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Article *in* Medicine Conflict and Survival · December 2012

DOI: 10.1080/13623699.2012.743311 · Source: PubMed

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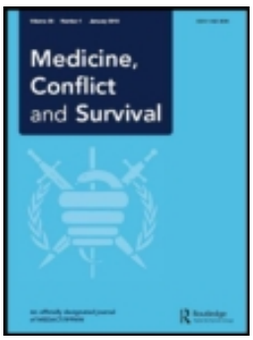

Medicine, Conflict and Survival

ISSN: 1362-3699 (Print) 1743-9396 (Online) Journal homepage: http://www.tandfonline.com/loi/fmcs20

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To cite this article: Rohini J. Haar & Leonard S. Rubenstein (2012) Health in fragile and post-conflict states: a review of current understanding and challenges ahead, Medicine, Conflict and Survival, 28:4, 289-316, DOI: 10.1080/13623699.2012.743311

To link to this article: http://dx.doi.org/10.1080/13623699.2012.743311

Medicine, Conflict and Survival
Vol. 28, No. 4, October–December 2012, 289–316

Routledge
Taylor & Francis Group

REVIEW ARTICLE

Health in fragile and post-conflict states: a review of current understanding and challenges ahead

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(*Accepted 9 October 2012*)

Health systems face enormous challenges in fragile and post-conflict states. This paper will review recent literature to better understand how, within a context of economic volatility, political instability, infrastructural collapse and human resource scarcity, population health deteriorates and requires significant attention and resources to rebuild. Classifications of fragile and post-conflict states differ among organizations and reviewing the basic consensus as well as differences will assist in clarifying how organizations use these terms and how statistics on these nations come about. Of particular interest is the increase in local conflicts within states that may not affect national mortality and morbidity but pose heavy burdens on regional populations. Recent research on sexual and reproductive health, children's health and mental health within fragile and post-conflict states highlights the effects of healthcare systems and their breakdown on communities. We propose a research agenda to further explore knowledge gaps concerning health in fragile and post-conflict states.

Keywords: health; medicine; fragile; post-conflict; state; mental health; sexual and reproductive health; children's health; conflict state

Introduction: fragile and post-conflict states

Countries that have experienced conflict or political instability face enormous challenges in recovery. Economic, political, and social structures may have deteriorated, and lack of physical and human resources make reconstruction difficult. The health of the population is nevertheless of particular concern to governments, development agencies, humanitarian organizations and communities. Stabilizing political structures and government legitimacy will have positive effects on health systems while conversely reconstruction and improvement of health infrastructure may have the potential of significantly

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ISSN 1362-3699 print/ISSN 1743-9396 online

http://dx.doi.org/10.1080/13623699.2012.743311
http://www.tandfonline.com

improving the governance and political stability of a state. This paper provides an overview of current literature and addresses the relevance and definition of fragile and post-conflict states as well as current evidence on the effects of conflict and fragility on health. It is not a systematic or comprehensive review of studies conducted but rather a framework to examine the range of work currently done in fragile and post-conflict states.

Fragile states

The concept of a 'fragile state' has particular relevance for health in today's world for two primary reasons: improving development of health systems and seeking greater securities. First, fragile states have some of the worst outcomes in terms of the Millennium Development Goals (MDGs) as well as other global health statistics (DFID 2005). Numerous studies reveal that post-conflict and fragile states, or particular regions within states that experience conflict or instability, have decreased life expectancy, maternal survival, vaccination status and survival outcomes as compared to their regional and income-ranked counterparts (Debarati and D'Aoust 2010, WHO 2011). Second, though the evidence remains limited, concerns exist that because they are unstable, fragile states may pose security risks both for their own populations and to regional and global security and that focused assistance to fragile states can stabilize countries and help prevent future conflict.

Yet there exists no consensus definition of a 'fragile state'. Though there is agreement that some states are fragile (e.g., Somalia), applying this term to others is more controversial (e.g., Cambodia). Further debate exists about the rank or level of a fragile state, i.e., whether it is declining into fragility, languishing in fragility, or stabilizing after a volatile period. The importance of the baseline development index of the country, whether it is a middle- or high-income country or a low-income one, and its geopolitical and strategic position, also affects its impact on the global level.

Despite the lack of consensus, exploring the definition of a 'fragile state' used by various agencies helps to uncover the motivations for donor interest and humanitarian programming, as well as the strategic implications of state fragility. Though many of the commonly agreed upon states are categorized as fragile under many definitions, there are some interesting differences among them. The Organization for Economic Co-operation and Development (OECD) and the Development Co-operation Directorate (DCD-DAC) recently defined fragile states on the basis that such states lack capacity against two criteria: (1) legitimacy of the government; and (2) effectiveness of state mechanisms to carry out governmental functions. A fragile state, according to this definition, is 'unable to perform basic functions [like] maintaining security, enabling economic development and ensuring the essential needs of the population are met' (OECD 2008). By this definition, these states are not just poor or corrupt; they are essentially incapable of accomplishing their basic objectives as a state. The

World Bank has replaced its label of 'Low-Income-Countries-Under-Stress' (LICUS) with the term 'Fragile States'. In its definition, used by many donor agencies, fragile states are 'characterized by weak policies, institutions, and governance' (Carvalho 2006). The income level and Country Policy and Institutional Assessment (CPIA) rating assist in classifying a country into one of three subgroups: 'severe', 'core', or 'marginal'. Utilizing this definition, there were 33 countries or regions classified by the World Bank as severe or core fragile states in 2011 (World Bank 2011a). Elsewhere, UNDP has an unofficial composite list of fragile countries that utilizes Food and Agricultural Organization and World Bank indicators (Cammack *et al*. 2006). USAID refers to fragile states generally as 'failing', 'failed' or 'recovering' states because 'in USAID's view, it is more important to understand how far and quickly a country is moving from or towards stability than it is to categorize a state as failed or not' (Cammack *et al*. 2006, p. 88).

