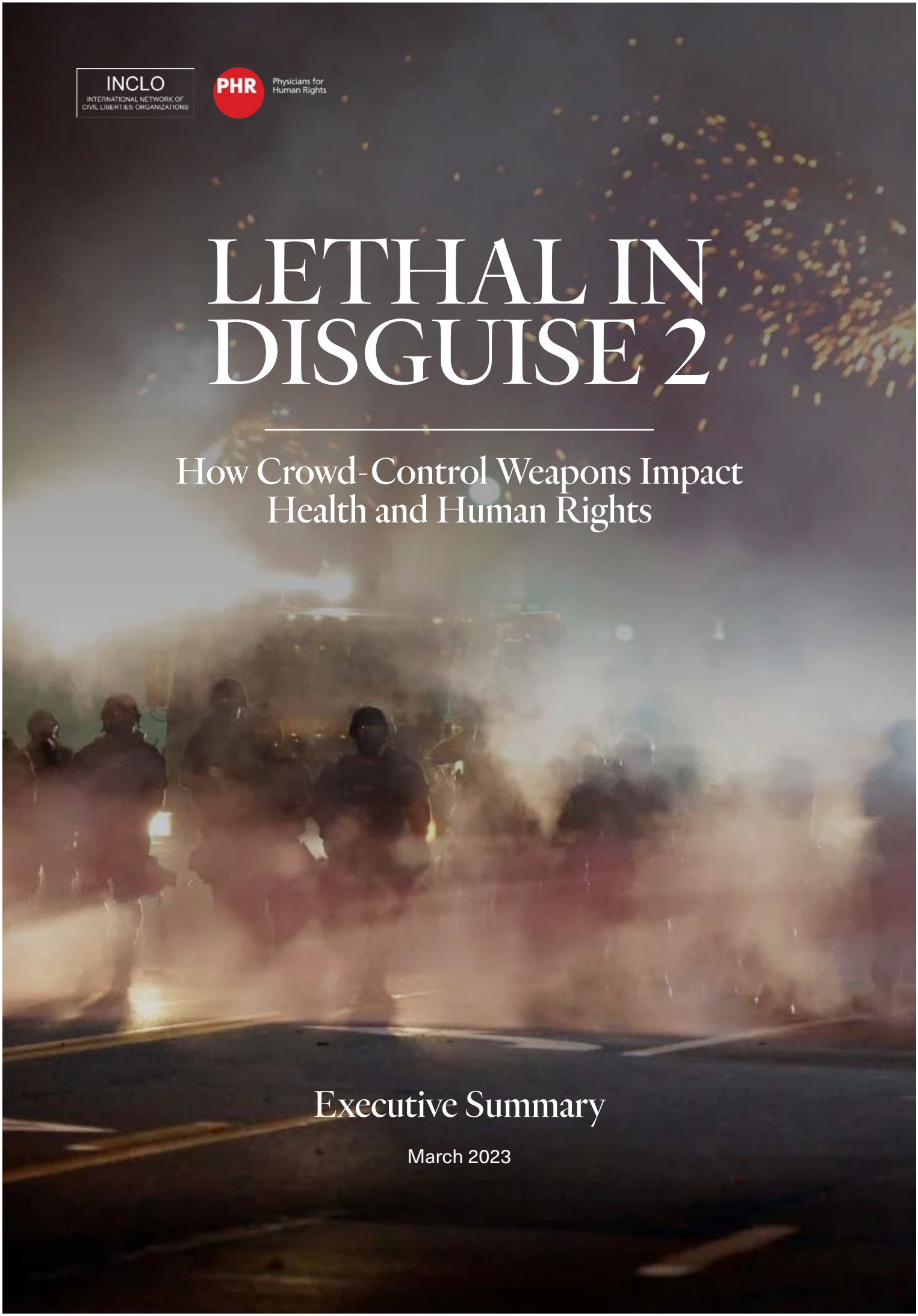

INCLO
INTERNATIONAL NETWORK OF CIVIL LIBERTIES ORGANIZATIONS

PHR Physicians for Human Rights

LETHAL IN DISGUISE 2

How Crowd-Control Weapons Impact Health and Human Rights

Executive Summary

March 2023

EXECUTIVE SUMMARY

Public protests have surged across the world in recent years, often led by grassroots movements seeking to challenge social and economic injustices, express discontent and demand transformative change from their governments. Economic inequity led to the 2018 "Yellow Vests" protests in France, and echoes of these protests were felt in the 2019 Chile protests, the 2020 Indian farmers' protests, and those across Colombia in 2021. George Floyd's 2020 murder by a policeman set off a historic wave of protests across the United States and globally, while similar cases of police brutality were behind the #EndSARS protests in Nigeria.

