Peace through Health I: Development and Use of a Working Model

NEIL ARYA

Physicians for Global Survival, Ottawa K1R 6P1

Peace through Health (PtH) is an evolving academic discipline that explores how health interventions may contribute to peace in actual and potential war zones and situations of conflict. This article is an attempt to define the scope of PtH activities, to develop a framework for groups and individuals to conceptualise their role in peace work and to develop clearly definable goals for evaluation. The use of a new model of 'Peace through Health' work is explored. A demonstration of how this model could help guide actions of organisations working for peace in current and potential war zones is undertaken. In particular, the work of International Physicians for the Prevention of Nuclear War and medical war prevention work in Iraq since 1990 is discussed. It is felt that such a model might be used to classify and better direct medical peace work to areas of expertise.

KEYWORDS Conflict resolution Education Health Health professionals Peace War

McMaster University in Hamilton, Ontario, Canada has just launched the first university level course on Peace through Health.[1] The development of a practical framework, or model, with which to understand such activities is an essential part of the course. This article explains the development of a model building on previous work from McMaster,[2,3] which developed a typology of mechanisms for health professional peace work and viewed war prevention using a disease prevention paradigm, and explores how this model might be used in practice. It is hoped that this model can be used to define scope of activity and to develop appropriate goals and end points; it might also be adapted for use by other sectors.

Multi-Track Diplomacy

The concept of multi-track diplomacy has evolved over the last two decades. Joseph Montville described two tracks, differentiating official, commonly acknowledged governmental actions to resolve conflicts (Track 1) from non-governmental, unofficial ones (Track 2).[4] Later models, developed by

MEDICINE, CONFLICT AND SURVIVAL, VOL. 20, NO. 3, 242–257 (2004)
ISSN 1362-3699 print/1743-9396 online
DOI: 10.1080/1362369042000248839 © 2004 Taylor & Francis Ltd.

Montville, Diamond and the Institute for Multi-track Diplomacy recognised that placing all Track 2 activities under one label of unofficial diplomacy would not reflect the breadth and scope of such activity, developed the term 'multi-track diplomacy', and expanded the non-governmental activity into many tracks. One current model describes nine tracks: the 'outer' eight tracks: (1) government, (2) conflict resolution professionals, (3) business, (4) private citizens, (5) research, training and education, (6) activism, (7) religion and (8) the funding or philanthropic community are all designed to move the 'inner' ninth track of public opinion/media/communication towards peace.[5]

Health is conspicuously absent from the Montville-Diamond classification, yet health workers have worked for peace over centuries. These Peace through Health initiatives have taken many forms, including humanitarian ceasefires for the immunisation of children, the use of health expertise to restrict weapons and war strategies, and efforts aimed at individual and social healing in war zones. Arguably peace and health are in fact, inextricably connected.

Peace/Health Analogies: Health Promotion and Conflict Transformation

Peace may be defined not merely as the absence of war or violence (direct, indirect, structural or cultural), or harm to others, but in a systemic way as engendering a state of integration and positive, nurturing, respectful and co-operative relationships. Peace may be seen more personally or internally with spiritual, emotional and psychological aspects. Whether individual or societal, peace is influenced by various factors: biological, social, economic and political. Peace may also be seen as a basic 'right'. The UN Convention on Rights of the Child,[6] adopted in 1989 and ratified by all countries except the United States and Somalia, explicitly includes rights to identity, education, shelter and safety – in short to an environment of peace. An Optional Protocol calls for special protection in times of war.

Promoting or developing this peace or 'conflict transformation' has been described as the process of moving from conflict-habituated systems to peace systems, 'catalysing changes at the deepest level of beliefs, assumptions and values, as well as behaviours and structures, distinguished from the more common term of conflict resolution because of its focus on systemic change'.[5]

This conception of peace and peace promotion seems closely analogous to current models of health and health promotion. In the World Health Organization's (WHO) Alma Ata Declaration of 1978, health is described in a holistic way – not just in a curative or symptom relief manner, but as:

> a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. [Health] is a fundamental human right and

> the attainment of the highest possible level of health is a most important world-wide social goal whose realisation requires the action of many other social and economic sectors in addition to the health sector.[7]

The landmark Ottawa Charter for Health Promotion[8] similarly seeks a transformation in the way health is perceived, defining health as a resource, and considering the fundamental conditions for health to be 'peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity'. Notably, the first prerequisite cited to provide a 'secure foundation' for health is peace. The Ottawa Charter adds that 'political, economic, social, cultural, environmental, behavioural and biological factors can all favour health or be harmful to it'. Health promotion is defined as 'the process of enabling people to increase control over, and to improve, their health', and its actions 'aim at making these conditions favourable through advocacy for health'.

