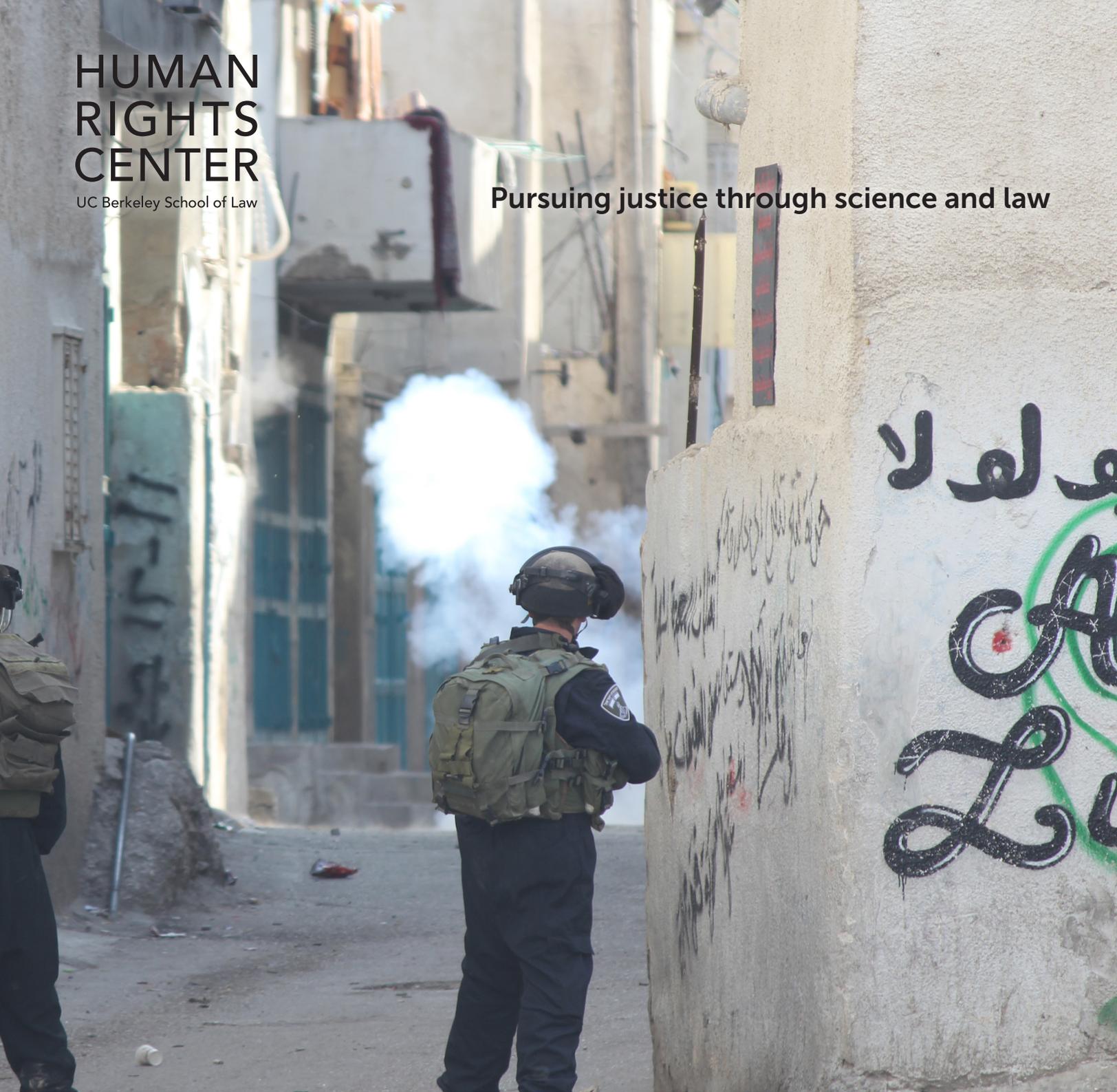


HUMAN  
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UC Berkeley School of Law

Pursuing justice through science and law



## NO SAFE SPACE

Health Consequences of  
Tear Gas Exposure Among  
Palestine Refugees



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Tear Gas Exposure Among  
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## HUMAN RIGHTS CENTER

The Human Rights Center at the University of California, Berkeley, School of Law conducts research on war crimes and other serious violations of international humanitarian law and human rights. Using evidence-based methods and innovative technologies, we support efforts to hold perpetrators accountable and to protect vulnerable populations. We also train students and advocates to document human rights violations and turn this information into effective action.