Protests against authoritarian governments were also seen in places such as Hong Kong in 2019, in Myanmar, Israel and the Occupied Palestinian Territories in 2021, and more recently in Iran, Russia and China in 2022. Recent demonstrations have also played out against the backdrop of the COVID-19 pandemic, in which global protests have occurred in response to perceived government ineptitude or overreach. Whether this pattern of ongoing protests represents a momentary period of turbulence or a new normal is yet to be seen. What is clear is that people-driven protest movements are becoming an increasingly common aspect of the 21st-century geopolitical landscape.

Law enforcement and security forces have frequently responded to these protests with excessive force and violence that fundamentally undermine the rights to free expression and assembly. The unnecessary and disproportionate use of force often serves not to disperse crowds and quell dissent but rather leads to acrimony and further escalation of conflict. Such uses of force often involve crowd-control weapons (CCWs), weapons ostensibly designed to inflict sublethal pain on individuals.[1] The rising popularity of CCWs by state actors highlights alarming trends in policing across the world: growing authoritarianism, the militarization of law enforcement, unregulated and precipitous use of weapons against peaceful, unarmed people, politically biased decisions to use force, little transparency around when, how and why CCWs are used and no meaningful accountability. The result is thousands of people worldwide who have been seriously injured or killed by these weapons, and the chilling effect of this violence on millions more.

Rigorous documentation of injuries resulting from the use of CCWs is necessary for understanding their impacts both on health and on assembly, association and free expression rights. In 2016, the International Network of Civil Liberties Organizations (INCLO) and Physicians for Human Rights (PHR) published ***Lethal in Disguise*** (LiD1), which was the first report to systematically catalogue the health risks and consequences of CCWs. Our 2016 report leveraged an extensive review of the peer-reviewed medical literature, augmented by reviews

1 It is important to note that the violent repression of protesters is not always or solely supported by the use of CCWs. In many countries, including where INCLO member organizations are based (e.g. the United Kingdom), tear gas, water cannons and other CCWs discussed in this report are not used or are banned in the context of peaceful assemblies. However, there are still serious challenges to the full enjoyment of assembly, association and free expression rights.

of news and human rights organisations' reports and other data, to elucidate the range and scope of injuries from the use–and misuse–of CCWs.

Since then, the nature, scale, and documentation of protests–and the weapons used–have evolved considerably. There are numerous reports in the media and medical research about thousands of people with severe injuries resulting from CCWs: kinetic impact projectiles (KIPs) have caused permanent blindness, brain damage and internal bleeding; chemical irritants have caused trauma from the canisters, as well as respiratory, skin, and eye injuries from the chemicals; stun grenades have burned people; and acoustic weapons have damaged hearing. Many more injuries likely went unreported.

These accounts and the significant medical and scientific advances that have been published since the initial report's release demanded that we revisit the findings of LiD1. This updated publication, and the additional resources published on the ***Lethal in Disguise*** web platform, aim to advance our understanding of the health impacts of CCWs since the publication of LiD1 and seek to continue to raise awareness about the misuse and abuse of CCWs, the detrimental health effects that these weapons can have, and the impact of their use on the meaningful exercise of assembly, association and free expression rights.

We attempt to answer a number of questions. What has changed in our medical understanding of the consequences of the use and misuse of CCWs globally? What new threats do we recognize these weapons pose not just to health but also to the meaningful exercise of assembly, association and free expression rights? In raising awareness about the misuse of CCWs, we seek to answer these questions and foster a global debate to develop further international standards and guidelines on the deployment of CCWs. Ultimately, our goal is to prevent injury, disability and death by providing information about CCWs and enabling people to exercise assembly, association, and free expression rights safely and freely.