Defining peace and health holistically as above, the goals and methods of promotion become analogous, complementary, or linked to each other (see Table 1). As such, perhaps promoters and practitioners of each might have lessons to offer the other.

Peace through Health Models

The first significant attempt to classify PtH work used ten categories: Communication of Knowledge; Psychological Healing of Individual and

TABLE 1
THE PEACE/HEALTH PARADIGM

	Health	Peace
Definition	Physical, mental and social well-being	Integrated, respectful, co-operative, positive, relationships, may include spiritual, psychological and emotional elements
	Not merely Absence of disease and infirmity	*Not merely* Absence of war or violence
Rights	Fundamental right or resource	A fundamental right for children (at least)
Determinants/fundamental conditions	Peace, shelter, education, food, income, stable ecosystem, sustainable resources, social justice, equity	Biological, social, cultural, environmental, behavioural, economic, political factors
Promotion	Process of enabling people to increase control over, and to improve their health through advocacy	Involves systemic change, catalysing changes at deepest level of beliefs, assumptions and values as well as behaviour and structures

Society; Strengthening of Communities; Extension of Solidarity; Evocation and Broadening of Altruism; Personalization of the Enemy; Construction of Superordinate Goals; Non-co-operation and Dissent; Diplomacy; and Re-definition of the Situation.[3,4] Though later further refined, the categories have substantially remained unaltered and are briefly described below.

In war zones, medical professionals participating in organisations such as the International Committee of the Red Cross (ICRC) and Médecins sans Frontières (MSF) dare to tread where few outsiders might venture. They assist with *Communication of Knowledge,* thereby putting a human face on suffering, and may be considered the most credible, unbiased sources of information. Such organisations may be seen as impartial, uniquely treating people of all sides without prejudice. By their very presence, as one institution persisting throughout a conflict, they can develop, foster, or sustain a structure for post-conflict rebuilding. Though not their primary objective, they can also help with *Healing of the Individual and Society* (physical, psychological and at times even spiritual), and *Strengthening of Communities*.

Medical professionals can *Extend Solidarity* merely by their presence; that is, by risking their own lives to treat people in war zones. Such gestures can give hope to the relatively powerless side of a conflict, strengthening their struggle for fundamental human rights.

Medical personnel may *Broaden the Concept of Altruism,* treating victims impartially in a war zone when military and other civilian personnel are propagandised into believing that people on the opposite side of a conflict have and deserve fewer rights as they are different. On a larger scale they may *Personalise the Enemy*, opposing war leaders who seek to diminish, depersonalise, and dehumanise the 'enemy'. Professional and personal connections with patients and colleagues throughout the world make the concepts of 'enemy', 'foreigner', or 'out-group' people seem bizarre. For example, International Physicians for the Prevention of Nuclear War (IPPNW) used common professional contacts and friendships during the Cold War to show that the consequences of war for 'real people' on the other side would be as real and catastrophic as they were for 'us' in the West.[9]

The famous humanitarian ceasefire campaigns in Central America in the late 1980s and early 1990s, 'Five Days for Peace', not only resulted in the immunisation of hundreds of thousands of children, but were a manifestation of the *Construction of Super-ordinate Goals*.[10] Warring factions found a common goal in the future well-being of their children – a desire to reverse the horrendous immunisation rate as a result of strife. Furthermore, they found that the 'other side' could be trusted to honour the ceasefire accord, setting the groundwork for agreement towards lasting peace.

Non-co-operation and Dissent describes the refusal of medical personnel to participate in what are considered unjust war campaigns of their governments, such as Israel in the Occupied Territories, the US in Vietnam

and Iraq, or Russia in Chechnya, or to oppose weapons systems such as nuclear weapons. Benjamin Spock, the renowned paediatrician, was noted and notorious (in some circles) for opposition to the Vietnam War. The Nuremberg trials and the resultant medical code indicate that even a military person has an obligation to disobey an order they know is illegal.[11]

Bolstered by the legitimacy conferred by the Nobel Peace Prize, prestigious medical organisations such as the ICRC, IPPNW and MSF are able to engage in *Diplomacy*. IPPNW had contacts with the highest level of Soviet administration and with various members of the US Congress and administration. No less a personality than Mikhail Gorbachev credited IPPNW with convincing him to push for arms reduction agreements.[12]

The final category is *Redefinition of the Situation*. The International Campaign to Ban Landmines (ICBL) de-legitimised the use of landmines as an instrument of war because of their indiscriminate effects on civilians. The medical burden of suffering and illness – physical, psychological and rehabilitative – and the depletion of resources, often lasting years after a war, galvanised a civil society effort to ban these weapons. Thus an ostensibly military and political issue became one in which health professionals had expertise. IPPNW has pointed out that nuclear war, which would indiscriminately target civilians and a disproportionate number of health care personnel, is a medical issue.[13]

