DECLARATION OF DR. ROHINI J. HAAR

I, Rohini J. Haar, declare as follows:

1. I am a licensed physician specializing in Emergency Medicine, and a professor and researcher with a focus on the impacts of the uses and abuses of crowd control weapons (CCWs).

2. I have been retained by counsel for Plaintiffs. I am making this declaration in support of Plaintiffs' Application for a Temporary Restraining Order and for a Preliminary Injunction. The facts and opinions set forth in this Declaration are true and of my own personal knowledge or are based on information typically relied upon by experts in my area. If called as a witness, I could and would testify competently under oath as to the facts and opinions set forth herein.

Background and Qualifications

3. I am a licensed physician in the state of California, currently working as an Attending Physician for the Department of Emergency Medicine at Kaiser Hospital in Oakland, CA. I am fully trained, and board certified in Emergency Medicine where my scope of practice includes both medical and mental health services in adults and children.

4. I am also an adjunct professor at the University of California, Berkeley School of Public Health where I teach and conduct research on public health, human rights and ethics. I lead research on the impacts of violence and human rights violations on health, both in the USA and globally.

5. I am a graduate of the University of Chicago, Pritzker School of Medicine in Chicago, Illinois. I received my clinical training at New York University/Bellevue Medical

EXHIBIT 33

Center in New York, NY in Emergency Medicine. I also earned a Masters degree in public health at Columbia University, Mailman School of Public Health in New York, NY.

6. I am medical advisor for Physicians for Human Rights, a national organization that brings the expertise of science and medicine to the protection and promotion of human rights. I have received specialized training and attended seminars by Physicians for Human Rights in the evaluation and medical documentation of victims of torture and other human rights abuses.

7. I am an expert on forensic examinations of torture survivors. I serve as a member of the International Forensic Experts Group (IFEG) and was a primary drafter of the 2022 edition of the Istanbul Protocol, "The manual on the effective investigation and documentation of Torture and Other Cruel, Inhuman and Degrading Treatment or Punishment." I also teach seminars on documentation of torture with Physicians of Human Rights and at UC Berkeley. Since 2014, I have focused one facet of my research on the use and abuse of crowd control weapons, such as tear gas, kinetic impact projectiles, water cannons and acoustic weapons. I have worked closely with academics at the University of California, Berkeley, the University of California, San Francisco, Physicians for Human Rights (PHR), Amnesty International, and legal experts at the International Network of Civil Liberties Organizations (INCLO) which includes the ACLU and 13 other civil rights organizations around the globe, in conducting interviews, quantitative research and policy analysis on this topic.

8. I was the first author of a landmark report *Lethal in Disguise: The health consequences of crowd control weapons* in 2016 as well as peer-reviewed systematic reviews on the health impacts of kinetic impact projectiles, "Death, injury and disability from kinetic impact projectiles in crowd-control settings: a systematic review," in the peer-reviewed medical journal

BMJ Open, and on tear gas, *Health impacts of chemical irritants used for crowd control: a systematic review of the injuries and deaths caused by tear gas and pepper spray,* in the peer reviewed BMC Public Health Journal, both published in 2017. I also co-authored a PHR report on the use of scatter shot crowd control weapons in Kashmir, India titled, *Blind to Justice: Excessive Use of Force and Attacks on Health Care in Jammu and Kashmir, India*, in 2017. I was the lead researcher and first author on a study on the health impacts of chronic exposure to tear gas in a refugee camp in Palestine titled *No Safe Space: Health Consequences of Tear Gas Exposure Among Palestine Refugees*, in 2018 at the Human Rights Center at UC Berkeley. In 2019, I was the first author and principal investigator on an investigation of excessive use of tear gas, rubber bullets and other weapons in the Sudanese revolution, entitled *Intimidation and Persecution: Sudan's Attacks on Peaceful Protesters and Physicians*, and co-author on a second report, *Chaos and Fire: An Analysis of Sudans June 3, 2019 Khartoum Massacre*. I have consulted with the UN Human Rights Council on the development of the 2020 UN Guidance on Less Lethal Weapons and with the California State legislature on State Bill 48 (AB48) requiring additional reporting and restrictions on the use of less lethal munitions. I have also presented on the health impacts of tear gas at national and international meetings, including the Consortium of Universities on Global Health (CUGH) and the American Public Health Association (APHA) and at the United Nations Human Rights Council.

9. On March 22, 2023, I was the lead author on a second edition of *Lethal in Disguise: the health consequences of crowd control weapons* (available online at www.lethalindisguise.org). I am the lead author on this 180-page comprehensive report as well as other related materials. This report has been widely covered by mainstream media as well as medical journals, including The Lancet.

10. This declaration is based on my expertise on crowd control weapons and their health impacts and my clinical experience. See also my CV, attached as Exhibit A, and list of publications in my CV and here: https://scholar.google.com/citations?user=I4swQKcAAAAJ&hl=en.

Materials Reviewed

11. The opinions I present in this declaration are based on my experience and research in settings of civil unrest and demonstrations across the globe, and on the information in Plaintiffs' Complaint.

12. The research I cite in this Declaration is primarily from the following papers and reports I have authored:

13. McEvoy M, Corney N, Haar RJ. Crowd Control Techniques: Perspectives on the Type and Use of Weapons by Police Around the World. In Forensic and Legal Medicine (pp. 815-830). CRC Press.

a. International Network of Civil Liberties Organizations and Physicians for Human Rights. Lethal in Disguise: How Crowd-Control Weapons Impact Health and Human Rights. 2022. https://www.lethalindisguise.org/

b. Haar RJ, Iacopino V, Ranadive N, Weiser SD, Dandu M. Health impacts of chemical irritants used for crowd control: a systematic review of the injuries and deaths caused by tear gas and pepper spray. BMC public health. 2017 Dec;17:1-4.

14. Haar RJ, Iacopino V, Ranadive N, Dandu M, Weiser SD. Death, injury and disability from kinetic impact projectiles in crowd-control settings: a systematic review. BMJ open. 2017 Dec 1;7(12):e018154.

Summary of Opinions

My primary opinions, based on my research and experience, can be summarized as follows:

15. Despite common perceptions that crowd-control weapons are harmless, each of these weapons including, and especially, chemical irritants and projectiles can cause significant and long-lasting health harms.

16. Even when used as recommended, the long-term health and environmental threats posed by repeated tear gas exposure are not fully known. Studies have linked tear gas to lasting physical symptoms, such as allergic reactions, respiratory damage, mental distress, anxiety and post-traumatic stress disorder beyond the direct physical injuries and permanent disabilities caused. In 2020 the American Thoracic Society called for a moratorium on the use of tear gas and other chemical agents against protestors, citing "the lack of crucial research, the escalation of tear gas use by law enforcement, and the likelihood of compromising lung health and promoting the spread of COVID-19." To the extent that teargas is deployed, it should be used exceedingly sparingly and cautiously.

17. Specific law enforcement practices significantly increase the risk and severity of injuries from crowd control weapons. Research consistently shows that misuse of force and crowd-control weapons including firing projectiles directly at individuals, targeting peaceful demonstrators, deploying chemical agents in confined spaces, using excessive quantities, and deploying such weapons in the presence of vulnerable individuals, can dramatically escalate both the frequency and severity of harm. For example, our research showed that direct trauma from canisters and grenades is the number one cause of death from chemical irritants.

18. Data also demonstrate that severe injuries are more likely when KIPs, including foam batons and various types of rubber pellets, are fired at close range; some types of KIPs

have the same ability to penetrate the skin as conventional live ammunition and can be just as lethal. When launched or fired from afar, these weapons are inaccurate and strike vulnerable body parts, as well as cause unintended injuries to bystanders. There are significant doubts that these weapons can be used in a manner that is simultaneously safe and effective.