Conflict and post-conflict states

Many fragile states, due to violence, political instability, and civil or international conflict, also fall into the category of 'conflict' or 'post-conflict states'. Though again no single definition exists, there are numerous indicators to define which countries (or regions within countries) can be categorized in these terms and a variety of definitions are used by different agencies.

The Heidelberg Institute for International Conflict Research (HIIK), a leading institution in work on conflict and post-conflict states, stresses the difficulty in categorizing states as 'conflict states,' 'post-conflict states' or a broader category. HIIK generally defines conflict, as 'the clashing of interests over national values of some duration and magnitude between at least two parties that are determined to pursue their interests and achieve their goals' (Heidelberg Institute for International Conflict Research 2010, p.88), which included 135 countries in 2009 alone. Violent and non-violent conflict, as well as sub-national conflict are further segmented in the Heidelberg approach into grades of intensity: *1* for dispute, *2* for non-violent crises such as verbal pressure and economic sanctions, *3* for violent crisis that is sporadic by at least one party, *4* for a limited war where force is used repeatedly in an organized way and *5* as war where 'violent force is used with a certain continuity in an organized and systemic way' with extensive measures and possibly resulting in massive destruction over long duration (Heidelberg Institute for International Conflict Research 2010, p.88). In one example of the complexity of conflict definitions, of the six wars (intensity level 5) that were in progress in 2008, four (Afghanistan, Somalia, Iraq and Pakistan) continued in the following year but the remaining two (Mexico among the drug cartels and Sudan in Darfur) transitioned to 'limited war' (4) rather than 'war' (5) in 2009. HIIK then identifies four new wars from 2009 that did not continue into 2010, including Sri Lanka, Israel/Palestine, Yemen, and Pakistan among Taliban and tribal militias, that are now

considered post-conflict regions but still in a 'state of crisis' (Heidelberg Institute for International Conflict Research 2010). Though many of the crises and wars included would not qualify the state as a whole as fragile (as the conflict is regional or local), this analysis of conflict, crises and wars highlights the dynamic nature of state stability.

A new analysis for UNESCO utilizes the Uppsala Conflict Data Program (UCDP) dataset over 20 years to expose the role of factors such as the identity of actors (state or non-state) and the magnitude of conflict (number of deaths, nutritional status, property destruction) to create an operational definition of post-conflict states (Strand and Dahl 2010). Though identifying comparables is important, even these precise definitions can be confounded by the reality of complex conflicts. For instance, is a militia a state actor if it receives funding from the state? Are deaths counted as battle deaths only or do they include total excess mortality during the war's period, whether from violence or starvation? In many places with poor data collection, identifying the numbers dead or the actors in the conflict may be difficult. And finally, how does one identify the effect of the conflict on the state? In some places, a small conflict could severely disrupt the function of the state and in other places a larger or even longer conflict could make less of an impact despite increased mortality and destruction. Using a definition of 1000 battle-related deaths over the past 10 years, Strand *et al*. create a list of 22 conflict states with four more non-state or extra-definitional conflicts (Strand and Dahl 2010). Dahl *et al*. identify 11 countries as *post-conflict*. These nations – Angola, Eritrea, Guinea, Indonesia, Ivory Coast, Liberia, Myanmar, Rwanda, Sierra Leone, United States of America, and Yugoslavia (Serbia) – all had a conflict that produced more than 1000 battle-related deaths in the 1999–2008 period but less than 200 deaths in 2006, 2007 or 2008. Despite this more rigorous definition, each state has very different needs and general assessments would be misleading, as the inclusion of the United States indicates.

The International Development Association (IDA) at the World Bank defines 'post-conflict countries' as: (i) a country that has suffered from a severe and long-lasting conflict, which has led to inactivity of the borrower for an extended period of time; (ii) a country that has experienced a short, but highly intensive, conflict leading to a disruption of IDA involvement; and (iii) a newly sovereign state that has emerged through the violent break-up of a former sovereign entity (World Bank 2011a). A conflict or post-conflict country may be difficult to clearly define, but an operational definition can assist in creating consensus understandings.

A compilation from numerous lists of fragile and post-conflict states (Table 1) indicates that 67 states qualify as fragile and 78 qualify as post-conflict when including all states labeled under the various definitions. Table 1 highlights the states that fall under at least three definitions of 'fragile' or 'post-conflict': the Xs on the left hand side of the table identify those states that are 'fragile' under at least 3 definitions (44 states out of the 67 considered 'fragile' under one or more definition); the Xs on the far right-hand side of the

Table 1. Fragile and post-conflict states: an analysis of definition

	Fragile state under three or more definitions	OECD 2010 (1)	World Bank fragile situations FY 2011 (2)	LICUS from World Bank (3)	DFID (4)	UNDP Composite (not official) (5)	Human Development Report (6)	Post-conflict UNESCO (7)	In-conflict UNESCO (7)	CRISE 2009 (8)	UN Peacekeeping Missions since 2005 (9)	UNDPs (10)	Post-Conflict State under three or more definitions	
X	Afghanistan	X	X	X	X	X	X		X	X	X–present	X	Afghanistan	X
	Algeria								X	X			Algeria	
X	Angola	X	X	X	X	X	X	X		X		X	Angola	X
	Azerbaijan			X	X					X		X	Azerbaijan	
	Bahrain									X			Bahrain	
	Bangladesh			X	X								Bangladesh	
	Belarus									X			Belarus	
	Benin						X						Benin	
	Bhutan									X			Bhutan	
	Bosnia and Herzegovina		X									X	Bosnia and Herzegovina	
	Burkina Faso									X			Burkina Faso	
X	Burundi	X	X	X	X		X		X	X	X–2007	X	Burundi	X
X	Cambodia	X		X	X		X			X		X	Cambodia	
X	Cameroon	X		X	X	X	X						Cameroon	
X	Central African Republic	X	X	X	X	X	X		X	X	X–2010		Central African Republic	X
X	Chad	X	X	X	X	X	X		X	X		X	Chad	X
	China									X			China	
	Columbia								X				Columbia	
X	Comoros	X	X	X									Comoros	
X	Congo, DR	X	X	X	X	X	X		X	X	X–2010	X	Congo, DR	X
X	Congo, Republic of	X	X	X	X	X	X			X		X	Congo, Republic of	
X	Cote d'Ivoire	X	X	X	X	X	X	X		X	X–present	X	Cote d'Ivoire	X
	Croatia											X	Croatia	
	Cuba									X			Cuba	
	Cyprus										X–present		Cyprus	
X	Djibouti	X		X	X								Djibouti	
	Dominica			X									Dominica	
	El Salvador											X	El Salvador	
	Equatorial Guinea			X		X				X			Equatorial Guinea	
X	Eritrea	X	X	X	X	X	X	X		X	X–2008	X	Eritrea	X