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Cover photo: Israeli soldiers fire tear gas in Aida refugee camp in 2014. Photo by Mohammad Alazza.

# EXECUTIVE SUMMARY

## Introduction

Residents of several longstanding refugee camps in the occupied Palestinian territory (oPt) have reported exposure to tear gas 2–3 times a week for more than a year, but in some months, almost every day. In Aida and Dheisheh camps, both located just outside Bethlehem in the occupied West Bank, residents have alleged that tear gas utilization by the Israeli Security Forces (ISF) is not directly correlated to political tensions, non-violent or violent protests, or stone throwing incidents. These reports raise concerns about the health consequences of such frequent exposure, both physical and psychological, for Palestine refugees and staff from the United Nations Relief and Works Agency for Palestine Refugees (UNRWA) who live and work in these camps. They also raise concerns that the ISF may be using tear gas in ways that are in breach of international norms.

Little is known about the health effects, both physical and psychological, of chronic or repeated tear gas exposure on Palestine refugees or on any population globally. Tear gas is a chemical irritant that is widely used to control riots or quell social protests. It is usually made up of a synthetic CN (chloracetophenone) or CS (2-chlorobenzalmalonitrile) gas or naturally occurring OC (oleoresin capsicum, also known as pepper spray and made from potent capsaicins inside hot peppers) that is intended to cause transient pain, and tearing of the eyes and a burning sensation of the skin. The aim of

these weapons is generally to incapacitate and limit the ability of exposed persons from causing harm and eventually, to disperse unsafe crowds. Newer forms of CS, such as CS<sub>1</sub> and CS<sub>2</sub> are siliconized to increase the half-life and potency of the chemical. The specific chemical utilized by the ISF in recent years is unknown. However, there has been limited evaluation of the more serious impacts of any of the chemical irritants particularly when a population is exposed over extended periods or to high quantities.

The aim of this paper is to (1) identify the frequency of exposure to tear gas among refugees who live in Aida and Dheisheh camps, and (2) categorize potential medical and psychological symptoms (both acute and chronic) associated with this exposure. We also aim to frame the use of tear gas within the social and political context and highlight the personal experiences of refugees, health workers, and UNRWA staff.

To produce a comprehensive evaluation of the context, exposure, health effects and possible solutions, the research team triangulated data from (1) qualitative interviews with focus groups within the camps and health workers who care for these residents, (2) medical evaluations of those who came forward with concerns about significant reactions, and (3) household surveys of the Aida camp residents on exposure frequency and medical and psychological symptoms.

## Findings

Researchers conducted interviews and the household survey in August 2017. One focus group was conducted in Dheisheh camp but the household survey and most of the focus groups of refugees occurred in Aida camp. Aida camp has the appearance of a densely populated urban slum with an area of 0.071km<sup>2</sup> and hosts about 6400 people living mostly in small apartments; this translates into a density figure of 90,000 persons per square kilometer, exceeding the figures of even the most densely populated cities in the world. There are two community centers, two schools, and various small stores and restaurants. There is a small paved soccer field (covered in mesh netting to hold back tear gas canisters) just outside the camp. The camp does not have a medical clinic and most of the area is taken up by 1–3 story buildings and narrow streets (cars can only go through one main central canal and around the outside). Dheisheh camp, on the other side of Bethlehem, hosts more than 15000 residents on about .31sq kilometers. All of Dheisheh camp is located in Area A under the Oslo Accords,<sup>1</sup> and should therefore fall under exclusive Palestinian Authority