19. Other weapons are commonly used in crowd control. Among these weapons, batons are particularly harmful when misused and applied with significant force. They can cause serious blunt force trauma, including fractures, internal bleeding, and potentially permanent disability to various body parts and death from bleeding, skull fractures or other severe injuries.

20. The use of flash-bang or stun grenades for crowd control is an example of the inappropriate, inadequately regulated use of military weapons for crowd management. While the stated objective of stun grenades is to cause disorientation and a temporary sense of panic, the potential for severe blast injuries and even death caused by the pressure of the blast or by shrapnel from the fragmentation of plastic and metal constituents of the grenade is disproportionately high. The blinding light and deafening sound they produce can also cause injuries indiscriminately. The disorientation caused by these weapons in crowd control contexts exacerbates safety concerns rather than alleviating them.

Description and Brief History of Chemical Irritants

21. Chemical irritants are a group of crowd control weapons (CCWs) that include a variety of chemical compounds intended to produce sensory irritation. Conventionally referred to as “tear gas,” chemical irritants come in a variety of formulations, sizes, concentrations, and delivery mechanisms, depending on the manufacturer and the context for which they are intended.

22. Historically categorized as non-lethal or less lethal, the general perception is that the weapon does not cause permanent injury or death, but instead has mostly short-term effects such as transient lacrimation (flowing of tears), ocular irritation and pain, blepharospasm (eyelid spasm), dermal pain, respiratory distress, and the psychological effect of disorientation and agitation. This perception is now being challenged, with more evidence of associated moderate and permanent injuries.

23. Chemical irritants include a wide range of agents that have been developed and deployed for many decades in addition to ones that are currently under development, but there are four chemical compounds that are most frequently cited in reports: chlorobenzalmalononitrile (agent CS), chloroacetophenone (agent CN), oleoresin capsicum (agent OC, known as pepper spray), and OC's synthetic form, PAVA. Of these four, the two most commonly used by law enforcement agencies in recent years are agents CS and OC.

24. Agent CS was developed in the 1920s in the United States and was introduced as a weapon by the U.S. military to replace CN in the 1950s. It then became a frequently used weapon in the second half of the twentieth century and was famously deployed in the Vietnam War by the U.S. military. Now it is widely used by law enforcement agencies in many countries – often as the first weapon of choice in the context of protest. The United States used to be the main manufacturer of CS, but recently other countries have been producing and exporting the weapon. Despite the United States remaining the biggest producer of CS, the U.S. Environmental Protection Agency (EPA) has not set a minimum threshold of concentration at which the general population could experience notable discomfort, irritation, or certain asymptomatic, non-sensory but transient effects, because even the lowest concentrations cause these symptoms. The volume

of chemical in each spray and gas varies considerably among manufacturers and countries and is unregulated and inconsistent.

25. Agent OC, the second most-commonly cited agent, is essentially a highly concentrated form of hot pepper. Agent OC and its synthetic form, PAVA, have recently increased in popularity as potent and effective crowd-control agents. The potency of the weapon is not just contingent on the concentration of OC within the solvent, but particularly on the strength of the "capsicum" – the active chemical that makes pepper spicy.

26. Also developed by the United States and originally used as a deterrent against wild animals (and by the U.S. Postal Service against dogs), OC became a law enforcement weapon in the late 1980s. It is now available both as a spray and in gas form, with lower concentrations being available as a self-defense "pepper spray" for the public, while variants that are more potent are developed for military and law enforcement agencies. These more potent variants are also increasingly becoming a weapon of choice for crowd control.

27. While several countries have limitations on the possession and use of OC, in either spray or gas form, it is unregulated in most countries.

28. It is worth noting that OC and CS compositions may include toxic chemicals, such as alcohol, halogenated hydrocarbons, and propellants such as Freon that are not well-studied but could result in health harms.

Mechanisms of Action

29. Chemical irritants are highly potent substances that produce sensory irritation and pain in the eyes, skin and upper respiratory tract. These properties are often utilized to deter individuals from violence, disperse crowds or otherwise gain compliance with police orders through the infliction of pain.

30. The chemicals most commonly used is the irritant agent chlorobenzalmalononitrile (CS) and its derivates and similar compounds (CS1, CS2) – often called tear gas, though the active agent is actually distributed as a fine powder – and the inflammatory agents Oleoresin capsicum (OC) or its synthetic version, N-Vanillylnonamide (pseudocapsaicin) (PAVA) – often called pepper spray. A number of other irritant agents, such as 1-chloroacetophenone (CN) and dibenzoxazepine (CR), are marketed and held by States, but are not commonly encountered (see Organisation for the Prohibition of Chemical Weapons 2019, Annex 4).

31. Chemical irritants are delivered via a wide range of methods and means. These include handheld aerosol sprays, weapon fired spray, shoulder-worn and backpack sprayers, handheld or vehicle mounted smoke generators or foggers, hand-thrown grenades, weapon-launched projectiles and grenades, as well as via water cannon and more recently via unmanned air or ground vehicles (drones) and inside projectiles (stingballs or pepperballs). Handheld aerosol sprays range in size from 25ml to 500ml, sometimes more, while shoulder-worn and backpack-style sprayers and smoke generators generally have a much larger capacity and can cover a wider area often in a very short time. Hand-thrown and weapon-launched projectiles/grenades and water cannons can be used from greater ranges and can be used to contaminate a wide area.

32. A particular issue with the majority of chemical irritant sprayers / foggers is that they have no dose control or cut-off trigger mechanism to control the amount dispersed. Under international laws of law enforcement, only the minimum amount of force should be used (and only when strictly necessary and proportionate to the threat) and force must cease when the threat from the individual ceases. In operational practice, law enforcement officials are expected

to use the minimum effective dose, i.e. one very short burst of spray, and then re- assess the threat. However, law enforcement frequently continually discharges sprays at individuals or groups, dispersing large quantities of chemical irritant of unknown concentration.

33. The amount of active irritant agent in products available to law enforcement officials varies widely, and manufacturers frequently offer a range of percentages for any given product, or offer custom fills for customers. This results in those using, affected or treating the affected not knowing what amount of chemical irritant has been delivered, or can lead to speculation and confusion as to the type of irritant being used, and may also result in unusual medical effects being encountered. For example, PepperBall, a commonly used compressed gas launcher system, which delivers chemical irritant via 0.68 calibre plastic encapsulated projectiles, advertises a range of projectiles with a wide range of percentage of irritant: “VXR LIVE-X a more concentrated formula, containing approximately 10x the PAVA of the VXR LIVE projectile” (Pepperball, 2023).

34. Chemical irritants are indiscriminate in nature, and the UN Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association has warned that they fail to differentiate “between demonstrators and non- demonstrators, healthy people and people with health conditions” (Kiai, 2012, para. 35). Even the use of small, handheld sprays risks affecting innocent bystanders in a public gathering, particularly in windy conditions or where people

are moving about. It is difficult, if not impossible, to limit the exposure to individuals or small group without affecting bystanders and peaceful demonstrators.

35. The Chemical Weapons Convention bans the use of chemical irritants, which it refers to as “riot control agents” (RCAs), as a method of warfare (Organisation for the Prohibition of Chemical Weapons, 1993, Art. I.5). The same instrument permits the use of RCAs

for "law enforcement including domestic riot control purposes," provided they are used in "types and quantities" consistent with such purposes (Organisation for the Prohibition of Chemical Weapons, 1993, Arts. II.9 and II.1.a).

Health Concerns from Chemical Irritants

36. A range of factors can determine the effects of chemical irritants, including the type of chemical agent and means of delivery used, the location and environmental conditions in which they are used (heat, humidity), and the concentration and quantity of irritant.

37. Chemical irritants primarily affect the skin and mucous membranes. When a person comes into contact with a chemical irritant, it mixes with moisture on the skin, or in the eyes and respiratory and oral tracts, and activates the TRPA 1 andTRPV1 pain receptors located in the peripheral nervous system. Their use is most frequently linked to sudden onset and severe burning sensations and tearing in the eyes, pain on exposed skin, vomiting, coughing and restricted breathing.

