Superfluous Injury: Case study analysis of attacks against healthcare workers and facilities with explosive weapons

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Committee Members Dr. Rachel Woodruff and Dr. Darren Zinner
There are many people without whom this thesis would not be possible. This page is for them.

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Abstract

Explosive weapons are the leading cause of damage to healthcare facilities and cause the highest number of death or injury to healthcare personnel per attack. In addition to the people who experience direct effects of the explosion, hundreds or thousands of people in communities surrounding the healthcare facility also suffer because they can no longer access essential healthcare services as they did before. With increasingly advanced technology that allows the creation of more powerful weapons and the growing number of conflicts between state and non-state armed groups embedded in urban environments surrounded by healthcare facilities and other civilian structures, it may seem that damage to healthcare facilities is an inevitable consequence of modern armed conflict. However, this is not the case. Explosive weapons are designed with specific effects in mind; these effects are predictable and damage can hardly be considered accidental. A better understanding and respect of international law on the part of armed groups and stronger enforcement of existing laws on the part of international bodies would significantly reduce the likelihood of attacks with explosive weapons. In this thesis, three case studies are analyzed through the Health: Science, Society, and Policy framework to find strengths, mistakes, and potential breaches of law on the part of healthcare workers and armed actors. Based on the lessons gleaned from these incidents and applicable scientific and legal principles, recommendations will be made to reduce the incidence and damage of attacks on healthcare workers and facilities with explosive weapons. Generally, these recommendations fall into the following categories: (A) Development and more appropriate use of explosive weapons based on their target and technical design, (B) better communication and mutual respect between healthcare workers, armed groups, and the surrounding population, and (C) a stronger commitment to investigating and prosecuting violence against healthcare workers.
Methods

The research for this thesis was conducted using internet sources. These sources included:

News articles

NGO publications: humanitarian and technical
- studies, reviews, press releases, educational resources, infographics

Educational: law, technology
- study guides, power points, product descriptions, university publications

Government Publications
- investigations, studies, guidelines, press conferences, official statements

This research method is consistent with research in the humanitarian field, for example when the ICRC based their sixteen country study on information from news articles and NGO reports.

A Chicago citation style with footnotes is used.

The information presented in this thesis is not intended for statistical analysis. A statistical analysis was not feasible or useful in this context for two reasons: primary data has already been compiled and analyzed by better-resourced professional organizations, and one of the most significant problems in the field today is a lack of primary data and cohesive compilation. The author is not in a position to collect primary data on this topic. But, the value in this case study analysis is that the author is able to more deeply analyze a few incidents to get more detailed snapshots of the problem. The author can make specific conclusions and recommendations based on these analyses and information from existing meta-analyses.¹

Most sources were in English, some were in French. The author has a working proficiency in French.

Because the author cannot read Arabic, some sources were excluded. This caused a bias in information gathering, over-representing western sources and international NGO’s and staff versus local news and staff.

The SIT ISP completed in the fall 2015 spurred the author’s interest and broadly informed the background knowledge on the humanitarian field. None of the research or writing is duplicated.

¹ This “snapshot” method is recommended by the ICRC as a necessary and helpful way to gain a deeper understanding of the issues of explosive weapon usage against healthcare workers and facilities. It is especially helpful to understand the violence in the context of specific regions and conflicts.
CHAPTER 1

Introduction

The purpose of this thesis is to investigate how violence against healthcare workers and facilities occurs, and what can be done to prevent or reduce the damage of any potential future attacks. I was originally introduced to this topic from a humanitarian standpoint, and I am personally innested in this topic because I plan to work in the global health field, and to do so safely. My first goal is to learn about and present this information in a way that is informative, practical, and respectful of the people who do this work and may have lost their lives doing so.

Second, as this is a Brandeis HSSP thesis, the writing and presentation will be aligned with an HSSP framework. I will explain how the problem and potential solutions of violence against healthcare workers and facilities is related to science, society, and policy.

Third, I recognize by the fact that violence against healthcare workers and facilities persists that many people and armed groups do not respect humanitarian principles for the sake of humanitarian principles. I hope by the end of this thesis to make a convincing argument that protecting health care is not only a humane endeavor but also a pragmatic one that helps ensure the continuation of stable societies, which is beneficial to all parties involved.

To answer my research questions and present my conclusions, I will more deeply analyze three case studies of violence against health care workers and facilities: two incidents in Yemen and one in Afghanistan. I will present pertinent details here and draw patterns between the cases to better understand the specifics of how violence against healthcare workers and facilities occur. In addition to detailed research into these three case studies, I will include more general
information about other incidents and successful prevention initiatives to support my broader
points.  

Violence against Healthcare Workers and Facilities

Violence against healthcare workers and facilities comes in many forms, and is a problem
around the world. Healthcare workers can be attacked by their own patients or visiting families
because of disagreements over medical care, as in the case of Dr. Michael Davidson who was shot
and killed at the Brigham and Women’s Center in Boston by his deceased patient’s distressed son
in January 2015. Hospitals and clinics may be invaded by organized gun-bearing groups, as in
March 2017 when ISIS fighters disguised as doctors invaded the Sardar Mohammad Daud Khan
Hospital in Kabul, Afghanistan, killing 49 people. Healthcare workers may be stigmatized and
ostracized from society to the point of not receiving medical attention themselves, as in the case
of Salome Karwah, a Liberian nurse who survived Ebola in 2014 but died from childbirth
complications in February 2017 because other medical professionals refused to treat her for fear
of her previous Ebola infection. Healthcare workers can be kidnapped, as in January 2014 when
five Médecins sans Frontières staff were kidnapped in Northwestern Syria and held captive for
four months (fortunately all of them survived). Healthcare workers are also vulnerable to the
violence that affects the areas where they live and work, as in the case of an unnamed ear, nose,
and throat doctor who was shot and killed outside his house while he was trying to leave to escape

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2 While each incidence of violence that occurs against healthcare workers and facilities is certainly deserving of
attention and individual investigation, for the purpose of this thesis including many more examples would either
become repetitive or introduce fundamentally new topics which would take the project off topic. I believe that
three is enough for researching specific incidents, and more brief cases can be used to make any points for which
evidence is lacking in those three.
3 (Sweeney 2015)
4 (Asharq-Al-Awsat 2017)
5 (Baker 2017)
6 (Reuters 2014)
shelling in his neighborhood during the ongoing conflict in Yemen.\(^7\) Healthcare facilities and the people inside can be affected by the use of explosive weapons, as when the Omar Ben Abdul Aziz hospital in Aleppo, Syria was destroyed by a Russian airstrike in November 2016.\(^8\)

It is difficult to accurately quantify the number, type, and consequences of violent incidents against healthcare workers that occurs each year. Governments and NGO’s have designated more resources toward tracking these acts of violence in recent years, but problems such as a lack of a unified and standardized tracking system and underreporting of incidents persist. Because this is still a developing field, it is difficult to accurately assess trends in this violence, because comparable data collected across several years is lacking. For example, the WHO released a report on attacks against healthcare workers in 2014 and 2015 based on publicly available secondary data. Data that was reported in aggregate or confidentially could not be included. According to their data compilation, an average of 480 healthcare personnel were killed per year, but while the figures were separated by country, they were not separated by type of attack, because the definitions of various types of violence were not standardized between primary data collection and reporting methods.\(^9\) The International Committee of the Red Cross (ICRC) published the Sixteen Country Study in 2011, in which 655 incidents of violence against healthcare workers over a 2.5 year period were analyzed. The ICRC reported that 1,834 people were killed or injured by explosive weapons while in a healthcare setting; 159 of these were healthcare workers.\(^10\) The identities of the countries and incidents involved were not published. According to Physicians for Human Rights,\(^11\) between the beginning of the crisis in Syria in 2011 to the end of 2016, 796

\(^7\) (Médecins sans Frontières 2017) pg 10 
\(^8\) (Martin Chulov 2016) 
\(^9\) (World Health Organization 2016) pgs 4-9 
\(^10\) (ICRC 2011) pg 2 
\(^11\) (Physicians for Human Rights 2017)
Healthcare personnel have been killed. It is not apparent from their website how many of these were due to explosive weapons. These are a few examples of the many different statistics and sources available. Each is valuable in their own way, and focused on a specific country or region. However, no one report includes all incidents from all countries. Still, some general conclusions can be made:

1. No one study included data from every country. Countries in Africa and the Middle East were more represented than those in Asia and the Americas. The consensus across studies was that several hundred healthcare workers are killed in incidents with explosive weapons annually in those areas. Many thousands of other targeted incidents of violence occurred.¹²,¹³

2. The greatest threat to medical workers is context-dependent, but particularly in environmentally unstable and violent areas medical workers are most vulnerable to baseline environmental violence rather than targeted attacks. This non-targeted violence is also difficult to track and categorize. National, rather than ex-patriate, staff are more vulnerable to this type of violence.¹⁴

3. Gun violence is by far the most common form of violence, accounting for both the most threats and greatest number of deaths, with guns being involved in at least 1/3 of all incidents.¹⁵

Kidnappings and robberies are usually performed with guns.¹⁶ Gun violence is usually related to criminal activity and perpetrated with small arms rather than by organized armed groups with higher power weapons, though the latter type of violence certainly does occur and usually yields a higher casualty count than the former.¹⁷

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¹² (ICRC 2011), pg 2
¹³ (World Health Organization 2016), pgs 4-9
¹⁴ No Relief: Surveying the effects of gun violence on humanitarian and development personnel (CHD)
¹⁵ Health Care in Danger: Violent Incidents Affecting the Delivery of Health Care January 2012 to December 2014 (ICRC)
¹⁶ (Muggah 2005) pg 14
¹⁷ (Muggah 2005) pg 9, 14
4. Attacks with explosive weapons accounted for 22.6% of attacks, and yield the highest number of casualties per attack. On average, 20.7 people were killed per attack with explosive weapons, versus 2.3 people per attack with guns. Of the events in which health care personnel were killed or injured, 47% were carried out with explosive weapons. State actors are more likely that non-state actors to carry out these attacks, largely because they have the necessary technological capability. Explosive weapons are the leading cause of damage to health care facilities (and other critical infrastructure including roads, schools, and sanitation systems) during conflict, and the effects of explosive weapons can persist even after a conflict has ended (due to persisting infrastructure damage or unexploded devices).

5. The loss of even one health care worker in already under resourced areas has far-reaching effects. For the five permanent members of the UN security council, there is an average ratio of 28.4 doctors and 69 nurses to 10,000 patients. In Afghanistan, a country with one of the highest levels of violence and death of healthcare workers, those figures are 2 doctors and 5 nurses per 10,000 patients. In Somalia, it is .5 doctors and 1 nurse. In Iraq, 5 and 10. So while on a global scale the simple statement that “several hundred people of certain professions are killed and several thousand injured or threatened annually” may sound like a relatively insignificant problem, the magnitude of the problem becomes clear when it is evident that the majority of those incidents are in areas that lack healthcare professionals. The absence of even one healthcare professional will cause treatment to be unavailable or delayed to thousands of people who desperately need it.

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18 (ICRC 2015) Table 1  
19 (ICRC 2011) Table 2a, 2b  
20 (ICRC 2011) Table 3c  
21 Explosive Weapons on Populated Areas: Technical considerations relevant to their use and effects (ARES)  
22 (OCHA 2016)  
23 (ICRC 2011) pg 3
6. The focus of this thesis is violence with explosive weapons against healthcare workers and facilities. To be sure the population surrounding this violence is also affected and needs emergency care for traumatic injuries. However, illnesses such as diabetes, heart disease, cancer, and renal insufficiency don’t stop for war. Women and babies still need pre/postnatal care, and children especially still need vaccines on a specific time schedule. Mental health care is often the last priority across all health systems, but is especially important in times of strife. Violence against health care workers and facilities disrupts all of these critical medical services and more, which affects an even greater number of people over a longer period of time than specific violent incidents.\textsuperscript{24}

7. Even when health care workers and facilities aren’t rendered physically unable to function (by serious injury, damage, death, or total destruction), there often comes a point especially for international organizations where the risk of violence becomes too great, and services and staff must be reduced or completely evacuated from a conflict zone. The level of care available fluctuates depending not just on attacks that have actually occurred and caused damage, but also on perceived threats. This inconsistent and at times unpredictable level of care negatively impacts the surrounding population even when a facility is still technically present and operational to some degree. This disruption of healthcare is a significant driver of population displacement.

**Thesis topic: violence with explosive weapons**

All forms of violence against non-military targets is reprehensible and almost always a violation of international humanitarian law. I have chosen to focus on explosive violence against healthcare workers and facilities for three main reasons:

\textsuperscript{24} (Action on Armed Violence 2015) pg 1
1. Relative to other targets and other forms of violence, explosive violence against healthcare workers and facilities has the most significant impact per attack. Explosive weapons often have wide-area, non-specific, powerful effects. When healthcare workers and facilities are the victims of attacks with explosive weapons, that damage extends beyond the already large damage zone into the community that was not directly affected by the violence but can then no longer depend on those healthcare services. Prevention of even a single attack with explosive weapons could therefore improve the health and wellbeing of thousands of people.

2. Attacks with explosive weapons, especially those performed from the air, require a certain level of technological sophistication possessed by states more often than non-states. This combined with the fact that they tend to cause significant damage means the attacks are generally better publicized than single, low-tech attacks, and they are more thoroughly investigated. Non-state armed groups tend not to conduct and publish investigations into attacks, while investigations conducted by states or international bodies are more likely to be published and available in English or French. This makes more information available to me despite my research constraints, and allows me to more thoroughly investigate the issue by acknowledging the perspective of the armed actor. This, in turn, allows me to make more practical recommendations to prevent future attacks.

3. The engineering of explosive weapons is specific to their purpose. In addition to recommending changes to the behavior and communication between groups involved in attacks with explosive weapons, technical modifications can be made to the explosive weapons themselves to increase their specificity and decrease their damaging wide-area effects. Even if war and violence are inevitable, excess damage, especially “collateral damage,” to non-military targets such as hospitals because of improperly designed and deployed explosive weapons is avoidable.
Preventing attacks on healthcare workers and facilities with explosive weapons through the HSSP lens

This topic is multidimensional and could be analyzed through the lenses of politics, international studies, law, engineering, and many other disciplines. HSSP provides a framework with which several dimensions of this topic can be analyzed together to gather a more holistic view of the issue. Before launching into definitions, case studies, and analysis, I will explain how each part of Health: Science, Society, and Policy relate to this topic.

Science: Understanding the engineering of explosive weapons generates a better grasp on international law and its application to the use of these weapons. Explosive weapons are built with distinct characteristics designed to cause specific and predictable damage; this can make the weapons more effective against their targets and less destructive to surrounding people and structures. Accordingly, when an explosive weapon is used against a structure or in an environment for which it is not designed and it causes excessive harm, an incrimination of the weapons-bearer for violating international law may have increased legitimacy because a more appropriately engineered weapon was not used. To avoid excessive harm from explosive weapons, weapons-bearers should acquire and use explosive weapons that are better suited to their target environment.

In addition to focusing on the engineering and use of explosive weapons, development and proper use of other technology and tools could reduce the harm of attacks with explosive weapons. More reliable communication devices (radio, telephones, internet connection) could ensure better communication within armed groups and between those groups and other organizations. Improving technology for imaging and navigation (camera, infra-red/night vision, GPS, satellites) could allow armed groups to more accurately identify targets and avoid harming other structures and people.
Combined, technological solutions such as properly engineered and applied explosive weapons, reliable communication devices, more accurate tracking tools, and better imaging devices when used by armed groups would likely reduce the frequency and harm of attacks with explosive weapons against medical workers and facilities.