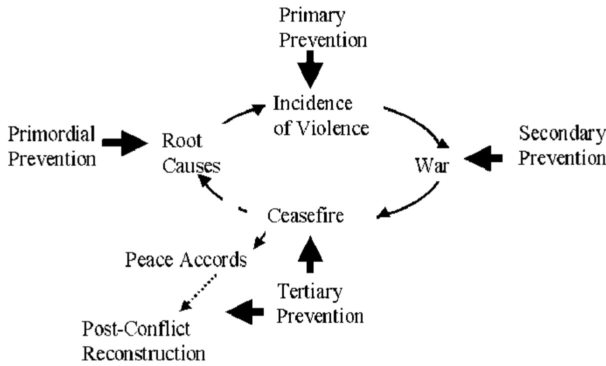
The discipline of Public Health offers another model of Peace through Health. In a Public Health Prevention model, war is seen as a disease, and interventions during pre-conflict, active conflict and post-conflict stages are explored, allowing preventive manoeuvres at the primordial, primary, secondary and tertiary stages.[3,14]

Primordial prevention involves looking at root causes. It refers to what would normally be termed ‘risk factors’ for conflicts developing in the first place, or from escalating to dangerous levels. Root Causes might include political exclusion, suppression of identity, other human rights violations and lack of equity or land. Primary prevention concerns prevention of war from breaking out when a situation of conflict already exists. Limitation of arms, combating propaganda and diplomacy are examples of such efforts. Secondary prevention refers to the situation where war has already broken out (the disease has manifested itself) and methods to make peace are sought (peacemaking). Tertiary prevention is meant to promote rehabilitation after disease has been established, that is, post ‘hot’ war peace-building.

Figure 1 shows an approach to conflict from a disease prevention model.

Each of these models has merits in terms of demonstrating how medical practitioners may act to mitigate conflict. The Public Health model in itself does not illustrate the types of activities in which health professionals might engage themselves; it is less of an action plan than it is a map. The early PtH models, while highly descriptive and reflective of a broad scope of activity, do not take into account how different mechanisms might be appropriate at succeeding stages of a conflict, and how this might facilitate goal setting.

FIGURE 1
BREAKING THE CHAIN OF WAR



These models might be adapted to incorporate the unique qualities and skills of health professionals, categorising their activity in terms of health professional roles.[15]

A Comprehensive Model for Peace through Health

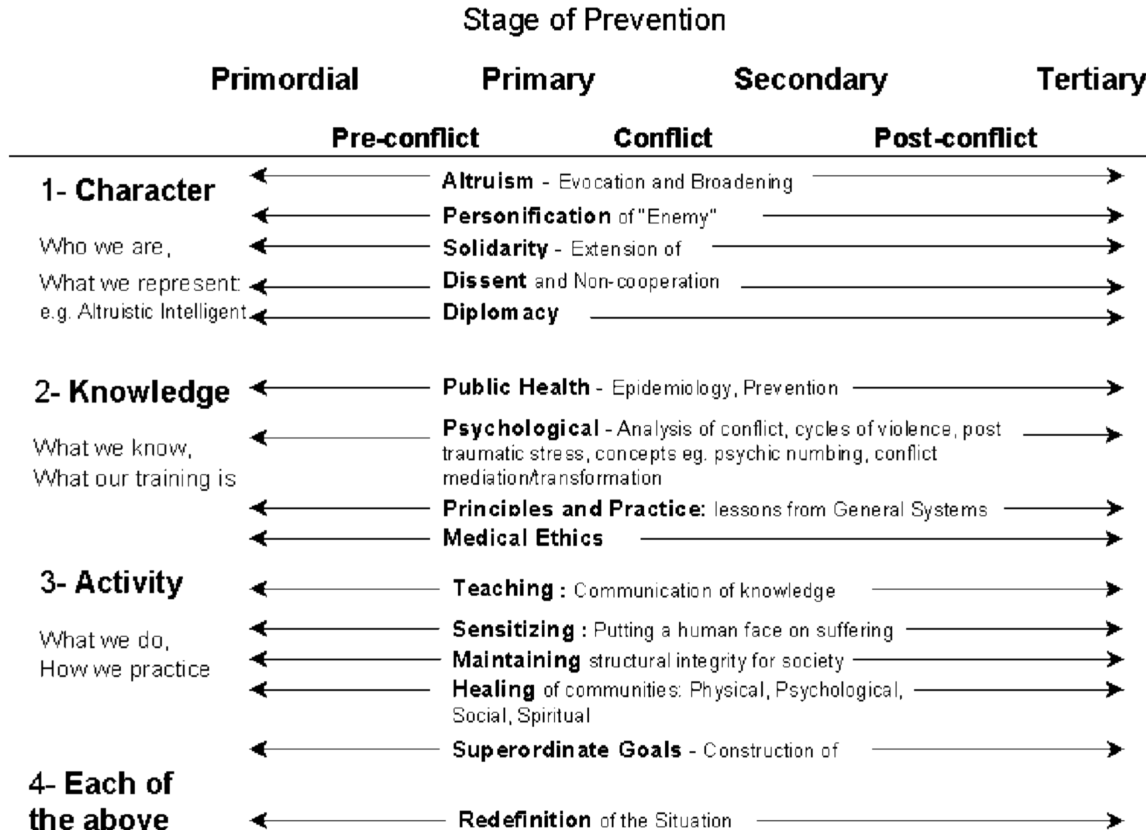
Figure 2 puts the models together, differentiating capacities of medical professionals to act uniquely for peace, under the categories of *Character, Knowledge and Activity*.