38. In the eyes, severe redness, intense pain and tearing will occur, resulting in blepharospasm (eyelid spasm characterized by frequently blinking) and sometimes, temporary blindness.

39. Within seconds, exposed skin will feel a painful burning sensation. Depending on the dose, redness may appear on the skin and in cases of allergy or hypersensitivity blistering lesions may occur either immediately or in a delayed fashion (hours or days later).

40. As the chemical is breathed in, it will irritate the oropharyngeal and lung linings, causing pain, coughing and sensations of respiratory distress.

41. The most dangerous effects include laryngeal inflammation obstructing the upper airway, inflammation in the tracheobronchial tree inducing tracheobronchitis or bronchospasm of varying intensity that hinders normal breathing.

42. Many people also experience anxiety and panic reactions.

43. In addition to the above, chemical irritant projectiles and grenades can cause significant trauma when they strike a person directly or when they explode in close proximity to a person. Because launched cartridges are large and dense, when the cartridge itself strikes an individual, it can cause trauma ranging from bruising to facial and limb fractures to internal bleeding to brain injury and death. The canisters also can cause severe burns when they directly hit individuals as the canisters themselves function by explosive (see A.M.B. Zekri, W.W.K. King, R. Yeung, W.R.J. Taylor, Acute mass burns caused by o-chlorobenzylidene malononitrile (CS) tear gas. Burns, Volume 21, Issue 8, 1995, Pages 586-589,

ISSN 0305-4179, https://doi.org/10.1016/0305-4179(95)00063-H

(https://www.sciencedirect.com/science/article/pii/030541799500063H).

44. Direct trauma from canisters and grenades is the number one cause of death from chemical irritants, per our research. These canisters are hot, large and fired at high speeds, resulting in severe trauma when they strike individuals. For this reason, as far as I am aware, every manufacturer of tear gas instructs that its products should not be fired directly into crowds and or used to target individuals with canisters or grenades as projectiles.

45. A summary of health impacts by body system includes:

a. *Eyes:* Irritation of the conjunctiva and cornea produces blurry vision, tearing, uncontrollable eyelid spasms, redness, and pain. Spasms can cause the lids to

close tightly and produce temporary blindness. Direct impact may lead to corneal burns, abrasions, lacerations, and blindness.

b. *Respiratory System:* CIs cause inflammation of the airways and pain. Coughing, difficulty breathing, and excess production of sputum are common. Individuals with preexisting lung disease, such as asthma or chronic obstructive pulmonary disease, may be more sensitive to these agents, even at low concentrations. Exposure may precipitate attacks of respiratory distress resulting in hypoxia, respiratory arrest, and death. Exposure also increases susceptibility to acute respiratory infections, which is likely to include COVID-19.

c. *Skin:* CIs cause a burning sensation to the skin as well as redness, itching, or allergic reactions. Erythema (redness of the skin) usually begins several minutes after contact and can least for minutes or days after the injury. Blistering and burns may also occur. In addition, repeated exposure to some CS gases can result in hypersensitivity reactions, with allergic responses worsening with each exposure.

d. *Psychological:* The physical symptoms of CIs often result in disorientation and agitation, which can lead to a state of fear, anxiety, and panic. In some instances of prolonged and repeated exposure to CIs in protest settings, symptoms of post-traumatic stress disorder have been documented.

e. *Cardiovascular:* CIs can cause increases in heart rate and blood pressure. Preexisting heart conditions, in combination with those physiological responses and the low oxygen from the impact on the lungs, may result in heart attack and possibly death.

f. *Internal surfaces of the nose, throat, and gastrointestinal system:* Irritation of the nose produces a burning sensation, inflammation, runny nose, and sneezing. In the

mouth and gastrointestinal tract, exposure to CIs can cause pain, excessive salivation, nausea, and vomiting. Excessive coughing, vomiting, and the toxicity of the agent can cause blood vessels to rupture and persistent pain.

g. *Physical Trauma:* Direct impact by the canisters and grenades carrying chemical irritants can cause significant blunt trauma and death. Injuries to the head and neck are most common, causing loss of vision, bruises, abrasions, and lacerations. When canisters and grenades are fired at close range, bone fractures and serious internal injuries are possible.

Exacerbating Factors for Chemical Irritants

46. There are circumstances that may increase the risk of complications, such as the use of these substances in enclosed spaces that make ventilation difficult.

47. Certain groups are particularly susceptible to the effects of chemical irritants, including older people, children, people who are pregnant, or people with respiratory problems such as asthma or chronic obstructive pulmonary disease. Airway obstruction or inflammation in vulnerable people could lead to cardiorespiratory arrest and death. According to the American Academy of Pediatrics, "children are uniquely vulnerable to physiological effects of chemical agents. A childs smaller size, more frequent number of breaths per minute and limited cardiovascular stress response compared to adults magnifies the harm of agents such as tear gas."

48. The half-life of most chemical irritants is short and the symptoms are transient, lasting less than an hour after exposure for most people, although for some people the effects can be more severe, long-lasting and cause ongoing health impacts (Centers for Disease Control and Prevention, 2018).

49. The dose exposure will increase when chemical irritants are used in enclosed spaces (where the irritant cannot disperse) or in cases of prolonged and/or repeated exposure (when people cannot escape the effects), resulting in exacerbated harm.

Safety Analysis for Chemical Irritants

50. Despite being widely available and used for nearly a century, there are very few studies establishing the safety of chemical irritants, and none on newer compositions. Of the reports and studies on chemical irritants that have been conducted, almost all note the need for more research.

51. The use of chemical irritants during the COVID-19 pandemic highlighted the risk of law enforcement contributing to the spread and impact of respiratory viruses, due to their effect on breathing and the lungs, and the risk of infection through induced coughing or sneezing (Omega Research Foundation, 2020). In 2020 the American Thoracic Society called for a moratorium on the use of tear gas and other chemical agents deployed by law enforcement against protestors participating in demonstrations, citing "the lack of crucial research, the escalation of tear gas use by law enforcement, and the likelihood of compromising lung health and promoting the spread of COVID-19" (American Thoracic Society, 2020).

52. An area of increasing importance, but where no clinical studies have yet been published, is the growing awareness of the effects of chemical irritants on reproductive health. Reports have suggested that there may be a relationship between the use of tear gas and miscarriage (Physicians for Human Rights, 2012). Following the widespread use of large quantities of chemical irritants during Black Lives Matter and other protests in the US in summer 2020, media reports emerged of physiological effects for people who menstruate (see, for example, Slisco, 2020; Stunson, 2020; Nowell, 2020). Stress may also play a role. One peer-

reviewed study based on a web-based survey of 2257 adults reporting recent exposure to tear gas in Portland, Oregon (U.S.), found that 54.5% of 1650 respondents who potentially menstruate reported menstrual changes. The most reported issues were increased menstrual cramping, unusual spotting, increased bleeding, and more days of bleeding (Torgrimson-Ojerio et al, 2021).

Management of the Health Impacts of Chemical Irritants

53. Care for those affected by chemical irritants should include decontamination, to prevent the penetration of more toxic substances into the body once exposure has ended, in order to avoid further damage. To do this, objects that have been impregnated by the toxin and are in contact with the skin or mucous membranes should be removed, such as contaminated clothing and contact lenses.

54. In addition, the skin and eyes should be thoroughly irrigated with fresh water or saline solution for at least 20 minutes. Health professionals should warn the patient that initially, the stinging sensation and pain in the skin or mucous membranes may worsen.

55. While there are anecdotal reports of a variety of substances helping with symptoms, there is little evidence to support their use. In the case of eye pain, anesthetic eye drops may be prescribed. For individuals with respiratory symptoms, inhalers with bronchodilators and/or corticoids can be used for bronchospasm, and oxygen administration may also be necessary. In some cases, hospitalization and even critical care may be necessary to treat exposed patients.