Society: Extensive communication and cooperation between any organization and the local community in which it operates essential. The primary focus of any intervention should be meeting the immediate needs of a community and ultimately building the capacity and resilience of the community to eventually become self-sufficient. Therefore, it is always necessary to communicate with the local population to determine their self-defined needs and work with them to accomplish any corresponding goals. Included in this cooperation is determining whether an organization, especially one that is not local, is welcomed in the area by existing organizations, government agencies, and local leaders. This is especially important for international organizations operating during violent conflicts in which cultural differences, poor communication, and even the involvement of the organization in conflicts occurring in other parts of the world can jeopardize working relationships, leading to decreased efficacy of an organization and violent, dangerous situations.

Facilitating regular communication between organizations operating in the area with local community leaders and other groups (including weapons-bearers) helps to clarify the needs and requirements of the local population and any organizations in the area. It allows organizations to establish expectations and educate the community and especially weapons-bearers about the role of medical workers and facilities, and protections afforded to them under IHL. Communication such as this fosters mutual understanding and respect, which can reduce the likelihood that such medical workers and facilities would become the target of contempt or violence. A widespread,
culturally imbedded respect of international law and healthcare workers can create a mutually beneficial relationship in which the society is safer, the population is healthier, and there is better cooperation between the group controlling an area and the people and organizations there. Preventing violence through these means can also create channels for further development within the community and internationally.

Policy: Proposals intended to reduce attacks on healthcare workers and facilities by improving technology and communication must be formally recognized and enforced at the international, state, regional, and local levels. The existence of international laws is certainly a crucial step, but how these laws are enforced is an unclear and inefficient process, if they are enforced at all. With the rise of armed non-state actors, interpretation and enforcement of these laws has become increasingly nebulous, partly because some non-state actors or even new governments weren’t party to the development of various treaties, and indeed may not thoroughly understand the meaning or benefits of the laws within. Additionally, many non-state actors are entrenched within urban environments, surrounding by civilians and non-military structures. Other international actors must step in to educate these groups and enforce international law. Increasing globalization and technological capability has made our world more connected than ever, which both increases our capacity as humans to help and understand each other and to get involved in complex conflicts and inflict severe damage. Policies related to IHL should reflect these changes, and create a flexible framework for operating in the modern world.

For example, when there exist explosive weapons worth millions of dollars equipped with GPS, a camera, and steering fins, is it really an “accident” when such a weapon is dropped on a hospital? Or do armed groups (typically state militaries) with such advanced technological capabilities have a responsibility to do everything in their power to actively prevent such an attack
from happening? It seems obvious that the spirit of international law indicates that armed groups should proactively use all their power within reason to actively avoid attacking hospitals, but some interpretations of the law differ.

Analyzing the use of explosive weapons on healthcare workers and facilities through an HSSP lens allows us to take a more holistic, broad approach to the problem than any single narrow discipline. Implementing initiatives in the realms of science, society, and policy would benefit the security and health of healthcare workers and the communities they serve.
CHAPTER 2

Explosive weapons: definitions, engineering, and use

The focus of this thesis is attacks on healthcare workers and facilities with explosives weapons, and before the details of specific cases are discussed an overview of how explosive weapons are engineered and used is presented here. The intention of this section is to give the reader a general appreciation for the different types of explosive weapons, and how their distinct characteristics affect their function. This is relevant to IHL and the cases of attacks against healthcare workers and facilities, because explosive weapons are designed to have specific effects; therefore, damage to civilians or non-military structures in the course of an attack is usually foreseeable based on the characteristics of the explosive weapons used. Had weapons-bearers chosen differently designed weapons or strategies in the cases analyzed in this thesis, the damages, casualties, and deaths caused during those attacks could have been significantly reduced.

Technical characteristics and corresponding purposes of explosive weapons

Every explosive weapon contains at least three main parts: the fuse, case, and explosive fill. The fuse determines when the weapon detonates; it can be timed or contact-dependent. The case of a metal coating encapsulates the weapon. The composition and thickness of the case affects the aerodynamics, brittleness, and kinetic energy of the weapon. The explosive fill is a combination of chemicals that, when stimulated to do so, react to cause an explosion. The energy of the explosion depends on the composition and ratios of the chemicals. The ratio of the weight of the fill versus that of other components of the bomb is called the charge-to-weight ratio.

25 (Kenneth Cross 2016) pg 18
An explosion is defined by FEMA as “a rapid release of energy that takes the form of heat, light, sound, and a shock wave.”\textsuperscript{26} Explosions are caused by rapid chemical reactions yielding an increase in thermal energy, which causes the rapid expansion of gases that provides explosive energy. Explosive weapons harness this energy to cause damage in three ways: blast, fragmentation, and heat. Every detonation of any explosive weapon will include blast, fragmentation, and heat, however the relative proportion of damage caused by each mechanism is dependent on the design of the weapon. In addition to these three main mechanisms, which are the primary cause of damage to people and structures, secondary mechanisms exist including penetration, ground shock, cratering, secondary fragmentation, and fire.

The blast of an explosive weapon refers to a shockwave of air whose pressure is greater than that of the surrounding atmospheric pressure (“overpressure”).\textsuperscript{27} This shockwave emanates out from the site of detonation faster than the speed of sound and damages whatever it contacts. If a weapon detonates above ground, a reflective shockwave may bounce back off different surfaces and increase the resultant damage. In small to medium-sized explosions, people tend to be seriously injured not by the pressure shockwave itself but by the accompanying wind. The blast is usually the most damaging mechanism of an explosion, especially for large bombs. Weapons that rely on blast as the primary damage mechanism have a high charge-to-weight ratio (>50\% for blast-and-fragmentation, up to 80\% for mainly blast).\textsuperscript{28}

Fragmentation is pieces of matter breaking up during detonation and traveling at thousands of feet per second away from the detonation site.\textsuperscript{29} The fragments can be made up of the casing
and warhead, or added components that are usually small metal pieces of varying shapes contained in a fragmentation sleeve. Material can undergo chemical or physical changes to prepare it for maximum fragmentation. The fragmentation radius is usually greater than that of the blast area, depending on the energy of the explosion and the fragmenting materials. Weapons that rely on fragmentation have a low charge-to-weight ratio (10-20%).

Thermal energy is the third primary damage mechanism of explosive weapons. It is usually extremely hot but short-lived, often described as a “flash.” By itself the heat from explosions usually causes less damage to people and structures than blast and fragmentation, both because of its brevity and relatively small radius.

An explosive weapon can also be characterized by its secondary effects. Each secondary effect corresponds to a primary mechanism, and is usually achieved through an enhancement or addition to a weapon’s design or use. Penetration is one such secondary effect made possible by strong casing around an explosive designed to pierce surfaces, allowing a weapon to enter a building, vehicle, or the ground before detonating. Weapons that rely on penetration have a medium charge-to-weight ratio (25-30%). Ground shock is another, characterized by shockwaves from the explosion traveling through the ground in addition to the air when detonation occurs on or near the ground. This can be especially damaging to nearby buildings as the ground moves beneath them, and to underground structures such as sewers, water pipes, electrical lines, and gas networks. Cratering occurs when a weapon detonates after falling near to or penetrating the ground, and the explosion is so powerful that a hole is left in the earth near the site. Secondary fragmentation occurs when materials not included in the explosive device also break apart and get

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30 (Kenneth Cross 2016) pg 49
31 (Kenneth Cross 2016) pg 16
32 (Kenneth Cross 2016) pg 49
carried away by the shockwave. Glass and concrete of nearby buildings are classic examples of potential secondary fragments, and can be extremely damaging to nearby people and structures. Firebrands are similar to fragmentation, in that they are projectiles flying out of an explosive device upon detonation. Instead of causing damage like metal fragments they act as tinder so that thermal energy spreads from the explosion to the surroundings as fire. An additional factor affecting the design and use of explosive weapons is that some are designed to be used alone, whereas other types are typically in salvo (multiple weapons being fired together)

Weapons are tailored to different targets and purposes depending on which primary and secondary characteristics they possess. Explosives designed to damage buildings may include strong blasts, ground shock, and penetration capabilities. Explosives with significant thermal energy and firebrands can also be used to start fires in buildings or settings like forests. Explosives that penetrate the ground or cause cratering can be used to target underground bunkers, underground infrastructure, or airplane runways (the craters render them less usable). People are of course vulnerable to any of the damage from these explosives, but explosive weapons that generate significant primary and secondary fragmentation are especially harmful to the human body, and have wide-area effects.

Terms used to describe common types of explosive weapons are defined below. Artillery is typically used to target people and vehicles. The primary damage mechanism is fragmentation, so the casing is thick and flies apart upon detonation. In addition to fragmentation, artillery relies on blast for destruction. Artillery is typically fired from a distance at high velocity, which is an additional reason strong casing is necessary. Mortar projectiles are similar to artillery in that they

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33 (Kenneth Cross 2016) pg 19 - 24
are used to target people and vehicles, mostly with projectiles. However, the casing is typically thinner and more brittle, thus breaking into more, smaller fragments. Armor piercing weapons have a solid, sturdy tip that allows the munition to pierce a target before detonation. These weapons can rely on either chemical or kinetic energy for penetration. This is useful in targeting buildings and tanks or other armored vehicles. HEAT munitions have a similar function to armor piercing weapons, except they gain entrance after detonation when the metal conical tip of the weapon streams forward in a jet of metal at extremely high temperature and velocity to penetrate a surface. The casing of the rest of the munition can be thinner for fragmentation once entry is gained. High explosive squash head (HESH) munitions contact a surface, such as a wall, and then detonate. Its primary mechanism of damage is the blast, because the shockwave is transmitted through the surface and transfers energy and causes damage inside with the blast and secondary fragmentation, even when the explosive doesn’t produce an entry hole. HESH projectiles do not need to gain entrance to cause damage inside a structure. General purpose bombs, as their name suggests, can be used to damage less-specific or fortified targets. They tend to be dropped from planes rather than fired from the ground, so the casing can be thinner than that of weapons fired from the ground that must withstand higher velocity travel. General purpose bombs rely on blast and fragmentation as their primary mechanisms of damage.

**Accuracy, precision, and guidance of explosive weapons**

The efficacy of an explosive weapon in destroying a target is not only dependent on the weapon itself, but also the firing of the weapon. Precision of a weapon is determined by random errors or variations in parameters like muzzle velocity, projectile mass, and quick weather changes. Accuracy is determined by systematic error, like target and gun positioning, alignment of the gun,
and regular wind and air resistance. Accuracy of unguided air delivery bombs is additionally affected by the aircraft, altitude, speed, and competence of the pilot.34

Accuracy is affected by systematic errors that occur round after round. They include factors such as wind and air resistance, alignment and positioning of guns and targets, and aircraft speed and qualities (for unguided air dropped bombs). If accuracy is assessed between rounds, these errors can be corrected, for instance by re-aiming a gun. Random errors affect precision and accuracy, and are caused by variable factors including manufacturing errors of the weapon, skill level of the human operator, variations in the mass of the weapons, and quick wind or weather changes. It is sometimes more difficult random errors due to their nature, but training better operators can reduce some of these errors. These sources of errors affect rocket artillery and projectile artillery differently. Rocket artillery has additional sources of both error or correction, including steering fins and variance over a longer travel distance.

Precision guided missiles (PGMs) have the capability of changing their flight path enroute to a target by altering the propulsion or steering fins of the rocket.35 The positions of the missile and target must be tracked throughout the flight to successfully steer. Non-homing guidance occurs when the location of a target is programmed into a missile before launch, and then based on information from GPS and INS (insertional navigation system), the missile is supposed to automatically reach the programmed location. If the missile has a live data link capability, the target location can be changed mid-flight. Homing guidance relies on some form of energy emission which a rocket tracks. Energy can take the form of radio, thermal, infra-red, or light (including laser). Homing guidance can be done in three ways: active, semi-active, and passive.36

34 (Kenneth Cross 2016) pg 30, 59
35 (Kenneth Cross 2016) pg 35
36 (Kenneth Cross 2016) pg 36
In active guidance, the missile transmits energy itself for targeting. In semi-active, a secondary device transmits energy to direct the missile toward a target, such as a laser. In passive guidance, the missile only receives energy from the target itself. The component of a missile that receives and/or transmits these guidance signals is called a seeker, which may also include a camera to transmit images or video to other devices. The advanced technology that defines PGMs is a two-sided coin; it can increase the efficacy of attacks and reduce accidental collateral damage of non-military targets by improving accuracy and precision of the weapon, however, the additional equipment is prone to additional failures and sources of error. Factors reducing visibility (smoke, debris, low-light conditions), and manipulation of energy signals (GPS signal jamming, target signal masking) reduce the accuracy of these weapons but would not affect lower-tech weapons.

**Use of explosive weapons**

After a target has been identified, weapons-bearers select the most appropriate explosive weapon for the job. Weapons-bearers must consider the intended effect on the target (warning, partial destruction, total annihilation, etc) versus the potential effects on the surroundings. A weapon is most efficient in a given situation when it can accurately and precisely strike the correct site, apply the desired level of destruction against the target, and avoid damaging nearby non-targets. The context of the target and the engineering and firing of the weapon combined determine the potential efficacy of a weapon. This is especially important when a target is in a densely populated area, where there is a high potential for collateral damage and killing or injuring uninvolved people.

The timing, power, accuracy, and mechanisms of damage of an explosive weapon relative to the composition and position of a target will help weapons-bearers determine the lower limit of what weapons may effectively cause damage to the target. The surroundings, timing, and
population density relative to the target should help weapons-bearers determine the upper limit of the radius and damage of the weapon. Sometimes, unfortunately, collateral damage is inevitable when striking a target. The acceptable level of collateral damage measured in damage to structures and injured or killed people can depend on the relative importance of the target to military goals. While it is required\textsuperscript{37} under international humanitarian law and other documents guiding the actions of weapons-bearers to try to determine ahead of time the anticipated effect on the target versus surrounding, uninvolved structures, there is no requirement that weapons-bearers assess the accuracy of their predictions after-the-fact.\textsuperscript{38} While it is often in the best interest of fighting parties to determine whether their target was affected as intended, many groups do not have uniform strategies to track collateral damage and prevent it in the future.

**Explosive weapons in populated areas**

The use of explosive weapons is a particularly destructive form of violence. When explosive weapons are used in populated, urban areas, the consequences are severe for individuals and society. Across the board, civilians account for 92\% of casualties when explosive weapons were used in these areas.\textsuperscript{39} Explosive weapons have the unique potential compared to other weapons to cause long-lasting damage to infrastructure including homes, schools, sanitation systems, electric grids, and roads. They are the primary cause of damage to healthcare facilities.

\begin{footnotes}
\footnoteref{37} (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Chapter II
\footnoteref{38} (Kenneth Cross 2016) pg 44
\footnoteref{39} (OCHA 2016)
\end{footnotes}
CHAPTER 3

International Law

International law regulates relations between and among states or non-state actors. International humanitarian law (IHL) is one of the oldest branches of international law.\(^40\) International human rights law (IHRL) and international criminal law (ICL) are newer branches of law related to IHL, and while they share similarities with IHL, there are also important distinctions between the branches. Additionally, there is customary international law (CIL), which is largely the basis for ICL and overlaps with IHL and IHRL,\(^41\) but is not exactly the same. Understanding the similarities, differences, and interplay between each branch is essential to understanding their applicability to attacks against healthcare workers and facilities with explosive weapons. The history and current standing of each branch of law will be discussed in this chapter\(^42\) to cultivate a better understanding of this issue from a legal perspective.

