A SIXTEEN-COUNTRY STUDY

HEALTH CARE IN DANGER

JULY 2011

ICRC

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SUMMARY

Health care is frequently suspended, withdrawn or rendered impossible by violent events. Thousands of wounded and sick people can be denied effective health care when hospitals are damaged by explosive weapons or forcibly entered by fighters, when ambulances are hijacked and when health-care personnel are threatened, kidnapped, injured or killed.

This study is based on an analysis of reports collected over a two-and-a-half year period describing 655 violent incidents affecting health care in 16 countries where the ICRC is operational. The reports were obtained from humanitarian agencies, including the ICRC, and from open sources such as the media and websites. Standard software applied to a statistical model for analysing reports of such events was used.

In 33% (216/655) of the events, the violence was committed by State armed forces, and 36.9% (242/655) by armed groups. Events involving explosive weapons had a much greater impact both on people and on health-care facilities. A variety of institutions involved in the delivery of health care were affected: international NGOs in 34.5% (226/655) of events, local health-care services (e.g. ministries of health) in 25.6% (168/655), and Red Cross or Red Crescent organizations in 16.8% (110/655). In all, 1,834 people giving or receiving care and others were killed or injured, of whom 20.1% (368/1834) were already wounded or sick and 8.7% (159/1874) were health-care personnel. Hospitals and other health-care premises were damaged in 17.7% (116/655) of events, and ambulances were damaged in 4.9% (32/655) of events.

The data captured by the methodology can be interpreted in a limited number of profiles of violence affecting health care. In relation to **hospitals, and other health-care facilities,** these are:

- use of explosive weapons by State armed forces during active hostilities, that – intentionally or unintentionally – strike health-care facilities, at the same time killing and injuring people;
- armed entry into health-care facilities by State entities (State armed forces and police) with the main purpose of arresting or interrogating the wounded and the sick;
- armed entry into or takeover of health-care facilities by armed groups to harass personnel, steal materials, occupy the premises or commandeer vehicles for their own medical or tactical purposes.

The principal forms of violence affecting **medical vehicles** are:

- violence by State armed forces and armed groups against vehicles and personnel en route;
- damage to ambulances caused by State armed forces, and to a lesser extent by armed groups using improvised explosive devices;
- harassment and delaying of ambulances or other vehicles transporting the wounded or the sick at checkpoints by State armed forces and police.

The principal forms of violence affecting **health-care personnel** are:

- use of explosive weapons by State armed forces during active hostilities, causing deaths and injuries;
- kidnapping of health-care personnel from their place of work by armed groups;
- killing of expatriate health-care personnel by armed groups;
- arrests;
- threats by a variety of parties.

The conclusion reached in this study is that the right of the wounded and the sick to health care is not respected in the contexts studied. This lack of respect can be attributed primarily both to State entities (State armed forces and police) and to armed groups. Despite the widespread nature of violence against health-care workers, facilities and beneficiaries, this grave problem and its repercussions have hitherto escaped a comprehensive understanding and coherent approach.

The means to address this problem do not lie within the health-care community; they lie first and foremost in the domain of law and politics, in humanitarian dialogue and in the adoption of appropriate procedures by State armed forces.

INTRODUCTION

Health care in danger: What is the issue?

Armed conflict and other situations of widespread violence generate immediate and additional health-care requirements for wounded and sick people that exceed peacetime needs.[1] These requirements increase at the very time when insecurity makes it more difficult to address them.

A sound, intact health-care infrastructure and the safety of health-care personnel are prerequisites for the delivery of health care.[2] When people take up arms for whatever reason, health care is disrupted in a variety of ways: fighting prevents personnel from reaching their place of work; health-care facilities and medical vehicles are inadvertently damaged; soldiers or police forcibly enter health-care facilities looking for enemies or "criminals;" and sometimes gaining control of a hospital is sometimes an objective of fighters. In the most serious cases, health-care facilities are directly targeted, the wounded and the sick are attacked and personnel are threatened, kidnapped, injured or killed. In brief, it may become difficult, even impossible, to provide adequate health care because of these and many other forms of insecurity. As a result, and whatever the context

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1. P. Perrin, *War and Public Health*, ICRC, Geneva, 1996, pp. 6-8.

2. R. Coupland, "Security, insecurity and health," *Bulletin of the World Health Organization*, March 2007, Vol. 85(3), pp. 181-183.

of violence, many thousands of wounded and sick people all over the world do not get the health care to which they have a right.

Violence against health care, both actual and threatened, is often an immediate consequence of armed conflict and other forms of violence that fall short of armed conflict, such as widespread rioting or demonstrations. A single act of violence that damages a hospital or kills health-care personnel has a knock-on effect on many other people requiring care, and especially the wounded and the sick, who suffer even more through lack of treatment. For example, an independent ICRC surgical hospital would normally treat approximately two thousand wounded people per year.[3] One serious security incident can close such a hospital, drastically reducing if not eliminating surgical services for the wounded. This is precisely what happened when six ICRC nurses were killed by unidentified gunmen in the ICRC hospital in Novi Atagi, Chechnya, on 17 December 1996. The tragedy extended beyond the needless death of those Red Cross health-care workers to the thousands of wounded people who, as a result of that incident, lost access to essential surgical services. In the same way, catastrophic damage was inflicted on Somalia's already weak health-care infrastructure when a bomb killed more than twenty people, including two doctors and an unverified number of medical students, at a graduation ceremony in Mogadishu in December 2009.[4] If a doctor in Somalia gives 250 consultations in a week, and assuming that 15 medical students or doctors were killed, their deaths represent more than 150,000 consultations per year that will not take place as a result of that single attack. On a less dramatic note, in some situations ICRC field teams have reported that hospital staff in areas prone to conflict are most concerned, in terms of their own safety, about direct threats from relatives of the wounded and the sick; these threats are triggered by dissatisfaction with the available health-care services.