Character represents 'who we are', what we are perceived or recognised as being, including our talents and defects. Medical professionals are generally perceived to possess character traits such as altruism, impartiality, trustworthiness, intelligence and analytic skills. These characteristics allow doctors to act, to evoke and broaden altruism, to personify the enemy and to extend solidarity. Health professionals' engagement in non-co-operation and dissent, or in diplomacy may get noticed more readily than other equally worthy groups because of the trust and respect society has for them. In the diagram these categories are listed as *Altruism, Personification, Solidarity, Dissent and Diplomacy* respectively.

Knowledge indicates 'what we know', what our training and skills, or expertise is. It includes major sub-disciplines of medicine such as Public Health with the model of prevention described above and epidemiology. Medical professionals were able to use studies such as the analysis of deaths after a war as occurred with Gulf War I to make a case against Gulf War II.

Many doctors, whether psychiatrists or not, have expertise in 'Psychological' concepts and understanding human behaviour; for example individual and group mental health, cycles of violence, and post-traumatic stress disorder. Such knowledge and skills allow the profession to engage in post-trauma healing and rehabilitation. We can take conflict analysis

FIGURE 2
PEACE THROUGH HEALTH WORKING MODEL



and mediation principles from individual and couple therapies further into the field of conflict prevention. Similarly health professionals would benefit from understanding concepts of violence, non-violence, conflict and peace.

Our understanding of Medical Ethics may similarly be more generalisable. The concepts of autonomy, confidentiality, obligation of full disclosure, and '*primum non nocere*' have been reflected in Just War Theory and used to define rules of engagement in war. The conclusions of a recent international commission of former military, political and diplomatic leaders, establishing rules on international intervention to aid societies risking genocide,[15] reflected sound medical principles and ethics.[16]

General Systems Theory holds that diverse systems might have similar analogous elements and principles.[17] Models from one system might be applied to others using principles of complementarity, ubiquity and unification, and system holism. Thus the field of medicine and its Principles and Practice may have lessons and applications for the domains of war and peace, politics and economics, and vice versa.

We can have positive lessons from the practice of medicine and can also share the painful lessons of medical mistakes. These are often symptomatic of reliance on technological fixes rather than holistic approaches, on curative rather than preventive models, the inability to understand causation versus association – in short, the blind hubris that denies our limited understanding of systems. Failures in the geopolitical world may be due to similar faulty premises and analysis, and recognition of this might help to reduce such errors in the future.

Activity refers to our professional activity, 'what we do', how we work and what gives us access. Elements of the above categories of *Character* and *Knowledge* suggest particular activities, but this category refers to generally recognised professional activities such as patient education, physical medical, surgical and psychological treatment, and the administration of immunisations. The earlier PtH categories of peace work include *Construction of Superordinate Goals*, putting a human face on suffering listed here as *Sensitising and Maintaining* a structure for post-conflict re-building and *healing* of communities – physical, psychological, social, and at times, even spiritual. The PtH entity of *Communication of Knowledge* is listed here as *Teaching*. Of course the process of teaching is not one way; it also includes the ability to appreciate, listen, empathise and learn from those with whom health professionals work, skills for which great teachers, doctors, nurses are renowned. Often those central to a conflict provide the basis for much more creative, relevant and sustainable solutions than those who seek to provide them from the outside.