International Humanitarian Law

Rules governing the treatment of civilian, injured, or dead people in conflicts have existed for hundreds or even thousands of years.\(^43\) International Humanitarian Law (IHL), also known as the laws of armed conflict (LOAC), seek to limit the effects of armed conflict by restricting the means and methods of warfare, and protect people not actively partaking in the fighting.\(^44\) The roots of modern international humanitarian law can be traced to the battle of Solferino, Italy in

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\(^{40}\) (Cerone n.d.) pg 1

\(^{41}\) (Association for the Promotion of International Humanitarian Law n.d.) pg 2

\(^{42}\) This chapter provides an overview of each branch of law as it related to the topic of this thesis, namely violence against health care workers and facilities with explosive weapons. Other aspects of the international law may be excluded.

\(^{43}\) Several religions, including Islam, Judaism, and Buddhism include laws or directions about how to conduct war, including treatment of prisoners of war and land conquered by armies. This had moral as well as practical purposes; conquering groups would use the land for themselves and the people as slaves. Therefore, it was beneficial to not destroy all land or kill all people in the course of war.

\(^{44}\) (ICRC 2004)
1859. The battle was one of the bloodiest in European history up to that point; in ten hours, over 6,000 soldiers were killed and 30,000 wounded. The medical teams of each army were completely overwhelmed and disorganized. Six days passed before all the wounded were cleared from the field. Thousands of wounded men straggled to a nearby town, where a businessman from Geneva by the name of Henry Dunant was traveling. He remained in the town for several days to help; Durant was so touched and disturbed by what he saw there that several years later he wrote a book, *A Memory of Solferino*, recounting the experience. In it, he described the horrible sights and smells of blood, flies swarming over festering wounds, thousands of wounded men in wretched condition strewn about the overcrowded town, and the agonizing deaths many of them faced. This book and Dunant’s advocacy led to the founding of the Red Cross and the creation of the first Geneva Convention in 1864.

The focus of the first Geneva Convention corresponded to the horrors Dunant witnessed following the Battle of Solferino; the convention described the rights of wounded and sick people to be collected and treated, regardless of their nationality or military affiliation. In accordance with this goal, it declared the neutral, protected status of healthcare workers, facilities, and ambulances bearing a red cross logo, even if they are associated with a military, to carry out their duty to collect and treat the wounded and sick. The first GC also conferred onto states the responsibility of disseminating information about IHL to everyone, but especially the military, and enforcing any violations of IHL.

Shortly after the first Geneva Convention of 1864, the Declaration of St. Petersburg, for the first time, restricted the means of warfare by prohibiting the use of specific weapons

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45 (Bugnion 2009)  
46 (Geneva Convention for the Amelioration of the Condition of the Wounded in Armies in the Field 1864)  
47 (Association for the Promotion of International Humanitarian Law n.d.) pg 2
(exploding or soft tip bullets, which would usually cause untreatable injury and agonizing death). The Hague Conventions of 1899 and 1907 built on the St. Petersburg Declaration and recognized and incorporated the first Geneva Convention\(^{48}\) into laws governing armed conflict on land and sea. The goal of The Hague Conventions laid out in both preambles is:

> “to revise the laws and general customs of war, either with the view of defining them more precisely or of laying down certain limits for the purpose of modifying their severity as much as possible.”\(^{49}\)

Lest fighting parties to The Hague take advantage of loopholes or gaps in this nascent IHL document, the convention goes on to state:

> “Until a more complete code of the laws of war is issued, the High Contracting Parties think it right to declare that in cases not included in the Regulations adopted by them, populations and belligerents remain under the protection and empire of the principles of international law, as they result from the usages established between civilized nations, from the laws of humanity, and the requirements of the public conscience.”\(^{50}\)

Thus, the combined 117 articles of The Hague Conventions codified specific rights and responsibilities concerning the conduct of fighting parties to limit the effects of armed conflict. The spirit of the salient points of the conventions can be summarized with the following excerpts:

> “the right of belligerents to adopt means of injuring the enemy is not unlimited,”\(^{51}\) and “It is especially prohibited to employ weapons of a nature to cause superfluous injury.”\(^{52}\)

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\(^{48}\) (Cerone n.d.) pg 2-3

\(^{49}\) (Hague 1899) preamble

\(^{50}\) (Hague 1899) preamble

\(^{51}\) (Hague 1899) art. 22

\(^{52}\) (Hague 1899) art. 23
The Hague conventions also made it clear that though signing parties were bound to these written rules, belligerents were not exempted from existing customary international law simply because it was unwritten. Further, the conventions left open the possibility that future conventions would further refine and codify components of IHL.

Indeed, over the course of the 20th century more laws regarding IHL were written down. Following the atrocities of WWII, four Geneva Conventions were created in 1949. The four Geneva Conventions apply to armed conflicts in which two or more states are involved, or to instances of occupation (even if the occupation is not met with armed resistance). The first Geneva Convention of 1949 protects the wounded and sick on land; it replaced the 1864 Geneva convention by the same name (and three other updated versions from the intervening years). The first Geneva Convention also protects medical personnel, facilities, vehicles, and so on in relation to their care for the wounded and sick. The second Geneva convention protects the wounded, sick, and shipwrecked military personnel at sea during war; it replaced and updated the corresponding Hague convention of 1907. The third Geneva Convention applies to prisoners of war; it replaced the Prisoners of War Convention of 1929. The fourth Geneva Convention of 1949 protects civilians, including those in occupied territory; this convention was not derived from any single previous laws, and its creation indicated a change in the scope and function of IHL. Prior to 1949 military personnel were the primary focus of the laws; the fourth Geneva Convention represented a shift in thinking about the importance of excessive harm to uninvolved civilians and society during armed conflict.

Relevant excerpts from the first Geneva Convention of 1949 include:

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53 (ICRC 2010)
“Fixed establishments and mobile medical units of the Medical Service may in no circumstances be attacked, but shall at all times be respected and protected by the Parties to the conflict.”

“The protection to which fixed establishments and mobile medical units of the Medical Service are entitled shall not cease unless that are used to commit, outside their humanitarian duties, acts harmful to the enemy. Protection may, however, cease only after a due warning has been given, naming, in all appropriate cases, a reasonable time limit and after such warning has remained unheeded.”

“Medical personnel exclusively engaged in the search for, or the collection, transport, or treatment of the wounded or sick, or in the prevention of disease, staff exclusively engaged in the administration of medical units and establishments, as well as chaplains attached to the armed forces, shall be respected and protected in all circumstances.”

“The staff of National Red Cross Societies and that of other Voluntary Aid Societies, duly recognized and authorized by their Governments, who may be employed on the same duties as the personnel names in Article 24, are placed on the same footings as the personnel names in the said Article.”

Article 3 of 1949, common to the four Geneva Conventions, introduced a significant change to IHL by enumerating laws to regulate non-international violent conflicts. Previously, IHL only applied to conflicts between two states, but the rules in Article 3 also apply to conflicts between a state and a non-state actor, two non-state actors, or an international coalition and non-state actors.

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54 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 19
55 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 21
56 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 24
57 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 26
58 (ICRC 2010)
59 (ICRC 2010)
Article 3 is effectively a condensed version of the Geneva Conventions; the rules included in it are less numerous and more limited than those in the full conventions.\(^{60}\) This means Article 3 only covers the most severe, extreme potential violations. However, the benefit of having Article 3 despite its limitations is that it is precisely during the most severe and extremely violent humanitarian crises that IHL regulations are needed most. The entire text of Article 3 is included below:

“In the case of armed conflict not of an international character occurring in the territory of one of the High Contracting Parties, each Party to the conflict shall be bound to apply, as a minimum, the following provisions:

(1) Persons taking no active part in the hostilities, including members of armed forces who have laid down their arms and those placed ’hors de combat’ by sickness, wounds, detention, or any other cause, shall in all circumstances be treated humanely, without any adverse distinction founded on race, colour, religion or faith, sex, birth or wealth, or any other similar criteria. To this end, the following acts are and shall remain prohibited at any time and in any place whatsoever with respect to the above-mentioned persons: (a) violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and torture; (b) taking of hostages; (c) outrages upon personal dignity, in particular humiliating and degrading treatment; (d) the passing of sentences and the carrying out of executions without previous judgment pronounced by a regularly constituted court, affording all the judicial guarantees which are recognized as indispensable by civilized peoples.

(2) The wounded and sick shall be collected and cared for.

An impartial humanitarian body, such as the International Committee of the Red Cross, may offer its services to the Parties to the conflict. The Parties to the conflict should further endeavour to bring into force, by means of special agreements, all or part of the other provisions of the present Convention. The application of the preceding provisions shall not affect the legal status of the Parties to the conflict.”

In the years following 1949, additional protocols were added to the Geneva Conventions. The first additional protocol strengthened the protection of victims in international conflicts, and the second additional protocol strengthened the protection of victims in non-international conflicts.\(^{61}\)

\(^{60}\) (Cerone n.d.) pg 4

\(^{61}\) (ICRC 2010)
There are several quintessential principles of IHL. One is the idea of “distinction,” which is the responsibility of fighting parties to distinguish between combatants versus civilians, and military targets versus civilian objects.62 A combatant is a member of the armed forces involved in the conflict at hand, or a person acting in a similar capacity by working under a commander, wearing and using conflict-related uniforms or insignias, openly carrying arms, and conducting their operations according to the customs of the conflict.63 A military object contributes to military action by virtue of its nature, location, or purpose, and its destruction would offer a military advantage. Civilians and civilian objects are defined in the negative, as anyone or anything that is not a combatant or military object. If a civilian takes part in the conflict, they become a combatant. If an object is used to gain a military advantage or for the purpose of the conflict, it becomes a military object, and loses its protected status. Fighting parties must exercise every feasible measure to identify and avoid civilians and civilian objects; it is not sufficient to be ignorant as to the status of a person or object, or simply not actively target civilians and civilian targets.

Health care workers, facilities, vehicles, and supplies performing medical duties are to be considered non-military personnel,64 even if they are associated with a military, because they are required under IHL to collect and care for the wounded and sick, and cannot do so if they are being attacked. Put another way, health care workers are civilians by extension because they help civilians, and thus are not military targets. They must help the wounded and sick without prejudice, even if a patient in need of medical care is a member of the opposing side of the conflict. Healthcare workers and facilities may lose their protection under IHL65 if they are used to accomplish military

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62 (Cerone n.d.) pg 2
63 (Association for the Promotion of International Humanitarian Law n.d.) pg 3
64 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949)
65 (Cerone n.d.) pg 2
objectives, including transporting or hiding able-bodied active military personnel, making space available for storage of military goods or military headquarters/communication center, or participating in other activities that confer military advantage to one side versus another while not in the course of carrying out their humanitarian duties. Even if healthcare workers or facilities lose their protected status, any fighting parties planning to attack must issue a warning before doing so to allow legitimate healthcare workers, patients, and supplies to be evacuated.66 Fighting parties must allow the transport of healthcare workers, their supplies, and patients to safety.67 If healthcare workers and facilities are used for legitimate medical purposes only, abide by IHL, and the fulfillment of their duties happens to benefit one side more than another (for example if rebel armed groups are under-resourced and more reliant on humanitarian medical services more so than a state), the healthcare workers and facilities are still protected under IHL. It is almost always advisable, though not required, for healthcare workers and facilities to display an internationally recognized and protected symbol such as the red cross, red crescent, or red diamond. Other symbols may also be used to long as they are established and recognizable in the relevant context.68

Another pillar of IHL is the principle of “proportionality,” which describes the balance between reducing human suffering and accomplishing military objectives.69 IHL aims to prevent unnecessary or superfluous injury and damage, not all injury and damage. Proportionality acknowledges the reality that civilian casualties and damage may result in the course of legitimate military ventures, and it provides a framework to determine the permissibility of the level of

66 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949)Art. 21
67 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 15
68 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Ch VII
69 (Association for the Promotion of International Humanitarian Law n.d.) pg 4
“collateral damage” compared to military necessity. Collateral damage is permissible so long as it is not “excessive in relation to the concrete and direct military advantage anticipated.”  

The means (types of weapons) and methods (military strategies and use of weapons) of fighting during conflict are thus regulated according to this principle.

Two essential related characteristics of IHL are that it only applies during conflicts, and once a conflict has been established IHL is interpreted and potentially enforced based on the facts of any specific incidents rather than the politics and history surrounding a conflict. This is especially relevant in situations such as occupations or conflict with non-state actors, because the law can be enforced and humanitarian principles can be upheld without taking a stance on whether a particular group legitimately or rightfully exercises control over an area. If any group, state or non-state, causes superfluous harm to non-military people or objects in the course of a conflict, then they have violated IHL, regardless of their official status in an area.

It is the responsibility of signing parties to educate their own people (particularly their military) about IHL. States are supposed to investigate and punish any violations of IHL that happen in their territory or by their members/citizens/armed forces. States must monitor and enforce the correct usage of medical symbols.

In summary, the protection of health care workers, facilities, and vehicles under IHL is primarily derived from the protection of people who are ill, injured, not (or no longer) fighting and

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70 (ICRC 2015) Pg 45
71 A conflict is defined by the Tadic Interlocutory Decision (par. 70) as a situation “whenever there is a resort to armed force between states or protracted armed violence between governmental authorities and organized armed groups or between such groups within a state.”
72 (International Justice Resource Center 2017)
73 (Cerone n.d.) pg 1
74 (Geneva Convention for the amelioration of the condition of the wounded and sick in armed forces in the field 1949) Art. 8
75 (Association for the Promotion of International Humanitarian Law n.d.) pg 5
in need of medical care. Fighting parties are required to collect and care for ill and injured people during conflicts; health care workers must be safe and alive themselves to render this obligated care. The principle of distinction dictates that fighting parties must take all feasible measure to distinguish between military and non-military people and objects; and then actively avoid harming non-military objects. When in doubt, it is to be assumed that an unknown person or object is not associated with the military. Use of easily-recognizable symbols helps fighting parties identify healthcare workers and facilities. The principle of proportionality dictates that any collateral damage inflicted must not be excessive compared to the military advantage gained in an attack.

Military necessity and a certain level of permissible harm is built in to IHL, therefore the body of law is flexible but it cannot be suspended. IHL only applies during active conflicts; but it applies to the entire state in which there is a conflict (even in areas that may be at relative peace), and it applies whether fighting parties are state or non-state actors. Regulations on non-state actors are less stringent and only cover the most serious potential abuses.

**International Human Rights Law**

The concept of “human rights” has been acknowledged by major religions and philosophies for thousands of years, but “human rights law” is a more recent development. The more recent codification of human rights stems from a need in democratic states to protect the existence and rights of minorities and those who are vulnerable in society, so that regardless of the political or cultural power one group may hold over another, all people are protected. One way to categorize human rights is by separating them into three generations,\(^{76}\) corresponding to the motto of the

\(^{76}\) (Viljoen 2009)
French revolution: Liberté (freedom from authoritarian oppression, first generation), Egalité (socio-economic equality, second generation), et Fraternité (collective solidarity, third generation).

Human rights laws were first established at the state level, for example with the Magna Carta, Declaration of Independence, and the Declaration des droits de l’Homme et de du citoyen. Until the 20th century, there was no international human rights law (IHRL) framework. The League of Nations obviously tried and failed to implement some international human rights laws, and after the atrocities of WWII the newly chartered United Nations made the codification of international human rights law a priority. The International Declaration of Human Rights of 1948, and the International Covenants on Civil and Political Rights (ICCPR) and Economic, Social, and Cultural Rights (ICESCR) of 1976 are the three most significant treaties and are collectively known as the International Bill of Human Rights.