Beyond individual acts of violence that have a massive impact upon care for the wounded and the sick, there are also whole areas of many countries in which it is simply too dangerous for health-care personnel to move around or work. The total impact of general insecurity on health care is difficult to assess, and there is consequently limited evidence of it in the public domain. There are, however, some indicators of the huge importance of this issue. The impact of general insecurity in one country alone is demonstrated by a study in the Democratic Republic of the Congo, in which it is estimated that 40,000 deaths per month are due to diseases that are easily treatable; the stated reason for these people not receiving the necessary treatment is insecurity arising

from the armed conflict.[5] Polio eradication in Afghanistan and Pakistan is hampered by insecurity and so hundreds of thousands of children cannot be vaccinated against polio.[6] The United Nations Secretary-General, the United Nations Development Programme and *Human Security Report 2009-2010* make it clear that achieving the Millennium Development Goals pertaining to child health, maternal health and HIV/AIDS may well be unachievable by 2015 because of the insecurity that follows in the wake of armed conflict.[7] The Iraqi Ministry of Health has reported that 628 health-care professionals have been killed since the 2003 US invasion and that 18,000 of 34,000 doctors have fled, with a catastrophic impact on Iraq's health-care system.[8]

The countries that have suffered sustained periods of conflict have the lowest numbers of health-care personnel. Per 10,000 inhabitants, the five permanent members of the UN Security Council have on average 28.4 doctors and 56 nurses, whilst in comparison Afghanistan has 2 doctors and 5 nurses, the Democratic Republic of the Congo has 1 doctor and 5 nurses, Somalia has 0.5 doctors and 1 nurse, and Iraq has 5 doctors and

5. B. Coghlan, R. Brennan, P. Ngoy, D. Dofara, B. Otto, M. Clements, T. Stewart, "Mortality in the Democratic Republic of Congo: A nationwide survey," *Lancet*, 2006, Vol. 367, pp. 44-51.

6. See e.g. the Global Polio Eradication Initiative Strategic Plan 2010-2012, p. 17, and in relation to the border area between Pakistan and Afghanistan, see pp. 17, 21 and 51. Available at: http://www.polioeradication.org/ResourceLibrary/StrategyAndWork/StrategicPlan.aspx. See also independent evaluations of polio eradication commissioned by the WHO. The *Report on the Independent Evaluation of the Major Barriers to Interrupting Poliovirus Transmission in Afghanistan: Final Report October 2009* by Michael Toole, Stephanie Simmonds, Benjamin Coghlan and Najibullah Mojadidi states on p. 5 that: "Insecurity poses the most significant non-health sector barrier to achieving high polio vaccination coverage throughout the country. The security situation is unstable, unpredictable, and threatened by a range of armed factions." See also Assad Hafeez, Corinne Shefner-Rogers, Philippe Borel, Rakhshinda Perveen and Viroj Tangcharoensathien, *Independent Evaluation of Major Barriers to Interrupting Poliovirus Transmission in Pakistan*, p. 5: "Security hampered access to immunization in several districts of NWFP/FATA [North-West Frontier Province/Federally Administrated Tribal Areas] and Balochistan, making it difficult to reach large numbers of children."

7. See "Keeping the promise: A forward-looking review to promote an agreed action agenda to achieve the Millennium Development Goals by 2015: Report of the Secretary-General," United Nations General Assembly, February 2010: pp. 3 and 11. See also *What Will it Take to Achieve the Millennium Development Goals? – An International Assessment*, United Nations Development Programme, June 2010, pp. 19-20, available at: http://content.undp.org/go/cms-service/stream/asset/;jsessionid=aMgXw9lbMbH4?asset_id=2620072; *Beyond the Midpoint: Achieving the Millennium Development Goals*, United Nations Development Programme, January 2010, pp. 60-75, available at: http://content.undp.org/go/cms-service/stream/asset/?asset_id=2223855; and *Human Security Report 2009-2010*, Chapter 5, "Deadly connections: Wartime violence and indirect deaths," and Chapter 7, "The death toll in the Democratic Republic of the Congo."

8. J. Zaracostas,. "Exodus of medical staff strains Iraq's health facilities," *British Medical Journal,* 28 April 2007, Vol. 334, p. 865. See also "Rising to the humanitarian challenge in Iraq," Briefing Paper, Oxfam International, July 2007, p. 11.

3. An ICRC hospital is set up only when no other surgical care for the wounded is available.

4. Figures for the impact of this event vary between reports. Up to 24 people may have died, including four ministers, three journalists and the dean of the medical school. See AFP, "Mogadishu suicide attack was Somalia's 9/11," NGO-Times LIVE, 8 December 2009, 7.20 p.m., by Sapa-AFP.

10 nurses.[9] The paucity of all aspects of health care in countries affected by conflict is illustrated by the fact that very little original research has been done in these same countries where needs are so great.[10]

It is clear that in terms of the numbers of people affected, violence, both real and threatened, against health-care workers, facilities and beneficiaries is one of the biggest, most complex and yet most under-recognized humanitarian issues today. In addition, there is no central agency charged with gathering information about this issue.[11]

Recognizing the size of the problem and acknowledging the difficulty of gathering such information in the contexts concerned do not help to limit the impact of violence on health care. Information about the general insecurity in a given context may be available, but far less is available about the specific threats to, and vulnerabilities of, health care, although an understanding of them could help to identify preventive or protective measures. That specific information can currently be gleaned only from reports written for purposes other than systematic documentation of how health care is disrupted by insecurity: media reports (from newswires, newspapers and major TV or radio news outlets) or reports – both internal and public – of humanitarian agencies.

The sixteen countries examined in this study are or were involved in armed conflict or have experienced other forms of collective violence.[12] For reasons that ultimately determine the body of law applicable, the ICRC qualifies any such violent situation in a given country as armed conflict or under the heading of "other situations of violence."[13] However, since the purpose of this study is to identify prominent patterns of violence affecting health care in those contexts, the distinction between armed conflict and other situations of violence is not a consideration here.

Objectives of the study

The study set out to use all available reports to answer the following question: In countries experiencing armed conflict or "other situations of violence," who commits what kinds of

violence against health-care facilities and personnel, when, where and how?

The ultimate goal is to find means of ensuring that health care can be provided in safety. It is hoped that by using data contained in reports from all sources to give insight into the threats to and vulnerabilities of health care, this improved understanding will lead to concrete preventive measures that reduce the impact of insecurity in such contexts, including greater respect for relevant national and international law.

Neither risk assessment nor establishing trends was an objective of the study.

Important definitions

For the purposes of this document:

Health care means the facilities and services provided in the contexts under consideration and includes:
- hospitals, clinics, first-aid posts;
- ambulances and support vehicles;
- personnel working in the above facilities or in the community in their professional capacity;
- staff of the International Red Cross and Red Crescent Movement, including volunteers working in the delivery of health care;
- State armed forces' health-care facilities and personnel;
- health-oriented NGOs.

