



## PERSPECTIVES

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# Chemical Weapons in Syria, Iraq and Beyond: Assessment and Implications

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BESA Center Perspectives Paper No. 386, December 12, 2016

**EXECUTIVE SUMMARY:** Chemical weapons (CW) continue to be employed frequently in Syria and Iraq. While the scale of attacks has been relatively minor so far, the possibility remains that the Islamic State (IS) might attempt a high-impact WMD attack. Hezbollah, too, which is present in both Syria and Lebanon, might wish to be – or indeed, already may be – equipped with CW.

The partial dismantling of the Syrian chemical weapons arsenal has had little effect on the regularity with which such weapons have been deployed in Syria and Iraq. They have been used by the Assad regime, the rebels, and IS alike. Another military element currently based in both Syria and Lebanon – Hezbollah – might also be interested in obtaining, or might already have obtained, CW.

In August 2013, the Syrian regime killed approximately 1,300 people with sarin nerve gas. This action was punished by a demand for Syrian chemical disarmament. The regime, which held onto a concealed store of standard military CW (possibly amounting to up to 100 tons, including CW precursors), refrained for the most part from employing them.

But that is not to say that the regime desisted from using chemicals against its opponents, or that it was it the only party to do so. Weaponized industrial toxic chemicals, mainly chlorine, became a routine weapon for all warring factions including the rebels and IS; and while this form of attack violates international laws and conventions, it has elicited only muted international

condemnation, hence its repeated use in both Syria and Iraq, albeit on a minor scale.

Although CW have not brought about a major shift in the course of warfare, they have not been ineffective, offering their users a series of accumulating net benefits, notably intimidating survivors into flight. (Retaliation has also been an excuse for the deployment of CW by all three actors, but does not appear to be a main incentive.)

It is possible that IS will attempt an act of “mega-sabotage,” meaning a high-impact operation involving CW or another WMD. The organization is very much inclined to pursue such an operation, either in the Middle East or in Europe or the US. Its weakened condition suggests that it is unlikely to pull off such an attack – but its motivation to attempt one is undoubtedly growing.

Of the three actors, IS is the most troublesome. IS has been dented by a variety of adversaries over the past year, but has retained its relatively rudimentary CW capacities. It endeavored to upgrade those capacities considerably by converting a pharmaceutical factory near Mosul into a production center for the manufacture of mustard gas. All the precursors were at hand from the oil industry, as were the necessary experts.

This orderly effort was curtailed, however. In February 2016, US special forces captured the purported head of IS’s CW program, an Iraqi named Sleiman Daoud al-Afari, in Badoosh, northwest of Mosul. In September, the US bombarded the CW production facility. This attenuated, but did not paralyze, IS’s CW program. The organization has also tried to procure biological and radiological weapons, with no clear outcome as yet.

Optimists might postulate that what IS has not yet obtained, in terms of WMD capabilities, it will not obtain. This is plausible, if unlikely. Estimates made in the lead-up to the Mosul coalition offensive were that IS had evacuated most of its CW-related equipment and experts to Syria.

An independent analysis by the IHS Conflict Monitor, a London-based intelligence collection and analysis service, states that as of November 2016, IS had used CW at least 52 times across Syria and Iraq since it swept to power in 2014. The wide distribution of these attacks indicates appreciable CW deployability and conveyability. The attacks were geographically scattered and varied in their delivery systems, suggesting that IS modified or obtained, and was experimenting with, different types of rockets and shells configured to carry toxic chemicals.

CW have been used repeatedly during the lingering fight over Aleppo. In Iraq, during the contemporaneous fighting over Mosul, IS fired artillery shells and rockets equipped with mustard agents at the Qayyarah air base, a key installation where US and Iraqi troops operate. IS also adopted a mode of induced dispersal of toxic chemicals by exploding civilian chemical facilities (for example, a major civilian chemical factory at Mishraq that contained large quantities of sulfuric compounds).

IS's motivation to achieve a relatively high-impact WMD operation in Syria, Iraq or beyond, against either military forces or civilian targets, is growing as the group becomes increasingly incapacitated. The possibility of a high-impact chemical, biological or radiological attack still exists and should not be discounted. (Nuclear weaponry, which is unobtainable for IS, is irrelevant within this context.)

Beyond the Middle East, the US and Europe are IS's main targets. In February 2016, the Director of US National Intelligence warned that IS "would like to use CW" in an attack on America. Also, the Dutch counterterrorism coordinator noted that IS is estimated to have between 60 and 80 operatives planted in Europe to carry out attacks. A similar order of magnitude might be inferred in the US. Whether these operatives are capable of committing acts of WMD sabotage is not clear.

Israel, too, has reason to be concerned about IS attempts at CW attacks. Militants of IS or its affiliates in the Golan Heights ("Shuhada al-Yarmouk", or the Yarmouk Martyrs Brigade) have confronted the IDF very little, but there is unverified – though concrete – information in the Israeli media pointing to the group's possession of CW. IDF Chief-of-Staff Gadi Eizenkot has mentioned the worrying possibility that various rivals in Syria might employ CW.

Minister of Defense Avigdor Lieberman has stressed that Israel will act without restraint to prevent the transfer of WMD (and advanced conventional weapon systems) from Syria to Hezbollah. This emphasis is understandable, as any conjunction of Hezbollah with CW is intolerable to Israel. In principle, equipping Hezbollah with CW or BW by Iran – known to be in possession of such arsenals – is no less likely than by Syria.

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