Effects of Kinetic Impact Projectiles and Baton Strikes

56. Kinetic Impact Projectiles, or “KIPs” refers to a range of projectiles used in crowd control settings that are made from combinations of rubber, plastic, PVC, various metals

including lead and steel, wood, hard foam, and wax, which are often generically referred to as "rubber bullets." These include foam batons and rubber pellets.

57. "Rubber pellets," also known as rubber ball rounds, may be fired individually or as several hard rubber or plastic balls deployed simultaneously from one plastic case or cartridge (sometimes known as scatter shot). Rubber pellets entail a risk of serious injury if fired at close-range or aimed at sensitive parts of the body. At longer ranges, they have unpredictable trajectories and become more inaccurate. Small projectiles increase the risk of eye injuries and penetration of the skin. Firing multiple rounds at once, known as scatter shot, is notoriously inaccurate, indiscriminate & arbitrary and may hit peaceful protestors and bystanders. Multiple round projectiles are also more likely to strike the head, face or other sensitive body parts, as well as strike more than one place, causing more significant injuries. In one study, the use of scatter-shot lead to a higher incidence of significant injury, likely because of their indiscriminate nature and inability to target them. There are numerous case reports of significant injuries from all kinds of scatter shot across the globe. Amnesty International, INCLO and PHR all call for, as a very first step, the prohibition of all types of cluster munitions and scatter shot, especially in crowd control.

58. Law enforcement agencies increasingly use combination weapons that merge the force of projectiles with the effects of chemical irritants. One of the most well-known brands, *PepperBall*, has become a generic term for this category. These devices typically consist of hard plastic frangible spheres or, in some cases, round-tipped cylinders designed to burst upon impact and release a powdered form of OC (oleoresin capsicum) or PAVA, the active ingredients in pepper spray. There are dozens of different models available, varying by shape, chemical concentration, and fill type, with different options offered by a range of manufacturers. These

weapons carry the combined injury profile of both kinetic impact projectiles and chemical irritants, compounding the risks they pose to human health. Upon impact, the projectile can cause blunt force trauma such as bruising, fractures, or internal injuries, while the chemical release can lead to the acute respiratory, ocular, and dermal effects commonly associated with tear gas and pepper spray. Additional risks arise when these chemical agents come into direct contact with vulnerable areas such as the eyes, ears, or open wounds. In such cases, the irritants can become embedded in tissue, leading to deeper contamination and prolonged exposure that is difficult to mitigate. The limited clinical and toxicological data on these weapons further heightens concern about their widespread and often indiscriminate use, particularly in crowd-control settings. Their dual-action nature increases the likelihood of both immediate injury and longer-term health consequences, underscoring the urgent need for stricter use protocols and more rigorous health impact assessments. The findings of a recent systematic review of medical literature that I authored in the journal BMJ Open indicates that KIPs cause serious injury, disability, and death. Our study identified 1,925 people with injuries from KIPs; 53 of these individuals died from their injuries and 294 suffered permanent disabilities. Of all people with injuries, 70% were considered severe (required professional medical treatment). Disaggregated data shows that scatter shot and metal composite bullets had the highest rates of injuries.

59. *Potential Health Impacts:* KIPs can cause blunt or penetrative trauma. Penetrative injuries are those that pierce the skin or soft tissue. Blunt injuries are those that cause internal damage without breaking the skin barrier. All KIPs can cause these injuries. Weapons that shoot multiple bullets, such as scatter shot rubber pellets, can disperse and are not discriminate, causing injuries to peaceful demonstrators and bystanders. The use of riot control face gear, such as gas masks and face shields, make targeting these weapons even more difficult.

A. *Eyes*: Direct trauma to the eye from KIPs nearly always causes either total blindness in that eye, due to ruptured globe (eyeball). KIPs have also entered the brain through the eye socket and caused extensive and irreversible damage.

B. *Brain*: Blunt trauma to the brain from KIPs can cause concussions and bruising inside the brain (contusions) as well as internal bleeding and skull fractures.

C. *Head and Neck*: The delicate structures of the face and neck are particularly vulnerable to traumatic injury. The bones of the face and skull, the spinal cord, and the blood vessels in the neck are all close to the skin surface. Trauma to that area has caused bleeding, irreversible damage, and death.

D. *Cardiorespiratory System*: When aimed at the chest, KIPs have bruised the lungs or heart, and caused serious and fatal injuries such as bleeding and deflation of the lungs

E. *Musculoskeletal System:* Injuries to the muscles and bones from KIPs have caused contusions and fractures. Deeper injuries have caused permanent damage to the neurovascular structures, leading to tissue death and sometimes necessitating amputations.

F. *Abdomen*: Blunt injuries to the abdomen area from KIPs have caused internal bleeding and damage in the solid organs such as the liver, kidneys, and spleen. Penetrative injuries have also caused bleeding, perforations, and infections.

G. *Skin and Soft Tissue*: KIPs can cause bruising and contusions of the skin and soft tissue, as well as superficial and deep lacerations, some of which may cause muscle or nerve damage as well as bleeding.

H. *Cumulative Impacts*: When KIPs are fired at close range, the risk for more severe injury is increased. At close range, the speed at which KIPs, including foam batons and various types of rubber pellets, travel can be comparable to live ammunition and, can penetrate the body, causing injuries, disabilities and death, especially when they strike the head or face. When launched or fired from afar, these weapons are inaccurate and can strike vulnerable body parts, as well as cause unintended injuries to bystanders and peaceful demonstrators. Therefore, there are significant doubts that these weapons can be used in a manner that is simultaneously safe and effective.

Flash-Bang Grenades

60. Another crowd control weapon increasingly used by law enforcement is the "flash-bang" or stun grenade. The UN categorizes flash-bang grenades as "disorientation or distraction devices" – bomb-like instruments designed to daze or warn groups or individuals through some combination of noise, light, overpressure, or fragmentation.

61. Flash-bang explosive devices were initially developed by the British Special Air Service in the 1960s and have been used for military training for decades. The first documented use of these devices outside of training was at Entebbe, Uganda in 1976, when the Israeli army used them in efforts to rescue hostages, then in 1977 in Mogadishu, Somalia, and at a siege of the Iranian embassy in London in 1980. The transition from military operations to police use occurred slowly over time. Use in urban settings and on civilian populations altered how the weapons were used, as well as the resulting injuries. Specialized law enforcement agencies like Special Weapons and Tactics (SWAT) initially developed similar weapons to use in hostage situations.

62. The use of stun grenades in crowd control has increased significantly over the past several years, and now these weapons are manufactured by dozens of companies worldwide. They are frequently used alongside other weapons, such as chemical irritants and/or projectiles. With poor regulation and almost no quality control, defective and misfiring stun grenades have been identified in several settings where there were limited regulations or guidelines on use.

63. Flash-bang or stun grenades are usually constructed like a conventional grenade, with an explosive powder that ignites when struck by a fuse. These devices typically generate noise and a bright flash by the rapid oxidation of a pyrophoric metal, such as magnesium or aluminum; this process can generate temperatures in excess of 3,000 degrees Celsius. Some devices generate sound that has been measured in excess of 178 decibels (dB), at least ten times louder than most gunshots. Both the 'flash' and the 'bang' usually last less than one second, momentarily activating photoreceptor cells in the eye and causing blindness for about five seconds until the eye restores itself to an unstimulated state. The loud blast causes temporary loss of hearing and of balance and generates a sense of disorientation. The concomitant blindness, hearing loss, and disorientation can result in secondary trauma from falls or hitting objects or other individuals. Moreover, groups of people simultaneously experiencing these symptoms can result in panic and chaos. With concomitant use of other weapons, stampedes have been reported.