(*Continued*)

Table 1. (*Continued*).

	Fragile state under three or more definitions	OECD 2010 (1)	World Bank fragile situations FY 2011 (2)	LICUS from World Bank (3)	DFID (4)	UNDP Composite (not official) (5)	Human Development Report (6)	Post-conflict UNESCO (7)	In-conflict UNESCO (7)	CRISE 2009 (8)	UN Peacekeeping Missions since 2005 (9)	UNDPs (10)	Post-Conflict State under three or more definitions	
X	Ethiopia	X		X	X		X		X	X	X–2008	X	Ethiopia	X
	Gabon						X						Gabon	
X	Gambia, The	X		X	X		X						Gambia, The	
	Georgia		X						X			X	Georgia	
X	Guinea	X	X	X	X	X	X	X					Guinea	
X	Guinea Bissau	X	X	X	X		X				X	X	Guinea Bissau	
	Guatemala											X	Guatemala	
	Guyana			X		X						X	Guyana	
X	Haiti	X	X	X		X	X				X–2011	X	Haiti	
	India									X	X–present		India	X
X	Indonesia	X	X	X		X						X	Indonesia	
	Iraq	X	X							X			Iraq	
	Israel								X	X	X–present		Israel	X
X	Kenya	X		X			X						Kenya	
X	Kiribati	X	X	X									Kiribati	
	Korea, Dem Republic	X								X			Korea, Dem Republic	
	Kosovo		X								X–present	X	Kosovo	
	Kuwait									X			Kuwait	
X	Lao, PDR	X		X	X		X			X			Lao, PDR	
	Lebanon										X–present	X	Lebanon	
	Lesotho						X						Lesotho	
X	Liberia	X	X	X	X	X	X	X		X	X–present	X	Liberia	X
	Libya									X			Libya	
	Madagascar						X						Madagascar	
	Malawi						X						Malawi	
X	Mali			X	X	X	X			X			Mali	
	Mauritania	X					X						Mauritania	
	Mozambique											X	Mozambique	
X	Myanmar/Burma	X	X	X		X		X		X			Myanmar/Burma	
	Namibia											X	Namibia	
X	Nepal	X	X	X	X				X	X		X	Nepal	X
	Nicaragua											X	Nicaragua	

(*Continued*)

X	Niger	X			X		X		X			X				Niger	
X	Nigeria	X			X		X		X		X–non-state	X				Nigeria	
	Oman											X				Oman	
X	Pakistan	X			X		X				X		X–present			Pakistan	
	Palestinian Administration	X	X										X–present			Palestinian Administration	
X	Papua New Guinea	X					X		X						X	Papua New Guinea	
	Philippines										X	X				Philippines	
	Qatar											X				Qatar	
	Russia										X	X				Russia	
X	Rwanda	X			X		X		X	X		X			X	Rwanda	X
X	Sao Tome and Principe	X	X		X											Sao Tome and Principe	
	Saudi Arabia											X				Saudi Arabia	
X	Senegal				X		X		X							Senegal	
X	Sierra Leone	X	X		X		X		X	X		X	X–2005		X	Sierra Leone	X
X	Solomon Islands	X	X		X		X								X	Solomon Islands	
X	Somalia	X	X		X		X		X		X	X			X	Somalia	X
	South Sudan				X										X	South Sudan	
	Sri Lanka										X				X	Sri Lanka	
X	Sudan, The	X	X		X		X		X		X				X	Sudan, The	
	Swaziland											X				Swaziland	
	Syria											X	X–present			Syria	
X	Tajikistan	X	X		X		X								X	Tajikistan	
	Tanzania								X							Tanzania	
	Thailand										X					Thailand	
X	Timor Leste	X	X		X						X		X–present		X	Timor Leste	X
X	Togo	X	X		X		X		X							Togo	
	Tonga	X														Tonga	
	Turkey										X					Turkey	
	Turkmenistan											X				Turkmenistan	
X	Uganda	X			X		X		X		X				X	Uganda	
	United Arab Emirates										X					United Arab Emirates	
										X						United States of America	

(*Continued*)

Table 1. (*Continued*).