Over the next several decades, additional treaties were put in place to acknowledge gaps or weaknesses in earlier IHRL depending on issues that arose at the time. The 1965 International Convention on the Elimination of All Forms of Racial Discrimination (CERD), 1979 Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), and the 2006 Convention on the Rights of Persons with Disabilities are a few examples of IHRL being codified to reflect sociopolitical development and recognition of the expansion of human rights.

International human rights laws are supposed to be implemented and enforced in a variety of ways. First, signing parties to the International Bill of Human Rights are responsible for implementing domestic laws in accordance with IHRL, and protect human rights at the national

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77 (Viljoen 2009)  
78 (Viljoen 2009)  
79 (United Nations 2017)  
80 (Viljoen 2009)
and local levels. Over the years, additional monitoring and enforcement mechanisms were put in place to compensate for the failure of individual states to enforce IHRL themselves. These include regional or continental accountability groups and courts, and International Criminal Tribunals (these will be discussed further later in this chapter).

The aim of the Universal Declaration of Human Rights is defined in its preamble to be

“a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.”

The document declares that every person is “born free and equal in dignity and rights, and the first such rights enumerated are the right to “life, liberty, and security of person.” The rights and protection of healthcare workers are primarily derived from Article 3, because healthcare workers are human beings and are entitled to human rights, regardless of their profession. Healthcare facilities, vehicles, and supplies are not specifically, directly protected under early IHRL. The “right to life” includes the right to access safe and affordable essential medicines, medical facilities, and health care services. States are forbidden from interfering with these rights, and

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81 (United Nations 2017)
82 (United Nations 2017)
83 (Association for the Promotion of International Humanitarian Law n.d.) pg 6
84 (Universal Declaration of Human Rights 1948) Art. 2: “Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty”
85 (Universal Declaration of Human Rights 1948) Art. 1
86 (Universal Declaration of Human Rights 1948) Art. 3
charged with protecting them; this provides the foundation for extra protection of healthcare workers and facilities under IHRL.

Unlike IHL, IHRL does not incorporate exceptions for military objectives, and may thus be derogated\(^87\) in times of violent conflict. More specifically, certain political, economic, or civil rights may be suspended in times of violent conflicts, however, the core rights of life, liberty, and security of person cannot be derogated completely. Sometimes, if the state is able to justify it for reasons such as public safety, national security, or public health, basic human rights can be limited in emergency situations. But, while IHRL may be derogated during violent conflict, the laws are still applicable in times of peace, unlike IHL. In fact, the IHRL may be more robustly applied in times of peace, and hold states to a higher standard of rights protection such as specific standards for healthcare provision that are not possible during violent conflicts.\(^88\)

There is no definitive consensus that armed non-state actors are bound by IHRL; the language in IHRL treaties specify that “states” are responsible for observing and protecting human rights, but there is little reference to non-state actors. While there is growing agreement that increasingly powerful non-state actors should somehow be held accountable for their actions in armed conflict, the history and written language of IHRL politicize the issue and sometimes renders its protective mechanisms useless. For example, in 2011 the UN Human Rights Council investigated confirmed reports of human rights abuses in Libya, but several member states were resistant to referencing IHRL. To invoke IHRL so would be to acknowledge the \textit{de facto} control the Transitional National Council (a non-state group) held over the area and challenge the authority of the Qaddafi government. The TNC would only be accountable to IHRL if it was considered a

\(^{87}\) The responsibility of the state to uphold a right becomes partially or completely suspended in times of public emergencies that threaten the life of the nation to an exceptional extent.

\(^{88}\) (Zyberi 2012) Slide 9
state, which would legitimize the group. One way commentators draw attention to lack of compliance with human rights treaties in situations such as this while not taking sides as to which group is in power is by distinguishing between human rights “violations” committed by states, versus human rights “abuses” committed by non-state groups. Still, this does not solve the problem that non-state groups in control of an area are not held accountable to IHRL.

The International Fact-Finding Commission was established in 1991 to investigate IHRL violations, but it has never been used. 89

In summary, the protection of healthcare workers under IHRL is primarily derived from their own human rights as individuals, particularly the non-derogable rights of life, liberty, and security of person. Because access to essential healthcare is necessary to fulfill the right to life, states cannot impede or even must facilitate people’s access to healthcare services. In this way, healthcare workers and facilities are protected under this interpretation of IHRL too, because for civilians to exercise their core human right to access medical services, healthcare workers and facilities must safely exist to provide those services. Some human rights are derogable; they can be suspended or eliminated during emergencies that pose a significant threat to society. Typically, derogable human rights include political or civil rights but not the core right to life.90 Rights can only be derogated if a state provides a legitimate reason why it is necessary to achieve an important goal. IHRL applies during conflicts and peacetime, and can be a useful mechanism for improving health resources during times of peace when more resources are available. The language of IHRL

89 (International Humanitarian Fact Finding Commission 2015)
90 United Nations, 2017
indicates it only applies to states; problems therefore arise when non-state actors are in *de facto* control of an area and commit abuses of human rights.  

<table>
<thead>
<tr>
<th>Commonalities between IHL and IHRL</th>
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<tbody>
<tr>
<td>Recognize principle of humanity – protecting human life and dignity</td>
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<tr>
<td>Protect vulnerable people (sick, injured, prisoners of war)</td>
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<tr>
<td>Prohibit cruelty and torture</td>
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<tr>
<td>Hold states responsible for illegal actions</td>
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<tr>
<td>Specifically regulate access to necessary health-related services</td>
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</tbody>
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### Chart: Commonalities and Differences between IHL and IHRL

<table>
<thead>
<tr>
<th>International Humanitarian Law</th>
<th>International Human Rights Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only applies during conflicts</td>
<td>Applies during both peace time and conflicts</td>
</tr>
<tr>
<td>Non-derogable</td>
<td>Sometimes derogable</td>
</tr>
<tr>
<td>Applies to state and non-state actors</td>
<td>Only applies to state actors</td>
</tr>
<tr>
<td>Contains specific instructions for the conduct of fighting parties</td>
<td>Enumerates individual rights that can be claimed by people</td>
</tr>
</tbody>
</table>

#### Customary International Law

Customary International Law (CIL) arises from consistent practices of states based on a sense of legal obligation rather than formal, written treaties. It is based on a fundamental set of shared human morals consistent with the natural laws. CIL is often the basis for treaties (certain laws that are customary and based on shared values gain legitimacy and enforceability when they are specifically codified), such as The Hague Conventions and Article 3, which seek to codify some tenants of CIL. Conversely, sometimes written IHL or IHRL become so well accepted that they are eventually reach the status of customary law, such as the Geneva Conventions. Some CILs remain unwritten, this does not mean they are unenforceable. The duality of CIL being the old foundation for codified international laws and still one of the highest and most well accepted

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91 (Zyberi 2012)  
92 (School n.d.)  
93 (Cerone n.d.) pgs 5-6
standards for conduct during conflicts reflect its centrality to the regulation of human interaction at the level of organized groups and states.

CIL applies to both states and non-state groups during conflict, because it does not derive its power from written treaties some groups may or may not have ratified but rather from its perceived obvious necessity and common acceptance.\(^9^4\) In fact, Article 3 is a written version of some of the most general, severe potential CIL violations to make them more easily understood by or applicable to non-state armed groups not party to other international laws.\(^9^5\)

### International Criminal Law and enforcement of IHL, IHRL, and CIL

International Criminal Law (ICL) is a fusion between IHL, IHRL, CIL, and national criminal laws. It was also developed recently on a global scale during the 20\(^{th}\) century. It is not its own list of laws, but rather a jurisdiction of certain courts over relevant international public law predicated on the idea that individuals can be held accountable for violation of these laws, and the violation of some laws is so egregious that the global community has a stake in their enforcement. The applicability of ICL to a particular situation depends on which branch of law to which an incident corresponds. The term “war crime” stems from IHL; a war crime is defined as a serious violation of the laws and customs applicable in an armed conflict. Because war crimes are based on IHL, an act must be a violation of IHL and committed in the course of military action to be considered a war crime. The incident need not have occurred during a conflict only of an international character to be considered a war crime.\(^9^6\) Because a war crime is defined as a *serious*

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\(^9^4\) [Association for the Promotion of International Humanitarian Law n.d.] pg 2
\(^9^5\) [ICRC 2010]
\(^9^6\) [Zyberi 2012] slide 20
violation, not every violation of IHL qualifies. A crime is generally considered serious if it endangers protected people or objects, or breaches important values.\textsuperscript{97}

International Criminal Tribunals are one enforcement mechanism of ICL. The Nuremburg Tribunal and International Criminal Tribunal for Rwanda are two examples of such tribunals that were temporarily created to handle violations of ICL in specific conflicts. ICL is most often enforced by state courts, either those of the state in which a crime was committed or those of the nationality of the perpetrator. The International Criminal Court (ICC) is a permanent, treaty-based institution created to put on trial perpetrators of the most serious international crimes (genocide, war crimes, etc). It is very new, having just been created in 1998 by the Rome Statue, and entered into force in 2002.\textsuperscript{98} The ICC can only be invoked when relevant national courts are genuinely unable or unwilling to put accused individuals on trial, and it usually only applies to incidents that occurred after its creation. The court only has jurisdiction over incidents that occurred on the territory of member states (including their vessels), over individuals who nationality is that of a member state, or over non-member states who have accepted the court’s jurisdiction. Most of the ICC’s work so far has been in Africa, including trials on individuals who committed war crimes in the DRC, CAR, Sudan, and Kenya. It is currently investigating several incidents in the Middle East, South America, Africa, and Asia. The ICC, International Criminal Tribunals, and State courts are all capable of convicting accused individuals of war crimes.

\textbf{Interplay between the different branches}

As this chapter indicated, the different branches of international law are distinct from one another, yet they are also related. There exists a shared respect for humanity between all the

\textsuperscript{97} (ICRC 2017)

\textsuperscript{98} (Association for the Promotion of International Humanitarian Law n.d.) pg 6
branches of the law. IHL and IHRL are based on CIL, for example in the way that people have a right to medical care even in the midst of a conflict. When there is a serious violation of any of the laws, it can be considered a violation of CIL, and enforced by courts. Any person accused of violating ICL still retains their own human rights; they are entitled to a fair trial, and food, water, and medical care while they are imprisoned. These rights stem primarily from IHRL, and apply even to people who may have committed human rights abuses/violations against other people.

Understanding each branch of international law is helpful in understanding the (il)legality of explosive weapons – which weapons were used, by whom, against what/whom, where the incident occurred, and in what context it happened all affect the applicability of different international laws. In the next chapters, specific incidents will be discussed and then analyzed in the conclusion with respect to international law and the use of explosive weapons.
CHAPTER 4

Case Study 1: Attack on MSF Kunduz Trauma Center in Northern Afghanistan

On October 3rd 2015 the US army carried out an airstrike on the Médecins sans Frontières Kunduz Trauma Center (KTC) in northern Afghanistan. The air strike, which occurred while US forces were in the area as part of a NATO training mission with the Afghan army, killed 42 people, including 14 MSF staff members.

Background

The French medical humanitarian organization, Médecins sans Frontières (MSF) opened the Kunduz trauma center (KTC) in August 2011. 99 Being a province capital, Kunduz is a populated city and a strategically important location for parties fighting in the Afghanistan war, and given its violent past MSF teams correctly predicted that it would become a center of violence again in the future. When it opened, it had 92 beds and was equipped with an emergency department, three operating theatres, an ICU, X-ray, labs, a pharmacy, and a physiotherapy center. It services war-wounded (WW) patients, as well as patients who had other traumatic injuries such as those from traffic accidents. Since its opening, the hospital serviced over 68,000 emergency patients and more than 15,000 surgeries were performed. The number of patients rose over time, and to reflect this increased demand the number of beds expanded to 140 by September 2015. 100

1 Scenes inside the KTC, months before the attack. MSF.

99 (Médecins sans Frontières 2015) pg 3
100 (Médecins sans Frontières 2015) pg 3
In order to operate in the area, the hospital established a set of policies agreed upon by all parties including MSF, Afghanistan health authorities, the US military, the Afghanistan military and police, and Al-Qaeda. Policies included:\textsuperscript{101}

- A strict no-weapons policy in the hospital compound
- Guarantee that all sick and injured people would be treated without discrimination
- Patients and hospital staff would not be harassed while involved in medical care
- Medical staff and patient privacy would be maintained
- Medical staff would be allowed to perform medical duties without prosecution

Because the patients, staff, and visitors at the hospital obeyed these policies, under international humanitarian law the hospital was not to be considered a military target. It is relevant to note that nowhere in the agreement did it say that patient and visitors would not be allowed to use radios and cell phones in to the hospital.

\textsuperscript{2}A sign outside the KTC prohibiting weapons (MSF)

\textbf{Events around the KTC leading up to the attack}

In 2015, violence in the area increased as the Taliban moved closer to the area. By the 28\textsuperscript{th} of September 2015, the Taliban had taken partial control of Kunduz, including the area around the MSF hospital.\textsuperscript{102} Taliban combatants arrived that evening at the hospital to inform staff that they

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{101}] (Médecins sans Frontières 2015) pg 5
\item[\textsuperscript{102}] (Aikins 2017)
\end{itemize}
\end{footnotesize}
had taken control of the area. They agreed to abide by the no-weapons policy of the hospital, and to avoid attacking the hospital, staff, and patients.\(^{103}\)

On the 29\(^{th}\) of September, MSF sent the GPS coordinates of the hospital to Afghanistan and American military forces again to ensure that all fighting parties knew the location of the hospital and would avoid targeting it, in accordance with their prior agreements and IHL. Afghan and American forces confirmed that they had received the coordinates.\(^{104}\)

Over the next several days, many patients chose to discharge themselves from the hospital, even against medical advice. Some medical staff believe this was due to circulating rumors that government forces would attempt to take back the city in the coming days, and that the hospital would not be safe.\(^{105}\)

On the 1\(^{st}\) October, the hospital received a question from American forces as to whether or not Taliban fighters were “holed up” in the hospital, and whether or not the staff were safe. MSF relayed the information that the hospital was operating at full capacity, that injured Taliban members, Afghan government soldiers, and civilians were being treated as patients, and that the safety of the staff was not compromised. The American contact was also reminded of the hospital GPS coordinates, and that all fighting parties needed to continue to respect the hospital as a legitimate medical humanitarian facility in the area.

On the 2\(^{nd}\) of October, flags were places at the entrance to the hospital, in addition to the MSF logo already painted on the roof. Following the Taliban taking over the city, the electricity

\(^{103}\) (Aikins 2017)

\(^{104}\) (Hickman 2016) pg 3. “The report confirmed MSF officials provided the correct grid coordinates for the MSF trauma center to several US government officials and that the location was properly entered on the US military’s “No Strike List” database, but that the aircrew did not have ready access to this database during the strike.” https://info.publicintelligence.net/CENTCOM-KunduzHospitalAttack.pdf

\(^{105}\) (Médecins sans Frontières 2015) pg 5
was cut and the hospital was one of the only remaining building with power, because it ran on generators. It was therefore one of the only easily-visible structures after night fell. MSF was informed that its staff was at risk of being kidnapped in the Kunduz area. This, in combination with increasingly intense fighting in the area, drove over 100 MSF staff to sleep in the basement of the hospital that night, which had been preserved as a bunker.