64. When distraction devices detonate, the case ruptures with significant force, so individuals standing near an explosion may suffer traumatic injury from the resulting pressure. The case can also rupture in such a way that high-velocity metal or plastic fragments are sent in multiple directions. These fragments are often unevenly distributed in size, shape, and direction and can pose a generalized hazard to anyone nearby. In addition to the shrapnel risk posed by

fragmentation of the device casing, some devices are designed to deliberately scatter high velocity rubber or plastic projectiles around the blast radius. Finally, projectiles with disorienting characteristics can be direct-fired at individuals, carrying with them similar risks as KIPs as well as of explosive injuries and burns.

65. Stun grenades are by nature indiscriminate. When they are used either as distraction devices to facilitate entry or as means of crowd dispersal, the limited control users have over their placement may expose unintended targets to the risk of serious injury. When used indoors or in dense crowds, these risks are amplified and can create additional hazards through fires as well as psychological panic they may provoke.

66. As with all explosives, stun grenades carry the risk of blast injury. These injuries are complex and result from pressure waves created by the blast. Blast injuries from close proximity explosions can lead to internal hemorrhage, eardrum rupture, lung injury, amputation, fractures, and degloving injuries (extensive skin removal that exposes underlying tissue). In 2011, a U.S. SWAT officer died of internal bleeding when a stun grenade exploded in his hand while he was checking it. A French activist was killed in 2014 by an OF F1 “blast-ball” style grenade a weapon now prohibited in France when it detonated after becoming lodged between his jacket and backpack. During the George Floyd protests in Seattle, United States, a woman went into cardiac arrest after being hit in the chest with a “blast-ball” style hybrid projectile that combined a concussive detonation with chemical irritants. (In June of 2020, the Seattle City Council voted unanimously to prohibit the use of many CCWs for protest, including blast balls.)

67. In addition to injuries caused directly by the primary blast wave, such as ear-drum rupture or lung injury, secondary and tertiary injuries can also occur as a result of these explosive devices. These weapons are made of both metal and plastic parts that may fragment during the

explosion and act as shrapnel. Some weapons, such as "sting-ball" grenades, are specifically designed to fragment and forcefully eject shrapnel across the blast area. These weapons behave as KIPs in terms of ballistics but are incapable of being aimed, resulting in weapons that are both completely indiscriminate and impossibly imprecise. Serious injuries have been documented from these unaimed impact projectiles. These include penetrating injury, skull fracture, severe ocular trauma, and complete vision loss from globe rupture. Tertiary injuries occur from being thrown on the ground by their force, and quaternary injuries result from fires and other results of the blast.

68. Stun grenades burn extremely hot and can cause life-threatening thermal injuries. A 2015 report by ProPublica, summarized in our first Lethal in Disguise report, identified more than 50 people seriously injured or killed by stun grenades since 2000, with thermal injury being the primary mechanism of injury. Furthermore, stun grenades can cause fires in structures; these fires have led to fatalities. Defective and poorly designed weapons may play a role in injury severity.

69. In addition to the risks associated with their blast, some distraction devices are designed to be fired from grenade launchers or similar platforms. When aimed (inappropriately) at individuals, the blast risk is compounded by the kinetic risk of what is essentially an improvised KIP. In Portland, US, two individuals were severely injured in 2018 by "airborne warning/signaling munitions" fired by police directly at protesters. One suffered a traumatic brain injury after being shot in the back of the head with such a round, while another suffered third-degree burns and impact wounds after being shot in the chest and arm.

70. The use of flash-bang or stun grenades for crowd control is an example of the inappropriate, inadequately regulated use of military weapons for crowd management. While the

stated objective of stun grenades is to cause disorientation and a temporary sense of panic, the potential for severe blast injuries and even death caused by the pressure of the blast or by shrapnel from the fragmentation of plastic and metal constituents of the grenade is disproportionately high. The blinding light and deafening sound they produce can also cause injuries indiscriminately.

Misuse can exacerbate injuries

71. Misuse of crowd control weapons can result in increased injury severity and greater frequency of injuries. Research conducted by my research team documented five critical misuse categories of crowd control weapons, each contributing to increased morbidity and mortality and violating international standards. These include directly firing canisters at individuals or dense crowds, which can cause severe injury or death. The inappropriate use of crowd control weapons against peaceful demonstrators violates the principle of necessity and can expose greater numbers of people to crowd control weapons. Deployment in confined spaces exacerbates harmful effects by concentrating the chemical. Using excessive quantities constitutes a disproportionate use of force, increasing exposure and injuries. Finally, using crowd control weapons in the presence of vulnerable individuals, such as children and the elderly amplifies harm due to the weapons' indiscriminate nature and these individuals' greater injury risk. These categories provide a crucial framework for understanding the severe consequences of improper crowd control weapons use.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed this 3 day of October, 2025.

Signed by:
Rohini J Haar
39C7FC3F437244D...

Dr. Rohini J. Haar

EXHIBIT A

ROHINI JONNALAGADDA HAAR, MD MPH

EDUCATION:

A.B.	**University of Chicago**, The College(Political Science) 2001
M.D.	**University of Chicago,** Pritzker School of Medicine 2005
M.P.H.	**Columbia University**, Mailman School of Public Health 2013 (Population and Family Health, Program on Forced Migration)

MEDICAL TRAINING:

Residency	**Emergency Medicine**, New York University/Bellevue Hospitals.
Fellowship	**Global Health**, Northshore/Long-Island Jewish Hospitals

MEDICAL APPOINTMENTS:

2009-2010	Attending Physician, Department of Emergency Medicine. **St. Vincent's Hospital**, New York, NY
2011-2012	Attending Physician, Department of Emergency Medicine. **St. Luke's-Roosevelt Hospital**, New York, NY
2012-2014	Director of Research & Attending Physician, Global Health Division, Department of Emergency Medicine, **St. Luke's- Roosevelt Hospital**, New York, NY
2015-2018	Attending Physician, Department of Emergency Medicine, **Highland General Hospital**, Oakland, CA
2014-present	Attending Physician, Department of Emergency Medicine. **Kaiser Medical Center**, Oakland, CA

ACADEMIC POSITIONS:

2014- 2023	**Research Fellow**, Human Rights Center, School of Law, University of California at Berkeley
2015- 2020	**Lecturer**, School of Law, University of California at Berkeley
2021- 2023	**Adjunct Professor**, Division of Population and Family Health, Mailman School of Public Health. Columbia University in New York
2015- present	**Lecturer**, Division of Epidemiology and Biostatistics, School of Public Health, University of California at Berkeley
2020- 2022	**Assistant Adjunct Professor, Step IV**. Division of Epidemiology and Biostatistics, School of Public Health, University of California at Berkeley\
2022-present	**Assistant Adjunct Professor, Step V**. Division of Epidemiology and Biostatistics, School of Public Health, University of California at Berkeley

BOARD CERTIFICATION:

American Board of Emergency Medicine, Emergency Medicine, 2010- present

PROFESSIONAL HONORS & RECOGNITION:

2021:	Emergency Medicine Residency Association, "25 Under 45 EM Leaders" Award
2016:	United Nations Association of the East Bay, Global Citizen Award
2005:	University of Chicago, Outstanding Future Physician Award

GRANTS:

CURRENT:

Agency: University of California at San Francisco
Grant: Resource Allocation Program (RAP)
Title: "**Health and Life Study of Afghan Refugees in California"**
P.I.: Ali Mirzazadeh, PhD, MD, MPH
Percent effort: 3%
Total costs for project period: $50,000
Project period: September 2023- August 2024

Agency: Foreign Commonwealth Development Office (FCDO), UK Government
Primary Awardee: University of Manchester, Larissa Fast
Title: **Researching Impacts of Attacks on Health Consortium (RIAH)**
P.I.: Rohini Haar, MD MPH at UC Berkeley Site
Percent effort: 40%
Total costs for project period: £2,499,995(total award)
Project period: March 2019- December 2021 (at Berkeley), January 2022-March 2025 (as independent contractor)