	Fragile state under three or more definitions	OECD 2010 (1)	World Bank fragile situations FY 2011 (2)	LICUS from World Bank (3)	DFID (4)	UNDP Composite (not official) (5)	Human Development Report (6)	Post-conflict UNESCO (7)	In-conflict UNESCO (7)	CRISE 2009 (8)	UN Peacekeeping Missions since 2005 (9)	UNDPs (10)	Post-Conflict State under three or more definitions	
	United States of America													
X	Uzbekistan	X		X	X					X			Uzbekistan	
	Vanuatu	X		X									Vanuatu	
	Vietnam									X			Vietnam	
	Western Sahara		X								X–present		Western Sahara	
X	Yemen, Republic of	X	X				X		X				Yemen, Republic of	
	Yugoslavia							X					Yugoslavia	
	Zambia				X	X							Zambia	
X	Zimbabwe	X	X		X	X	X			X			Zimbabwe	
67	Total # fragile states on any list												78 total post-conflict states	78
44	44 states listed under 3 or more definitions												17 states listed as post-conflict under 3 or more definitions	17
		7 states on 3 or more lists of BOTH fragile and post-conflict states												

Sources: (1) OECD, 2010. *Resource flows to fragile and conflict-affected states*. Paris: OECD Publishing; World Bank, 2011. World Development Report: conflict, security and development. harmonized list of fragile situations. World Bank; (3) S. Carvalho, 2006. *Engaging with fragile states. An IEG review of World Bank support to low-income countries under stress*. World Bank; (4) N. Chapman and C. Vaillant, February 2010. Synthesis of country programme evaluations conducted in fragile states. Department for International Development, ITAD; (5) R. Muggah, T. Sisk, E. Piza-Lopez, J. Salmon, and P. Keuleers, 2012. *Governance for peace. Securing the social contract*. United Nations Development Programme. United Nations Publications; (6) United Nations, 2011. Human development report." United Nations Development Programme. United Nations Publications; (7) H. Strand and M. Dahl, 2010. Defining conflict-affected countries. The hidden crisis: armed conflict and education. Background paper prepared for the Education for All Global Monitoring Report 2011. UNESCO; (8) A. Langer, F. Stewart, and R. Venugopal, 2011. *Horizontal inequalities and post-conflict development*. Oxford, UK: Palgrave Macmillan, Centre for Research on Inquality, Human Security and Ethnicity (CRISE); (9) United Nations peacekeeping, online, https://www.un.org/en/peacekeeping (accessed 13 November 2012); (10) J. Oriorhenuan and F. Stewart, 2008. Crisis prevention and recovery report 2008. Post-conflict economic recovery. Enabling local ingenuity. United Nations Development Programme. Bureau for Crisis Prevention and Recovery.

table identify those states that are considered 'post-conflict' under at least three definitions (17 out of the 78 considered 'post-conflict' under one or more definition). Though the lists are not homogenous, comparing them may help create a more unified understanding of fragile and post-conflict states with practical implications for policy and research.

Current knowledge about conflict and fragility and its impact on health

However defined, evidence shows that low-income fragile and post-conflict states generally lag significantly behind other low-income countries on the MDGs and other economic indicators.

> The 1.5 billion people who live in countries affected by organized violence, defined by political violence or high levels of homicide, are twice as likely to be undernourished, 1.5 times as likely to be impoverished, and their children are three times as likely to be out of school. (World Bank 2011a)

Alarmingly, 'no low income fragile or conflict-affected country has yet achieved a single Millennium Development Goal' (World Bank 2011b, p.5). A *BMJ* study reviewing World Health Survey data estimated that 378,000 violent war deaths occurred annually from 1985–1994 (Obermeyer *et al*. 2008). Analysis of WHO demographic data has shown that:

> … the additional burden of death and disability incurred in 1999 alone, from the indirect and lingering effects of civil wars in the years 1991–1997, was nearly double the number incurred directly and immediately from all wars in 1999. (Ghobarah *et al*. 2003; see also Slim 2008)

Lack of health services and health workers contribute to the civilian casualties of war.

Although differing definitions and methodologies make it hard to generalize about the impact of fragility and conflict on mortality, health and health systems, several analyses found that in fragile and conflict-affected states studied, population health worsens during and after conflict (Garfield and Neugut 1991, Levy and Sidel 2007, Zwi and Ugalde 1991). Increases in infectious diseases, malnutrition, lack of access to emergency care and lack of other resources can potentially lead to decreased life-expectancy (Roberts *et al*. 2004, Coghlan *et al*. 2006b, Degomme and Guha-Sapir 2010).

Evidence in the field of health systems in fragile and post-conflict states is emerging that suggests that fragile and post-conflict states suffer from poorer health than their neighbors and experience difficulty transitioning into stable health systems. Table 2 compares health indicators in 'Fragile States' (by the World Health Organization definition) to non-fragile states in similar economic status or geographical regions. In nearly all indicators, populations in fragile states are worse off than their counterparts in non-fragile states, including the

percentage of births attended by a skilled health personnel, measles immunization coverage among 1-year-olds, percentage of underweight children under 5-years-old, total fertility rate, life expectancy, neonatal mortality rate and maternal mortality rate.

Several conflict states, including Kosovo, Liberia, Chechnya, and Mozambique, underwent destruction or severe damage to health facilities that reached up to 80% (Cliff and Noormahomed 1988, Physicians for Human Rights 2001, 2009). A study in Cote d'Ivoire found that the number of healthcare providers in the war affected regions were dramatically lower than pre-war levels and was associated with a collapse of infrastructure and health services for HIV/AIDS related services (Betsi *et al*. 2006). The poorest countries, with decreased baseline health service capacity, and even further decreased capacity after a conflict, have the highest ratios of non-combat related deaths (Garfield 2008). However, though several studies indicate that there are significant decreases in life-expectancy and worsening health indicators post-conflict and other studies illustrate the loss of infrastructure and emigration of health workers from conflict area, the mechanisms of causality between war and ill-health are yet to be firmly established.

The impact of local and regional conflicts on health

Some more recent studies suggest that health indicators may not be as dramatically affected by modern conflicts as previously thought. The Human Security Report (HSR) from 2010 argues that 'nationwide mortality rates actually fall during most wars,' primarily because local conflicts do not dramatically change the general trend in the improvement of health indicators worldwide. The HSR states that 'of the 52 countries that experienced war in the period from 1970 to 2008, only 8 countries (or 15 percent) experienced any increase in the Under-5 Mortality Ratios during wartime' (Human Security Report Project 2010). This may be a product of targeting particular demographic groups, the regionalization of conflict within a state, or inability to obtain quality health data in conflict zones.