This report examines many categories of CCWs used around the world: including kinetic impact projectiles (KIPs), chemical irritants, water cannons, disorientation devices and acoustic weapons. Because weapons not traditionally considered riot control agents are increasingly being used to police crowds, this report also addresses blunt force weapons (i.e. batons) and new frontiers in CCW technology such as drones, electronic control devices and direct energy weapons. International law concerning the use of force, with specific mention of CCWs, is also discussed.

The title of this update and our prior report is designed to make a fundamental reality clear -- CCWs are dangerous and can be lethal. It is time for this to be widely acknowledged. The global use of CCWs by government-controlled security forces on protesters has severe consequences to the physical health of both those targeted and bystanders not targeted, on the mental health of everyone involved, and on the enjoyment and safe exercise of fundamental civil and political rights.

Based on multiple expert interviews, this report also demonstrates that injuries have been

repeatedly exacerbated by disproportionate, indiscriminate and excessive use of these weapons. We are not intending to claim that public order and safety are not a legitimate state obligation. Too often, however, the use of force and CCWs are used in violation of local, state and international protocols, resulting in disproportionate and excessive use. Nearly all weapons can and are frequently used as indiscriminate tools of collective punishment against peaceful protesters, bystanders and disruptors alike, regardless of their vulnerabilities, actions or potential for causing harm. Some are inherently unlawful, just because they are indiscriminate.

Police violence is also frequently discriminatory and biased against marginalised groups, including racial, ethnic, political, religious, and other minorities, who too often face disproportionate deployments of force and weapons during protests. While the use of certain CCWs may be warranted in some cases to ensure the safety of the public and law enforcement officials, this study demonstrates that the vast majority of CCWs are not only unnecessary for this purpose, but their use runs directly counter to the objective of "public safety and order".

Summary of findings[2]

Kinetic impact projectiles

KIPs–commonly referred to as "rubber bullets" or "baton rounds"–are bullet-like missiles used by law enforcement and security forces to deter conduct through the pain of impact. The findings of a systematic review of medical literature indicate that KIPs can cause serious injury, disability, and even death. Our updated research identified 2,190 people with injuries from KIPs reported in medical literature published over the last six years (2016-2021) globally; and at least twelve of the identified people died from their injuries with 945 suffering permanent disabilities. Ocular injuries, including blindness, account for 1,575 of the injuries reported (65% of the total number of injuries).

These data demonstrate that severe injuries are most likely when KIPs are fired at close range, when KIPs contain metallic components or when multi-projectile KIPs are used. Of note, the number of injuries from metal birdshot found in our literature review dwarfs those from other KIPs (82% of all injuries). Additionally, we found that from close range, some types of KIPs have a similar 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 can strike vulnerable body parts and cause unintended injuries to bystanders, especially when multiple projectiles are scattering from one firearm simultaneously. Our conclusion

2 The health effects of KIPs and chemical irritants are described in detail because there is adequate medical data on associated injuries to conduct a robust analysis. For other weapons, we harness the growing social media landscape and the growth of online news media sources to identify and catalogue injuries reported resulting from weapons.

is that it is doubtful that these weapons can be used in a manner that is both safe and effective in a protest setting.

Key findings on KIPs

- Increase in use and injuries: Since the publication of LiD1, data on the use of KIPs to suppress mass dissent has more clearly illustrated the true health cost of the proliferation of KIPs in law enforcement and security forces worldwide. Focusing on literature published from 2016-2021, 2,190 persons were injured or killed by KIPs, mostly in protest settings, a number greater than LiD1's total of 1,984 persons reported as injured and killed based on literature published before 2016.

- Multi-projectiles: The finding of widespread injuries from multi-projectile KIPs–where multiple projectiles are fired at once–demonstrates the harmful effects of these inherently indiscriminate weapons. They cannot effectively target a single individual or a single body part, and their use has resulted in serious injuries to targeted individuals (when they impact sensitive body parts) and to bystanders (when the projectiles miss the intended target, instead affecting those not targeted). The results of our analysis suggest that these weapons are more dangerous than single projectiles and leading us to call for a prohibition on their use as a first step in limiting harm from KIPs.