COMPLETED:

Agency: Enhancing Learning & Research for Humanitarian Assistance (ELRHA)
Grant: Research for Health in Humanitarian Crises (R2HC)
Title: "**Evaluating the public health impacts of attacks on healthcare in Syria"**
P.I.: Rohini Haar, MD MPH
Percent effort: 20%
Total costs for project period: $525,961
Project period: September 2019- September 2023

INVITED SPEAKING ENGAGEMENTS, PRESENTATIONS, SYMPOSIA & WORKSHOPS:

2020, Sep: Physicians for Human Rights Webinar Series. "Protests During a Pandemic"
2020, Oct: International Network of Civil Liberties Organizations. "Protests, Pandemics and Political Rights"
2020, Nov: Sudanese American Physicians Association. "How to document protest injuries."
2021, Jul: Dejusticia (Colombia). "Webinar series in Crowd Control Weapons"
2021, Jul: Iridia, Centr per a la Defensa dels Drets Humans. "Webinar on Human Rights and Protests"
2021, Oct: Amnesty International. "International Strategic Planning Workshop"
2021, Oct: Physicians for Human Rights. "Webinar for Belarusian human rights advocates"
2021, Nov: Sudan Doctors for Human Rights. "Torture, Tear Gas and Human Rights"
2022, Mar: National Academy of Medicine (NAM), the American Public Health Association (APHA), and the Committee on Human Rights (CHR) of the National Academies of Sciences, Engineering, & Medicine. "Violent Conflict: The challenges of protecting public health and healthcare in conflict"
2022, Mar: Global Health Grand Rounds, Dell Medical School University of Texas, Austin. "The Ethics of Research in War"
2022, Sep: Amnesty International Civil Society Summit: Towards a Torture-Free Trade Treaty. Hybrid (web and London, UK). "The health impacts of crowd control weapons"

2022, Nov: National Academies of Sciences, Engineering, and Medicine (NASEM) Expert Meeting re Global Violence Against Health Care Providers. Webinar. "Protecting Healthcare in Conflict"

2022, Dec: International Peace Institute. Webinar. "Strengthening Data to Protect Healthcare in Conflict Zones: Toward the Implementation of UN Commitments"

2023, Feb: International Network of Civil Liberties Organizations. Toronto, Canada (and web): "Lethal in Disguise: Health Impacts of Crowd Control Weapons."

2023, Mar: Berkeley Climate Network. UC Berkeley and Bay Area Public Health Departments. Heat health climate workshop. "The health, social and economic impacts of wildfires in California."

2023, Apr: World Health Organization, Global Health Workforce Conference. " The toll of violence against health on the health workforce: characteristics, impacts and responses"

2023, Apr: Consortium of Universities on Global Health, Annual Conference. Washington, DC. CUGH 2023. "The health impacts of attacks on healthcare in Colombia."

2023, Apr: United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Humanitarian Networks and Partnerships Week. Webinar. "Data for Decision Making: The need for better data in conflict"

2023, Apr: United Nations Office of the High Commissioner for Human Rights (UNOHCHR): Roundtable on the Right to Health in Syria. Istanbul, Turkey. Multiple presentations and interventions on protecting health workers and health systems in Syria's conflict.

2023, Jun: Médecins Sans Frontières/Doctors Without Borders (MSF), Brussels, Belgium (and web). "Lethal in disguise: The health consequences of crowd control weapons"

2023, Oct: University of California Disaster Resilience Day. Sacramento, CA. "Climate Justice and Health."

2023, Oct: Society of Academic Emergency Medicine, Humanitarianism Task Force (HTF). Humanitarian Research Series. Webinar. "Health and human rights in practice."

PEER-REVIEWED PRESENTATIONS & SYMPOSIA GIVEN AT MEETINGS:

2011: **Haar, RJ**. The livelihoods of Haitian health-care providers: A pilot study of the economic and social impacts of the January 2010 earthquake. CUGH Conference. April 2011.

2013: Noonan JM, Goett RR, **Haar RJ.** Factors Influencing Physician Determination of Code Status in the Emergency Department. Annals of Emergency Medicine. 2013 Oct 1;62(4):S137-8. SAEM Conference.

2014: Noonan JM, **Haar RJ,** Morrison ME, Eliades MJ. 218 Availability of Advanced Directive Documentation for Skilled Nursing Facility Patients in the Emergency Department. Annals of Emergency Medicine. 2014 Oct 1;64(4):S78-9. SAEM Conference.

2014: Golden A, Davey K, Paschal G, Solis D, **Haar RJ.** 340 Socio-Economic Factors Associated With Repeat Emergency Department Visits. Annals of Emergency Medicine. 2014 Oct 1;64(4):S120. SAEM Conference.

2016: Fong F, Snyder R, **Haar RJ,** McCoy S, Stover E, Coloma J, Harris E. Bottom-up design of information and communications technology in an era of transdisciplinary global health & disruptive social innovation. Annals of Global Health. 2016 Aug 20;82(3). APHA.

2017: Ri SE, Ogata T, Snyder R, **Haar RJ.** Attacks on Health Facilities as an Indicator of the Human Cost of Conflict in Syria. Annals of Global Health. 2017 Apr 7;83(1). CUGH.

2019: Mehtar SG, **Haar RJ.** *Measles Outbreaks in Conflict-Affected Norther Syria: Results from an Ongoing Outbreak Surveillance Program* (Doctoral dissertation, University of California, Berkeley).2019.

2019: **RJ Haar.** Power of health professionals to promote peace and human rights: A case study of the Sudan's attacks on peaceful protest and physicians. APHA's 2019 Annual Meeting and Expo. Nov. 2-Nov. 6, 2019.

2019: **RJ Haar,** KH Wang, H Venters, S Salonen, R Patel. Narrative and Physical Documentation from a Field Investigation of Human Rights Abuses of Rohingya Refugees. APHA's 2019 Annual Meeting and Expo Nov. 2-Nov. 6, 2019.

2020: **Haar RJ**, Muzzall E, Perlman B. Strategically targeted strikes on civilian healthcare infrastructure in the Syrian civil war. In APHA's 2020 VIRTUAL Annual Meeting and Expo (Oct. 24-28) 2020 Oct 27. APHA's Annual Meeting and Expo.

2021: A Rosenthal, **RJ Haar**, E Stover. Health and social impacts of California wildfires and the deficiencies of the current recovery system. CUGH 2021 Virtual Conference

2022: **RJ Haar**, A Tarakji, R Burbach. Methodological Approaches to Understanding the Impact of IHL Violations: Lessons from Syria. ICRC Data Analysis Conference. November 2022 Geneva & Virtual.

2023: YB Ramirez, **RJ Haar** I Palacio On the Horns of a dilemma: The lives of women health workers in Colombia facing adversity, conflict and targeted attacks. CUGH 2023 Annual Conference. Washington, DC. (Poster)

2023: R Burbach, M Hamze, A Abbara, **RJ Haar**. The Ripple Effect in Syria: Estimating the impact of health facility attacks on health service utilization in northwest Syria from 2017-2019. CUGH 2023 Annual Conference. Washington, DC. (Poster)

2023: D Rayes, A Abbara, H Tappis, A Rihawi, LRubenstein, RJ Haar. The legacy of war on the medical worker: The impacts of attacks on health on personal and professional lives of medical workers in Syria. CUGH 2023 Annual Conference. Washington, DC. (Oral)

PROFESSIONAL SERVICE

REVIEWER

2015-present Reviewer for *Conflict and Health, British Medical Journal, PLoS Medicine, PLoS One, International Journal of Infectious Diseases, Health Security, Health and Human Rights Journal, Annals of Emergency Medicine*

PUBLIC SERVICE

2020- 2022: Board Member, Pangea Legal
2014- present: SF Bay Area Chapter of Physicians for Social Responsibility
2023-present: PTA Resource Liaison, (PTA president 2020-2023). John Muir Elementary School
2022-present: Steering Committee Member, Safeguarding Health in Conflict Coalition
2022-present: Committee Member, Healthcare in Danger Community of Concern, ICRC
2023-present: Advisory Council Member, Human Rights Center at UC Berkeley

BIBLIOGRAPHY:

PEER-REVIEWED PUBLICATIONS

1. **Haar RJ**, Naderi S, Acerra JR, Mathias M, Alagappan K. The livelihoods of Haitian health-care providers after the january 2010 earthquake: a pilot study of the economic and quality-of-life impact of emergency relief. International journal of emergency medicine. 2012 Dec;5(1):1-6.

