a policy level.

All roles operate actively in communities with a potential for violent conflict (if it is not already an escalated conflict). Therefore there is a strong argument for developing the conflict resolution and mediation competencies of field workers, no matter which role they play. Any health worker actively engaged in an arena of violent conflict may find him or herself in a situation where conflict can be deescalated through basic skills of conflict resolution. There is now some attention being paid to this in the education of peacekeepers (David Last, personal communication relating to peacekeeper education in Canada).

The protection of human rights is a challenging, but key task for any health professional. The peace-through-health worker, the humanitarian worker, the development worker and the military health worker may all gain from continuing to frame their efforts in a human rights context. Efforts should also be made to ensure the integration of systematic skills training and understanding of human rights and international humanitarian law in the education of all health workers. This knowledge, added to the already existing skills, mandates and ethos of humanitarian and development organizations, a clearer awareness of insider and outsider roles and a consideration of their relative strengths and weaknesses, could greatly strengthen the results of health projects undertaken in times of violent conflict.

However, it is also important to respect differences in values of the various perspectives and not try to co-opt others into one's own perspective, no matter how strong the imperative seems. Humanitarian workers act with values of neutrality, which is judged necessary for the security of humanitarian workers themselves and for ensuring their access to populations in need. The perception of neutrality can very easily be damaged, for example if humanitarians work with other actors who have a less neutral stance in the conflict, or are seen to be working with one party to a conflict more than another. Many peace workers have been outspoken in their solidarity and support for the victims of human rights abuses. Development workers and peace workers with a health background can act impartially and help people based on needs, but they do not always claim neutrality. Military actors may be part of the conflict, and therefore not neutral, though in many case they are involved as international peacekeepers in the midst of two conflict parties. Despite the need to respect one another's stance on neutrality, there can still be active exchange and debate between the various perspectives. Humanitarianism does not exist in a vacuum and a critical understanding of the consequences of one's own actions is necessary for all without exception.

The public health approach, with its focus on population data and on primary prevention has moved further into the centre of mainstream health concerns. Insights from public health, from its very beginnings in epidemic illness, led health workers to prioritize prevention, which took them into non-health arenas that have an impact on human health. When we consider the long history of engagement of health professionals with the health consequences of war, it is only natural that there should be a steady shift in thinking from baseline expertise in dealing with individual injuries and illness. First came mitigation of the worst impacts of war on soldiers and sailors, then civilians, and then outlawing some (but not yet all) of the most deadly and indiscriminate weapons. Now, some health professionals work on preventing the predictable recurrence of particular wars, some on ridding the world of its worst weapons, and others on providing alternate ways of resolving conflicts, protecting threatened populations, and attention to

economic causes of war. These activities are very timely. War is an immensely costly strategy for dealing with conflict, and consumes the attention of political leaders engaged in it, often to the exclusion of other global crises.

Conclusion

There are a number of very different roles for health workers in the context of violent conflict. Peace-workers, humanitarian and development workers and their organizations, and the military each play different roles, and are not mutually exclusive. As we have outlined above, there are important commonalities between all these areas, including the need to document the health consequences of violent conflict; the role of the health sector in stabilizing post-war societies; the importance of cooperation between insider and outsider health workers; understanding the role health actors play – directly or indirectly – through their presence and activities in situations of violent conflict; and of increasing the conflict resolution skills and cultural competencies of health workers through better integration of human rights approaches, concerns for equity and participation, and involvement of affected populations in interventions.

There is a great need for further evidence on the potential role and impact of the health sector in violent conflict. It is necessary to systematically evaluate and appraise many of the current efforts so that recommendations for the role for the health sector and individuals working within it can be developed. Developing an understanding of these roles and the potential to mediate violent conflict can be developed with the help of humanitarian and development organizations, drawing on their experiences and understanding of the conditions in post-war societies to design systematic investigations of the health sector as a peace-builder. Insights and experiences from other sectors, such as education and justice systems, should also be shared to demonstrate the need for all sectors to play a stabilizing role in post-war societies.

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