In a background paper to the 2011 *World development report* on 'Conflict, security and development', the World Bank shows that though conflict can dramatically affect the health of populations directly involved in the violence, the entire country may not suffer the aftermath equally (Debarati and D'Aoust 2010). Particularly in conflicts that are more locally focused, targeted groups within populations may be significantly more affected than the population as a whole. An analysis of the demographic patterns of mortality in Cambodia and Rwanda post-conflict show that violent deaths were concentrated in males aged 20- to 40-years-old (Heuveline 1998, Walque and Verwimp 2009). As the population ages, this demographic shift of fewer men continues, creating a population pyramid that has far fewer men than women and potentially affecting social behavior and fertility as well as economic stability.

Local factors in smaller conflicts may also be hidden by broader national data. A comparison of mortality rates between provincial and national regions within conflict settings reveals that provincial data is often dramatically different from national aggregates (Debarati and D'Aoust 2010, CE-DAT 2010). In Sri Lanka, for example, a recent survey of key informants, healthcare providers and inhabitants found that the war torn Northern Province had dramatically lower numbers of physicians and midwives as well as a higher maternal mortality than neighboring provinces (Nagai *et al*. 2007).

Finally, national statistics may be inconsistent with local surveys reporting poor health indicators because of the nature of statistical reporting systems. Because national reporting may select for populations in more secure environments and with less disruption of assessment mechanisms, proportionally fewer conflict-affected populations may be surveyed (CE-DAT 2010, Debarati and D'Aoust 2010). Regional surveys in Kenya, Congo, Somalia and Ethiopia, for instance, show that particular regions are less surveyed than others, creating 'black-holes' that could alter national data. Additionally, generalized country statistics may not fully assess the breakdown in healthcare delivery in particular isolated populations such as IDPs and refugees, who usually have worse health status and may live in camps outside the reach of country data.

The impact of conflict on mental health

There is a growing body of evidence regarding the toll of conflict on the mental and psychological health of populations. Recent research on inter-state and civil conflicts, and on various populations including civilians, soldiers, refugees and specific vulnerable groups such as the elderly, children or women, find increased incidence and prevalence of mental health disorders during and well after the conflicts studied (Summerfield 2000, Krippner and McIntyre 2003, Murthy and Lakshminarayana 2006). Much of the recent evidence comes from the Balkans. Bosnian refugees who fled the war in Bosnia and Herzegovina had high rates of physical disability as well as psychiatric co-morbidity compared to standardized World Health Organization regional baselines (39% depression, 26% Post-Traumatic Stress Disorder [PTSD] in a survey population of 534 adults) (Mollica *et al*. 1999). A three-year follow-up of the same population revealed that those who stayed in the region continued to exhibit increased rates of psychiatric disorders compared to persons who left (Mollica *et al*. 2001). Similarly, a study of 558 Kosovar Albanian households found that 17% of people over 15-years-old suffered from PTSD and there was particularly increased risk of disorder in those over 65-years-old (Lopes Cardozo *et al*. 2000). A sample of 2976 children aged 9- to 14-years-old revealed increased rates of PTSD and grief reactions directly correlated to the exposure to traumatic events in Bosnia-Herzegovina in 2002 (Smith *et al*. 2002). As another example, a survey of 99 Bosnian refugee children in Sweden revealed a significant correlation between the experience of traumatic events and prolonged psychological issues (Angel *et al*. 2001). More

Table 2. Health Indicators in Fragile State Summary.

	# Countries	% of births attended by a skilled health personnel, 2000–2010 (source: WHO Health Statistics 2011)	Measles immunization coverage among 1-year-olds, 2009 (source: WHO Health Statistics 2011)	Children under 5 years that are underweight, 2000–2009 (source: WHO Health Statistics 2011)	Total fertility rate (per woman) 2009 (source: WHO Health Statistics 2011)	Life expectancy at birth (years) 2009 (source: WHO Health Statistics 2011)	Neonatal mortality rate per 1000 live births 2009 (source: WHO Health Statistics 2011)	Maternal mortality ratio per 100,000 live births 2008 (source: WHO Health Statistics 2011)
Fragile states	43	50%	73%	23% (42)	4.5	58.1	33.7	558.0
Global WHO data	All countries	NA	82%	NA	2.5	66.0	24.0	260.0
BY INCOME STATUS								
Fragile states, low income	27	43%*	72%	25%	4.8	56.5	35.6	641.6
Non-fragile low income countries	13	60%	83%		4.4	55.0	36.0	580.0
Fragile states, low middle income	14	61%**	76%	20%	4.2	60.9	31.1	436.3
Non-fragile lower middle income countries	40	83%	88%		2.8	66.0	26.0	230.0
Fragile states, upper middle income	1	89%	67%	8%	2.2	68.0	15.0	38.0
Non-fragile upper middle income countries	49	97%	91%	4.40%	2.1	68.0	11.0	82.0
Fragile states, high income	1	65%	51%	11%	5.3	53.0	40.0	280.0
Non-fragile high income countries	48	99%	94%	NA	1.7	77.0	4.0	15.0
BY GEOGRAPHICAL REGION								
Fragile states in the African region	28					54.5	37.8	685.6
Non-fragile states in the African region	20	69%	82%	16%	3.8	52.0	620.0	36.0

(*Continued*)

Fragile states in the region of the Americas	1					62.0	27.0	300.0
Non-fragile states in the region of the Americas	34	92%	92%	5%	2.3	73.0	66.0	9.0
Fragile states in the South-East Asian region	4					66.5	26.3	307.5
Non-fragile states in the South-East Asian region	6	72%	92%	25%	2.3	64.0	240.0	31.0
Fragile states in the European region	3					68.3	18.7	44.0
Non-fragile states in the European region	50	~100%	94%	NA	1.6	71.0	21.0	7.0
Fragile States in Eastern Mediterranean region	3					59.0	39.3	578.3
Non-fragile states in the Eastern Mediterranean region	16	90%	89%	11%	2.7	64.0	320.0	30.0
Fragile states in the Western Pacific region	4					65.8	21.5	323.3
Non-fragile states in the Western Pacific region	24	92%	87%	NA	2.6	72.0	51.0	11.0

recently, studies of Kosovar survivors of torture have been followed up long-term and found to have worsening career outcomes, sleep disorders and suicidal ideation as well as high prevalence of severe pain and reduced physical fitness (Wang *et al*. 2010, 2012).