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<sup>1</sup> According to the report of the UN Special Rapporteur on the situation of human rights in the Palestinian territories dated October 19, 2016, “The current stage of the fragmentation [of the West Bank] can be traced to 1995, when the Oslo II Accords divided the West Bank into three areas: (a) Area A, which consists of the principal Palestinian cities and towns (except for parts of Hebron), and amounts to 18% of the West Bank; it is under the civil and security governance of the Palestinian Authority, although Israel does conduct regular security intrusions with or without coordination with the Palestinian Authority; (b) Area B, which comprises about 400 Palestinian villages and adjacent farmland, and amounts to 22% of the West Bank; it is under Palestinian civil authority, but exclusive Israeli security control. The vast majority of the 2.4 million West Bank Palestinians live in Areas A and B; (c) Area C, encompassing 60% of the West Bank, is under full Israeli civil and security control. Area C contains about 225 Israeli settlements and between 370,000 and 400,000 settlers, along with about 180,000 Palestinians. Area C completely surrounds the Palestinian communities in Areas A and B.”

security control. The majority of Aida camp is designated as Area A however the street abutting the Israeli separation wall, with both the Boys’ School and the UNRWA office falls under Area C. However, ISF regularly enter all areas of the camps, where under the Oslo Accords, Israeli security forces were meant to be withdrawn and security control transferred to the Palestinian Authority.

We conducted 10 focus groups with over 75 participants and we interviewed 236 individuals in the camp, ages 10 and older, as part of a household population survey. Of the survey respondents, 67% were female and 39% were students, in a fairly equal distribution of ages between 10 and >66 years old.

*Exposure findings:* We conducted a household survey that asked questions regarding experiences with tear gas exposure as well as any short or long-term medical or psychological symptoms. The survey was conducted based on a purposive sampling technique whereby the camp was divided into four geographic sections. Within each section, the first house was selected randomly and then the following houses were selected in a line from the first house. If no participants were available, or they were ineligible or declined to participate, the following house was selected. We chose this sampling methodology to ensure that all general areas of the camp were sampled (including those close to the Israeli separation wall or the ISF military watchtower and those farther away, near and far from the main road, etc.) and to identify the experiences of a broad range of the population within the abilities of the surveyors.

Two hundred and thirty-six interviews were conducted with individuals (ages 10 and greater) living within Aida camp as part of the household survey.

The following is a summary of the results of these interviews: 100% of residents surveyed reported being exposed to tear gas in the past year. Respondents report also being exposed in the past several years to stun grenades (87%), skunk water (85%), pepper spray (54%) and report witnessing the

use of rubber bullets (52%) and several also report being witness to live ammunition (6%); 55% of respondents describe between three and ten tear gas exposures in the past month (the month before the survey was carried out), both indoors and outdoors. Indoor locations included homes, schools and places of work. Over the same period, 84.3% (n=188) were exposed in the home, 9.4%(n=21) at work, 10.7% (n=24) in school, and 8.5% (n=19) elsewhere, in a car for instance). Fifty-three people (22.5%) said that they had been hit directly with a tear gas canister in the past.

*Medical examinations:* Medical examinations yielded testimonies of fainting, seizures, miscarriages, and other concerning events, but no medical findings were identified in this limited examination. We highlight, however, that the absence of physical scarring or other evidence of injuries must not be construed as absence of serious injury or harm. The nature of the weapons used, the limitations in diagnostic testing, the variable time frame between exposure and the time of our evaluation, and the limited resources and documentation available in medical facilities may contribute to the lack of identifiable physical scars even when real injury occurred.

*Mental health effects and consequences:* Mental health was assessed based on the household survey and focus group interviews. The household surveys included a section on evaluating mental health based on the internationally accepted standardized General Health Questionnaire (GHQ) with 12 questions that assess general well-being and mental health. From a psychological perspective, our findings from the community group interviews and the GHQ results reveal a pattern and a level of distress consistent with high levels of anxiety and depression including: sleep disruption, acute stress responses, and chronic post-traumatic stress disorder. A consistent pattern of responses across all groups—men, women, and children of all ages—suggest that the residents of Dheishah and Aida Refugee camps are exposed to

very high levels of psychological distress on a regular basis.

Community focus groups consistently and independently reported experiences of fear, worry, physiological reactivity, hyper-arousal, poor and disrupted sleep, lack of safety, and daily disruptions in basic activities of daily living—including caring for children and the sick, participating in school and work life, and engaging in basic family life activities.