Each of the Above. The final category of *Redefinition* of the situation involves each of 'who we are', 'what we know' and 'what we do'. The case can be made that war and preparation for war are medical issues, not just a military, social, economic or political. The ability of IPPNW to convince

political leaders and the general public that nuclear war was a medical issue was based on the reputation of physicians (*Character*), epidemiological knowledge of the medical effects of nuclear war (*Knowledge*), and that doctors would be in the front-line treating victims (*Activity*). Putting these categories diagrammatically into a Public Health framework (Figure 2) not only allows us to classify, understand and interpret past activities, but to analyse linkages and help develop future activities.

Recognising our role in terms of the stage of conflict, our limitations in terms of knowledge, training, and group and individual characteristics might help us to develop these goals and place limitations on our work. This model could be applied to other sectors of society not currently identified by the multi-track model (legal professionals, human rights workers, engineers, scientists, artists, athletes and musicians) to help them develop their work using their own characteristics (who *they* are, what *they* know and what *they* do). In the future new and more specific mechanisms might be developed for each stage of prevention. Clearly establishing and articulating goals is the first step to evaluating our effectiveness.

Critique of the Model

The model presented here has been criticised as being Euro-centric, biomedical, and neglectful of the roles of other professionals and alternative practitioners, or dismissive of the role of other non-health professionals. It also appears to limit discussion to the roles of outsiders in a conflict. Indeed, although evidence may be found for all of these charges, the intention of the model is not to be a static, comprehensive model for peace, but to explore ways for those outside immediate zones of 'hot' conflict to contribute to its prevention, mitigation and resolution.

An important part of health practice in its ideal form is to listen, to work on common goals and to integrate appropriate knowledge and experience from other cultures and traditions. What might be explored further is what other disciplines might contribute to improving the practice of medicine. Thus we can improve health in addition to working for peace. The model thus should only be seen as an initial '*essai*' to explain possible roles for conventional health professionals, in particular doctors, to work for peace, not a comprehensive and exclusionary model.

A Practical Model?

Health organisations in war zones, or potential war zones, working towards peace, human rights, social justice, or environmental sustainability, often decide whether to work on particular issues solely on the basis of 'gut feeling'. The ability to describe activities consistent with past experience and expertise and establish parameters to measure success, would be quite useful for non-governmental organisations (NGOs), para-governmental organisa-

tions, and supra-governmental organisations to help clarify goals and appropriately guide foci for activity.

Equally important, this categorisation may help these organisations understand what their limitations are. Identifying 'who we are not', 'what we don't know' and 'what we don't do' may help in decisions as to which issues we should focus on, when we should seek alliances with others and what we might best leave for others to address or undertake.

Medical and Humanitarian Organisations in Prevention of Armed Conflict

Many health organisations are active in conflict prevention, treatment of victims during war or post-conflict rebuilding. A critical part of this model is to establish at what point in the conflict organisations are working. Although asked to act in similar situations by virtue of their Nobel Peace Prizes, organisations such as IPPNW and MSF have quite different mandates. IPPNW has been a primary prevention organisation designed to prevent nuclear war and later all war, while MSF has primarily been active during and after conflict to help societies rebuild (secondary and tertiary prevention).

International medical organisations such as the ICRC, WHO, and the United Nations International Children's Fund (UNICEF) assist victims during wars and with rehabilitation post-conflict (secondary and tertiary prevention). To a far lesser extent they try to help in primary prevention and with root causes (primordial prevention). The ICRC for instance, has been a leader in the small arms issue, and WHO works on improvement of health status of populations even without a hot conflict, possibly reducing the chance of armed conflict. WHO now has a division for Health as a Bridge for Peace.

The International Society of Doctors for the Environment (ISDE), and Physicians for Human Rights (PHR) are examples of medical organisations with an international scope but with specific foci related to root causes (primordial prevention), only peripherally related to prevention of conflict. Amnesty International (AI), which also primarily works on human rights, considers its health professional component so important that it has a specific network designed for cases involving health professionals, medical attention to prisoners or violations of medical rights and codes.

Broad coalitions of organisations which involve health professional groups with many others such as the International Action Network on Small Arms (IANSA) and ICBL often use a health, humanitarian or human rights message as a central focus for advocacy work. Both work on primary prevention of conflict by reducing access to weapons and on tertiary prevention with victim assistance and post-conflict rebuilding. Organisations such as the Coalition for Gun Control (CGC) in Canada and the Handgun Epidemic Lowering Plan (HELP NETWORK) in the US

limit their focus to reducing access to weapons domestically. OXFAM recognises the connection of a variety of peace issues with health and nutrition before, during and after conflict, for which it has earned its worldwide reputation.