- Metal pellets: The vast majority of reported severe injuries (82%) occurred as a result of metal birdshot, a hunting munition pressed into service in several countries as a KIP. This report illustrates metal pellets' imprecision, indiscriminate nature, and unmatched capacity to maim.

- "Hybrid" weapons: The development and proliferation of "hybrid" weapons that combine characteristics of KIPs with other CCWs, such as "pepper balls" or stun grenades that disperse rubber balls, are proliferating technologies that must be closely observed and evaluated.

- Canisters misused as KIPs: Tear gas canisters, when fired directly at protesters, can be extraordinarily hazardous. These devices and their resultant injuries are reviewed in the chemical irritants section, but the ad hoc use of other weapons as KIPs must be further examined and regulated.

Chemical irritants

Commonly referred to as "tear gas" and "pepper spray," chemical irritants include a variety of chemical compounds intended to irritate the senses. The general perception is that these weapons have mostly short-term effects that include irritation of the eyes, dermal pain, respiratory distress, and the psychological effects of disorientation and agitation. A systematic review of medical literature documenting the health effects of chemical irritants identified over 100,000 people who have been injured since 2015. At

least fourteen people have died, all of them because of trauma inflicted by the canister.[3] While chemical irritants are often thought of as causing minimal transient harm, our findings also identify longer-term risks, including permanent disability and death from their use and misuse.

Key findings on chemical irritants

- Extensive use, limited evaluation: Tear gas has continued to be used extensively around the world. While chemical irritants continue to be the primary crowd-control agent used by law enforcement and security forces to repress and disperse protests, there is almost no publicly accessible manufacturer or government-sanctioned literature on the composition, health or environmental safety standards on the use of these weapons.

- New ways of deployment: Beyond the use of traditional canisters, sprays, and grenades, the use of chemical irritants diluted in water cannons is a growing problem, with reports of resulting skin irritation and pain. There has also been growing use of other composite weapons, such as pepper balls or water cannons laced with chemical irritants, which complicate the identification of weapons, as well as the treatment of injuries.

- Canisters misused as KIPs: Dense and metallic tear gas canisters can easily cause fatal injuries when fired at the head or torso. All deaths reported in recent medical literature associated with tear gas have occurred due to impacts from military-grade tear gas canisters.

- New hazards recognized as a result of the airborne transmission of viruses, such as COVID-19: The extensive use of chemical irritants during the pandemic has increased the risk of adverse medical effects due to COVID-19's effects on breathing and the lungs, as well as the risk of infection through induced coughing or sneezing. While there is limited information on the incidence of COVID-19 in the setting of tear gas exposure, this issue continues to be of concern as the pandemic continues, and others will likely follow.

- Psychological impacts: The psychological impacts of the use of CCWs have not been extensively studied nor documented in the medical literature, but cases documented in this review indicate that exposure to chemical irritants may result in significant psychological effects, including potential long-term disability.

3 The deaths reported were primarily in Iraq where military-grade canisters were used.

Other weapons[4]

Water cannons

Water cannons are inherently indiscriminate, particularly at long distances. They can also make communicating with protesters difficult. Their intimidating size and appearance may cause panic leading to stampedes among protesters. We found that blunt trauma from their force has resulted in blindness, head trauma and fractured bones in a number of people. The use of coloured dyes, chemical irritants, or malodorants in conjunction with a water cannon is a form of collective punishment which underscores the potential for abuse of these weapons.

Disorientation devices

Disorientation devices, also known as "flash-bangs" or stun grenades, create a loud explosion and, in some instances, a bright flash of light. They are made of both metal and plastic parts that may fragment during the explosion and therefore carry risks of blast injuries to targeted individuals and bystanders. Explosions that occur close to people have led to amputation, fractures, burns and death. Additionally, the ability to precisely place these thrown devices is questionable, especially when used in protest settings. There are frequent news reports and anecdotal evidence of injuries and deaths from these weapons, including reports of injuries to military, corrections, and other law enforcement officials while handling these devices.

