



The Islamic Republic and its Axis of Resistance's Chemical Weapons Threat

By Mohammadreza Giveh and David Albright

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With deep-seeded tensions in the Middle East and the current volatile dynamics, a potential trigger for worsening and widening warfare is receiving too little attention. The risk has increased of lethal and incapacitating pharmaceutical-based agents (PBAs) being dispersed by Iranian proxies or agents using easy-to-operate drones. The two such agents most needing more attention are fentanyl and medetomidine, both potent incapacitating and lethal agents, even if inhaled in small doses above the safe level.

Iran's work has raised alarm in at least one Middle Eastern government about their use. In addition to concern about casualties among civilians and military personnel, the use of canisters of pharmaceutical-based agents in areas already tense from war and attacks would create instability and panic and risk harsh military responses.

Members of the Organization for the Prohibition of Chemical Weapons (OPCW), which oversees the Chemical Weapons Convention, are having their annual meeting this week at The Hague. By expanding their focus on PBAs this week, they can help deter their use and help prevent another trigger that can significantly worsen military conflict in the Middle East.

A [new paper](#) from our Institute documents that multiple Iranian security complexes have been preparing production of fentanyl and medetomidine. These complexes, most notably the Islamic Revolutionary Guards Corps (IRGC), the Ministry of Defence and Armed Forces Logistics (MODAFL), and the IRGC's Imam Hossein University have been working on pillars of producing those weapons: large-scale cost-efficient synthesis of the compounds with maximum potency, evaluating a stable chemical mixture based on those agents that can be aerosolized using a propellant, and developing the delivery of the agents through grenades, bullets, or drones.¹

A document hacked in 2023 from within Iran details Imam Hussein University Department of Chemistry's use and testing of MODAFL-made tear gas grenades and cartridges to weaponize

¹ See: Mohammadreza Giveh and the Good ISIS Team, "The Islamic Republic's Work on Pharmaceutical Based Agents," *Institute for Science and International Security*, November 25, 2024, <https://isis-online.org/isis-reports/detail/the-islamic-republics-work-on-pharmaceutical-based-agents/>.

medetomidine. These grenades can be delivered by the IRGC's existing, small, easily exported and operated multicopter drones and can have lethal effects on a population. It is not clear whether this project has been streamlined but if mass produced, these weapons can be extensively deployed by proxies abroad and small IRGC units domestically.

The regime in Iran has a well-documented history of deception regarding weapons of mass destruction. Its nuclear program has been regularly cited by the U.N. International Atomic Energy Agency (IAEA) as not providing complete declarations and misleading inspectors in violation of its obligations under the Nuclear Non-Proliferation Treaty. The IAEA's governing board last Thursday again condemned Iran for its failure to cooperate fully with the inspectors and provide answers to a long-running IAEA investigation into Iran's hiding of nuclear material. Similarly, now there is ample evidence that Iran is in violation of the Chemical Weapon Convention (CWC).

Today, Supreme Leader Ali Khamenei might think of authorizing the use of PBAs domestically or through proxies against Israeli civilians and military as a desperate way to help restore deterrence. Amid historically high tensions with Israel, the Islamic Republic is witnessing the unraveling of its decades-long deterrence strategy that relied heavily on a web of proxy militias throughout the Middle East. Iran's once feared missile arsenal has been proven to be inadequate in hitting military targets in Israel, and recently the regime suffered a significant setback to its ability to make more missiles as a result of Israeli strikes. With its nuclear weapon ambitions under international scrutiny, the regime may see chemical weapons as a strategic alternative, particularly if they can be supplied to proxies or agents and used with a high degree of deniability. Unlike traditional chemical weapons, fentanyl and medetomidine have legitimate pharmaceutical use, providing a perfect disguise of deniability for their supply and deployment.

Those who may argue Iran's leadership would hesitate to risk international condemnation, should consider the regime's and its proxies' troubling record of similar actions and its willingness to resort to extreme measures to maintain its power and influence. The Syrian President Bashar al-Asad used chemical weapons on at least three occasions between 2013 and 2018 during which he received extensive military aid from Iran, and the IRGC-Quds Force was his lifeline on the ground against the Syrian opposition. In 2019, Iran-backed Popular Mobilization Forces (PMF) in Iraq shot MODAFIL-made tear gas rounds against Iraqi protesters. The suppression of that unrest ended up killing more than 300 civilians. Reports indicate that former IRGC-Quds Force leader Qassem Soleimani himself advised PMF leadership on that.

The Islamic Republic's work on illegal incapacitating and lethal agents and a potential export of these weapons to its proxies poses a serious humanitarian threat to the people in the Middle East. This week, the members of the OPCW need to put more focus on the legitimate concern that Iran could weaponize PBAs and is non-compliant with the Chemical Weapons Convention. The OPCW has an opportunity this week to raise awareness to deter and dissuade further development and use of pharmaceutical based agents.