Health-care facilities means premises (buildings and other installations) and vehicles used in the delivery of health care. **Health-care premises** covers "medical units" in the sense of Articles 8(e) and 12 of Protocol I additional to the 1949 Geneva Conventions, or other hospitals, clinics, first-aid posts and medical stores, as well as offices for the administration of health care, whether or not they are recognized and authorized by a competent authority of a party to a conflict. **Medical vehicles** include ambulances and all such vehicles covered by Article 8(f), (g), (h) of Additional Protocol I or other vehicles used for health-care purposes, even if not assigned exclusively to medical transportation and under the control of a competent authority of a party to a conflict, such as private cars used to transport the wounded and the sick to a health-care facility, transport vehicles for medical supplies and people-carriers transporting medical staff to places of work (e.g. for local vaccinations or to work in mobile clinics).

People in health care includes health-care personnel, the wounded and the sick, relatives, bystanders and others. **Health-care personnel** covers those persons falling within the legal definition of "medical personnel" in Additional Protocol I, Article 8(c), and other persons engaged in the care of the

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9. World Health Statistics 2010, available at: http://www.who.int/gho/database/WHS2010_Part2.xls.

10. The number of health-related research articles recorded in PubMed as attributable to institutions is 85 for Afghanistan, 85 for the Democratic Republic of the Congo, 36 for Somalia and 1,100 for Iraq. The equivalent figure on average for permanent members of the UN Security Council is 797,552. These data were obtained from the website of PubMed, searching by "affiliation" of the article: the countries from which the publications originated are determined by searching for the location of the institutions to which the first authors are affiliated.

11. L. Rubenstein, M. Bittle, "Responsibility for protection of medical workers and facilities in armed conflict," *Lancet*, 2010, Vol. 375, pp. 329-340.

12. For reasons of political sensitivity, the countries studied are not specified.

13. See Resolution 8 of the Council of Delegates, Nairobi, 2009.

wounded and the sick, even if they are not assigned by a party to an armed conflict, such as health-care volunteers, first-aiders, health-care administrators and drivers of ambulances and supply vehicles, regardless of whether such personnel are national or international or are employed by the State or by a non-governmental organization. **The wounded and the sick** are those receiving or seeking access to health care. **Relatives and bystanders** include relatives of the wounded and the sick, relatives of health-care personnel, persons assisting the wounded and the sick (including drivers of private cars transporting the wounded and the sick) and all persons of an unspecified relationship to personnel or the wounded and the sick who are in or close to health-care facilities at the time of an event and who suffer the effects thereof. **Others** include security guards tasked with protecting health-care facilities, police, aid workers not directly engaged in the delivery of health care, contractors (e.g. those people tasked with building maintenance) and any other unspecified people in health care at the time of the event.

Violence means the intentional use of physical force or power – threatened or actual – against oneself, another person, or against a group or community that results in or has the likelihood to result in injury or death, psychological harm, maldevelopment or deprivation.[14] It is pertinent to this study that forceful obstruction at a checkpoint of an ambulance carrying a wounded person meets this definition of violence.

Insecurity, with regard to health care, means the very real dangers to which the wounded and the sick, health-care workers (professional or not), are exposed. It includes:
- death, injury, rape, kidnapping, arrest, harassment of and threats to health-care personnel, the wounded and the sick, and other people in health care;
- material damage, such as the physical destruction of, theft of or damage to health-care facilities or medical vehicles, or cutting off electricity and water;
- preventing access of the wounded and the sick to health care;
- removing wounded or sick people, against their best interests, from health care.

Also included are threats to commit the acts mentioned above, launching attacks from health-care facilities and using, carrying or storing weapons within such facilities. This definition includes violent acts that unintentionally affect health care.

People committing violence refers to the party responsible for the violence or threat of violence against the delivery of health care. People committing violence are classified according to categories such as "State armed forces," "police," "armed groups," "others" (civilians, relatives of the wounded and the sick, and the wounded and the sick themselves, who commit violence), and criminals. Another such category is "conflict parties" in relation

to events in which the reported impact on health care could not be attributed to any one side, party or faction engaged in armed conflict.

Armed groups are named or unspecified armed groups that are not part of a State's law enforcement agencies, armed forces or security apparatus. This definition includes, but is not limited to, rebel or guerrilla groups and "terrorist" groups. It does not include private security companies and their personnel.

Firearm includes any handgun, shotgun, rifle or machine gun.

Explosive weapon includes any weapon (other than a firearm that operates by igniting gunpowder in a cartridge) relying on explosive force, such as a shell, bomb, car bomb, mortar, rocket, missile and improvised explosive device.

Turning reports into data

At the core of this study is a method based on a statistical model of armed violence that is described in Annex 1. The method requires identification of information in reports of violent events – written for whatever purpose – that pertains to the context and outcome of the violence, the weapons used and in what number, how the weapons were used (including threat of use), and the vulnerability of people affected. This information is fed into a relational database that enables diverse forms of violence to be identified and analysed.

The information used to compile this study was found in reports in the media or on websites, or in internal reports of humanitarian agencies. None of these reports was written for the purpose of studying the impact of real or threatened violence on health care on a systematic basis.

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14. The definition adopted by the WHO.

METHODOLOGY

In 2008, the Health Unit of the ICRC's Assistance Division began systematically collecting reports of violent events – including those involving threats of violence – that had an impact on health care in 16 countries where insecurity, as defined above, was of concern to the ICRC.

From 1 July 2008 to 31 December 2010, reports of violent events affecting health care in those countries were collected from a variety of sources, i.e. open sources (media and websites) and reports from humanitarian agencies, including the ICRC. The reports were identified by:
- using Factiva and Yahoo media searches with specially selected search terms (see Annex 2);
- monitoring the specialist humanitarian media outlets ReliefWeb and AlertNet provided by the Thomson Reuters Foundation;
- requesting the ICRC delegations concerned to send:
  – copies of any local media reports of events that matched the above definitions;
  – copies of any pertinent internal reports;
- collating NGO reports relating to the delivery of health care;[15]
- consulting websites of other agencies and security reports.

All reports were read with a view to their inclusion in the study. If questions arose as to whether a report should be included, it was discussed by the co-authors. All reports were then entered into a specially prepared Excel spreadsheet. Multiple reports of one event were collapsed into one entry. The fields for data entry are given in Annex 3.

The database was analysed in terms of the sources of reports, health-care agencies affected and overall impact on health care. Separate analyses were carried out on different subsets according to:
- the impact of violence on people in health care (wounded and sick people already receiving health care, their relatives and other bystanders, and health-care personnel);
- people committing violence;
- whether firearms or explosive weapons were used (if this was known or relevant);
- the number of people in health care killed or injured per event;
- the impact of violence on health-care facilities (premises and vehicles) including damage, armed entry or takeover;
- attacks on medical vehicles or health-care personnel en route and at checkpoints.