MSF staff who were on the ground later remarked that up until the air strike, the area had been quieter than usual the night of October 2\textsuperscript{nd} and morning of October 3\textsuperscript{rd}. No fighting was taking place in the vicinity of the hospital, and all patients, visitors, and staff continued to respect the no-weapons policy. The hospital itself was still active; staff took the opportunity to operate on less critical patients than those who had required immediate attention during the previous day, and routine medical care for the many injured patients continued through the night. There were 159 MSF staff, 1 Red Cross delegate, and 105 patients in the hospital. Additionally, there was an unknown number of patient caretakers and visitors. MSF staff estimated that of the patients, 4 were Afghanistan government forces, and 20 were Taliban forces\textsuperscript{108}. The remaining 81 would have been civilians, including children.

**Military Activity leading up to the attack**

The Afghan National Army was actively combatting Taliban forces in the area. The US army unit Operational Detachment Alpha or “A-team” was present in a non-combat NATO mission “Resolute Support” to train and support Afghan forces. The US counterterrorism mission “Freedom’s Sentinel” was also ongoing in the area; under which US army forces were supposed to combat terrorism.

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\textsuperscript{106} (Aikins 2017)
\textsuperscript{107} (Médecins sans Frontières 2015) pg 6
\textsuperscript{108} In line with neutrality practices, patients’ affiliation wasn’t necessarily recorded or even asked, but oftentimes due to time of injuries, uniforms, or visitors, it was clear whether a patient was a combatant, and with which group they were affiliated.
to engage with ISIS and Al Qaeda, but not the Taliban; the White House Press Secretary said of the mission that “the US military will not be engaged in specific operations targeting members of the Taliban just because they’re members of the Taliban.”

The goals and rules of engagement under Freedom’s Sentinel and Resolute became increasingly hazy as fighting intensified. Neither the American nor Afghan militaries had expected for the Taliban to take over Kunduz, and were unprepared to immediately launch an effective defense in the context of the existing missions. Afghan military officials indicated that if US forces withdrew, they would abandon the city. The day after the Taliban took over parts of Kunduz, an additional American A-team and several operatives were sent to the area, along with an elite Afghan special forces unit, called the “KKA.” Still operating by the parameters of Freedom’s Sentinel and Resolute Support, US military leadership devised a plan by which they and the Afghan army would regain control of the city called “Kunduz Clearing Patrol.” This plan involved attacking the police compound (“NDS headquarters”) deep in the city, which the Taliban had overtaken and were using as a new command center. The US umbrella of self-defense was expanded to cover Afghan allies engaging with the Taliban, and US forces pre-emptively struck relevant military threats in “pre-assault fires” to prevent probable attacks. This was later deemed an inappropriate use of the self-defense rules.

The Air Strike

October 2nd was a particularly brutal day of fighting as NATO forces attempted to drive Taliban fighters from the police headquarters. After nightfall the fighting had somewhat subsided, Afghan forces took the opportunity to move some of their wounded fighters to the airport in order

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109 (The White House 2014)
110 (Aikins 2017)
111 (Aikins 2017)
112 (Hickman 2016)
to evacuate them for medical care. Following that, they planned to return to the police headquarters to continue fighting the Taliban, traveling on a path that would take them past the Kunduz Trauma Center. Because of their advanced technological resources, the US military was supposed to provide air support with a surveillance drone and an AC-130 plane as the Afghan convoy moved through the city to the airport through potentially hostile territory.\footnote{\textit{Aikins 2017}}

Afghan forces provided the US army command with the correct GPS coordinates of the NDS headquarters, which were relayed to the AC-130.\footnote{\textit{Hickman 2016} pg 3} Shortly after take-off, an antenna on the plane malfunctioned and crewmembers were unable to access the email that contained the GPS coordinates of the hospital.\footnote{\textit{Hickman 2016} pg 3} The plane was flying at an increased altitude to avoid being tracked or struck, and its navigation system was unable to accurately locate the NDS compound by GPS coordinates,\footnote{\textit{Hickman 2016}} so even if the crew had been able to access the hospital’s coordinates they would have been unable to ascertain the location under the circumstances. The surveillance drone was in a different part of the city and was not used to gather additional information on the AC-130’s upcoming target.\footnote{\textit{Aikins 2017}} The sensor operator on the plane then resorted to visually searching the area for potential targets, and zeroed in on the hospital because it was lit up and clearly a hub of activity in the middle of the night.\footnote{\textit{Aikins 2017}} The sensor operator reportedly did not see the MSF logo on the top of the building, or did not recognize it because it was not a red cross or crescent.\footnote{\textit{Aikins 2017}} He also did not report seeing any fighting in the immediate vicinity of the hospital. The US military requested an updated visual description of the target from the KKA, who described a “Long T-shaped building

\footnote{\textit{CENTCOM}: “The MSF trauma center did not have an internationally recognized symbol to identify it as a medical facility, such as the Red Cross or Red Crescent that was readily visible to aircrew at night.”}
with a small off shoot… located in a walled-in compound with multiple buildings and a north-facing gate with an arch." This was a distinct description of the hospital that could not be confused with the NDS headquarters, which was a trapezoidal building in a crowded compound with a south-facing gate in a different part of the city. American forces claim that they never received the real visual description of the NDS headquarters. Concerned about the navigational malfunction earlier, the pilot of the AC-130 re-entered the coordinates of the NDS headquarters from an altitude more likely to generate an accurate location, and the plane’s navigational system directed him to the correct spot. However, he and the American command compared the GPS coordinates and visual description of the target provided by the KKA, and decided to strike based on the visual description.

The AC-130 then descended, and at 2:08AM began bombing the KTC with Howitzers. People fleeing from the building as it was destroyed and catching fire, referred to as “squirters” by operators of the gunship, were targeted and shot with guns. The airstrike lasted about an hour, ending by 3:15AM. The T-shaped building that was once the trauma center, emergency room, and operating theatres was completely destroyed. Other buildings in the hospital compound and buildings surrounding the compound were left untouched. The precision and accuracy with which the trauma center was struck provides clear evidence that it was the target rather than accidental collateral damage.

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120 (Aikins 2017)  
121 (Aikins 2017)  
122 (Aikins 2017)  
123 (Médecins sans Frontières 2015); The CENTCOM investigation reports that the attack ended at 2:38AM.  
124 (Médecins sans Frontières 2015) pg 11
MSF staff immediately began calling and texting any and all contacts that they could reach and inform that an airstrike was taking place, and attempt to stop it, but the bombing did not cease until the trauma center had been destroyed.¹²⁵

**Aftermath of the airstrike**

Explosions can kill or maim people in several ways; there is the force of the initial blast, then flying shrapnel, and then fire. During the attack on the KTC, those who escaped these three hazards they were also vulnerable to gunfire coming from the AC-130. The scene of the attack was truly horrific. Immobilized patients burned in their beds. Staff, visitors, and other patients who were not immediately killed experienced traumatic amputations and shrapnel injuries, or gunshot wounds as they fled to other buildings in the compound. Remaining MSF staff quickly set up impromptu operating rooms in offices in an attempt to save those who had not immediately been killed during the attack. Still, 42 people including 14 medical staff were killed in the attack.¹²⁶

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¹²⁵ (Médecins sans Frontières 2015) pg 8
¹²⁶ (Médecins sans Frontières 2015)
Starting at 5:45AM, ambulances arrived to evacuate patients to nearby hospitals. Clashes occurred nearby between Afghan forces and the Taliban, and at least one ambulance was caught in the chaotic crossfire. International medical staff were evacuated that morning.\textsuperscript{127}

The hospital was decimated and had to close, leaving the thousands of patients who relied on the KTC with few or no further options for healthcare. Executive administrative MSF staff who remained on the premises for the weeks following the air strike reported that a NATO-associated

\textsuperscript{127} (Médecins sans Frontières 2015) pgs 9, 12, 13
tank crashed through the gate and entered the courtyard in the course of their investigation of the attack, further damaging the hospital grounds and scaring staff.  

MSF, NATO, the US army, and Afghan military forces all conducted internal investigations. However, MSF’s calls for an independent investigation went unheeded. 

Further journalistic inquiries into the incident have revealed details that were excluded (or censored) from the US investigation, including damning statements made by leaders in the Afghan military forces. First, a senior KKA commander stated that MSF staff were hiding Taliban leaders in the hospital months before the attack (he had no evidence to support this claim). Then, after the attack and reparations by the American government, the same commander said “That hospital is in the service of the Taliban. I swear to God, if they make it a hundred times, we’ll destroy it a hundred times.” This obviously indicated that Afghan military leaders such as this one supported the bombing of the hospital. Other members of the Afghan forces indicated that they believed the hospital was a legitimate military target because the Taliban were allowed to bring their radios into the hospital. According to these men, KKA had picked up radio transmissions relevant to military activities from inside the hospital, effectively making the hospital a Taliban control center. Members of the KKA also stated that the hospital was attacked because machine gun fire was coming from the hospital towards NATO forces, even though according to the American operator of the AC-130 there was no actual fighting occurring in the vicinity and the Afghan convoy was nowhere near the hospital at the time. Several months before the air strike, suspicions such as these culminated in members of the NATO military coalition forcing their way into the hospital with guns in search of a Taliban leader whom they were convinced was hiding there. The Taliban leader

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128 (Médecins sans Frontières 2015) pg 13
129 (Aikins 2017)
130 (Aikins 2017)
131 (Aikins 2017)
was not found, and the hospital closed for several days afterward until they received adequate assurance that no such violence would occur again.\textsuperscript{132}

\textbf{Concluding notes}

The investigation and statements put forth by the US military and government indicate that the attack on the KTC was caused by a series of mistakes. The official investigation cites equipment failures including communication systems going out on the AC-130, faulty GPS, and a camera on the missile itself failing to engage. The investigation also blames procedural and human errors including inaccurate application of mission operating rules and rules of engagement, failure to adequately communicate and determine the correct target, and working through improper command channels with the Afghan military.

What the investigation does not discuss, or what was censored, is the possibility that the Afghan military intentionally and knowingly targeted the KTC and used its American ally to carry out the attack. The visual description of the target that matched the KTC on the night of the attack in addition to statements made by Afghan military officials after the fact make this scenario a likely possibility.

Better equipment, procedures, and communication on the part of the American military and/or respect for humanitarian law on the part of the Afghan military would have prevented this attack. While the responsibility rests on the shoulders of the weapons bearers, there were additional steps MSF could have taken as well to reduce the likelihood of an attack. Some of these include using universally recognized symbols such as a red cross or crescent rather than the MSF logo on the roof and entrances, forming stronger relationships with the Afghanistan military and government, and having clearer communication channels once the attack took place.

These protective strategies and potential legal actions will be further discussed in the discussion and conclusion sections.

\textsuperscript{132} (Aikins 2017)
CHAPTER 5

Case Study 2: Attack on MSF Abs Hospital in Northwestern Yemen

On the 15th August 2016, a Saudi-led coalition carried out an airstrike in the compound of the MSF-supported Abs hospital in northwestern Yemen. The attack killed 19 people and injured 24 others, and caused damage to the hospital.

Background

Yemen has been plagued by conflicts for decades, but in March 2015 the violence intensified, spurring MSF to send more staff and supplies to support hospitals across the country. Over ¾ of the population in the Hajjah district were dependent on humanitarian aid for medical care, including the 300,000 internally displaced people who fled to the area. The Abs hospital was the only functional hospital in the area, and so in July 2015 MSF directed resources to that location. Their assistance included sending or paying 205 workers comprised of local staff, international staff, and Ministry of Health employees. With MSF’s support the hospital sustained 14 ER beds, an operating theatre, and pediatric and maternity wards. Combined across all departments, over 15,000 patients were treated at Abs hospital during MSF’s first year there. Additionally, MSF assisted in securing clean water and nutrition treatments for the surrounding population.

From the time they began working in the area, MSF regularly communicated with armed groups and government agencies. Their presence was known, and in fact led community members to believe that the area would be more safe with a hospital nearby, even though the area was already residential and not any kind of legitimate military target. MSF staff provided the Saudi-Led

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133 (Médecins sans Frontières 2016) pg 3
Coalition (SLC) with GPS coordinates of the facility, and clearly displayed MSF logos on the roofs of the hospital.\footnote{Médecins sans Frontières 2016} pg 10

Staff on the ground monitored the safety and activity of the hospital, there were no records of military or non-medical activity going on within the hospital. The strict no-weapons policy was enforced and respected. The pharmacy was carefully secured so that no drugs would be channeled into the unintended hands. In fact, records reflected effective, ongoing communication with both the SLC and Al-Houthi armed groups, with no significant violent conflicts or threats.

\textit{The Attack}
By 3pm on the afternoon of August 15th, air strikes had occurred in villages near the hospital, and hospital staff reported that they observed increased airplane presence in the area. Because of this, staff initiated a mass casualty plan in anticipation of an influx of wounded patients, but no such dramatic influx occurred and the plan was later lifted.¹³⁵

Around 3:35PM, a white city taxi approached the hospital with patients who had been wounded in airstrikes; the taxi had apparently driven at least ten kilometers through unpopulated areas to reach the hospital. The guard inspected the car at the hospital gate and ascertained that no weapons were present, nor were any passengers (one of whom was a child) wearing military uniforms of any kind, so it was allowed enter the compound. MSF staff were in the course of evaluating the patients and preparing to move them into the hospital when at 3:40 PM a bomb was dropped precisely where the car had parked in the triage area, without any warning. The explosion killed people standing nearby on impact, shattered windows, destroyed the car, and left a crater in its place. Many others were injured by shrapnel and partial collapse of structures. Fortunately, hospital buildings were mostly still standing, and no other weapons were deployed.

¹³⁵ (Médecins sans Frontières 2016) pg 4
Immediately after the attack, MSF contacted the SLC through pre-determined channels. At first, MSF staff were told that the strike was an Al-Houthi militia rocket launch, but it was confirmed over the next several hours that the car was targeted by the SLC. At the Abs hospital, existing patients plus the new patients were quickly transported to nearby private healthcare facilities by private vehicles, or stabilized and transported later if necessary. Because of the severity of the injuries or illnesses endured by patients even before the airstrike, patients experienced adverse outcomes and at least one died because they had to leave the hospital. By 6:45pm that night, all staff evacuated.

**Aftermath of the Attack**

The hospital remained closed for 11 days, following which departments reopened as facilities became operational. The operational capacity of the hospital was significantly diminished because MSF made the decision that the site was no longer safe for its staff. Additionally, MSF withdrew international staff from five other nearby medical facilities, though the organization still provided resources and logistical support to remaining local staff. Another problem was that many patients justifiably felt unsafe at the hospital after the airstrike, which led to drastically reduced admission numbers and even patients fleeing against medical advice at the sound of nearby planes, though no other attacks occurred. These factors combined reduced the number of places patients could go for care, especially because transportation and admission to other facilities was very expensive. It also created tension between the local community and hospital, because some people saw it as inviting military activity into their neighborhood. Additionally, the clean water and nutrition projects that were ongoing in the community were

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136 (Médecins sans Frontières 2016) pg 5
137 (Médecins sans Frontières 2016) pg 7
138 (Médecins sans Frontières 2016) pg 8
halted, leaving the population more vulnerable to illnesses. The fallout from the Abs hospital attack probably disproportionately affected IDP’s, who were especially economically disadvantaged and without consistent, affordable health care and adequate living conditions.

Further journalistic reports on the attack have indicated that the weapon used was likely American made,\(^ {139}\) though this hasn’t been officially, publicly been confirmed by the SLC or US government.