Acoustic weapons

Acoustic weapons, sometimes called sound cannons or sonic cannons, indiscriminately emit painful, loud sounds that have the potential to cause significant harm to the eardrums and delicate organs of the ears and may cause hearing loss. Eardrum injury and hearing loss have been reported in a handful of lawsuits and other cases; serious questions remain about their safety and efficacy in protest contexts.

Blunt force weapons

Blunt force weapons (i.e. batons) are perhaps the most recognizable police weapon used against protestors. These include many variations of a stick or club, depending on history, culture and context. Batons can be defensive weapons, but in the context of protests, they are frequently used as offensive weapons, sometimes in conjunction with other weapons, to shove, strike, hold or apply pressure on people. Batons, depending on the force and the location of the strike, can cause anything from mere bruising to life-threatening blunt trauma. We highlight cases in Italy, India, Chile and Kenya that illustrate the potential for abuse of batons in protests and demand broad regulation of the use of this type of weapon in protest settings.

4 Although to date there is limited evidence in the medical literature on the safety of water cannons, disorientation devices, acoustic weapons, blunt force weapons (batons) and remotely operated vehicles, case studies involving these weapons demonstrate their capacity for causing significant harm to protesters.

New frontiers [5]

Electronic conduction devices

Electronic conduction devices (ECDs), such as tasers and electric shields, are transitioning from weapons used primarily in arrest or carceral settings to protest contexts. Cardiac arrhythmias, muscle damage and electric burns (both on the skin and internally) may result from electrical conduction, and there may be trauma from the barbs or shields that compounds the danger. ECDs have been identified as contributing factors in over 100 incustody deaths in the United States as well as thousands of injuries globally. Expanding the use of these weapons to more people poses the risk of far more injuries.

Remotely operated vehicles

Remotely operated vehicles, more commonly known as drones, have seen massive growth in the past decade. Civil liberties experts note that the use of drone technology is the most concerning CCWs development in the past five years. To date, they have been primarily used for surveillance, but they are increasingly being used to carry and fire CCWs. Both of these uses are problematic in terms of injury and the potential to violate fundamental rights.

These weapons may cause additional risk of injury because they can be employed remotely from the actual physical location of law enforcement or security forces, which can limit in-person judgements of how, when, on whom, and how much of a response is appropriate. Mistakes are frequent in military drone strikes, and, by extension, any deployment of drones capable of firing CCWs in protest settings is concerning. To our knowledge, although drones that fire CCWs have only been used by Israeli law enforcement and security forces, a large number of countries have purchased these technologies, leading to concerns about their expanding use.

Access to medical care

The health effects described in this report may be exacerbated by factors that serve to impede access to medical care. These include restricted access to medical transport, forbidding or restricting medical assistance at protests, direct attacks on medical professionals and street medics, and the chilling effect of detaining those injured by CCWs at medical facilities, which leads people not to seek necessary medical attention. These barriers to access to timely medical care have played a significant role in increasing the risk of serious injury, permanent disability, or death from CCWs.

Summary of recommendations

Since LiD1 was published in 2016, we have seen both improvements and mounting challenges to limiting the dangerous use of CCWs. The initial report was well received and led to numerous national and international discussions around better regulation, resulting in the development of the 2020 *United Nations Human Rights Guidance on Less-Lethal Weapons in Law Enforcement*

5 New frontiers in protest contexts include the use of electric weapons (such as tasers) and remotely operated vehicles such as drones.

(UN Guidance).[6] Protesters are now more aware of potential injuries and have better tools to report on their experiences. At the same time, weapons manufacture and use have proliferated, resulting in more injuries and less accountability for their harm. In many countries, there is still a lack of documentation, reporting and investigation of CCWs injuries. Meaningful accountability for CCWs abuses remains rare.

In the light of the evidence gathered in this report, INCLO and PHR, with contributions from the Omega Research Foundation, propose several recommendations on all aspects of CCWs use, including: regulating manufacturing and transparency in their design, composition, and testing, to regulating their trade and use; promoting the reporting of all uses of CCWs and seeking accountability for misuse. The purpose of the recommendations, found in detail in Section 4, is to reduce injuries, disabilities and deaths caused by CCWs; to bolster international guidelines for the use of CCWs; to ensure the protection and promotion of assembly, association and free expression rights; to seek accountability in cases of harm; and to develop safe practices for the occasions where these weapons are deployed.