McMaster University Peace Studies group has restricted its field activities in Croatia, Sri Lanka, and Afghanistan to tertiary prevention mental health work, intended to prevent resumption of conflict, and has generally avoided presence during active conflict.[2]

Use of the Model

The PtH model delimits areas of expertise and successful activity. When asked to participate in *secondary and tertiary prevention* activities treating victims of conflict, using the model IPPNW decision-makers would recognise that this was not the expertise of the organisation and would decline. MSF has largely similarly kept out of *primary prevention* activities, calling them 'political'. WHO and the ICRC, with greater resources and staff, are able to participate in all stages, but each division must restrict its foci to its area(s) of expertise. Projects may have laudable goals, but without the requisite reputation, knowledge and experience such projects are doomed to failure.

Even when projects may fall into a Primary Prevention model with regard to nuclear weapons, its *raison d'être*, IPPNW might be best advised to decline some of them. For example, for anti-nuclear war activism on the part of health professionals, the framework would tell us that we cannot appear credible (*Character*) if we concentrate efforts on legal, economic, political or military aspects (or in the case of nuclear power, apart from clearly-identified health risks), even if individually some of us may have expertise in these fields (*Knowledge*) and even have proper training to engage in such activities. While this may seem to be common sense, physicians have not always heeded such lessons. We also should recognise limitations in working on organisational structure and conflict resolution/ mediation that are outside our normal scope of *Activity*, unless we have special skills. And though we might have a general understanding of human behaviour, we should be cautious before entering conflicts with specific cultural and religious contexts, but rather listening to and relying on local understanding and expertise to guide us.

An Example: the Iraq Anti-War and Sanctions Movement

How would the model work in practice? Peace activities in respect of Iraq by health professionals in the last decade provide useful examples.

Prior to and during the first Gulf War, physicians questioned the necessity and ethics of the war. The experience of Yolanda Huet-Vaughn, a military doctor, showed that disobedience of the war machine in ways consistent with

medical ethics could take a great personal toll. Dr. Huet-Vaughn, a conscientious objector, based her refusal to submit to mobilisation of her National Guard unit in Kansas on her fear that Gulf duty would force her to violate her Hippocratic oath and the Nuremberg Code, which prohibits treatment without consent. She considered the systematic bombing destruction of hospitals, schools and apartment buildings, and the immunisation of personnel with experimental vaccines as prophylaxis for biological warfare without their consent, as professional and legal violations and spoke publicly of her opposition. A court martial sentenced this mother of three to two-and-a-half years of hard labour, forfeiture of pay, and dismissal. As a result of public pressure, she was released from military prison after serving eight months. 'Patriots' of the Gulf War then threatened to try to revoke her citizenship and, failing this, to revoke her licence to practice medicine. In 1997 the Kansas State medical board reprimanded and fined her US$5000 for her stand.[18] Such activity might be seen as an example of primary (before), and secondary (during the war) prevention (*Character – Altruism* and *Dissent*; and *Knowledge – Medical Ethics*: Figure 2).

After the first Gulf War, several groups documented the effects of the war through field epidemiological studies in its immediate aftermath, accurately predicting the mortality that would follow if urgent actions were not taken to alleviate the situation and tracking changes over the following years.[19–21] In Figure 2, this would be classified as 'Knowledge' – 'Public Health'.

Throughout the 1990s physicians from various organisations went on humanitarian missions to Iraq[22] sometimes taking essential medication and on their return informing people of the suffering of the Iraqi people. This would be classified as *Activity – Healing* (physical and social), as well as *Teaching* and *Character – Solidarity* and *Altruism*. At times the act of taking supplies, involving breaking sanctions, might be a violation of national law, in particular in the US, leading to discussions with national and international officials. Such activity encompasses other *Character* categories: *Dissent* and *Diplomacy*. Arguably, all of these actions could be regarded as being during conflict, with sanctions as an instrument of war, and could be classified as secondary prevention.

Many health professionals participated in pre-Gulf War II opposition,[23] citing the likely humanitarian impact of war, its questionable status in international law and the probable disastrous consequences of such a war for the future.[24] As the goal was to stop the impending hot war this appears to be clearly pre-conflict or primary prevention. The *Character* element is prevalent, with physicians using their reputations and connections for access, broadening the concept of *Altruism*, and *Personification of the enemy*, engaging in non-co-operation and *Dissent* and *Diplomacy*. They also chose to use the *Knowledge* of previous wars and their humanitarian or health consequences.

The direct civilian casualties from the second Gulf war have been documented by a group from the UK, Iraq Body Count.[25] Meanwhile, the

Coalition Provisional Authority set up by occupying US forces was reported as putting a halt to a Health Ministry survey of civilian casualties and preventing release of any data collected.[26]

Though safety considerations have prevented many organisations from participating, other groups have provided relief to people enfeebled by lack of water, sanitation, and proper electricity. This would be considered as tertiary prevention intended to rehabilitate the society. Aspects of these actions include in part the *Character*: *Solidarity*, and *Activity*: *Healing* and *Maintaining*, strengthening and rebuilding of community.