**MSF and JIAT reactions to the attack**

The Joint Incidents Assessment Team (JIAT) is a body composed of 14 individuals with legal and military experience from Saudi Arabia, Kuwait, Yemen, Qatar, Bahrain, and the UAE. JIAT exists to investigate the operations armed groups in the Middle East, including the SLC, to determine whether their actions are permissible under IHL given the circumstances surrounding any incident, international norms, and rules of engagement.\(^ {140}\) Information from their investigation\(^ {141}\) report is below; it contains many details contradictory to MSF’s account of the attack.

The JIAT reported that the SLC was monitoring an area in the north of the city of Abs with elevated Houthi activity, including meeting of Houthi armed leaders. At some point a vehicle (the white taxi) headed south from the targeted site, at which point the JIAT states it was “immediately” pursued and shelled. The vehicle was considered a legitimate military target by the SLC and the JIAT because of its proximity to the site of Houthi activity. The JIAT states that the vehicle was “next to” a building at the time of the shelling, which the SLC was unaware was a hospital because

\(^ {139}\) (Amnesty International 2016)  
\(^ {140}\) (Riyadh 2016)  
\(^ {141}\) (Babi’l 2016)
no signs were displayed. The JIAT reported that 7 people died and 11 were injured in the attack. Investigators concluded that the attack on the hospital was an accident, collateral damage in a strike against a legitimate military target. The JIAT concluded that the SLC ought to apologize for the unintentional error, offer assistance to those affected, and investigate whether the rules of engagement were violated and take appropriate action following that investigation.

MSF does not dispute that the vehicle was leaving an activity with increased Houthi activity or fighting, however the organization pointed out that it was common for civilians to be transported throughout the city in distinctive white taxis. The SLC wrongly jumped to the conclusion that the taxi was performing military operations rather than carrying injured civilians from a dangerous area to a hospital. MSF further disputes the claim that SLC air forces “immediately” shelled the vehicle; the vehicle had traveled through 10 kilometers of unpopulated area before reaching the hospital from the north of the city, and had stopped for a few minutes outside of the emergency room area while a guard inspected it. If the SLC had intended to immediately pursue and shell the vehicle, they had ample opportunity to do so earlier. The JIAT’s statement that the car was “next to” a building is misleading, in fact the car was inside the hospital compound. It was not coincidentally driving down a random street. The hospital was clearly marked with a 2mx5m sign including the MSF logo and identifying hospital information painted on the roof, with additional signs posted around the compound. Its functions were well-known in the area, and MSF had provided the SLC with its GPS several times over the last year it had been in that location. Thus, MSF refutes the possibility that the SLC did not know the building was a hospital. Finally, the JIAT stated that 7 people were killed and 11 injured in the attack, when the real casualties over double that; 19 killed and 24 injured.
MSF concluded in their own report that the attack was wrongful, unprovoked, and inexcusable. Following the JIAT statement release, they further stressed that the incident should not be considered an accident, rather “a consequence of conducting hostilities with disregard for the protected nature of hospitals and civilian structures.”\textsuperscript{142} Their assessment of the situation has merit. In Yemen alone over a short few years, there have been so many attacks on hospitals, schools, and other civilian structures that hundreds of people have been killed, including health care workers.\textsuperscript{143} Sometimes the incidents are deemed justified because the SLC viewed the target as a Houthi headquarters or weapons storage and distribution center, as in the case of an attack on a school on the same day as that on Abs hospital, in which 10 children were killed.\textsuperscript{144} Other times the incidents are dismissed, as the attack on Abs hospital was, as collateral damage inevitable in violent conflicts. When the SLC as a weapons-bearer has the capability to avoid causing significant harm to non-military targets such as healthcare facilities, and repeatedly does not do so, continued attacks with explosive weapons on these buildings are not “errors.” They are acts of malevolent negligence that reflect the lack of respect the SLC hold for IHL, the needs of the civilian population, and humanity.

\textsuperscript{142} (Médecins sans Frontières 2016)  
\textsuperscript{143} (Médecins sans Frontières 2017)  
\textsuperscript{144} (Riyadh 2016)
CHAPTER 6

Case Study 3: Air strike near MSF Taiz health clinic in Southwestern Yemen

On December 1, 2015, Médecins sans Frontières opened a tent clinic outside the city of Taiz, Yemen. The following day, the Saudi-Led Coalition carried out air strikes near the new clinic. These air strikes killed one civilian and injured others, including MSF staff, caused already internally displaced people to flee the area, and led to distrust between MSF and the community.

Background

The civil war in Yemen officially began in March 2015, but fighting between factions had been occurring for at least three years before that. The Saudi-led coalition (SLC), a party fighting in the conflict on the side of former president Hadi, imposed a weapons embargo at the beginning of the conflict.145 This prevents other supplies, including fuel and medicines, from reaching the country. So, while a violent conflict was ongoing and the need for medical services was especially great, half of all healthcare facilities in Yemen were forced to close or reduce operations because they lacked resources and couldn’t operate through the ongoing conflict.146 MSF was able to negotiate with the SLC to import medical supplies despite the embargo and destruction of several airports. MSF accomplished by chartering planes and ships to bring in tons of medical supplies.147

Taiz is a city in southwest Yemen, about 60 miles inland from the Bab al-Manadab Strait. Fighting intensified in the area in July 2015, at which time the population of the city was about 600,000. That number has since shrunk to 200,000.148 Fighting is most intense and dangerous in

145 (Médecine sans Frontières 2017)
146 (Cone 2016)
147 (Médecine sans Frontières 2017)
148 (Médecins sans Frontières 2017)
the city center. MSF runs two hospitals in the Al-Houban neighborhood near the city: a trauma center for war-wounded patients and a mother and children’s hospital. The organization supports four other hospitals in the city: Al Thawra, Al Jomhori, Yemeni Swedish, and Al Rawda.\textsuperscript{149} MSF give medical supplies and medicines to these hospitals which are otherwise inaccessible because of the embargo.

Attacks on health care facilities in Taiz are unfortunately all too common. Nine people were injured when the Houthi/Saleh forces shelled Al Thawra hospital in October 2015.\textsuperscript{150} Snipers shoot into hospitals, surgeons have been forced to operate at gunpoint, hospital structures such as water and tanks fuel tanks have been destroyed, and ambulances have been hijacked. Sometimes, to avoid the violence outside, healthcare workers live inside hospitals for extended periods of time because it is too dangerous to commute to/from work. The situation is truly dire. Daily, civilians are in danger of sustaining war wounds. They have to take circuitous routes to reach hospitals, and treatment is often delayed for traumatic or medical emergencies. All medical services, including primary care, maternal care, and vaccination schedules have been disrupted.

Before the fighting intensified in Taiz in July 2015, people were fleeing to the city to escape violence elsewhere. Combined with people who abruptly left their homes in more dangerous parts of the city center, there were thousands of internally displaced people living in poor conditions in camps or around neighborhoods outside the city. Malnourishment was a significant issue as well. Many of the displaced people living near the MCH went there for care.\textsuperscript{151} MSF opened the health clinic in a field in the residential Al-Houban neighborhood (500 meters from the Mother and Child hospital) to meet the needs of the population there and prevent the mother and child hospital from

\textsuperscript{149} (Médecins sans Frontières 2015) pg 1
\textsuperscript{150} (Médecins sans Frontières 2017) pg 5
\textsuperscript{151} (Médecins sans Frontières 2015) pg 1
being overwhelmed with patients in December. MSF chose this location because there had not been fighting or airstrikes in the area for months, and there were no obvious military objects nearby.

![Image of MSF tent clinic](image)

**Figure 9 The tent clinic and MSF, with banner visible. MSF**

**The attack and communication with military forces**

On November 29, before setting up the clinic, MSF sent the GPS coordinates of the Mother and Child hospital and the new clinic to the SLC. Included in that email were image of a medical vehicle with an MSF banner on top and aerial photos of the neighborhood with the MCH and new clinic locations marked. The health clinic was a 6x5 meter white tent, with a 2x3 meter banner displaying the MSF logo on top. MSF further communicated with local leaders and authorities that the clinic would be set up and operational on December 1.

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152 (Médecins sans Frontières 2015) pgs 9-11
On December 2, the second day the clinic was open, there were airstrikes in the neighborhood just over a mile from the clinic between 11:20am and noon. MSF proceeded to send the coordinates of the clinic and the mother and child hospital to the SLC a second time. People in the area were scared because of the airstrikes, leading to low patient numbers for the day. Normally the clinic would have closed at 2:00pm, but it closed early and staff left by 1:40pm.\(^{153}\)

Immediately following the morning airstrike, the MSF Yemen team contacted the MSF Djibouti liaison (who was designated to handle communication for Yemen in the event of an attack like this), who in turn contacted the KSA. First, the KSA representative would not release information about whether the airstrikes would continue in the area. He then said it was impossible that there were airstrikes within 20km of the clinic. Records of the conversations show that at 1:10pm the KSA confirmed receipt of the correct GPS coordinates, and said that the airstrikes would “not approach these locations.”\(^{154}\)

One hour later at 2:10pm, right after clinic was supposed to close, an airstrike was conducted and an explosive weapon was dropped just 22 meters (72 feet) from the clinic by KSA forces. Nine people were injured, and one person was killed. An MSF guard was among the people

\(^{153}\) (Médecins sans Frontières 2015) pg 2
\(^{154}\) (Médecins sans Frontières 2015) pg 4
severely injured. Three of the people injured were standing near the tent when the airstrike occurred.\textsuperscript{155} Many of the injuries were from shrapnel; images of the site after the blast also show significant damage to a car, and holes in walls or posts caused by the air strike. If the clinic had not closed early, there would have likely been more people just leaving the clinic who would have been injured or killed.

The explosion was strong enough that staff and patients in the mother and children’s hospital felt the explosion over 450 meters away. Following the afternoon airstrike, the mother and children’s hospital also sent home any non-critical patients and stopped all non-essential duties for the day.

\textbf{Aftermath of the attack}

Following the airstrike near the clinic, relations between MSF and the local community which they aimed to serve weakened. Many already displaced people fled the area, saying that the airstrike occurred in the area because of the MSF clinic. The people who stayed in the area were

\textsuperscript{155} (Médecins sans Frontières 2015) pg 2
likely weary of going to the clinic; there are many instance in Yemen where attacks on and around healthcare facilities cause patients to stay home or delay treatment when they need medical care.\textsuperscript{156} Medical professionals are quoted as saying that as a result of the extreme violence in Yemen, women consistently stay home to give birth, putting themselves and their babies at higher risk for illness and death. War-wounded individuals may have to travel long distances to get treatment, resulting in infection, disability, and even death. People can stay home and risk getting sicker, or travel to a healthcare facility and risk getting shot. Taxis are routinely a target for snipers and explosive weapons, unfortunately so are ambulances. Either vehicle may be held up at checkpoints, regardless of the condition of the patient being transported.\textsuperscript{157} Private hospitals and clinics exist, but the price of care at one is usually prohibitively expensive for average Yemeni citizens.\textsuperscript{158} It is unlikely that people who fled the area near the clinic after the airstrike found a safe location that is near healthcare facilities. Medical personnel are also often displaced people themselves; when their homes and places of work are no longer safe, they are forced to flee. This shortage of healthcare professionals puts further strain on an already overburdened healthcare system.

Unfortunately, the brutal actions of the SLC in Yemen show no signs of stopping. Attacks on healthcare facilities and civilians have continued since the airstrike near the clinic. For example, in May 2016, the SLC declared the entire Saada province a war zone and designated civilian structures as military targets.\textsuperscript{159} Schools, homes, medical facilities and transports, and essential infrastructure such as gas, electricity, and water networks were all damaged by airstrikes. Over 2,800 civilians were killed that month. UN resolution 2216 has provided diplomatic cover for the

\textsuperscript{156} (Médecins sans Frontières 2015) pg 2
\textsuperscript{157} (Médecins sans Frontières 2017) pg 13
\textsuperscript{158} (Médecins sans Frontières 2017) pg 11
\textsuperscript{159} (Al-Haj 2015)
actions of the SLC.\textsuperscript{160} The resolution called on Houthi forces to cease aggressions, and condoned embargos (including those on medical supplies and other aid materials), but did not acknowledge specific responsibilities of the SLC, such as to stop bombing civilian and medical structures. The SLC so far has not been held accountable for its repeated egregious violations of IHL and attacks on healthcare facilities.

\textsuperscript{160} (UN Security Council 2015)
CHAPTER 7

Analysis of the attacks and actions of armed groups and healthcare workers

In this chapter, the actions of both armed groups and affected healthcare organizations and workers will be assessed. Violations of international law and actions that could have prevented or reduced harm of the attacks will be discussed. It should be the responsibility of armed groups to take every step to avoid attacking healthcare workers and facilities, however, it is in the benefit of healthcare organizations to also proactively protect themselves to the extent that is possible. In the event of an attack, the more measures healthcare organizations have in place, the more likely it is that violations of international law can be easily identified and enforced.

KUNDUZ

MSF actions

While the Kunduz Trauma Center (KTC) was operational, MSF periodically sent its GPS coordinates to the Afghan and American militaries. Given that planes are equipped with GPS technology, it was reasonable to assume that the militaries would faithfully use this technology. However, other back up mechanisms could have been put in place in case GPS was not used or did not work, as in the case of the attack. MSF could also have sent aerial photos or a visual description of the hospital compound; had the AC-130 operators had access to this information, they may have realized that they were targeting the hospital rather than the police headquarters. Additionally, having the visual aerial description of the hospital could have prevented the Afghan military from providing the Americans with false information.

MSF is the largest medical humanitarian organization in the world, so it is reasonable to expect that their logo would be easily recognized, however, American military officials cited the
lack of a red cross or red crescent as a reason that the hospital was not recognized from the air. MSF routinely identifies its buildings and vehicles with banners bearing the MSF logo and text. The organization should consider using a universally recognized red cross or red crescent instead of or in addition to these symbols; especially on roofs. This change would offer the benefit of either making the buildings more recognizable and less likely to be attacked, or to use as further proof that armed parties should have recognized the building as a hospital and should have avoided attacking it. The organization could also consider using reflective signs, so that they can be more easily seen in the dark and through dust or smoke. Ideally, with the technology available to the military, these changes wouldn’t be the only thing standing between a hospital and an aerial attack, however, because of the relative cheapness and potential benefit of new signs they may be a worthwhile investment. The signs could also be reused for other facilities in the event that an operation has to close or move. Barring new signs, MSF or other humanitarian organizations like it should confirm with nearby armed groups that the groups recognize and understand their specific symbol, and that the symbol is visible. Under the Geneva Conventions, symbols other than a red cross or red crescent may be used, as long as they are recognized in their operational context.

Having an underground bunker reserved for staff seemed to be a beneficial practice; it probably saved many lives. MSF should continue this practice, and select new sites with underground shelters (or space to construct one). This has been a relatively successful strategy for hospitals in Syria, which are routinely being targeted by airstrikes.\textsuperscript{161} Underground rooms or facilities serve the dual purpose of being hidden and being resistant to explosives.

\textsuperscript{161} (Binder 2017)
MSF protected the hospital’s neutrality by having a strict no-weapons policy. MSF should have also clarified the policy surrounding cell phones and radios with the Taliban and Afghan military. Taliban radio communications coming from within the hospital were cited by the Afghan military as justification for the loss of the hospital’s protected status. Likewise, the Afghan military should have raised this concern with MSF to attempt to change the policy rather than attacking the hospital. This was not a justification to attack the hospital, but it was not an illegitimate concern.