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15. The Security in Numbers Database (SiND) is a project of Insecurity Insight in which a number of humanitarian agencies pool information about security events (http://www.insecurityinsight.org/projectshumanitarian. html). Permission has been obtained from agencies that submitted reports of events pertinent to this study on condition that the agencies concerned and the countries in which the events happened are not identified.

These data subsets were further interrogated with specific questions to create a profile of the most prominent forms and the impact of the violence captured by the methodology.

RESULTS

Reports of events

Over a period of two and a half years, 1,342 reports detailing 655 separate events of violence or threats of violence affecting health care were collected and processed.

Of these events, 58.6% (384/655) were reported in open sources such as radio and newspapers or on websites; 28.1% (184/655) gave rise to reports found in the global media following the use of defined search terms and accessed through Internet sites. Those events for which reports were derived from field-level media sources (e.g. copies of print stories from local newspapers) accounted for 3.7% (24/655) of the total; those reported both on the Internet and at field level accounted for 1.7% (11/655). Of all events, 25.2% (165/655) were found in specialized humanitarian media outlets such as ReliefWeb and the Thomson Reuters Foundation's AlertNet Expresso.

Accounts of 53.7% (352/655) of events were given in internal reports of humanitarian agencies (including the ICRC). Of these, 12.4% (82/655) were also reported in open sources.

Of the 384 events reported in open sources, 34.9% (134/384) were events involving explosive weapons, whilst of the 352 events described in internal reports, 15.6% (55/352) were said to have involved the use of explosive weapons.

Agencies affected

The providing agencies affected by the 655 events were: international NGOs in 34.5% (226/655) of events; local health-care services (e.g. ministries of health) in 25.6% (168/655) of events; Red Cross or Red Crescent organizations in 16.8% (110/655) of events; local and unspecified types of NGO in 7% (46/655) of events; private individuals transporting the wounded or the sick in 3.5% (23/655) of events; a UN agency in 2.9% (19/655) of events; and State armed forces in 2.3% (15/655) of events. The remainder are mixed providers (e.g. joint convoys) in 0.7% (5/655) of events. In reports on 5.8% (38/655) of events there was no information about the health-care provider.

Overall impact

In 52.8% (346/655) of the 655 events, 2,374 people in health care were directly affected in a variety of ways (see Figure 1). Health-care facilities were affected through damage, armed entry or in other ways in 70.5% (462/655) of events. In 28.8% (189/655) of events, people in and near health-care facilities were affected *at the same time as* those facilities were affected. In 17.5% (115/655) of events, only the health-care premises and medical vehicles were affected and people were not harmed. As a result of the impact on both people and facilities, the delivery of health care was reported to have been suspended, made impossible or withdrawn for a finite period in response to 45.6% (299/655) of events.

Figure 1 shows the outcome of the events in which people were affected in some way.[16]

People committing violence and weapons used

State armed forces were identified as the people committing violence in 33% (216/655) of all events analysed, armed groups in 36.9% (242/655), and the police in 6.9% (45/655). In 6.7% (44/655) of events that occurred during active fighting as part of armed conflict, the reports did not specify which of the two opposing sides ("conflict parties") was responsible for the damage to health-care facilities or the effects on people. In 16.5% (108/655) of events, other people committed the violence.

In 22.6% (148/655) of the events, some kind of explosive weapon was used. Firearms were known to be involved in 34.2% (224/655) of the events. Other weapons were used in 3.8% (25/655) of events. In 3.1% (20/655) of events a combination of weapons was reported to have been used. In 9.3% (61/655) of events, weapons were not a factor (e.g. because the events involved threats delivered by mail or phone or administrative decisions with implicit threats). For 27.0% (177/655) of events, no information on the type of weapon used by the people committing violence was available.

Figure 1. Effects of 346 events on people in health care
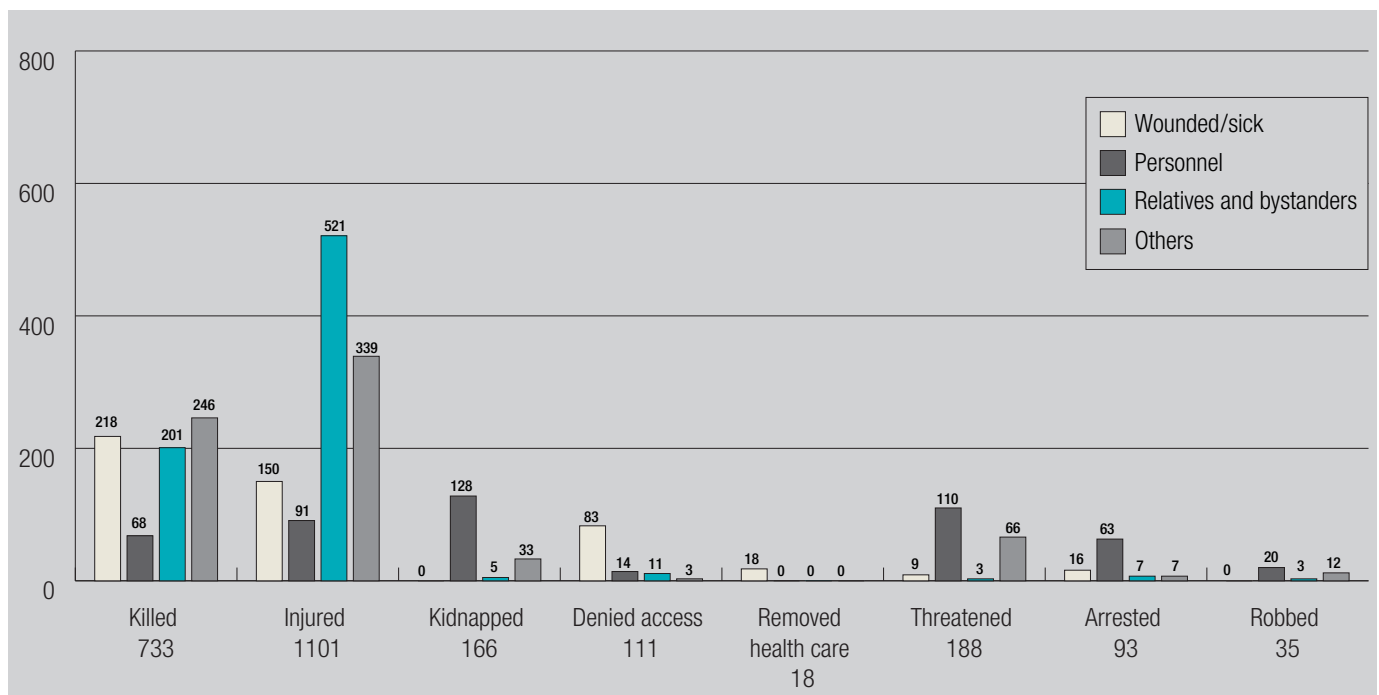
("Denial of access" was deemed a factor in the deaths of three persons. These are not included in the figures for the numbers of people "killed.")

