Weapon Type

Unspecified knives and kitchen knives together account for more than half of all fatal encounters and show strikingly different profiles: the unspecified knife is associated with the highest contact-range rate (65.6%), while the kitchen knife is strongly associated with domestic violence (52.5%) and mental illness (72.5%). Longer-reach weapons — swords, axes, and hunting knives — show the largest average engagement distances but still produce fatal outcomes.

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Takeaway

Two weapon categories — the unspecified knife and the kitchen knife — account for more than half of all 1,970 fatal edged-weapon encounters (1,023 cases, 51.9%) and differ sharply in their tactical and contextual profiles. The unspecified knife is associated with the highest contact-range rate of any major category (65.6% of cases with known distance) and a lower mental illness rate (44.2%). The kitchen knife is strongly associated with domestic violence (52.5% of cases) and mental illness (72.5%), and is used at substantially greater distances on average. Long-reach weapons — swords, hunting knives, and axes — show the largest mean engagement distances (7.3 to 9.6 feet) but still produced fatal firearm discharges in every case.

Background

The specific weapon wielded by a subject shapes the tactical geometry of a fatal encounter: its reach determines the zone of immediate threat, its availability in the environment reflects context (a kitchen knife implies a domestic or residential setting; a machete or combat knife implies a different trajectory), and its association with mental illness or domestic violence provides additional context for response planning.

Despite this relevance, weapon type is rarely analyzed systematically in the police fatal-force literature. Most existing analyses treat all edged weapons as a single category or distinguish only between knife and non-knife. The EWRL dataset codes weapon type at the level of the specific implement where determinable, enabling the first longitudinal analysis of how weapon type co-varies with engagement distance, encounter duration, domestic violence context, mental illness, and less-lethal deployment across a decade of fatal encounters.

Research context

The lethality of an edged implement is shaped by physical characteristics — blade length, tip geometry, and cross-section — and by the circumstances of use, including anatomical target, velocity, and engagement distance. Forensic studies of stab injuries have consistently found that penetration depth and anatomical trajectory are stronger predictors of lethality than external blade measurements alone. Berg Von Linde et al. (2024) examined 93 fatal single stabs to the trunk and found that depth of penetration into thoracic and abdominal cavities — not blade length per se — was the critical determinant of lethality, with cardiac or great-vessel involvement accounting for the majority of immediate deaths [(Berg Von Linde et al., 2024)]. Ajayi et al. (2021) analyzed trends in penetrating knife injuries presenting to UK emergency departments and found that longer blades were associated with deeper wounds and higher immediate case fatality, though many fatalities also involved shorter implements at high force and close range [(Ajayi et al., 2021)]. Harms and Bush (2022) compared knife and firearm homicides across the United States and found that while firearms are substantially more lethal per assault, knife wounds produce death in a non-trivial fraction of cases, with anatomical target being the dominant predictor [(Harms & Bush, 2022)]. Krusselmann et al. (2025) examined weapon-specific lethality across multiple categories in police encounters and found that edged weapon sub-type was a significant predictor of outcome, with longer-bladed weapons occupying a distinct risk profile from utility implements [(Krüsselmann et al., 2025)]. Rennison et al. (2011) tested social-distance effects on weapon lethality and found that the relationship between weapon type and fatal outcome was moderated by the social relationship between victim and offender [(Rennison et al., 2011)].

The EWRL weapon-type analysis is the first longitudinal study to quantify how specific weapon sub-types co-vary with engagement distance, encounter context, and crisis indicators across a decade of U.S. fatal police encounters — extending the forensic focus on individual wound characteristics to the structural patterns of encounters in which different weapons appear.

Data and methods

Dataset. The analysis draws on the full Edged-Weapon Response Lab dataset (N = 1,970), covering fatal police encounters involving an edged weapon documented in the Washington Post Fatal Force database [(Washington Post, 2025)] and Mapping Police Violence [(Mapping Police Violence, 2026)] for January 2015 through December 2024.

Weapon type (D_Weapon). The primary weapon is coded to thirteen mutually exclusive categories: knife (unspecified generic knife not more specifically described), kitchen (kitchen or cooking knife), folding (pocket or folding knife), multiple (two or more distinct edged weapons), non-knife (edged implement not primarily designed as a knife — includes broken glass, spike, screwdriver when used as an edged weapon, etc.), machete, axe (including hatchet), utility (box cutter, utility knife, razor blade), hunting (fixed-blade hunting knife), combat (fixed-blade tactical or combat knife), sword (including large fixed-blade sword-length weapons),

screwdriver (used as an edged or puncture weapon), and scissors. Two additional categories — fantasy (decorative or costume blade, n = 8) and chainsaw (n = 7) — fall below the suppression threshold and are not displayed individually; they are included in dataset totals.

Engagement distance, encounter duration, domestic violence flag, mental illness flag, suicidal flag, officer injury, and less-lethal deployment are defined in the EWRL research dataset (Machacynski, 2026).

Suppression. All counts are drawn from the suppressed public aggregate. Cells with fewer than five records are not displayed. For more information see EWRL Methods — Suppression and privacy (/methods/suppression-and-privacy).

Findings

Distribution of weapon types

The unspecified knife is the most common weapon category (539 cases, 27.4%), followed by the kitchen knife (484 cases, 24.6%), folding knife (213, 10.8%), multiple weapons (207, 10.5%), and non-knife edged implement (102, 5.2%). Machete (95, 4.8%), axe (62, 3.1%), utility knife (56, 2.8%), hunting knife (53, 2.7%), combat knife (50, 2.5%), sword (39, 2.0%), screwdriver (28, 1.4%), and scissors (27, 1.4%) make up the remainder. The thirteen individually reportable categories together account for 1,955 of 1,970 cases (99.2%).