The frequency and unpredictability of ISF raids are among the most distressing aspects for people living in the camps. As a result, the ability of teachers to teach and children to learn in school was reported to be regularly compromised in the camps. Children and teachers reported being unable to carry out school activities during and after attacks by ISF, since tear gas regularly enters the school buildings and compounds and children are awoken at all hours by raids. Children and teachers do not feel safe at school and as a result, teaching and learning becomes very difficult.

Because of the frequency and unpredictability of ISF incursions, parents reported being unable to provide a “safe space” for their children and families, resulting in significant distress. The unpredictability is especially noteworthy as it appears that the ISF raids are not always tied to specific incidents or events in the camps. The seemingly random nature of the ISF raids creates a state of hyper-arousal, fear and worry.

Because the ISF raids are experienced as random, residents of the camps are perpetually on edge, fearing the next attack. The consequences of this chronic hyper-aroused state of fear and worry typically leads to a stress-response syndrome—the “fight or flight” response—which, if chronic, can result in the development of chronic health conditions and overall poor health. The GHQ data support the conclusion that residents of the camps experience increased levels of psychological distress and overall poor health.

*Physical symptoms and effects:* Responses to the household survey and the qualitative interviews

added to the knowledge of the medical symptoms of repeated tear gas exposure. Acute symptoms included loss of consciousness, breathing difficulties, rashes, and severe pain, all of which lasted many hours beyond the time they were directly exposed to the gas. While several years of frequent tear gas exposure normalized the experience to some extent, there was widespread fear of the long-term impacts of the chemical exposure. Respondents associate several chronic conditions with the tear gas exposure: asthma, allergic dermatitis, headaches and neurological irritability, miscarriages, and blunt trauma from canister injuries. There are widespread concerns that the tear gas currently being used is much more potent, long lasting and dangerous than that used in years past, that it causes worse and longer lasting side effects, and that no medical or home remedies or available preventative are effective.

The household survey gave researchers a window into the general experience of the population of Aida camp. We found that more than a quarter of respondents that work outside the home had to miss work for a tear gas related illness. The survey asked questions about related symptoms at 24 hours after exposure (by which time all symptoms should be completely resolved) and at the time of the survey. More than 75% of respondents reported that eye-related complaints (pain, burning, tearing), skin irritation and pain, as well as respiratory problems lasted more than 24 hours after the exposure. Ongoing symptoms such as headache, difficulty concentrating, eye irritation, sweating, difficulty breathing, coughing, dizziness and loss of balance were attributed to chronic tear gas exposure in more than 20% of the respondents [see charts].

While all respondents had reported being exposed to tear gas in the past year, only about one quarter of all respondents (23.6%) stated that they received medical care because of a tear gas related incident. Of those who did not seek medical care, the majority (65%) felt they did not need treatment; however, 20% noted that no medical care

was available and 5.6% were concerned about being identified or arrested.

*Findings from interviews:* In qualitative interviews within focus groups, we found that residents felt that tear gas use by the ISF was unprovoked and disproportionate. While it has not been possible to verify this as part of this research, it is important to note that such perceptions are grounded in the lived experiences of camp residents, who have been exposed to tear gas time after time, over the course of years. Between January 2014 and 15 December 2017, there were at least 376 confrontations between ISF and camp residents according to UNRWA data. In December 2017, there was a dramatic rise in tear gas utilization in the camps after President Donald Trump's proclamation that the US Embassy would be moved to Jerusalem and ensuing civil protests. Residents from the camp report that ISF routinely use tear gas during such confrontations. Overall, residents frequently stressed that there are no "safe spaces" in the camp. We identified several themes reported in the qualitative interviews (beyond what was discussed above related to physical and psychological impacts):

1. The tear gas exposure was widespread, frequent, and indiscriminate.
2. The use of tear gas by the ISF was primarily unprovoked.
3. There were no safe places in the camp. Homes and schools are not designed to protect against these exposures and there is no way to avoid it or mitigate the effects.
4. UNRWA is expected to provide more structured protection—both to its staff and the population. This may consist of better protocols for its schools and workers, more advocacy on behalf of the refugees as well as resources, equipment, and protective gear to UNRWA workers.
5. Medical ethics issues are profound: fear of seeking health services, being turned away

from hospitals, hospitals not keeping records on these injuries (some non-UN hospitals indicated that they have not kept records since experiencing ISF raids to search for persons and records), and other reported practices of the ISF that include blocking ambulances or attacking them at sites of clashes.