16. Note that this figure inevitably contains some double counting, the result of people experiencing more than one effect due to the same event.

Tables 1 to 4 show the people committing violence and the impact of the events according to the broad categories of weapon used, if this was known. (Note that the fields in the tables are not mutually exclusive; the same event may figure in more than one table. For example, the same event involving an explosive weapon that hit a hospital and resulted in the death of wounded and sick people and health-care personnel appears in Tables 3a, 3c and 4a.)

Tables 2a and 2b show the number of people killed or injured by the use of explosive weapons and firearms, respectively, by people committing violence.

Tables 3a, 3b and 3c show the number of events in which wounded or sick people, relatives or bystanders and health-care personnel, respectively, were killed or injured while in health care by people committing violence, and the weapons used.

Tables 4a and 4b show the number of events in which health-care premises and ambulances, respectively, were damaged by people committing violence, and the weapons used.

Events affecting health care en route

In total, 30.4% (199/655) of events occurred en route.[17] These are shown by category of weapon and people committing violence in Table 5.

Denial of access to health care

In 9.6% (63/655) of events, access to health care or access of health-care personnel to the wounded and the sick was denied to 111 people. In 58.7% (37/63) of these events, access was denied by State armed forces, in 23.8% (15/655) by police, in 9.5% (6/63) by armed groups and in 4.8% (3/63) by others. In two cases, denial could not be attributed to one of two parties in conflict. Only two of these incidents involved use of an explosive weapon.

Table 1. Weapons used by people committing violence

	Number of events	Proportion of events involving explosive weapons	Proportion of events involving firearms	Proportion of events involving unknown, non-applicable or other weapons
Total events	655	148/655 (22.6%)	224/655 (34.2%)	283/655 (43.2%)
Conflict parties	44	15/44 (34.1%)	11/44 (25.0%)	18/44 (40.9%)
State armed forces	216	79/216 (36.6%)	74/216 (34.3%)	63/216 (29.2%)
Police	45	0/45	15/45 (33.3%)	30/45 (66.7%)
Armed groups	242	44/242 (18.2%)	101/242 (41.7%)	97/242 (40.1%)
Other	108	10/108 (9.3%)	23/108 (21.3%)	75/108 (69.4%)

In 23.2% (152/655) of events, a total of 1,834 people in health care were killed or injured. In 8.9% (58/655) of events, State armed forces killed or injured on average 8.7 people per event. In 7.8% (51/655) of events, armed groups killed or injured on average 8.8 people per event. In 2.6% (17/655) of events, the deaths and injuries during a conflict could not be attributed to either party: on average, 43.1 people were killed or injured per event (other people committing violence (anonymous assailants, members of the public, etc.) killed or injured 142 people in 26 events).

Table 2a. Casualties in events involving the use of **explosive weapons**

	Number of events	Number of people killed	Number of people injured	Number killed or injured per event
Total events	75	595	955	20.7
Conflict parties	13	217	509	55.8
State armed forces	33	206	238	13.5
Police	n/a	n/a	n/a	n/a
Armed groups	20	135	139	13.7
Other	9	37	69	11.8

Table 2b. Casualties in events involving the use of **firearms**

	Number of events	Number of people killed	Number of people injured	Number killed or injured per event
Total events	49	51	63	2.3
Conflict parties	3	3	2	1.7
State armed forces	14	17	10	1.9
Police	2	4	2	3.0
Armed groups	20	17	34	2.6
Other	10	10	15	2.5

17. "En route" refers to medical vehicles or personnel trying to reach the wounded and the sick, or the wounded and the sick trying to reach or being transported to health-care facilities.

Table 3a. People committing violence in 22 events in which 368 **wounded or sick people** were killed or injured while in health care

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	22	14/22 (63.6%)	5/22 (22.7%)	3/22 (13.6%)
Conflict parties	4	4/4 (100%)	0/4	0/4
State armed forces	9	5/9 (55.6%)	2/9 (22.2%)	2/9 (22.2%)
Police	2	0/2	2/2 (100%)	0/2
Armed groups	5	4/5 (80.0%)	0/5	1/5 (20%)
Other	2	1/2 (50%)	1/2 (50%)	0/2

Table 3b. People committing violence in 30 events in which 722 **relatives and bystanders** were killed or injured while in health care

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	30	18/30 (60%)	10/30 (33.3%)	2/30 (6.7%)
Conflict parties	4	4/4 (100%)	0/4	0/4
State armed forces	10	5/10 (50%)	5/10 (50%)	0/10
Police	0	0/0	0/0	0/0
Armed groups	11	8/11 (72.7%)	1/11 (9.1%)	2/11 (18.2%)
Other	5	1/5 (20.0%)	4/5 (80%)	0/5

Table 3c. People committing violence in 81 events in which 159 **health-care personnel** were killed or injured

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	81	38/81 (46.9%)	29/81 (35.8%)	14/81 (17.3%)
Conflict parties	9	7/9 (77.8%)	2/9 (22.2%)	0/9
State armed forces	30	16/30 (53.3%)	9/30 (30%)	5/30 (16.7%)
Police	0	0/0	0/0	0/0
Armed groups	32	12/32 (37.5%)	14/32 (43.8%)	6/32 (18.5%)
Other	10	3/10 (30%)	4/10 (40%)	3/10 (30%)

Table 4a. People committing violence in 116 events involving damage to **health-care premises**

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	116	82/116 (70.7%)	5/116 (4.3%)	29/116 (25%)
Conflict parties	15	11/15 (73.3%)	1/15 (6.7%)	3/15 (20%)
State armed forces	75	56/75 (74.7%)	2/75 (2.7%)	17/75 (22.7%)
Police	0	0/0	0/0	0/0
Armed groups	22	15/22 (68.2%)	1/22 (4.5%)	6/22 (27.3%)
Other	4	0/4	1/4 (25%)	3/4(75%)

Table 4b. People committing violence in 32 events involving damage to **ambulances**

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	32	14/32 (43.8%)	10/32(31.3%)	8/32 (25%)
Conflict parties	3	1/3 (33.3%)	1/3 (33.3%)	1/3 (33.3%)
State armed forces	21	10/21 (47.6%)	5/21 (23.8%)	6/21 (28.6%)
Police	0	0/0	0/0	0/0
Armed groups	5	2/5 (40%)	3/5 (60%)	0/5
Other	3	1/3 (33.3%)	1/3 (33.3%)	1/3 (33.3%)

In 25.6% (168/655) of events, there was armed entry or takeover of health-care premises, supply vehicles or ambulances.