2. **Haar RJ**, Rubenstein LS. Health in fragile and post-conflict states: a review of current understanding and challenges ahead. Medicine, Conflict and Survival. 2012 Dec 1;28(4):289-316.

3. **Haar RJ**, Footer KH, Singh S, Sherman SG, Branchini C, Sclar J, Clouse E, Rubenstein LS. Measurement of attacks and interferences with health care in conflict: validation of an incident reporting tool for attacks on and interferences with health care in eastern Burma. Conflict and health. 2014 Dec;8(1):1-2.

4. **Haar RJ**, Iacopino V, Ranadive N, Weiser SD, Dandu M. Health impacts of chemical irritants used for crowd control: a systematic review of the injuries and deaths caused by tear gas and pepper spray. BMC public health. 2017 Dec;17(1):1-4.

5. **Haar RJ**, Risko CB, Singh S, Rayes D, Albaik A, Alnajar M, Kewara M, Clouse E, Baker E, Rubenstein LS. Determining the scope of attacks on health in four governorates of Syria in 2016: results of a field surveillance program. PLoS medicine. 2018 Apr 24;15(4):e1002559. PMID: 29689085; PMCID: PMC5915680.

6. **Haar RJ**, Iacopino V, Ranadive N, Dandu M, Weiser SD. Death, injury and disability from kinetic impact projectiles in crowd-control settings: a systematic review. BMJ open. 2017 Dec 1;7(12):e018154.

7. Parwak Y, Dandu M, **Haar RJ**. Barriers to Health among IDPs in Kabul, Afghanistan: a qualitative study. Journal of Refugee & Global Health. 2019;2(2):8.

8. **Haar RJ**, Lin J, Modvig J, Nee J, Iacopino V. The Istanbul Protocol: A global stakeholder survey on past experiences, current practices and additional norm setting. Torture Journal. 2019;29(1):70-84. PMID: 31264817.

9. Ri S, Blair AH, Kim CJ, **Haar RJ**. Attacks on healthcare facilities as an indicator of violence against civilians in Syria: an exploratory analysis of open-source data. PLoS One. 2019 Jun 10;14(6):e0217905.

10. **Haar RJ**, Wang K, Venters H, Salonen S, Patel R, Nelson T, Mishori R, Parmar PK. Documentation of human rights abuses among Rohingya refugees from Myanmar. Conflict and health. 2019 Dec;13(1):1-4.

11. Bruno W, **Haar RJ**. A systematic literature review of the ethics of conducting research in the humanitarian setting. Conflict and health. 2020 Dec;14(1):1-7.

12. Iacopino V, **Haar RJ**, Heisler M, Beriashvili R. Istanbul Protocol implementation in Central Asia: Bending the arc of the moral universe. Journal of Forensic and Legal Medicine. 2020 Jan 1;69:101886.

13. Baker E, Stover E, **Haar RJ**, Lampros A, Koenig A. Safer Viewing: A Study of Secondary Trauma Mitigation Techniques in Open Source Investigations. Health and Human Rights. 2020 Jun;22(1):293.

14. Hakki L, Stover E, **Haar RJ**. Breaking the silence: Advocacy and accountability for attacks on hospitals in armed conflict. International Review of the Red Cross. 2020 Dec;102(915):1201-26.

15. **Haar RJ**, Read R, Fast L, Blanchet K, Rinaldi S, Taithe B, Wille C, Rubenstein LS. Violence against healthcare in conflict: a systematic review of the literature and agenda for future research. Conflict and health. 2021 Dec;15(1):1-8.

16. Saadi A, Hampton K, de Assis MV, Mishori R, Habbach H, **Haar RJ**. Associations between memory loss and trauma in US asylum seekers: A retrospective review of medico-legal affidavits. PLoS one. 2021 Mar 23;16(3):e0247033.

17. Rosenthal A, Stover E, **Haar RJ**. Health and social impacts of California wildfires and the deficiencies in current recovery resources: An exploratory qualitative study of systems-level issues. PloS one. 2021 Mar 26;16(3):e0248617.

18. **Haar RJ**, Read R, Fast L, Blanchet K, Rinaldi S, Taithe B, Wille C, Rubenstein LS. Violence against healthcare in conflict: a systematic review of the literature and agenda for future research. Conflict and health. 2021 May;15(1):1-8.

19. Jin RO, Anaebere TC, **Haar RJ**. Exploring bias in restraint use: four strategies to mitigate bias in care of the agitated patient in the emergency department. Academic Emergency Medicine. 2021 Sep;28(9):1061

20. Muzzall E, Perlman B, Rubenstein LS, **Haar RJ**. Overview of attacks against civilian infrastructure during the Syrian civil war, 2012–2018. BMJ global health. 2021 Oct 1;6(10):e006384.

21. Heisler M, Ranit M, **Haar RJ**. Protecting providers and patients: results of an Internet survey of health care workers' risk perceptions and ethical concerns during the COVID-19 pandemic. International Journal of Emergency Medicine (Online). 2021 Dec 1;14(1).

22. Mehtar S, AlMhawish N, Shobak K, Reingold A, Guha-Sapir D, **Haar RJ.** Measles in conflict-affected northern Syria: results from an ongoing outbreak surveillance program. Conflict and health. 2021 Dec;15(1):1-4.

23. Zweig SA, Zapf AJ, Beyrer C, Guha-Sapir D, **Haar RJ**. Ensuring Rights while Protecting Health: The Importance of Using a Human Rights Approach in Implementing Public Health Responses to COVID-19. Health and Human Rights. 2021 Dec;23(2):173.

24. Trager S, Leigh J, Woods A, Parmar P, Petty A, **Haar RJ,** Beyrer C. Consistency of reports of violence from northern Rakhine state in August 2017. Conflict and health. 2022 May 7;16(1):22.

25. Rubenstein L, **Haar RJ.** What Does Ethics Demand of Health Care Practice in Conflict Zones?. AMA Journal of Ethics. 2022 Jun 1;24(6):535-41.

26. Jin RO, Anaebere TC, **Haar RJ.** Exploring Bias in Restraint Use: Four Strategies to Mitigate Bias in Care of the Agitated Patient in the Emergency Department. Focus. 2023 Jan;21(1):100-5.

27. Hampton K, Mishori R, Forensic Asylum Evaluation Expert Group. What constitutes a high-quality, comprehensive medico-legal asylum affidavit in the United States immigration context? A multi-sectoral consensus-building modified Delphi. Journal of Forensic and Legal Medicine. 2023 May 1;96:102513. (**group authorship member Haar RJ**)

28. Abbara A, Rayes D, Tappis H, Hamze M, Wais R, Alahmad H, Almhawish N, Rubenstein L, **Haar RJ**. "Actually, the psychological wounds are more difficult than physical injuries:" a qualitative analysis of the impacts of attacks on health on the personal and professional lives of health workers in the Syrian conflict. Conflict and health. 2023 Oct 9;17(1):48.

29. Crawford K, Florez T, Rodriguez M, Cirado L, Read R, **Haar RJ.** "There is a fear that you will be attacked just for the act of working in health": a survey of experiences of violence against healthcare in Colombia. Conflict and health. 2023 Oct 24;17(1):51.