These recommendations are based on two core principles: (1) protecting health and limiting injuries; and (2) ensuring the meaningful exercise of the right of assembly, association and free expression.

Design, development, and procurement

- CCWs and related equipment intended for use in the context of protests must be designed and produced in a way that ensures that they meet legitimate law enforcement objectives and comply with international law and standards. This duty applies to states and their agents as well as to companies that manufacture weapons for law enforcement (*recommendation 1*).

- Information on CCWs, including manufacturer testing data and safety data sheets, must be made publicly accessible (*recommendations 5-6*).

- International, regional and national controls should be adopted on the trade in CCWs and equipment. These should prohibit the trade in inherently abusive weapons and equipment and control the trade in CCWs that are misused to ensure that they are not used in human rights abuses *(recommendation 7).*

- Testing, evaluation and approval should include a multidisciplinary approach that, in addition to law enforcement and manufacturers, includes policymakers, academics, health professionals and other relevant civil society actors. Testing of CCWs should consider, at the least, legality, level of target accuracy, risk of lethality, risk of serious injury or disability, level of pain inflicted, operational

6 United Nations Office of the High Commissioner for Human Rights, United Nations Human Rights Guidance on Less-Lethal Weapons in Law Enforcement, 2020 (UN Guidance on LLWs), accessible at: https://www.ohchr.org/Documents/HRBodies/CCPR/LLW_Guidance.pdf.

lifespan, reliability (i.e., minimal risk of malfunction) and other relevant factors (*recommendations 8-13*).

› Selection and procurement of weapons must comply all domestic and international standards, and information about the process and the inventories should be made publicly accessible (*recommendations 14-16*).

Regulations and training

› States should engage with and support international- and regional-level processes to develop trade controls, including the United Nations (UN) process on controls on the trade in tools of torture (*call to the UN number 4*).

› Regulations, procedures, and/or protocols on the use of CCWs should be developed for law enforcement based on applicable domestic, regional and international laws. Treaty obligations and international standards should be observed and operationalized in the protocols. These should also reflect the findings from independent testing. Law enforcement should never rely solely on manufacturers' instructions (*recommendation 17*).

› Law enforcement should be trained in human rights and legal standards as well as human rights-compliant use of CCWs. In addition to teaching the technical aspects of the weapon and its use, training should be contextual, including addressing the specific aspects and challenges of managing protests in compliance with all international, national and local laws (*recommendations 19-27*).

Use of force

› The use of any kind of force, including CCWs, must always comply with the principles of necessity, proportionality, legality, precaution, non-discrimination, and accountability (*recommendation 28*).

› Appropriate de-escalation techniques should be used to minimise the risk of violence. Law enforcement officials should be aware that even the display of CCWs may escalate tensions during protests. Where force is proportionate and is necessary to achieve a legitimate law enforcement objective, all possible precautionary steps must be taken to avoid, or at least minimise, the risk of injury or death (*recommendations 29-30*).

› Where a decision to disperse a crowd is taken in conformity with domestic and international law, force should be avoided. Where that is not possible under the circumstances, only the minimum force necessary may be used, with consideration of proportionality, and then only after very clear warnings and opportunities to comply have been made (*recommendations 31-34*).

Deployment of crowd-control weapons

› This report makes it clear that KIPs can cause serious injuries, permanent disability and even death. Severe injuries

are more likely when KIPs are fired at close range. When launched from afar, these weapons are often inaccurate and can strike vulnerable body parts or bystanders. Therefore, the medical evidence in this report underscores that KIPs should never be fired indiscriminately into groups and are, in general, an inappropriate weapon in any protest context (*recommendation 36*).

- Chemical irritants, when deployed using canisters or grenades, are inherently indiscriminate by nature, cause severe pain and injuries and frequently escalate tensions. Therefore, extreme caution must be used before and during deployment, including considerations of the presence of bystanders and the existence of areas of egress and airflow to minimise any risk of overexposure due to serious risk of injury *(recommendation 41)*.[7]

- Many CCWs, including water cannons and acoustic weapons, are indiscriminate in nature and must be restricted and, if used at all, used with extreme caution in protest contexts (*recommendations 44-46 and 51-53*).