Table 5. People committing violence in 199 events affecting medical vehicles or health-care personnel en route

	Number of events	Proportion caused by explosive weapons	Proportion caused by firearms	Proportion caused by unknown, non-applicable or other weapons
Total events	199	29/199 (14.6%)	101/199(50.8%)	69/199 (34.7%)
Conflict parties	10	1/10 (10%)	6/10 (60%)	3/10 (30%)
State armed forces	76	12/76 (15.8%)	42/76 (55.3%)	22/76 (28.9%)
Police	18	0 /18	7/18 (38.9%)	11/18 (61.1%)
Armed groups	78	14/78 (17.9%)	38/78 (48.7%)	26/78 (33.3%)
Other	17	2/17 (11.8%)	8/17 (47.1%)	7/17 (41.2%)

Of 199 events en route, 17.6% (35/199) occurred at checkpoints.

SUPPLEMENTARY INTERROGATION OF DATA SUBSETS

When do State armed forces damage health-care premises?

In 11.5% (75/655) of the events analysed, health-care premises were damaged by State armed forces; of these events, 94.7% (71/75) occurred during active fighting and 96% (72/75) were deemed unintentional.

Which categories of people are affected by damage to health-care premises during active fighting?

In 13.3% (87/655) of events, health-care premises were damaged during active fighting. These events resulted in 711 casualties (319 people killed and 392 injured), all of whom were local. Of these, 38.3% (251/711) were wounded and sick people, 22.6% (148/711) were relatives and bystanders, 3.7% (24/711) were health-care personnel and 44% (288/711) were others.

Who threatens health-care personnel?

In 7.5% (49/655) of events, 110 health-care personnel were threatened, of whom 30% (33/110) received threats from armed groups, 12.7% (14/110) from State armed forces and 8.2% (9/110) from police. Of the other 49.1% (54/110) of health-care personnel, 33.6% (37/110) were threatened by State administrative bodies[18] (e.g. a threat that work related to the person voicing concern would be obstructed or that the organization would be seen as critical towards government policy), and 15.4% (17/110) were threatened by employees, former employees, criminals or other unidentified people. Of the 49 events involving threats, 42.8% (21/49) had an effect on the delivery of health care.

How do armed groups target health-care facilities and personnel, and medical vehicles, with explosives and what is the impact?

In 7% (46/655) of events, armed groups used explosives; in 84% (39/46) of these, a variety of improvised methods such as car bombs, explosive belts or remote controlled or weight-triggered devices were employed. The use of military explosive weapons such as mortars or rocket-propelled grenades was specified in reports relating to 15.2% (7/46) of events. In terms of impact, 43.5% (20/46) of these events killed or injured a total of 174 people, 28.2% (13/46) damaged premises, 6.5% (3/46) damaged support vehicles, and 4.3% (2/46) damaged ambulances. Explosive weapons were used in 26.1% (12/46) of events involving armed entry into health-care facilities and in one instance of kidnapping. In 4.4% (7/46) of events, an explosive weapon was used in combination with firearms.

Who kidnaps health-care personnel and where?

In 8.4% (56/655) of events, a total of 166 people were kidnapped, of whom 77.1% (128/166) were health-care personnel. Armed groups were responsible for all but one of the kidnappings. Of all kidnappings, 46.4% (26/56) took place en route and 30.3% (17/56) from health-care premises. The other kidnappings took place in a variety of other locations.

Which categories of people committing violence kill, injure or kidnap expatriate health-care personnel?

Armed groups were responsible for all ten of the civilian expatriate health-care personnel killed and for all six events in which 18 expatriate health-care personnel were kidnapped.

What happens during armed entry into health-care facilities?

In 13% (85/655) of events, armed groups undertook armed entry; in 48.2% (41/85) of these, the reported motivation of the group was to take over the health-care facilities (which included 22 support vehicles, nine ambulances and nine hospitals) with a view to appropriating them for their own use or for tactical purposes. Of the armed entries undertaken by armed groups, 36.4% (31/85) involved kidnapping (58% (18/31) from vehicles and 41.9% (13/31) from health-care premises), 20% (17/85) involved theft of medical equipment or supplies, 4.7% (4/85) involved threats to health-care personnel and another 4.7% (4/85) involved threats to the wounded and the sick or others.

In 6.9% (45/655) of all events, State armed forces entered health-care facilities (premises and vehicles); in 64.4% (29/45) of these, the reported motivation was to search for wounded or sick enemies.

Police undertook armed entry in 2.7% (18/655) of all events; only 33.3% (6/18) were for the purposes of law enforcement, i.e. looking for insurgents or criminals; the rest involved robbery, bribery, beating people or demanding health care.

What happens at checkpoints?

Events at checkpoints (a subset of events en route) made up 5.3% (35/655) of all events. Of these, 65.7% (23/35) involved State armed forces, 25.7% (9/35) involved police, and 8.6% (3/35) involved armed groups. In the 35 events, 29 people were denied or delayed passage, nine people were arrested, eight people beaten, two removed from the ambulance and three robbed.

Were health-care facilities used to launch attacks or store weapons?

There were no reports from which it could be concluded that attacks were launched from health-care premises or medical vehicles. (When data were entered, such events would have been

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18. Of these 37 health-care personnel threatened by a State's administrative body, 35 worked for one organization and were threatened by one State.

coded separately from the 168 "armed entry" events in which State armed forces or armed groups took over health-care facilities and took up positions within them.) There were also reports in which it was alleged that weapons were hidden within health-care facilities, but these allegations were denied by the accused party.

How often is the red cross or red crescent emblem mentioned in relation to events affecting health-care premises or medical vehicles?