## Limitations

This study was framed as an exploratory study to better understand the context and issues faced by Palestine Refugees in Aida and Dheisheh camps and has some notable limitations. This study is a retrospective study of the experiences and reports of the residents of these camps. We could not objectively assess the accuracy or consistency of resident experiences but highlight that their self-reported exposure to tear gas is consistent with media reports and UNRWA documentation of ISF utilization of these chemicals in the camps. Restrictions by the ISF on video surveillance of these incidents also limit the ability to record incidents for review. Because there are no known quantitative exposure markers for CS or other chemical crowd control weapons, objective measurements of exposure, in the soil or in human fluids, is not possible.

Given the safety concerns of the residents, we are not able to identify participants for follow-up or ongoing research. For the survey, we attempted a geographical cluster sampling methodology to ensure a comprehensive view of the experiences of the camp residents while balancing practical needs. When combined with the relatively large proportion of the population sampled (~3.7% of the total camp population), it does approach the ability to provide population-based prevalence estimates. The survey was also limited in the number of questions we asked. In particular, we did not focus our study on the experiences of young men who are expected to be most frequently involved in clashes and exposed to tear gas because we wanted to gain a more population-based understanding of the exposure.

For the focus groups, while we interviewed a wide range of residents and workers within the camp, we were not able to interview every group that may have unique experiences with tear gas. Given time and space constraints, we also conducted focus group interviews rather than individual interviews, which may limit the amount of personal or private information that was shared.

We also were not in communication with nor did we interview any ISF staff or leadership to understand their view of the incidents we reviewed. We hope that this report will make such communication more viable and increase the transparency around the protocols for use of tear gas and the chemical make-up of the weapons. We also note that we focused our interviews in Aida and Dheisheh camps; we therefore cannot generalize these findings beyond these two sites without further study.

While we acknowledge these limitations, this study does identify some concerning themes regarding the significant exposure to tear gas and potential health impacts. We highlight the need for further research based on this exploratory review and note that the patterns, consistency, and multiple independent confirmations of the responses in this report stand as a testament to the deeply troubling exposures to tear gas in these camps.

## Recommendations

### *To the Israeli government*

The primary responsibility for protecting Palestinian civilians in occupied territory and ensuring their welfare is with Israel, the occupying power. All Palestinians living in the occupied areas are considered protected persons under international law. Israel must respect and protect their rights. We urge the State of Israel to encourage methods to avoid the use of crowd control weapons more broadly. The need to use safe and effective crowd control weapons in limited roles may be accepted but note that the utilization of tear gas in these camps appears to be well beyond any appropriate use. The Israeli

government and security forces are the only stakeholders in this context that can limit the use of tear gas, and we urge you to reconsider how this weapon is currently deployed.

We urge the Israeli government to ensure that the Israeli army, border police, and all other security forces operating in the oPt adhere to both national and international guidelines on proportionate utilization of force. ISF must comply fully with the UN Code of Conduct for Law Enforcement Officials and the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials. In countries where police powers are exercised by military authorities or state security forces “law enforcement officials” includes officers of such services.

The UN Code of Conduct requires law enforcement officials to respect and protect human dignity and maintain and uphold the human rights of all persons in the performance of their duty, including the right to life and the prohibition of torture and other ill-treatment.

The UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials provides that law enforcement officials should apply non-violent means before resorting to the use of force, which should be used only if non-violent means have proven to be, or are likely not to be, effective. If the use of force is unavoidable, law enforcement officials must always exercise restraint in its use. Any use of force should be strictly limited to those situations where it is absolutely necessary and strictly proportional to the legitimate aim pursued, and should aim to minimize damage and injury.