REVIEW ARTICLES

1. **Haar, RJ.** "Hand Infections." MedScape Emedicine. 2010. Newest version available at: https://emedicine.medscape.com/article/783011-overview

2. **Haar, RJ** and Rubenstein, LS. Health in Fragile and Post-Conflict States. United States Institute of Peace. Special Report 301. January 2012.

BOOKS AND CHAPTERS

1. **Haar RJ** and Levy B. Climate Justice and Health. in: Levy B, Patz J, editors. Climate change and public health. 2nd ed. Oxford, UK. Oxford University Press; (in press, 2024)

OP-EDs AND COMMENTARIES

1. Heisler M, Mishori R, **Haar RJ.** Protests against police violence met by more police violence—A dangerous paradox. JAMA Health Forum 2020 Jun 1 (Vol. 1, No. 6, pp. e200739-e200739). American Medical Association.

2. Tarakji, A, Almhawish, N, **Haar, RJ.** Opinion: A new type of accountability can help restore dignity for Syrians. 7 April 2021. Devex. Available at: https://www.devex.com/news/opinion-a-new-type-of-accountability-can-help-restore-dignity-for-syrians-99585

3. **Rohini Haar** and Brian Castner. Research and Regulation of Less-Lethal Projectiles Critically Needed. 30 July 2021. Bill of Health. Petrie-Flom Center. Available at: https://blog.petrieflom.law.harvard.edu/2021/07/30/research-and-regulation-of-less-lethal-projectiles-critically-needed/

4. **Rohini Haar** and Nicholas Robinson. The right to protest is sacrosanct. California needs to protect that right from rubber bullets and tear gas. San Francisco Chronicle. August 31, 2021. Available at: https://www.sfchronicle.com/opinion/openforum/article/The-right-to-protest-is-sacrosanct-California-16423503.php

5. **Haar, RJ.** Medical Professionals on the Front Lines. Physicians for Human Rights. April 30, 2019. Available at: https://phr.org/our-work/resources/medical-professionals-on-the-front-lines/

6. **Haar, RJ.** The Very Real Health Impacts of Tear Gas. Physicians for Human Rights. December 11, 2018. Available at: https://phr.org/our-work/resources/the-very-real-health-impacts-of-tear-gas/

7. **Haar, RJ.** We're Seeing the Lucky Ones. Physicians for Human Rights. February 12, 2018. Available at: https://phr.org/issues/investigating-deaths-and-mass-atrocities/assessments-and-documentation-of-mass-crimes/through-evidence-change-is-possible/were-seeing-the-lucky-ones/

8. Iacopino V, **Haar RJ**, Heisler M, Lin J, Fincancı ŞK, Esdaile C, Modvig J, Sveaass N, Nathanson VH, Melzer N, Cohen J. Istanbul Protocol 2022 empowers health professionals to end torture. The Lancet. 2022 Jul 16;400(10347):143-5.

9. Dalouk K, **Haar RJ**. Protecting health in conflict in Sudan: a call for health worker solidarity. BMJ. 2023 Jun 27;381. DOI: https://doi-org.libproxy.berkeley.edu/10.1136/bmj.p1453

10. **Haar RJ,** Mishori R, Zia-Zarifi S. Iran must stop the use of pellets to target and blind protesters. The Lancet. 2023 Oct 21;402(10411):1415. DOI:https://doi-org.libproxy.berkeley.edu/10.1016/S0140-6736(23)02180-3

11. **Haar RJ**, Abbara A, Rubenstein L, Spiegel P, Alnahhas H. Attacks on Health are a war crime and a public health catastrophe. The Lancet. 2023, in press.

NON-PEER REVIEWED PUBLICATIONS AND HUMAN RIGHTS INVESTIGATIONS

1. **Haar, RJ,** Iacopino V, Weiser S, Dandu M**. "**Lethal in Disguise: The Health Consequences of Crowd Control Weapons." Physicians for Human Rights (NY) &International Network for Civil Liberties Organizations. 2016. Available at: https://www.inclo.net/issues/lethal-in-disguise/

2. **Haar, RJ**, Ghannam, J. No Safe Space: Health Consequences of Tear Gas Exposure Among Palestine Refugees. Human Rights Center, UC Berkeley. 2017. Available at: https://www.law.berkeley.edu/wp-content/uploads/2017/12/NoSafeSpace_full_report22Dec2017.pdf

3. Nelson, T, **Haar, RJ.** "Please Tell the World What They Have Done to Us" - The Chut Pyin Massacre: Forensic Evidence of Violence against the Rohingya in Myanmar. Physicians for Human Rights. July 2018. Available at: https://phr.org/our-work/resources/please-tell-the-world-what-they-have-done-to-us/

4. **Haar, RJ. "**Intimidation and Persecution: Sudan's attacks on peaceful protesters and physicians." Physicians for Human Rights. April 2019. Available at: https://phr.org/our-work/resources/intimidation-and-persecution-sudans-attacks-on-peaceful-protesters-and-physicians/

5. Reynhout, S, Heisler, M, **Haar, RJ.** Shot in the Head. An Online Visual Presentation. Physicians for Human Rights. September 14, 2020. Available at: https://phr.org/our-work/resources/shot-in-the-head/

6. Audrey Mahieu, Karl Blanchet, **Rohini Haar,** Larissa Fast, Leonard Rubenstein and Natalya Kostandova. Conceptual issues and methodological approaches to evaluating the wider and longer-term impact of attacks on healthcare in conflict. RIAH Working Paper 1. December 2020. Available at: https://riah.manchester.ac.uk/wp-content/uploads/2021/01/Impact-Methods-Working-Paper-min-1.pdf

7. Abdelrahman A, **Haar RJ** The Effect of Conflict on Healthcare Workers in Syria: Results of a Qualitative Survey. medRxiv. 2021 Jan 1.

8. Leone J, **Haar R,** Heisler M, Mishori, R. "Silenced and Endangered: Clinicians' Human Rights and Health Concerns about Their Facilities' Response to COVID-19" February 23, 2021. Physicians for Human Rights. Available at: https://phr.org/our-work/resources/silenced-and-endangered/

9. Daugherty A, Lum A, Croft S, Wille S, **Haar, RJ.** "Violence Against Health Care: Attacks During a Pandemic." March 1, 2021. Insecurity Insight and UC Berkeley Human Rights Center. Interactive Visual Report at https://storymaps.arcgis.com/stories/fd6a804a17b74f0aaa3d00b76b9ab192.

10. Natasha Harrison, Katerina Crawford, Scott Reynhout and **Rohini Haar.** Case Study: Exploratory Analysis of Publicly Available Data on Attacks on Health in Colombia. RIAH Projects Methods Memo. 22 April 2021. Available at: https://riah.manchester.ac.uk/wp-content/uploads/2021/05/RIAH-Columbia-Online-Surveillance-WebCopy.pdf

11. Safeguarding Health in Conflict Coalition & Insecurity Insight. Ineffective Past, Uncertain Future. The UN Security Council's Resolution on the Protection of Health Care: A Five-year Review of Ongoing Violence and Inaction to Stop It. January 2021. **(Drafted executive summary)** Available at: http://insecurityinsight.org/wp-content/uploads/2021/05/Ineffective-past-Uncertain-Future-A-Five-Year-Review-2016-2020.pdf

12. **Rohini Haar** and Susannah Sirkin. Strengthening Data to Protect Healthcare in Conflict Zones. International Peace Institute. November 21, 2022

13. **Rohini Haar** et al. (lead author) Lethal in Disguise: How Crowd-Control Weapons Impact Health and Human Rights. Physicians for Human Rights & International Network of Civil Liberties Organizations. March 2023.

CONTACT INFORMATION

[redacted]
rohinihaar@berkeley.edu
3136 College Avenue, Berkeley CA 94705 USA