In 80 events (12.2%), facilities belonging to or run by components of the International Red Cross and Red Crescent Movement were affected. Reports on only eight of those events explicitly noted that the facilities were marked with a protective red cross or red crescent emblem.

DISCUSSION OF RESULTS

Limitations

The principal limitations of this study relate to the sources of the reports, their completeness and accuracy.

The reports gathered are not representative of all relevant reports of violence, because they were written for reasons other than studying the nature of violence, real or threatened, against health-care workers, facilities and beneficiaries. It is therefore likely that the study represents an underestimation of all events.

Given the main sources (internal reports of humanitarian organizations and open sources including the media), it is likely that there is a bias towards the more serious events, i.e. those in which people were killed, injured or kidnapped.

These limitations and others are set out in Annex 4.

Conclusions

The danger to health-care workers and facilities in armed conflict and other situations of violence is widespread and serious. It is heterogeneous in terms of the nature and impact of the violence, the people committing violence and the agencies affected. If health care is suspended, withdrawn or rendered impossible as a result of violent events, there are knock-on effects for thousands of wounded and sick people. The right of the wounded and the sick to health care is not respected in the contexts studied. This lack of respect can be attributed both to State entities (State armed forces and police) and to armed groups.

Some violent events affecting health care are reported in the media, whilst others are mentioned only in internal reports of agencies affected or otherwise concerned. Those involving explosive weapons that damage health-care facilities and kill or injure people tend to be reported more in the media than in the internal reports of humanitarian agencies. Incidents at checkpoints and those involving denial of access or threats tend to be the subject of agencies' internal reports. This indicates that the media report on what is the most obvious cause of insecurity, whereas agencies affected, including the ICRC, tend – almost certainly for their own operational reasons, including their own security – not to make public the less obvious incidents that affect them. As a result, the media may not be aware of all the dangers health-care workers face; awareness of the full spectrum of issues relating to the insecurity of health-care facilities and workers is limited to a small group of agencies. This could explain why it has hitherto escaped a comprehensive understanding and coherent approach.

The data presented above can be interpreted in a limited number of profiles of violence affecting health care. In relation to **hospitals and other health-care facilities,** these are:
- use of explosive weapons, by State armed forces during active hostilities, that – intentionally or unintentionally – hit health-care premises or medical vehicles, at the same time killing and injuring people;
- armed entry into health-care facilities by State entities (State armed forces and police) with the main purpose of arresting or interrogating the wounded and the sick;
- armed entry into or takeover of health-care facilities by armed groups to harass personnel, steal materials, occupy the premises or commandeer vehicles for their own medical or tactical purposes.

The principal forms of violence affecting **medical vehicles** are:
- violence against vehicles and personnel en route by State armed forces and armed groups;
- damage to ambulances caused by State armed forces, and to a lesser extent by armed groups using improvised explosive devices;
- harassment and delaying of ambulances, or other vehicles transporting the wounded or the sick, at checkpoints by State armed forces and police.

The principal forms of violence affecting **health-care personnel** are:
- use of explosive weapons by State armed forces during active hostilities, causing deaths and injuries;
- kidnapping of health-care personnel from their place of work by armed groups;
- killing of expatriate health-care personnel by armed groups;
- arrests;
- threats by a variety of parties.

In addition, this data set shows that:
- the number of people killed or injured per event is greater when explosive weapons are used, as compared with other weapons;
- the number of people killed or injured per event is greatest when an attack involving explosive weapons cannot be attributed to a specific party in an armed conflict;
- when violence is perpetrated by a variety of parties against or around health-care facilities, more wounded or sick people, relatives and bystanders are killed and injured than health-care personnel;
- more health-care personnel than wounded and sick people are arrested and removed from health care;
- disruption of health-care services is common when weapon-bearers damage or forcibly enter health-care facilities;
- health care is frequently suspended as a result of the impact on such facilities, whether or not personnel are affected;
- attacks launched from health-care facilities are rare;
- in most attacks by State armed forces, damage to health-care facilities is not intentional;
- it is unclear to what extent the protective emblems of the red cross or red crescent protect health-care facilities from the effects of violent events;
- common crime, mainly robbery, was also a cause of insecurity in the contexts studied.

Reports from a variety of sources, including the media, can be used to document, analyse and make known the nature of the more serious forms of insecurity. There is clearly a need for further study of the knock-on effects of violent events on health care.

The present study has identified some major threats to and vulnerabilities of health care. It is obvious that appropriate preventive measures do not lie within the health-care community. As stressed in the summary, they lie first and foremost in the domain of law and politics, in humanitarian dialogue and in the adoption of appropriate procedures by State armed forces.

ANNEX 1

The model used by Insecurity Insight[19] for this study (the "Taback - Coupland model") begins with a theory that states that an act of violence must take place at a given time and place and that the outcome of any act of violence has four determinants. These determinants are:

- the nature of the weapon;
- the number of weapons in use or number of users armed;
- how the weapon is used (the psychological aspect of the violence, e.g. intent, strategy or motivation);
- the vulnerability of the potential victim.

The interaction of the people committing violence and the outcome for the victim(s) can be described in those terms.

Importantly:

- each determinant is necessary but not sufficient by itself to cause the effect in question;
- any preventive measure falls within one or more of these determinants.

An example is the lethality of attacks with firearms. This will be determined by:

- the kind of firearms (death is more likely if a larger calibre weapon is used, because the wound will be bigger);
- how many firearms are being shot against the victim(s);
- whether the user is standing close to (e.g. 5 metres) or further away (e.g. 200 metres) from the victim(s);
- whether the victim(s) of the attack are cornered, tied up, can run away or take cover.

This example also shows the important interaction at a psychological level between how the weapon is used, the other determinants and perceptions of the potential outcome. (Whether the trigger is pulled to cause a fatal injury is influenced, for example, by whether the user of the firearm believes he or she can hit the victim(s) with it, whether there are others similarly armed, how easy it is to hit the victim(s) in that context, and whether the victim(s) have already been hit.)

This theory applies to any act of violence using any weapon causing any effect in any context.

The theory becomes a statistical model when numeric values are given for who did what, to whom, where, when and by what means (including the kind of weapon), using reports of **real** incidents of violence.

A "report" can be a very short text as indicated by the following sentence: "Two masked men entered Hospital X last night and shot dead a sleeping patient."

