

UEMS IN RESIDENTIAL AREAS

Unplanned explosions at munitions sites (UEMS) not only lead to significant fatalities and casualties, but also incur high socio-economic and political costs for the surrounding area and the state in which they occur. The Small Arms Survey's UEMS database monitors incidents that have occurred globally since 1979 (Small Arms Survey, n.d.).¹ This Fact Sheet reviews UEMS trends over the past decade (2010–19) and analyses the effects of UEMS on human lives, including their gendered implications, over the entire period covered by the database (1979–2019). While the risk of UEMS cannot be entirely eliminated, measures can be taken to reduce their negative consequences.

Key developments

The incidence of UEMS is increasing (see Table 1). In 2019 the Small Arms Survey recorded 30 incidents of what it defines as 'accidents that resulted in an explosion of abandoned, damaged, properly or improperly stored stockpiles of munitions at a munitions site' (Berman and Reina, 2014, p. 3). The 2019 figure, the third consecutive annual increase, is more than double the documented cases in 2016. All parts of the world (except Antarctica) were affected by UEMS during the decade 2010–19. Out of the 242

incidents recorded in the Survey's UEMS database over that period, 39 took place in Africa, 16 in the Americas, 116 in Asia, 70 in Europe, and 1 in Oceania. Five countries accounted for a third of all incidents: the Russian Federation (28 UEMS), Syria (20), Iraq (15), Ukraine (15), and Yemen (13).

Regional and other trends observed

Within the generally elevated level of UEMS incidents compared to the pre-2000 era, diverging trends can be seen in the world's various regions. Western Asia and Eastern Europe together accounted for more than half (59 per cent) of the documented incidents and almost three-quarters (72 per cent) of the casualties (injuries and deaths) between 2015 and 2019.² UEMS incidents have decreased substantially in Southern Asia since 2000, and essentially disappeared in Eastern Africa. At the same time, Western Asia, a subregion characterized by intensifying armed conflicts, was the site of 38 per cent of the total of the globally documented UEMS in the 2015–19 period, and accounted for most of the recent growth in UEMS, which were also on the rise in Western Africa.

Table 1 Long-term trends in selected characteristics of UEMS incidents

	1980–84	1985–89	1990–94	1995–99	2000–04	2005–09	2010–14	2015–19
By world region								
Africa	8%	14%	15%	8%	9%	18%	18%	14%
Eastern Africa	8%	7%	9%	0%	3%	10%	2%	0%
Western Africa	0%	0%	0%	4%	4%	2%	3%	6%
Americas	17%	17%	15%	11%	12%	10%	7%	6%
Asia	25%	34%	33%	30%	58%	48%	43%	53%
Western Asia	0%	10%	12%	7%	15%	14%	21%	38%
Southern Asia	0%	17%	12%	14%	25%	20%	14%	8%
Europe	42%	34%	36%	51%	21%	25%	31%	26%
Eastern Europe	33%	14%	24%	18%	14%	14%	24%	21%
Oceania	8%	0%	0%	0%	0%	0%	0%	1%
By identified root causes (omitting undetermined causes)								
Lack of surveillance, leading to ammunition deterioration	38%	25%	30%	16%	10%	11%	8%	3%
Inappropriate storage infrastructure and systems	13%	20%	22%	19%	20%	22%	26%	20%
Handling errors and inappropriate working practices	38%	15%	22%	23%	23%	41%	32%	27%
Failure to take into account external and environmental influences and events	13%	10%	17%	7%	34%	23%	16%	37%
Poor security	0%	30%	9%	35%	13%	3%	19%	13%
By type of storage								
Non-purpose-built; dump	8%	28%	24%	17%	19%	12%	11%	20%
Purpose-built	92%	62%	61%	74%	62%	70%	83%	49%
Unspecified	0%	10%	15%	9%	19%	18%	6%	31%

Despite the increasing trend since 2017, the second part of the decade was the five-year period with the fewest UEMS incidents in the 21st century, and also the one with the lowest human toll in terms of deaths and injuries. During the 2015–19 period, on average an unplanned explosion killed or injured 13 persons, which is fewer than in any other five-year period since 1980.