- Batons should only be used in exceptional circumstances and only against violent individuals posing significant risks to themselves or others (*recommendations 54-56*).

- Some weapons have already been determined to cause disproportionate harm to health, undue collective punishment, or both, and must be prohibited. These include any kind of live ammunition (*recommendation 36*); KIPs that fire multiple projectiles at once, also known as "scatter shot" (*recommendation 38*); any projectiles with metal components or cores, including rubber-coated metal bullets, bean bag rounds and PVC-metal composite material, any projectiles with lead (*recommendation 39*); and pellet rounds, such as "birdshot" (*recommendation 40*); chemical irritants, including launchers that fire multiple chemical irritant canisters, such as the Venom system, excessively dense or high-grade canisters, canisters with additives or ingredients within them, sprays and grenades that are determined to be toxic or hazardous, have passed their expiration date or are otherwise in disrepair (*recommendation 42*); dye, chemical irritants or malodorants mixed with or sprayed with water cannons (r*ecommendation 47 and 48*); disorientation devices, such as stun grenades, explosive grenades or other flash bang weaponry (*recommendations 49 and 50*); direct

7 INCLO member, the ACLU, supports these recommendations and, additionally, calls for a full prohibition of chemical irritants and all indiscriminate CCWs on any mass gathering or assembly. In July 2020, the ACLU submitted a statement to the United Nations Human Rights Council (UNHRC) which among other things stated that: "[p]olice response to protests and other mass assemblies should not involve militarized displays or mass violence by the government, and law enforcement should never deploy indiscriminate weapons, such as tear gas and stun grenades, on any mass gathering or assembly." Several cities and states in the United States have proposed bills to ban or severely restrict the use of tear gas and/or KIPs in the context of protest. For example, the City of Philadelphia, Pennsylvania, has categorically banned the use of chemical weapons and kinetic energy munitions by the police against any individual engaging in First Amendment activities.

contact electric shock weapons; some blunt force weapons, such as whips and weighted or spiked batons (*recommendation 56*); and fully autonomous weapons systems (*recommendation 58*).

- Some weapons are concerning because of the risk of severe injuries or human rights violations. A moratorium on the use of these weapons in protest contexts should be issued until further evidence of their impacts has been collected and the boundaries of their lawful use have been established. These weapons include remotely operated armed drones, the development or use of directed energy weapons, and all other electric shock devices (*recommendation 58*).

- For some weapons, the methods and contexts of use can exacerbate injuries, escalate tensions and compound rights violations. As a result, their methods of use must be restricted and limited. Specifically, firing in enclosed or confined spaces, using excessive quantities, exposing vulnerable individuals, including children, the disabled and older persons, and/or firing weapons directly at individuals or into dense crowds (*recommendations 37 and 43, 54-55, and 57*).

Post-deployment procedures and accountability

- Medical care for sick and wounded people must not be restricted or interfered with and identities of those seeking care should not be released to law enforcement (*recommendations 59-61*).

- Law enforcement officials should record and report any use of CCWs, including specific models of CCWs deployed, the distances from the targeted individuals and/or bystanders and duration of deployment, the number of each type of CCW used, and the specifics of any injuries caused by CCWs. Review of this reporting must confirm that the reporting is accurate, and that the that the use of CCWs was proportionate, necessary, and lawful (*recommendation 62*).

- There should be a visible identification and a clear chain of command whenever CCWs are used, in order to ensure responsibility and accountability. All decisions taken should be traceable, and those who have taken them must be held accountable (*recommendations 63-64*).

- All deaths, injuries and suspected misuses of CCWs should be thoroughly investigated by a body independent of the implicated officials, with a view to establishing responsibilities and accountability of the officials involved, including the various levels of the command structure in charge during the incident. Where there is evidence of unlawful conduct, commanders and responsible officers should face administrative disciplinary measures and/or criminal prosecution, as appropriate (*recommendations 65-67*).