Though IPPNW affiliates and individuals have been involved in secondary prevention (treating victims during war) and tertiary prevention (assisting rehabilitation) activities, this has been in collaboration with those with greater experience: it is recognised that this is outside the expertise of the organisation, if not that of individual members. On the other hand IPPNW became actively involved with primary prevention activities such as demonstrations, opinion editorials, meeting with government officials, informing the public and educating other health workers, using the experience of others.[27,28] Others too stayed within their field of expertise: academic teams such as those at Harvard chose to only present their findings and let others draw conclusions, while MSF concentrated on rehabilitation and treatment. Individual members remained free to oppose war.

The model gives a more formal rationale for making such decisions. These may otherwise cause major debate within organisations as each prospective project is examined individually, and seemingly dealt with on an ad hoc basis.

Contribution to Evaluation

A major shortcoming is that evaluation of PtH projects in the field is not yet well developed. WHO has also tried to understand its work in Health as a Bridge to Peace and learn from its work but has not really developed a framework for assessment.[29] There have been attempts to show that such projects 'do no harm' but whether they are the best use of resources or expertise has been incompletely examined. The discipline has been criticised as being ideological and lacking in focus on outcomes and evidence.[30]

Establishing and articulating goals is clearly the first step to evaluating our effectiveness. The mechanisms described under the categories of *Character, Knowledge* and *Activity* could each be parameters by which to measure the success of a Peace through Health mission. For example: how well did we personalise the enemy? How did we employ our epidemiological knowledge towards informing the general public, our colleagues, and decision-makers about the consequences of war? How successful were we in strengthening communities? Obvious corollaries would be 'how might we be able to do this better?' or 'could we use other mechanisms that might be useful?' within our field of expertise.

Measuring outcome in terms of stopping a war or sanctions may not be a realistic target of such interventions. An intervention designed to protest against a war might be a success if it demonstrates solidarity with victims, or mitigates the harm to populations, or helps to prevent the next war, or to defeat governments or policies that have led to harm. Any of the above may be reasonable goals to measure and to compare with other interventions in a cost/benefit analysis.

Conclusion

Health professionals have worked in the past and will continue to work in the future towards developing conditions for a peaceful and just society. A comprehensive model for health work for peace has been developed, incorporating work at various stages of conflict and various attributes of health professionals. This model might be adapted for other sectors of society. Medicine happens to cross boundaries among the various components and tracks situated. At the very least 'health' deserves to be considered as a 'track' towards peacemaking: indeed it may be a key common denominator aspired to and shared by all.

The model allows those who choose to work on particular projects or at particular stages of conflict an ability to see how their work fits into the spectrum of activities to promote a more harmonious world. They can examine other mechanisms of action or identify other opportunities for involvement, taking into account their talents, experience, knowledge and reputation. The model may also offer a method of evaluation of these projects.

Acknowledgements

Amelie Baillargeon has been invaluable in editing and in the development of diagrams. Catherine MacAllister also helped with development of Figure 2. Mary Wynne Ashford, Fiona Kouyoumdjian, and Mary Louise McAllister have each assisted with constructive comments and editing. Finally, I would like to express profound appreciation to Graeme MacQueen and Joanna Santa Barbara for pioneering the development of the Peace through Health framework, developing education in the discipline and personal support.

References

1. MacQueen G, Santa Barbara J. Peace building through health initiatives. *BMJ* 2000; **321**: 293–6.
2. MacQueen G, McCutcheon R, Santa-Barbara J. The use of health initiatives as peace initiatives. *Peace & Change* 1997; **22**: 175–97.
3. Yusuf S, Anand S, MacQueen G. Can medicine prevent war? *BMJ* 1998; **317**: 1669–70.