**American and Afghan Military Actions**

The American military forces on the ground had a poor grasp on their own rules of engagement and IHL. The intended attack on the Taliban-held police headquarters was not justified under their ability to defend themselves; not only was it not an active threat to American forces, it was not a threat to Afghan forces which were in a separate part of the city. Furthermore, any preemptive use of force required higher authorization, which was not sought. The biggest mistake, though, is that American forces utterly failed to ascertain the true identity of their target, an undertaking explicitly mandated by IHL. First, a drone intended to conduct visual surveillance was in a different part of the city, separated from both the Afghan convoy and American plane. Second, the plane’s GPS was faulty, and directed the plane to an incorrect site, at which point the hospital was arbitrarily defined as a potential target. The hospital was lit up, and the AC-130 operator assumed it was more likely to be the Taliban headquarters. When the GPS coordinates were re-entered and directed the AC-130 to the correct site, the actual position of the true target was disregarded. The AC-130 operator was unable to access the GPS coordinates of the hospital because the internet on the plane was faulty and the information was in an email, so they could not cross reference the location of the target with locations on the no-hit list. The camera on the plane was not able to obtain a clear enough picture of the hospital compound to see the MSF signs on
the roof, in part because the operator wanted to remain undetected and therefore remained higher in the air. American forces then relied on the Afghan military to provide a visual description of the target. Given the history of the Afghanistan forces providing false information to American forces, and Afghan aggression toward MSF in prior incidents, the American military should not have relied so heavily on this information to identify a target site. All of these technological failures and untrustworthy information culminated in an inability to accurately identify the hospital. The attack was a violation of IHL because American forces were under no imminent threat from the hospital, and they failed to distinguish it as a medical facility from a military object, even though they should have had the technology to do so. American forces should have postponed the attack until better information was available, for example by fixing the navigational and internet connections, or using the surveillance drone to more closely observe the area.

The attack lasted nearly an hour. If the KTC had a direct line of communication with American forces operating nearby, it is possible that MSF could have notified American forces that they were attacking the hospital, and some damage could have been avoided.

However, there is the likely possibility that the attack was not a mistake at all, so better technology or communication would not have prevented it. It is clear that the Afghan military believed MSF to be coordinating with the Taliban. Afghan military members then used this as justification for attack on the hospital. This demonstrates a poor understanding or respect of IHL; the KTC was not in the service of the Taliban, the hospital was only being used for legitimate medical purposes in line with the humanitarian mission of MSF. Even if the hospital had been in the service of the Taliban, under IHIL the Afghan and American militaries were required to issue a warning and give healthcare workers and patients the opportunity to evacuate before attacking.
The Afghan military should better educate its members on IHL, and should have communicated their concerns to MSF and their American allies.

The Afghan military, knowing American navigational systems were down, gave an unmistakable description of the hospital rather than the police headquarters. There is no way this was a mistake; the hospital had a spacious courtyard, T-shaped trauma center, and north facing gate, while the police headquarters was a trapezoidal building in a crowded courtyard with a south-facing gate. Combined with Afghan military sources saying that they believed that the hospital was in the service of the Taliban, and if the hospital was rebuilt they would bomb it again, this information is sufficient evidence that Afghan forces likely intentionally targeted the hospital.

In the declassified version of the American investigation into the attack, there was no mention of investigation into the possibility that the hospital was intentionally targeted. The entire document wrote about the incident as if it was simply a mistake. This leaves open three possibilities: 1. It would somehow pose a risk to US military operations to release this information (it is unlikely that even mentioning the investigation of this topic would pose significant risk) 2. The military investigators did not consider this possibility (this is unlikely, and such an inadequate assessment would pose its own violation of IHL because parties are required to investigate any incidents) 3. The American military was complicit in the attack, either by actively participating at the time or “covering for” the Afghan military after the fact (either of which being a war crime and violation of IHL for intentionally targeting a legitimate medical facility, or failing to correctly identify it).

The American military should publicly investigate the claim that the Afghan military intentionally targeted the KTC.
Following the investigation, the American military did implement punishment, retraining, and reconciliation strategies. Sixteen US servicemembers were considered for some sort of administrative or disciplinary action; General Campbell took action in twelve of these by removing them from command and/or issuing letters of reprimand, formal counseling, and extensive retraining. Five of these men returned to the states and it was recommended by General Campbell that another General Votel in the states consider further disciplinary action for them. Four of them received letters of admonishment, three members of the flight crew had to undergo retraining and reevaluation, and the fifth also had to retrain in his specialty. According to the investigation report, because the investigation found that the incident was an accident, senior military commanders determined that administrative (rather than criminal action) was sufficient to deal with the actions of servicemembers, especially since these administrative actions could hinder career advancements and promotions.\footnote{162 (Hickman 2016) pg 4}

General Campbell issued several directives to improve operations in Afghanistan, including additional training to be completed by over 9,000 servicemembers by November 2015, reviews and instructions clarifying the rules of engagement and target selection process, mandate that key GPS coordinates are pre-loaded into aircraft so that they are always accessible, and that detailed information about the incident would be provided to MSF leadership.\footnote{163 (Hickman 2016) pg 5}

The US military offered condolence payments to 170 individuals and families affected by the incident, plus $5.7 million to rebuild the KTC.

Under IHL, states can and must conduct investigations into potential violations. Under the premise that this incident was truly accidental, the US fulfilled this requirement and took several
important, sufficient steps including reprimanding and retraining personnel, updating and clarifying information, and offering payments for damage. The specific points of the updates directions are not available to the public; they ought to include instructions to use all available technology (GPS, camera, telecommunication, etc) to verify the correct target, and not to rely on possibly faulty information from the Afghan army in situations such as this. However, under the premise that this incident was not truly an accident, the US did not sufficiently investigate potential war crimes, or did not release that information. Even if Afghans planned the attack and Americans carried it out on Afghan soil, Americans’ crucial involvement in the process should allow Americans to investigate the potential that this violation of IHL was committed. Further, Americans can investigate whether or not a grave breach of IHL was committed by any Afghan military personnel, or forward this responsibility onto the Afghan government or an international body. Since the suspicion already exists that Afghans intentionally targeted the hospital, the US military should have conducted the investigation or forwarded it onto an international body to ensure that IHL would be respected, and a thorough and fair investigation and penal procedure would take place.

ABS

MSF and Saudi-Led Coalition Actions

MSF provided the GPS coordinates of their Abs hospital several times to the Saudi-Led Coalition (SLC). Banners were present on the roof of the hospital, and the hospital was well-known in the area. Yet, the SLC carried out an airstrike on the hospital in broad daylight, saying that they were not aware the building was a hospital. The SLC plane operators should have checked the GPS coordinates of their target with the GPS coordinates on their no-hit list. Further, they should have observed that signs were present on the roof of the building identifying it as a hospital. MSF
could have specifically communicated to the SLC the visual description of their hospital and logo, either to protect the hospital from attacks or further delegitimize the claims of the SLC that the status of the building was unknown at the time of the attack.

The SLC claimed that it targeted a car traveling from an area of elevated Houthi military activity believed to be a legitimate military target, and shelled it immediately. These statements are demonstrably false – no violent activity was occurring because of the taxi; it was conducting the perfectly reasonable and predictable task of transporting injured civilians from a dangerous area to a healthcare facility. Furthermore, the SLC waited until the vehicle drove to the hospital waited outside the gate, and entered the hospital courtyard to carry out the attack; shells were not dropped immediately.

Finally, even if the taxi was a legitimate military target, the SLC violated IHL by causing avoidable and superfluous harm to the hospital, healthcare workers, and civilians near the car by using an excessively powerful explosive weapon. Photos from the site of the explosion show a large crater where the car was parked. Remember that explosive weapons must be specially designed with thick casing and a high charge-to-weight ratio to produce such a powerful blast and large crater. The explosion damaged the hospital, utterly destroyed the car, and killed and injured dozens of people nearby. This weapon was not appropriate to use in a dense urban setting, much less in the middle of a hospital courtyard. If the car had to be targeted, an explosive weapon designed to pierce thin metal and cause a more contained explosion would have been more appropriate to target a small, unarmored vehicle and the people inside. Because of the poorly selected explosive weapon employed by the SLC, many more lives were lost, injuries incurred, and damage caused.
The JIAT investigation into the incident paralleled the SLC’s narrative; that they were unaware the building was a hospital, that the car was a legitimate military target and was shelled immediately, and that the collateral damage was appropriate and necessary. Given the history of the SLC repeatedly attacking hospitals in Yemen and the fact that the JIAT’s investigation is so obviously inadequate, an international body should investigate this incident. It is possible that an international criminal tribunal could investigate the pattern of attacks on healthcare workers and facilities in Yemen, or the ICC could investigate this and other incidents. Either way, given that a civilian vehicle carrying injured people was targeted with a too-powerful weapon inside a healthcare facility during an ongoing conflict, and the attack with this explosive weapon resulted in the death and injury of dozens of civilians (including healthcare staff), this incident can be investigated as a violation of IHL, IHRL, ICL, CIL, and could ultimately qualify as a war crime (especially in conjunction with all of the other violence perpetuated by the SLC).

The SLC should more carefully select its targets and the weapons it uses in populated areas, and educate its members on the relevant international law related to the selection of these weapons.

**TAIZ**

In the analyses of the attack on the KTC and Abs hospital, recommendations on the part of MSF included providing armed groups not only with GPS coordinates, but also aerial images and images of the logo. Before the airstrike near the Taiz clinic, MSF did provide all of this information to the SLC plus the organization called the military the day of the attack when there were airstrikes in the area, and yet the attack still occurred. This demonstrates the absolute necessity of clarifying and enforcing international law.
The attack near the Taiz health clinic was a violation of international law; there was no military advantage to be gained from the attack, it injured and killed civilians, and negatively impacted the operation of health care services. Had the attack been carried out with a more powerful weapon or if the weapon had directly hit the clinic or hospital, either of these would have been more severe violations of IHL, but the incident at hand was a violation nonetheless. The shrapnel found by civilians at the scene indicates that the attackers intended for this explosive weapon to cause damage to people and facilities; remember that shrapnel can travel farther than the blast or heat of an explosion, and its sharp, small, metal particles are especially dangerous to the human body. There really were no further precautions that could have reasonably been taken by MSF, and there is no valid excuse for the SLC to have carried out the attack.

The JIAT investigation report of the attack indicated that there were Houthi rebels in the area, and that they were a valuable military target. JIAT recommended that MSF keep the mobile clinic away from military targets to avoid “side effects” of any bombings. JIAT maintains that because a legitimate and valuable military personnel were the target of the attack and MSF suffered no casualties that IHL had not been breached.\textsuperscript{164}

The facts that no attacks had occurred in the area during the preceding 9 months before the opening of the clinic, that the attack was so close to the new, clearly marked clinic, and that the attack occurred at a time when healthcare workers and patients were expected to be in the area all suggest a certain level of intentionality behind the attack. The context of repeated, ongoing attacks by the SLC against healthcare workers and facilities in Yemen further supports this argument. The possibility that these attacks are purposeful acts to threaten or harm civilians and disrupt healthcare

\textsuperscript{164} (Irates News Agency 2016)
services should be investigated by the ICC or an international criminal tribunal, and any incriminating findings should be used to appropriately punish the SLC and prevent future attacks from occurring. JIAT’s investigation was inadequate and their statement did not acknowledge the change in military activity between December 2 and the preceding 9 months of no air airstrikes in the area. Further, their English statement did not acknowledge MSF’s claims that the people in the area were not Houthi rebels but rather IDP’s in need of medical care. An attack on these people that also affected health care workers is potentially a violation of IHL and IHRL\textsuperscript{165} (and therefore ICL and CIL). The SLC should retrain its members with respect to international law and their job duties, an international organization such as the Red Cross should probably step in to assist.

The impact of this attack was also relatively less severe than the other two case studies; fewer people were killed, and no damage was incurred by healthcare facilities. This attack serves as a demonstration of how even in the absence of the absolute loss or severe damage healthcare workers and facilities, significant negative impacts on healthcare workers and the community occur. Following this attack, people in the community justifiably felt less safe seeking health care at nearby MSF facilities, and even fled the once-safe area. Health care workers themselves also tend to leave their homes and jobs to pursue a safer environment. Population displacement such as this negatively affects communities because it leads to instability and a shortage of health care professionals. Furthermore, the essential trust between health care facilities and the local community break down if the local population views the facility as the reason for attacks. Because this clinic was so new, usable data does not exist to assess how the attack affected patient numbers, however, these figures do exist for the attack on Abs hospital. Before the attack, at least 50 patients

\textsuperscript{165} In both IHL and IHRL, it is illegal to attack civilians and medical workers while not in the course of a necessary military objective. There are conflicting reports as to whether there were even military personnel or objects in the area.
were admitted per day across the five departments. Following the attack, there were about 6 patients per day.\textsuperscript{166} It is unclear where or if the rest of the people in need of medical care sought services. There is even an example of a women in active labor fleeing the hospital after she heard a plane flying overhead, and delivering her baby somewhere outside.\textsuperscript{167} Data and stories such as these illustrate the deeply harmful effects attacks with explosive weapons on healthcare workers and facilities have on communities even after the direct damage has been (mostly) repaired.

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\textsuperscript{166} When the hospital re-opened, it was not operating at full capacity because the MSF international staff had been evacuated. However, substantially more patients could still have been served than the average 6 per day with the local staff and supplies and logistical support provided by MSF.
\textsuperscript{167} (Médecins sans Frontières 2016) pgs 8-9
\end{flushright}
CHAPTER 8

Recommendations and Conclusions

Having discussed and analyzed explosive weapons, international law, and specific case studies of attacks with explosive weapons, general conclusions will be drawn and recommendations will be made as to how military, healthcare, and civilian personnel and organizations can help to prevent or reduce the harm of potential future attacks on healthcare workers and facilities.

I. Science and Technology

1. Data

Currently, the burden of collecting data on violence against healthcare workers is up to several different NGO’s and states. This leads to both redundancies\textsuperscript{168} and non-uniformity\textsuperscript{169} in data collection and reporting. There is no single organization that either collects or organizes data on a global scale to track violence with explosive weapons against healthcare workers and facilities. To understand the true scope of the effect of violence with explosive weapons against healthcare workers and facilities and to direct resources to solve it in an efficient and scientific manner, more robust and reliable data is essential. Better data is also needed so that when interventions are implemented, their efficacy can be assessed over time; currently there is a dearth of the necessary long-term, consistent data collection and reporting mechanisms. Regional, state-

\textsuperscript{168} Two studies including data from the same countries and possibly not including the name of the countries to maintain neutrality, as in the case of the 2011 ICRC sixteen country study. It’s hard to count the number of deaths and injuries caused by explosive weapons when the specific incident from which a casualty occurred is unclear.

\textsuperscript{169} The intensity of research into an issue should vary by the severity of the problem in that area – for example, explosive weapon usage against healthcare workers and facilities in Syria is an acute and extreme problem compared to Mexico, but data collection mechanisms should still be in place for each country.
wide, and local data should not cease to be collected by NGO’s or by states. Qualitative or small-scale data is still valuable to gather snapshots of violence in specific contexts, because problems, resources, and potential solutions differ around the globe. What works in Sudan may not work in Syria. Given increasing globalization and growing strength and scope of international laws, data should also be available that reflects the situation on a global scale, so that the international community can work together to reduce this violence.