Studies in Afghanistan provide evidence that mental health suffers significantly during and after conflict. A 2004 paper in JAMA found that 67% of 799 civilian respondents in Afghanistan suffered from depression, 72% suffered from anxiety and 42% from PTSD (Cardozo *et al*. 2004). Women and those directly affected by trauma were most significantly affected. In a second Afghanistan study, 38.5% of 1011 respondents suffered from depression, 51.8% from anxiety and 20.4% from PTSD (Scholte *et al*. 2004). Although these studies did not report baseline rates, and such baseline rates of mental health disorders in a general population vary with the location, these levels appear far higher than in non-conflict areas worldwide.

Literature from elsewhere, in varying circumstances of conflict, also show related patterns. Evidence from Cambodia reveals that survivors of war may have psychiatric symptoms three (Kinzie *et al*. 1989) to 10 years after conflict (Mollica *et al*. 1993, 1998, Boehnlein *et al*. 2004), particularly among those who continue to be displaced (Mollica *et al*. 1993). In Chechnya, two thirds of 256 displaced respondents exhibited symptoms such as depression, insomnia, anxiety and somatization (De Jong *et al*. 2007). In Lebanon, ravaged by war from 1975–1990, mothers and children (Macksoud and Aber 1996, Karam *et al*. 1998) and hostages (Saab *et al*. 2003) exposed to traumatic events and war showed increased prevalence of mental health disorders, particularly depression and PTSD. Recent studies in Palestine have found long-term psychological trauma among children exposed to conflict. One study showed that only 2.5% of children 10- to 19-years-old in a sample from Gaza did *not* exhibit any PTSD. Of the other 97.5% who did exhibit some PTSD symptoms, 32.7% exhibited severe symptoms requiring psychological intervention (Sarraj and Qouta 2005). Parents of refugee children in Palestine also reported significant rates of general conduct problems (Baker 1990) as well as bedwetting, poor grades, nightmares and aggressive behavior when compared to non-refugee children (Mousa and Madi 2003). Evidence from Iraq (Gorst-Unsworth and Goldenberg 1998, Ahmad *et al*. 2000), Rwanda (Pham *et al*. 2004), Sri Lanka (Somasundaram and Sivayokan 1994, Somasundaram and Jamunannantha 2002), Somalia (Odenwald *et al*. 2007) and South Sudan (Paardekooper *et al*. 1999) also shows long-term effects of war on mental health.

The impact of conflict on children's physical health

Conflict may decrease children's opportunities for education, expose them to higher risk of sexual violence, malnutrition and disease, deny them treatment for medical problems, subject them to recruitment as child soldiers or forced labor, and create health risks from food insecurity and lower immunization,

hospital access, and parental literacy (Kiros and Hogan 2001). Some studies have reported increased child mortality in conflict via both violent and non-violent means (Office of International Affairs, National Research Council 1995, Bellamy 1996). Children may also experience more illness than adults in similar circumstances (Toole and Waldman 1997, Agadjanian and Prata 2003, Pearn 2003, Coghlan *et al*. 2006b, Moss *et al*. 2006).

The cumulative toll on children in war is enormous. A UNICEF report estimated that:

> … in the last decade more than 2 million children have died, more than 6 million have been permanently disabled or seriously injured, more than 1 million have become orphans, and more than 12 million have fled their homes. Child health is of particular concern in poor countries that have undergone long periods of armed conflict. In low-income countries, where children are already extremely vulnerable to disease, malnutrition, and trauma, the onset of conflict increases death rates by up to 24 times, with adverse effects especially for under-five children. (UN and UNICEF 1996; see also Machel 1996, UNICEF 2001)

There is growing evidence of the severe disruption to child health and education. The EFA Global Monitoring Report reviews the impact of conflict on children's educational ability, noting that they are at much higher risk for school dropout and illiteracy (UNESCO 2010).

Worldwide, 16 of the 42 countries with the highest reported under-five child mortality rates have suffered from conflict, with neonatal deaths, infectious disease, malnutrition, diarrhea and respiratory infections being the primary causes of death (Black *et al*. 2003). It may be that states that have poor health indicators are more likely to become embroiled in conflict, thereby worsening their health status even further, but establishing causality in this context is secondary to understanding that the two are fundamentally related, particularly in terms of practical implications for stakeholders. Furthermore, even in low-intensity conflicts, the impact of war on children has been disastrous. The steady decline in infant mortality in Nicaragua from 120 per 1000 live births in 1978 to 76 per 1000 in 1983, halted during the peak of the Nicaraguan Resistance and the rate did not decline again until after 1987 (Garfield *et al*. 1987).

Children with HIV/AIDS start at much higher risk of morbidity and mortality than other children, which makes them even more vulnerable post-conflict (Ahman *et al*. 2000). The peak of the AIDS epidemic in sub-Saharan Africa in the 1990s correlates with a time of many wars and conflicts, so independent analysis of why mortality rates did not trend down as they did in much of the rest of the world is difficult. More recent evidence using multivariate analysis shows that both the AIDS epidemic and political instability have independently had a significant impact on the high under-5 mortality rates in sub-Saharan Africa (McMichael *et al*. 2004, Garenne and Gakusi 2006, Vreeman *et al*.