4. Montville J. *Conflict and Peacemaking in Multiethnic Societies*. New York: Lexington, 1990.
5. *Multi-track Diplomacy*. Arlington, VA: Institute for Multi-track Diplomacy, 2002. At: < http://www.imtd.org/about-theory.htm > (accessed 7.3.04).
6. *Convention on the Rights of the Child*. New York: United Nations, 1990. At: < http://www.unicef.org/crc/crc.htm > (accessed 7.3.04).
7. World Health Organization. *Alma Ata Declaration*. At: < http://www.who.dk/AboutWHO/Policy/20010827_1 > (accessed 7.3.04).
8. World Health Organization. *Ottawa Charter for Health Promotion*. Geneva: WHO, 1986. At: < http://www.who.dk/AboutWHO/Policy/20010827_2 > (accessed 7.3.04).
9. Lown B. The physician's commitment. In: Adams R, Cullen S (eds.) *The Final Epidemic: Physicians and Scientists on Nuclear War*. Chicago: Educational Foundation for Nuclear Science, 1981: 237–40.
10. Galli G. *Humanitarian Cease-fires in Contemporary Armed Conflicts: Potentially Effective Tools for Peacebuilding*. MA thesis. York: University of York, 2001. At: < http://www.who.int/disasters/hbp/GGDissFINAL.doc > (accessed 10.3.04).
11. Charter of the Nuremberg Tribunal. Document A/1316. *Yearbook of the International Law Commission*, Vol II. The Hague: ILC, 1950: 374–80. Quoted in: Pentikäinen M (ed.). *The Right to Refuse Military Orders*. Geneva: International Peace Bureau, 1994.
12. Gorbachev M. *Perestroika: New Thinking for our Country and the World*. London: Collins, 1987: 154.
13. Yokoro K, Kamado N. The public health effects of the use of nuclear weapons. In: Levy BS, Sidel VW. *War and Public Health*. New York: Oxford University Press, 1997: 65–83.
14. Rodriguez-Garcia R, Macinko J, Solórzano FX, Schlesser M. *How Can Health Serve as a Bridge for Peace?* Washington, DC: School of Public Health and Health Services, The George Washington University, 2001. At: < http://www.certi.org/publications/policy/gwc-12-a-brief.htm > (accessed 10.3.04).
15. International Commission on Intervention and State Sovereignty. *The Responsibility to Protect*. Ottawa: International Development Research Centre, 2001. At: < http://www.ciise-iciss.gc.ca/report-e.asp > (accessed 10.3.04).
16. Arya N. Healing our planet: physicians and global security. *CMJ* 2003; **44**: 139–47.
17. Von Bertalanffy L. *General System Theory: Foundations, Development, Applications*. New York: George Braziller, 1976.
18. Swomley JM. An example of military justice. *Humanist* 2002; **62** (2). At: < http://www.impeach-bush-now.org/Articles/Bush/WatchOnTheRight.htm > (accessed 10.3.04).
19. Ascherio A, Chase R, Cote T, *et al*. Effect of the Gulf War on infant and child mortality in Iraq. *New Eng J Med* 1992; **327**: 931–6.
20. Campaign Against Sanctions in Iraq. UNICEF's situation analysis of children and women in Iraq; Baghdad, 1998. At: < http://www.casi.org.uk/info/unicef9804.html > (accessed 23/03/04).
21. International Committee of the Red Cross. Iraq: a decade of sanctions 1989 – 1999. Geneva: ICRC, 1999. At: < http://www.icrc.org/web/eng/siteeng0.nsf/iwpList322/4BBFCEC7FF4B7A3CC1256B66005E0FB6 > (accessed 10.3.04).
22. Gottstein U. Peace through sanctions? Lessons from Cuba, former Yugoslavia and Iraq. *Med Confl Surviv* 1999; **15**: 271–85.
23. Clark, J. Taking up cudgels for peace *BMJ* 2003; **326**: 184.
24. Clark, J. War on Iraq could produce a humanitarian disaster, health professionals warn. *BMJ* 2002; **325**: 1134.

25. Civilian deaths in ‘‘noble’’ Iraq mission pass 10,000. London: Iraq Body Count, 2004. At: < www.iraqbodycount.org > (accessed 10.3.04).
26. Iraq body count ordered stopped. *Toronto Star*, 10 Dec 2003.
27. Arya N. Ask the right questions! *Ottawa Citizen* 7 March 2003.
28. Arya N, Zurbrigg S. Operation Infinite Injustice: impact of sanctions and prospective war on the people of Iraq. *Can J Public Health* 2003; **94**: 9–12.
29. Manenti A. *Health as a Potential Contribution to Peace*. Geneva: WHO, 2001.
30. Vass AJ. Peace through health: this new movement needs evidence, not just ideology. *BMJ* 2001; **323**: 1020.

(Accepted 16 March 2004)

Neil Arya is a Canadian family physician. He is a Lecturer in Peace through Health in the Faculty of Humanities and an Assistant Clinical Professor in the Faculty of Medicine, McMaster University and Adjunct Professor of Environment and Resource Studies at the University of Waterloo. He was President of Physicians for Global Survival and Vice President of IPPNW from 2000 to 2002.

Correspondence: 99 Northfield Drive, E. #202 Waterloo, ON N2K 3P9 Canada; e-mail: < narya@uwaterloo.ca > .