UEMS in residential areas and their gendered impact

Of the 100 most devastating UEMS incidents in terms of casualties since 1979, 72 occurred in or near residential areas, that is in or near cities, civilian dwellings, communities, slums, suburbs, towns, or villages.³

Consequently, it is important to obtain a better understanding of the ways in which these events may affect women, men, boys, and girls. The disaggregation of victim data by sex and age is the first step in such a process. Unfortunately, this type of analysis depends on the availability of data in the source materials, and the Survey could identify figures for sex-disaggregated casualties for only 15 of the 623 incidents recorded over the period 1979–2019. In these 15 cases, 10 per cent of casualties were identified as female and half were children of unspecified sex, while the rest were adult males (Small Arms Survey, n.d.).

Beyond sex-disaggregated data on victims, the fact of UEMS occurring in residential areas has gendered implications. For example, UEMS could potentially render areas of land unusable, which may lead to direct reductions in agricultural livelihoods. Similarly, communities may need to go further to obtain clean water after UEMS have contaminated local nearby water sources. Most research has not yet examined these and other psychological, socio-economic, or cultural gendered effects.

Since the previous update of the UEMS database, the UN Office for Disarmament Affairs, which manages the UN SaferGuard Programme, has announced its intention to review the International Ammunition Technical Guidelines (IATG) to ‘increase understanding of the gender dimensions of ammunition management, across the life cycle and to integrate gender perspectives into the IATG’ (UN Procurement Division, 2020). This initiative may make useful contributions to efforts both to obtain better data on the gendered implications of UEMS and to prevent them from occurring.

Mitigating casualties from UEMS with LCMA and other initiatives

The Survey’s *A Practical Guide to Life-cycle Management of Ammunition* (LCMA) Handbook highlights several important

considerations for the location of ammunition storage sites in order to reduce the impacts of possible UEMS (Carapic et al., 2018, pp. 64–65). First, they should not be sited in densely populated areas and, second, staff working at the sites and living in the surrounding areas should be properly trained to respond effectively to a UEMS incident in order to ensure minimal casualties, damage, and disruption.

A significant UEMS incident can lead to improved practices. For example, a major UEMS incident in San Salvador, El Salvador, in 2000 that resulted in 125 casualties led the government to urgently prioritize the relocation of 12 more ammunition depots located within or nearby residential areas in the city (ICBL, n.d.). Other factors may lead to decisions of this kind. The Republic of Moldova has reported the consolidation of its ammunition storage sites throughout the country from 8 to 5 over the last 15 years, resulting from a significant reduction of its surplus ammunition in a process that was supported by international assistance (Camerzan, 2019, slides 4 and 7). Independently of the reasons for adopting such an approach and in the knowledge that not even the most advanced LCMA procedures can prevent all UEMS incidents, adequately positioning and staffing munitions sites will ensure that the consequences of a UEMS are mitigated. ●

Notes

- 1 The updated version of the Small Arms Survey’s UEMS database includes UEMS incidents up to and including 31 December 2019. For all statistics, see *Small Arms Survey* (n.d.).
- 2 World regions and subregions as defined by the UN Statistics Division (n.d.).
- 3 Based on a qualitative assessment of the reporting on the incidents. This also includes military barracks that are surrounded by civilian homes.

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About the Small Arms Survey

The Small Arms Survey is a global centre of excellence whose mandate is to generate impartial, evidence-based, and policy-relevant knowledge on all aspects of small arms and armed violence. It is the principal international source of expertise, information, and analysis on small arms and armed violence issues, and acts as a resource for governments, policymakers, researchers, and civil society. It is located in Geneva, Switzerland, and is a project of the Graduate Institute of International and Development Studies.

The Survey has an international staff with expertise in security studies, political science, law, economics, development studies, sociology, and criminology, and collaborates with a network of researchers, partner institutions, non-governmental organizations, and governments in more than 50 countries.

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