2009). Personal stories of tragedy abound and are marked by both a systemic and local breakdown in infrastructure (Husic 2008).

The impact of conflict on sexual and reproductive health

It is well-established that systematic gender-based violence has been used as a tool of war more and more frequently (Bastik *et al*. 2007, Cohen 2011, Peterman *et al*. 2011). The Human Security Report 2012, however, challenges some of the conventional wisdom on sexual violence during conflict. It reasons that while 'focusing disproportionate attention on the relatively small proportion of countries that are deeply affected by [direct] conflict affected violence' and presenting men and combatants as the agents of all violence, it ignores the far more pervasive non-combatant violence, often perpetrated within the home or extended family (Human Security Report 2012). The report proposes to create awareness of this bias (caused by media interest in news-worthy stories and a drive to secure donor funding) while focusing on realigning policy with evidence-based analysis.

Recent trends nonetheless suggest that higher rates of sexual violence do not always end with the conflict. Increased sexual violence may persist either directly (for example as continued violence against women) or indirectly as increased infertility, HIV and other sexually transmitted diseases, anatomical pathologies like fistulas that cause permanent disability, and social or psychological consequences that leave women ostracized, deemed unfit for marriage and society or with long-term psychological trauma (Steiner *et al*. 2009, Johnson *et al*. 2010). In other cases, gender-based violence in post-conflict areas may undergo a transformation into trafficking, prostitution, forced captivity and other forms of ongoing sexual victimization. The post-conflict state must deal with this violence, as well as with the poor status of reproductive health, and a lack of trained medical staff or resources for birth planning and labor. The creation of new bodies such as UN Women, and of new research into women's health, has served to highlight the importance of women's health in post-conflict and fragile states (Crosette 2010). Recent literature exposes the increasing complexities involved in the understanding of sexual and reproductive health post-conflict and the need to design appropriate interventions. Here we examine four of the most prominent issues in that literature:

HIV/AIDS in the aftermath of rape and sexual violence

Conflict and war have traditionally been directly linked with the epidemic spread of HIV/AIDS. The presence of sexually active peacekeeping forces, the return of potentially infected soldiers and refugees, and the increase in high-risk behaviors stemming from desperate circumstances and social upheaval may act to increase the spread of sexually transmitted diseases (Tripodi and Patel 2004, Becker and Drucker 2008). In South Asia, increased rates of HIV

at the Jammu and Kashmir border, and among Bhutanese and Sri Lankan refugees, indicate that HIV prevalence may be higher in some fragile and post-conflict populations (Save the Children, UK 2002, Subramanian 2002). Similar work in Afghanistan revealed that the opium trade and insurgency lead to higher odds of HIV infection (Griffin and Khoshnood 2010). However, recent research projects by the AIDS, Security and Conflict Initiative (ASCI) find that 'governance outcomes have been shaped as much by the perception of HIV/AIDS as a security threat, as the actual impacts of the epidemic' (de Waal 2010, Becker *et al*. 2008). ASCI research found that the current indices of fragility at country level did not demonstrate any significant association with HIV, calling into question the models used for asserting such linkages. However, at the local government level, ASCI and other evidence suggests that conventional indicators of conflict, including the definition of when it ends, fail to capture the social traumas associated with violent disruption and their implications for HIV. Though there may not be a direct increase in the HIV incidence post-conflict, the unique characteristics of HIV management and control in fragile states is important to grasp; these include targeting at-risk groups, protection, programming strategies, coordination and integration and monitoring and evaluation (Spiegel 2004).

Trafficking, prostitution and sexual victimization in post-conflict settings

Trafficking of vulnerable girls and women in the aftermath of a conflict was first noted in Boznia-Herzegovinia in the 1990s. Even UN peacekeepers have been implicated as consumers for trafficked women and in assisting the trafficking (Murray 2002). Several studies show that the presence of peacekeepers may actually create a demand for trafficking (Panagiota 2003, Skjelsbæk and Barth 2003, Mendelson 2005). Internally displaced persons (IDPs) and refugees are at particular risk for trafficking for sexual labor (Ward 2002, United Nations High Commissioner for Refugees 2003). The legal complexities of IDP and refugee status, particularly within post-conflict and fragile states, make these populations particularly vulnerable to exploitation (Steinberg 2005). Several case studies from countries as diverse as Burma (Young and Pyne 2006), Mexico (Acharya 2004) and Tajikistan (Mirzoyeva 2004) exemplify the concern with exploitation of refugee and IDP women and girls. The links between organized crime and trafficking in post-conflict states are also demonstrated in several studies (International Organization for Migration 1999, Klopcic 2004).

Maternal health and mortality in fragile and post-conflict settings

Effective and stable health services are necessary for maternal and reproductive health since death peri-partum is most often caused by lack of access to obstetric care (McGinn 2000, Hill *et al*. 2007). Conflict regions often report the

worst shortages in trained healthcare providers, disrupting obstetric protocols and leading to high maternal mortality ratios, particularly within local conflict zones even within otherwise relatively stable countries (Debarati and D'Aoust 2010, Kruk *et al*. 2010, WHO 2011). In Liberia, maternal mortality nearly doubled from 578 per 100,000 live births in 1999 to 994 per 100,000 in 2005 (Liberia Institute of Statistics and Geo Information Services [LISGIS] 2008). Evidence from Afghanistan shows that the maternal mortality ratio increased to nearly 1600 per 100,000 and in Sierra Leone, to 1800 per 100,000 – much higher than prior to their respective conflicts (Bartlett *et al*. 2002, 2005, Government of Sierra Leone 2005). In another study of 21 conflict and 21 non-conflict countries in Sub-Saharan Africa, the authors found that the median maternal mortality ratio in conflict-countries was 1000 per 100,000 births while non-conflict countries had a median ratio of 690 per 100,000 (O'Hare and Southall 2007). Countries outside of Africa also show significant changes in maternal mortality post-conflict. In Sarajevo and Chiapas (Mexico), maternal mortality ratios increased significantly from before the conflicts in those regions (Carballo *et al*. 1996; Physicians for Human Rights 2006). In addition to maternal mortality, increased reproductive rate is an indicator of lack of reproductive health services and has been found to increase after conflicts where states continue to lack capacity to provide birth control (McGinn 2000, Debarati and D'Aoust 2010).