Two masked men [number of people armed] entered Hospital X [where] last night [when] and shot [weapon (firearms)] dead [outcome] a [outcome] sleeping patient [vulnerability]. (Shot dead = intent)

The method uses written reports of real incidents of armed violence as the source for the necessary values. Information from a report on an individual incident is entered into a spreadsheet specially designed to capture and process information about the people committing violence and about the victim(s) or potential victim(s). In this way, reports of violence in a given context or affecting a particular vulnerable group are translated into a database. Qualitative data is translated into quantitative data.

By analysing the data generated by this method, the nature and outcome of violence in a given context can be described in quantitative terms. This indicates threats (the determinants on the side of the people committing violence) and victims' vulnerabilities. The identification of threats and vulnerabilities then indicates entry points for preventive policies.

The kind of data that can be generated and the conclusions that can be drawn depend entirely on the completeness and accuracy of the reports used.

ANNEX 2
MEDIA SEARCH TERMS

(Red Cross or red crescent or UNHCR or UNICEF or World health or WFP or UNDP or MSF or Oxfam or handicap international or german agroaction or save the children or mdm or medecins du monde or humanitarian aid or NGO* or aid worker* or ambulance or Hospital* or doctor*) and (attack* or threat* or kidnap* or hostage* or arrest* or assassinate* or dead or death* or kill* or murder* or massacre* or wound* or injure* or torture* or hurt* or survive* or uninjured).

Applied to countries in question.

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19. The method was developed by Insecurity Insight (www.insecurity-insight.org). It has been used successfully to study attacks on journalists in conflict, sexual violence in the Democratic Republic of the Congo and explosive violence, and to map violence in eight different countries.

ANNEX 3
THE FIELDS FOR DATA ENTRY

This annex contains a list of the fields for data entry. The full "Codebook" containing rules for data entry is available from Insecurity Insight on request.

In relation to the event:
- Date of report
- Date on which the event started
- Whether the event was reported by one or more media outlets
- Name of media source
- Number of media reports needed to fill out all the information on the event
- Whether the event was reported by an ICRC delegation
- Brief phrase describing the attack, e.g. "Missile attack in Kabul"
- Country in which the event took place
- Name of town/province/region
- Whether the described attack endangered what has been defined as health care
- Provider of health care (e.g. government, NGO, UN, Red Cross and Red Crescent Movement)
- Whether the event took place in a "concentration of civilians," such as an urban area or refugee camp (see Protocol III of the 1980 Convention on Certain Conventional Weapons)
- Kind of area (e.g. checkpoint, refugee camp)
- Whether it could be deduced from the report that the attack deliberately targeted health care
- Time of day
- Whether the attack occurred as part of or during active fighting between two armed sides
- Whether some of the effects were sustained during an armed rescue mission
- Whether the attack involved robbery by the people committing violence (of personal effects of staff, e.g. money and watches, or material belonging to the health-care provider, e.g. vehicles and stocks of food)
- Whether the event and/or its effects denied access to any party

Information about people committing violence:
- Category of people committing violence (e.g. a State's armed forces involved in combat or an unspecified group of armed men)
- Name of force or group
- The number of people committing violence involved
- Whether the people committing violence or part of the group of people committing violence were armed
- Whether the attack involved suicide of the person or people committing violence
- Whether it can be deduced from the report that the weapon was mounted or was operated on foot
- Kind of explosive weapon involved
- Kind of firearm used
- Whether any other weapon was used
- Any additional information about the weapon (e.g. whether improvised)

Victim information:
- Category of victim (e.g. health-care personnel)
- Profession of the victim (e.g. hospital staff)
- Whether the victims were expatriates or local

By category of victim for each event:
- Number of people killed
- Number of people who may have died as a result of an attack on the health-care facilities (who were not killed in the event itself)
- Number of people injured
- Number of people kidnapped
- Number of people threatened
- Number of people raped
- Number of people tortured
- Number of people arrested
- Number of people removed from health care
- Number of people who were denied passage
- Number of people who were victims of crimes other than being subjected to violence
- Total number of people affected in the attack

Facilities:
- Category of facility affected (e.g. building or vehicle)
- Whether the facility was clearly marked (by the red cross or red crescent emblem)

By category of facility:
- Number of facilities where the precise effects remain unclear, but where the proximity of a violent event clearly shows that the facility must have been affected in some way
- Number that suffered material damage
- Number threatened
- Number affected by armed entry
- Number to which the wounded and the sick were denied access
- Number where weapons were installed
- Number from which attacks were launched
- Number taken over by the people committing violence

Endangered health care

The purpose of this section is to record – regardless of whether there were any victims – attacks or other forms of disruption that endanger health care because the facilities have been affected, or because precautionary measures taken by agencies to protect staff and assets have affected the delivery of health care.
- Type of external impact on the facilities that endangered the work of the providing agency or interfered with the delivery of health care, such as riots, fighting, programme takeover, false accusations, risk to reputation
- Measures taken against health-care providers, such as closure of programmes, denial of visa, threat of closure or expulsions
- Type of agency measures taken to protect staff and assets, such as restriction of movement, repatriation of staff

ANNEX 4

Statistical estimates in this study may lack accuracy because of how reports were obtained for entry into the database and which reports were selected, or because the information in the reports is not accurate.

Because the subject matter pertains to violence and conflict, a database built on reports about this subject may carry biases for a variety of reasons. These reasons include:

- the desire of various parties to keep events or certain details of events secret;
- the particular interest of the reporting person or persons in communicating about a particular kind of event.

With respect to accuracy, writers of reports and especially those of media reports about violent events may introduce a political, religious or emotional bias. However, there does appear to be some consistency of information in reports from different sources.

The more dangerous a context is, the more difficult it is to report accurately on violent events in it; this applies whether the primary reporter is a health-care professional, a humanitarian aid worker or a journalist.

Sources of reports may affect their coverage: those pertaining to events in regions far away from major cities or other areas of concern to journalists and agencies may be underreported. Some areas of the world are of less interest to the media than other areas. In a previous study it was shown how violent events affecting civilians in the Middle East generate many more reports than Africa.[20]

The fact that the reported events on which this study is based took place in only sixteen countries means that the data set is not representative of violence affecting health care in all countries.

The languages used in the sources were principally English, French and Spanish. No reports in any other language were transmitted for entry into the database. It is unclear to what extent events reported in other languages would change the data presented in this study.

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20. N. Taback, R. Coupland, "Towards collation and modelling of the global cost of armed violence on civilians," *Medicine, Conflict and Survival*, 2005, Vol. 21, pp. 19-27.

MISSION

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the Geneva Conventions and the International Red Cross and Red Crescent Movement. It directs and coordinates the international activities conducted by the Movement in armed conflicts and other situations of violence.