We urge Israel to prohibit the deployment of chemical irritants by its security forces in ways that are likely to increase the risk of unwarranted injury and death, such as firing canisters directly at people and using chemical irritants in high concentrations or in confined spaces with limited routes of egress. The ISF should also refrain from using excessive amounts of tear gas or using it in an indiscriminate manner—such as firing it over a wide area, which increases the risk of affecting uninvolved bystanders.

We urge the ISF to ensure that chemical irritants are not fired in crowded refugee camps, in residential areas, near schools or near elderly people or others who may have difficulty in escaping their toxic effects.

We recommend that there must be better communication between all parties but that the Israeli forces should make the chemical composition available to Palestinian health professionals. We urge the Israeli government to also share any studies that have been conducted on these chemicals, and any documented regulations or guidelines on its use, the decision-making protocols, and other data that promotes transparency, accountability and better health.

We also urge the ISF to respect international standards on medical ethics and patient privacy, including as laid forth in customary international human rights and humanitarian law. We ask that you not undermine health seeking behaviors and good medical record keeping. We urge ISF to prohibit its forces from entering or occupying hospitals or other health facilities, or violating patient privacy by confiscating medical records or attempting to interview health care workers regarding patients under their care. Health workers have an obligation to treat everyone seeking care.

#### *To UNRWA*

UNRWA is to be commended for raising, including with the Israeli authorities, the protection and health concerns regarding the use of tear gas in the refugee camps.

The participants of this study unequivocally understood that UNRWA had a mandate to protect them. The UNRWA staff (including teachers, sanitation workers, and guards) who we interviewed felt that UNRWA had additional occupational obligations to assist and protect its workers as well.

We urge UNRWA to continue working with outside experts and internal mechanisms to develop guidelines for limiting tear gas exposure and its impacts in the camp in general as well as in UNRWA

buildings and schools. While the State of Israel has the responsibility to limit its use of tear gas to safe and proportionate levels, UNRWA is obliged to better protect students and children as well as the general population, and assist in developing “exposure protocols.” UNRWA should also assist in developing protocols for proper management and safe disposal of the used canisters, which are a particular risk to children when they remain in the camp.

UNRWA must also ensure the protection of its staff by providing appropriate personal protective equipment suitable for their work and convenient for use during unanticipated incidents. This equipment may include personal masks, gloves with appropriate protective materials, fans and other ventilator equipment. Simple steps can be taken for protection, such as upgrading and repairing windows and doors in UNRWA schools and offices to limit gas entry into enclosed spaces.

We urge UNRWA to develop and implement systems and programs for addressing the medical and psychosocial impact of chronic tear gas exposure on communities and individuals living in the camps. The long-term impact of psychosocial stressors on these communities has the potential to exacerbate already distressed communities.

UNRWA should consider finding local research partners that can continue ongoing surveillance programs to document injuries, develop a register of severe cases, and address the problems faced by these refugees.

We also urge UNRWA to share the findings of this report with colleagues in the Israeli government and other local organizations to work together to

implement these recommendations and develop a stronger advocacy strategy for camp residents.

#### *To other UN bodies, advocacy organizations and State parties*

We note that the use of tear gas in the Aida and Dheisheh camps appears to be at an unprecedented scale. We hope that the international community, other UN actors and state parties can advocate on behalf of these refugees to limit the sales of these weapons, increase transparency on what chemical is actually being used, and advocate for the discriminate, proportionate, and minimum use necessary of all crowd control weapons.

#### *To scientists and researchers*

As this is an exploratory study of an ongoing problem, there is a need for scientific expertise, particularly from Palestinian and Israeli researchers and scientists to develop more rigorous studies, conduct prospective studies of tear gas use, and continue understanding the levels of exposure and health impacts. We also advise expanding this research to include other relevant refugee camps and potentially, other weapons that are utilized.

#### *To the health workers and residents*

We thank you for taking the time to speak with the research team and share your experiences. We advise you to continue seeking healthcare services and providing them. We ask that you continue advocating for your rights. We hope that this report illustrates the difficult conditions within which you must live and work and the resiliency that you demonstrate.



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