Empowering women: sexual and reproductive health infrastructure baselines and potential improvements

It is clear that conflict is a negative determinant of sexual health (Bornemisza *et al*. 2010) but effective interventions are lacking. Some (Steinberg 2005) reason that creating a unified body that focuses on sexual and women's rights and health during the post-conflict period would be effective. Others argue that creating early frameworks through which women's rights are documented and highlighted from the beginning of post-conflict planning would more effectively protect these populations (Schmeidl and Piza-Lopez 2002, Chemonics International, 2006). A study of Liberian and Sierra Leonean refugees in Guinea demonstrated that refugees could, with adequate donor funding, create, plan and implement effective reproductive health programs for themselves that would appropriately serve their communities (von Roenne *et al*. 2010). Another potential contribution is the creation of a 'Basic Package of Health Services' that includes sexual and reproductive health services for the post-conflict or fragile state. Similar packages have been implemented in Afghanistan since 2005 and South Sudan since 2006, though they have a significant neglect of gender-based violence services (Ministry of Public Health 2005, Ministry of Health, Government of Southern Sudan 2006, Roberts *et al*. 2008).

Challenges ahead: a research agenda

The complexities of attempting to do research in an ongoing armed conflict are daunting. Nonetheless, developing informed strategies to protect and promote health during and after armed conflict should be a global health priority. There is a great deal of interest in the field in developing more sophisticated and reliable means of measuring mortality and morbidity in conflict, and these should be pursued. Further, questions about the causal relationship among conflict, fragility and health are gaining attention, along with the potential contributions of health to state-building. A United States Institute of Peace (USIP) conference in June 2011 on 'Health in fragile and post-conflict states', which was the inspiration for this paper, underscored the need for both programming to develop health systems in fragile states and the need for research to understand the dynamics of health, fragility and conflict (Haar and Rubenstein 2011). Discussions and talks during the conference served as the basis for a research agenda summarized here.

One important area of work during conflict is clarifying the extent of and motivations and incentives behind assaults on healthcare, with the goal of preventing them. Understanding these actions during conflict could help prevent such attacks in the future. Data on recent brutality against health workers and patients and assaults on health care facilities – as well as strategies to limit migration of health workers – must be comprehensively collected and analyzed.

Research on the consequences of armed conflict is still emerging. Potential contextual factors such as the type of conflict, chronicity, topography, regional patterns, intensity, pre-conflict state of health services, history and culture may significantly affect both baseline health and health impacts, and warrant study.

Evidence indicates that health investments can potentially contribute to state building and, perhaps, to enhanced national and local legitimacy, but the degree to which they can do so is still not clear. These questions are particularly of interest to donors and governments intent on prioritizing international stability as a goal of involvement in health systems. Donors also need to directly confront the choice whether the goal of health investment in fragile and post-conflict states is for population health or political stabilization. To do so, they require an informed knowledge base. Given the importance placed by some donors on building state legitimacy, a robust exploration of how to structure aid programs in poorly governed states to improve health and health systems without supporting corrupt or repressive governments deserves attention. With more focus on the structure of local health systems prior to and during conflict, it is also important to consider whether decentralization models are effective to address local grievances or compensate for a weak state.

Another stimulating field of work is how best to empower all stakeholders, including women in local communities and local health workers and local health bureaus, to create strong community-based health systems. With the prominence of community-initiated health programs in recent years, this would be an exciting

field, particularly in post-conflict and fragile states that have sustained a complete breakdown of previously hierarchical, top-down infrastructure.

Military assistance is now commonly directed towards advancing disaster relief, disease surveillance and research and provision of health services in highly insecure areas. With vast resources, the military is a growing part of the aid community, but a true understanding of how its actions and its political stance in different countries could affect civilian health systems – as well as the tensions between assistance and military objectives – is vital.

Finally, from a broader perspective, it is clear that fragile states need assistance in building effective health systems from the outset. These issues are beyond the scope of this paper, though we note that there is an emerging body of writing that brings thoughtful attention to past experiences and lessons drawn from efforts at post-conflict reconstruction of health systems. Additional work is needed, including looking at the role of the humanitarian sector and transitioning from humanitarian to development goals. In particular, attention on how to restructure humanitarian aid programs with a view towards long-term health systems development is key to creating rational early-intervention programs with long-term goals in mind. Humanitarian agencies could begin looking at how their work influences the stability of national health ministries, especially in high intensity settings or protracted conflicts. While it is vital to meet short-term health needs, it is equally important to develop a coherent long-term strategy.

Conclusion

Even allowing for the varying definitions of post-conflict and fragile states, these states tend to carry a heavier burden of illness and death, especially for vulnerable populations within them, including women, children and refugees and displaced persons. Research into conflict and fragility has shown that health, both generally as well as in realms such as mental health, sexual and reproductive health and children's health, is gravely affected by violent political circumstances. Further understanding of the health consequences of fragility and conflict is vital to recovery.

Acknowledgements

We thank Stephen Commins at the International Medical Corps for invaluable contributions, Margaret Kruk at Columbia University for her advice and mentorship, and Anjalee Kohli and Suzanne Dyer for their assistance. We also thank the United States Institute of Peace and all the contributors to their conference on Health in Fragile States in June 2011, whose dedication and commitment to their work inspired this paper.

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