What would make data “better?” And what sort of organization could accomplish this goal? A new NGO or additional branch/agency of an existing NGO should be tasked with acquiring, analyzing, and releasing better data on violence against healthcare workers. Because forms of violence are often combined,\textsuperscript{170} this organization should investigate all forms of violence, not just one, but for the purposes of this thesis only violence with explosive weapons will be discussed here. One of the first problems with data in the field is that some areas are so extremely dangerous or remote that they are not accessible and data cannot be collected.\textsuperscript{171} The first task of the organization should be to attempt to collect data in these areas, either themselves or through people present on the ground. If it isn’t possible for professionals to collect the data, civilian reporting systems have been successful in other situations\textsuperscript{172} and could be implemented here. Since redundant data collection would be a waste of valuable resources, the organization should lean on

\textsuperscript{170} For example, if a rape or kidnapping is committed at gunpoint, such an incident could possibly fall into several categories of violence. Attacks can be committed with explosive weapons and guns. It should be up to one organization to organize this data so that it is represented as accurately as possible, without over or under exaggerating the problem.

\textsuperscript{171} (ICRC 2015) pg 8-9

\textsuperscript{172} Through internet or phone connections, civilians themselves can report health-related issues. This is a relatively new but successful strategy in surveillance of infectious diseases. Influenzanet is European platform where people can self-report flu-like symptoms so experts can track potential spread of disease. [Guerrisi et. al.\hfill \text{https://academic.oup.com/jid/article-abstract/214/suppl_4/5386/2527906/Participatory-Syndromic-Surveillance-of-Influenza?redirectedFrom=fulltext} Applied to explosive weapons, civilians in inaccessible areas could report incidents, which could then be investigated, or the data could be analyzed separately.
other NGO’s or states when possible to access their data, and establish a uniform collection and classification system with each data collector. An issue in the field has been that NGO’s and states want to protect their own reputation either to avoid prosecution or to continue to attract workers and donors, and so they may be disinclined to share certain information with the public or other aid providers. The data collecting NGO should work with states and NGO’s to acknowledge these concerns so that data can still be collected and shared.

This NGO should ensure, whenever possible, to collect the following data on each attack: the type and number of explosive(s), armed group responsible, intended target (and potential military association), damage to healthcare facility, and death or injury of healthcare workers and civilians. This information could be further used to assess whether or not violations of international law occurred.

2. Explosive Weapons

There is room for improvement in the use and technological capabilities of explosive weapons themselves and associated technology. First, armed groups should ensure that they understand the effects of each existing weapon in their arsenal, and that a weapon is only used in the appropriate context. Weapons and weapon deployment systems should only be used within their intended operational capacities. For example, the operator of the AC-130 in Kunduz intentionally flew the aircraft at a high altitude to avoid detection, but the GPS and communication systems were not designed to function at that height. Thus, their accuracy was compromised and the wrong target was selected. If a military object is identified, armed groups must ensure to use weapons that will cause the necessary level of harm and no more to avoid the superfluous harm to civilians prohibited in IHL.
Second, new weapons technology should be developed to improve their accuracy. Back up mechanisms should be put in place to prevent human or technological errors, such as a system that automatically cross references no-hit list GPS coordinates with assigned target GPS coordinates. In Kunduz, such a system could have notified the aircraft operator that the GPS coordinates of the KTC matched that of the target. More advanced cameras could automatically detect relevant symbols and alert operators to their presence. Healthcare facilities could have devices that electronically alert militaries to their presence so that even in poor-visibility conditions, they could be detected and avoided. These devices should be carefully guarded so as not to fall into the wrong hands, and if used improperly the NGO and military should be able to jointly remotely control the devices. These devices could be especially useful to vehicles, which are small, harder to identify from their air, and usually in motion.

**Policy note:** These devices could be regulated much like medical symbols in the first Geneva Convention; that they are not to be abused or used to misrepresent the true identity of a person or facility.

It is relatively easy for most states to inflict major, indiscriminate damage on an area. What is more difficult is precisely and accurately inflicting damage on the opposing military without harming civilians. To this end, technology should continue to be developed to make the effects of weapons more specific so that when it is necessary to target a military object or person near healthcare facilities and workers, collateral damage is reduced. Had Houthi rebels existed near the Abs hospital or Taiz clinic, the SLC could have deployed weapons with more specific, targeted effects rather than such large explosions that caused excessive damage.
3. Communication

If armed groups need to rely on certain technology, such as radio or internet, to acquire essential information throughout the course of their work, those communication channels must be more reliable. If they break down, armed groups should not perform unnecessary attacks that may violate IHL and harm healthcare workers and facilities. In Kunduz, there was no pressing need to carry out the attack; it was a pre-emptive strike at the wrong location. This technology should be further developed to avoid communication breakdowns. Back up methods for communication should be in place in case the first methods fail.

Healthcare workers should also have a direct, reliable communication line with any armed actors in the area. The attack in Kunduz lasted between 30 and 60 minutes; had MSF been able to communicate directly with the American forces in the area, the attack could have been halted and the damage could have been reduced.

4. Protection

There are a number of precautions that can be taken to protect the integrity of healthcare facilities in the event of an attack. Flying glass shards can cause significant harm to people who are relatively safe from the primary effects of an explosion; shatter-resistant glass could help reduce this risk. Adhesive explosion-proof wallpaper exists and could be used to reinforce healthcare facilities. It may not be possible to apply the wallpaper to an entire facility, but it could be used to create bomb shelters throughout a facility to which staff and patients could safely stay in an attack.

Signs on roofs or posted around healthcare facilities could be made more visible at night by using reflective materials or lights. This could alert armed groups to the presence of a healthcare
facility, which they should then avoid damaging under IH In Kunduz, if the attack was a mistake, making the medical symbols on the KTC could have helped aircraft operators to identify the building.

Combined, these four strategies involving science and technology should reduce the likelihood of an attack, and reduce the collateral structural and human harm resulting from any future attacks.

There are some weaknesses in these recommendations. One is that any data collected by civilians in inaccessible areas may not be as reliable as that collected by professionals. Misleading data could falsely represent the situation, and therefore any proposals to prevent further violence may be less effective. However, some ways to reduce the likelihood of these negative outcomes would be to analyze the civilian-provided data separately and identify its source, send special investigators out to rural sites only when there are reports of an incident, and to include images in data sharing so that researchers can literally get a better picture of what’s happening on the ground. Another potential weakness in this recommendation is that NGO’s are limited in what supplies they can buy and transport; shatter-proof glass or bomb-proof wallpaper may be too expensive or too cumbersome to transport. Strategically placing these products throughout buildings or negotiating lower prices with the vendors/manufacturers are two ways to compensate for their price. An additional weakness of the entirety of the technology section is that in some attacks, there aren’t technical or perception errors; armed groups intentionally target healthcare workers and facilities. The next two sections discuss interventions related to policy and society that could help reduce the instances of intentional attacks.

173 As has been done with medicines and medical supplies
II. Policy

1. Fact Finding Commission or International Court specifically for violence against healthcare

Similar to the need for an NGO to acquire and analyze better data on explosive weapons usage against healthcare workers and facilities globally, an international fact finding commission should be established specifically on the topic of violence against healthcare workers to make recommendations to the ICC or ICT’s about prosecution of war crimes and violations of international laws. A separate court could also be established. This new organization is necessary and justified for two main reasons:

1) Attacks against healthcare workers and facilities with explosive weapons is categorically a serious violation of IHL; the wide-area effects of explosive weapons combined with the importance of healthcare in a community combined make it especially destructive. All people’s lives matter, regardless of their profession. However, when violence against healthcare workers and facilities occurs, the harmful effects are extended to hundreds or thousands more people in the community who were not even directly affected by the attack. The rights under IHL and IHRL of the healthcare workers were likely violated, but so were the rights of everyone who relied on that care to fulfill their “right to life.” This type of crime is especially egregious damaging to society as a whole. Its effects are bigger than a single event; it increases population displacement and decreases the resilience of a community to overcome future threats to their health and well-being. These factors can extend and worsen a crisis because of societal instability. It is therefore in the interest of the international community to swiftly and effectively reduce this form of violence.
2) Existing mechanisms such as the ICC and IFFC have failed to adequately control this violence. In part, they are each weighed down with burdensome political labels and red tape. Any future courts or commissions should be designed in such a way to reduce these inefficiencies and fill in the gaps.

This organization would likely be a treaty-based organization similar to the ICC. It should be grounded in IHL and ICL, so that it is focused on the simple facts of incidents rather than political labels, and so that both state and non-state actors could be held accountable for their actions.

2. Make IHRL apply to non-state actors

Additional protocols and treaties have been introduced in the past to redefine or expand the scope of IHL and IHRL. Article 3 and Additional Protocol II to the Geneva Convention dictated that the basic tenants IHL should apply to non-state actors. A treaty or series of treaties should be introduced so that IHRL must also be upheld by non-state actors to fill in gaps between IHL and IHRL applicability, such as when the threshold for conflict has not been met but a non-state actor still threatens the wellbeing of civilians in certain areas of a state. Relevant treaties would probably be established through the UN, though since IHRL has regional components it would be appropriate to create regional treaties.

3. Enforce Existing Laws

All three case studies involve likely breaches of international law. The problem isn’t necessarily that we need new laws, but that we must enforce existing ones. If a state fails to

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174 Harkening back to the political statement in holding the TLC accountable for IHRL abuses as the de facto government in an area, the focus of IHL would not be the status of involved parties but simply their actions.

175 Remember that IHL applies to state and non-state actors
adequately address an incident on its own, the IFFC and ICC should step in to prevent additional acts of violence. In Kunduz, while American forces conducted an investigation and did punish several involved parties, the investigation was incomplete. On principle, a potential perpetrator of war crimes should not be allowed to investigate itself. The ICC and IFFC should have investigated the US & Afghan militaries. Even though the JIAT is composed of representatives from several different countries throughout the middle east, the state/non-state character of the conflict introduces unique political biases, and given that the JIAT has demonstrated support of the SLC’s lack of respect for IHL and healthcare workers and facilities, incidents such as those in Abs and Taiz should also be investigated by the ICC and IFFC to ensure that these attacks stop.

4. Medical Ethics and the Right to Privacy must be Respected

The Hippocratic Oath is not suspended during conflict situations; health care workers cannot harm patients or reveal their private information no matter the potential military importance of a patient. Armed groups and healthcare workers themselves must respect these ethical values at all times. When patients, community members, and armed groups doubt or don’t respect the ethics of medical professionals, the consequences can be dangerous. For example, in Kunduz, armed men stormed the hospital months before the attack in search of a patient, significantly disrupting the operations there. In an unrelated incident, throughout the course of pursuing Osama Bin Laden, a doctor secretly collected DNA samples while on a vaccination campaign. Following this revelation, violence against vaccine campaign workers rose in Pakistan. It is important for the safety of patients and medical professionals that medical ethics are respected.

Intertwined with medical ethics and international law is the neutrality of health care workers. The attack on Kunduz hospital and opinions of the Afghan military members toward MSF highlight the benefits health care providers maintaining their real and perceived neutrality.
When healthcare workers are seen as not-neutral, they risk becoming a military target, or not being able to provide medical care to members of a community because of a lack of trust.

Together, these policy initiatives should expand the scope of international law to protect more people globally, and in the event of an attack investigative and punitive mechanisms would be strengthened.

There are also weaknesses in these policy initiatives. One is that no organization is truly neutral in the eyes of the entire world. The ICC, which was intended to investigate and prosecute war crimes without prejudice, has a noticeable tendency to focus on atrocities committed by Africans in Africa; because of this, its members were accused of western imperialism because international laws were being enforced when broken by Africans but not by Europeans or Americans.\(^\text{176}\) There would likely be political resistance to establishing another court or investigative body, given that existing ones should already be enforcing international laws. To that point, many laws and legal bodies already exist; why aren’t the laws already enforced and why might yet another treaty bring about positive change? The intent behind the recommendation is to focus on one specific, particularly harmful issue. Hopefully this would allow focused, high-level investigations and analyses by qualified people who are not overwhelmed or overworked by all categories or war crimes.

**III. Society**

**1. Education**

Under international law, states are responsible for educating people (especially members of their military) about IHL. This practice should continue, however, following any attack against

\(^{176}\) (Halakhe 2014)
healthcare, another organization such as the ICRC should step in to review a state’s policies regarding education and IHL. It is in the mandate of the Red Cross for its national societies to educate people about IHL; the organization should continue to perform this task.

NGO’s, including the Red Cross and MSF, have also taken the important initiative of education health care workers and the general public about IHL. Healthcare workers do have obligations under international law which must be upheld to maintain their protected status. It is essential that medical professionals understand these laws and their duties.

2. Communication and community engagement

Any NGO’s and armed actors operating in an area must communicate with each other to establish territories and policies. In Kunduz, when the Taliban took over the city, one of the leaders visited the hospital to announce his presence and acknowledge the hospital’s policies. On the contrary, when the Afghan army believed that the Taliban was using the KTC as a control center, the military (may have) opted to attack the hospital instead of communicating their need for a policy change to the hospital.

Following any attacks that may occur, healthcare providers should reach out to local leaders to try to rebuild trust with the community so that patients will feel safe coming to the hospital. This could have helped increase patient numbers and trust after the attacks in Taiz and Abs.

The ultimate goal of these “society” initiatives is to foster the necessary level of comprehension and a deep cultural respect of international law and the provision of healthcare
services. It is possible to change behavior and beliefs, especially when people or groups are educated about how these laws can benefit them.

The primary weakness in these societal interventions are irreconcilable differences between armed groups and healthcare workers. Sometimes, even when people are educated about the benefits and consequences of laws, they will still break them. This reality highlights the need for an efficient justice process in which international law violators can be quickly investigated and prosecuted. However, the benefit of communicating with armed groups about international law and the role of healthcare workers is that sometimes it does work – if the Taliban in Kunduz can respect the rules of a healthcare facility, surely other groups can, too.

**Synergism among recommendations and Conclusion**

Several of the recommendations are really a blend of science, society, and policy. Communication, for example, can only occur when both sides have the desire and technological capability to communicate. Further, each side must have an adequate understanding of international law for any discussion of policies to be productive. International laws and medical ethics aren’t always easy or intuitive; if a society collectively shares the values these policies are trying to promote, they are more likely to be enforced. If armed groups don’t respect and understand the laws, then they have to be enforced through courts. Similarly, technologically advanced weapons are only useful if they are used properly in accordance with international law; if a group possesses weapons with the capacity for high accuracy and precision but does not respect the law, that group is just more dangerous.

When implemented together, these initiatives in science, society, and policy have the potential to positively impact the health and well-being of healthcare workers and the communities
they serve. Attacks with explosive weapons would be less likely to occur either intentionally or on
accident, and if an attack does occur it would be more likely to be investigated and applicable laws
could be enforced. Because of the shortage of healthcare workers, especially in conflict areas that
are more vulnerable to attacks, preventing or reducing the harm of even one attack could keep life-
saving healthcare available to hundreds or thousands of people.

If the task seems daunting, that’s because it is. More than any other point in human history,
we are bombarded 24/7 with news from around the world of heartbreaking human suffering.
Increasingly advanced weapons technology allows armed groups to inflict more extreme,
widespread harm on their victims. However, the same constant connectedness and technology can
be used to find common ground, collaborate, and develop modern solutions to these problems. The
realm of humanitarianism and international law as it functions today is relatively new; the Red
Cross and codified IHL are only just 150 years old. It is a growing, changing body of ideas, and
while the laws and technology are developed by experts they are influenced by human stories and
reflections of cultural phenomena. Like Henry Dunant in 1864, each individual who is moved by
the suffering of their fellow human and feels a responsibility to help has the power to do so.
Increased attention and understanding of the issue is the first step towards carrying knowledge
forward into meaningful change.
Bibliography


—. 2016. "MSF internal investigation of the 15 August attack on Abs hospital Yemem: Summary of Findings." September 27.