Figure 1. Distribution of fatal edged-weapon encounters by weapon type, 2015–2024 (N = 1,970; categories below the suppression threshold combined in dataset totals and not displayed individually).

Engagement distance by weapon type

The mean engagement distance — the minimum pre-discharge separation between the subject and the closest threatened person — varies substantially across weapon types, with shorter-bladed or concealable weapons associated with the smallest distances and longer-reach weapons associated with the largest.

The unspecified knife category shows the highest contact-range rate: 179 of 273 cases with known distance (65.6%) involved contact-range events, and the mean distance was 3.5 feet. Scissors show a similarly extreme proximity profile (12 of 19 with known distance at contact range, 63.2%; mean 3.1 feet), though their small sample warrants caution. By contrast, the kitchen knife — despite being the second most common weapon — resolves at contact range in only 36.7 percent of cases with known distance (151 of 411) and has a mean distance of 6.2 feet. The folding knife profile (34.6% contact range, mean 6.5 feet) is similar to the kitchen knife.

The longest mean distances are recorded for swords (9.6 feet), hunting knives (9.4 feet), and axes (9.0 feet) — all weapons with substantial reach or the ability to be swung in a wide arc. Despite these larger average distances, each of these categories still produced fatal outcomes, and contact-range events are not absent: 6 of 28 sword encounters with known distance (21.4%), 14 of 43 hunting-knife encounters (32.6%), and 11 of 44 axe encounters (25.0%) were contact range.

The multiple-weapons category shows the highest mean distance among the common categories (7.3 feet) and the lowest contact-range rate (25.6%). Encounters with multiple weapons may involve more complex tactical situations that extend the distance before force resolution.

Figure 2. Engagement distance profile by weapon type, 2015–2024 (cases with known distance; contact range defined as ≤1 ft; within-5ft cumulative).

Contextual profile by weapon type

Domestic violence. The kitchen knife is the most strongly domestic weapon in the dataset: 52.5 percent of kitchen knife cases (254 of 484) carry the domestic violence flag, compared with 41.7 percent of unspecified knife cases (225 of 539), 45.4 percent of multiple-weapon cases (94 of 207), and 47.2 percent of hunting knife cases (25 of 53). The utility knife (32.1%) and the screwdriver (28.6%) show the lowest domestic rates among the major categories; these implement types more often appear in contexts outside the home.

Mental illness. The scissors category shows the highest illness rate (20 of 27, 74.1%), followed closely by the kitchen knife (351 of 484, 72.5%), axe (43 of 62, 69.4%), and sword (27 of 39, 69.2%). The unspecified knife category shows the lowest illness rate among major categories (238 of 539, 44.2%) — markedly lower than any other weapon type. This pattern is consistent with the unspecified knife appearing more frequently in street confrontations or crime-related contexts, while the kitchen knife, scissors, and long-bladed weapon categories are more heavily associated with crisis presentations in residential settings.

At the weapon level, the multiple-weapons category shows an elevated H-band (90-minute-plus) rate (16 of 181 with known duration, 8.8%) consistent with barricade and standoff encounters in which a subject may have assembled multiple implements.

Officer injury. Screwdrivers — despite their smaller reach — show the highest officer injury rate (4 of 28 cases, 14.3%) among major categories. The unspecified knife category has the next-highest rate (62 of 539, 11.5%). The kitchen knife (36 of 484, 7.4%) and multiple-weapons (13 of 207, 6.3%) categories show the lowest rates, consistent with their domestic and crisis-associated profiles in which the subject's immediate attention is often not directed toward officers.

Figure 3. Contextual profile by weapon type: domestic violence flag rate, mental illness flag rate, and officer injury rate, 2015–2024.

Less-lethal deployment and rounds fired

Less-lethal deployment rates are highest for non-knife edged implements (57 of 102, 55.9%), scissors (15 of 27, 55.6%), and folding knives (100 of 213, 46.9%). The unspecified knife category has the lowest less-lethal deployment rate (149 of 539, 27.6%) — consistent with its high contact-range rate, which leaves limited time and space for less-lethal deployment before lethal force becomes necessary.

Rounds-fired patterns reflect the distance distributions. Kitchen knife encounters show the highest frequencies of multi-round discharges (5+ rounds: 146 of 331 with known category, 44.1%; 2–4 rounds: 144, 43.5%), while the unspecified knife category has a higher proportion of single-round discharges (55 of 220, 25.0%) despite its high contact-range rate. Longer-reach weapons — sword, hunting knife, axe — show the highest 5+ round fractions among smaller categories, consistent with encounters that unfold at greater distances and may involve more rounds being fired before the subject is stopped.

Interpretation

What the findings show. Weapon type is a meaningful differentiator across multiple dimensions of fatal edged-weapon encounters. The unspecified knife — the most common single weapon — presents the highest contact-range rate and the lowest illness association, consistent with a street-confrontation or crime-adjacent profile. The kitchen knife — the second most common weapon — is primarily a domestic weapon and is heavily associated with mental illness; its encounters unfold at greater distances and involve fewer contact-range events, but are not less lethal. Long-reach weapons produce fatal outcomes across a range of distances, including contact range, and their larger average distances may reflect encounter structures that gave officers more time — but not time enough to prevent a fatal outcome.

What the findings do not show. Weapon type is coded from incident records, which in some cases may describe only the type of weapon recovered rather than the specific implement used in the hostile sequence. The “unspecified knife” category almost certainly contains a mix of weapon sub-types that source records did not describe specifically. Because the dataset is conditioned on fatal outcomes, weapon types that more commonly appear in encounters resolved without a fatality — or encounters that are more amenable to less-lethal resolution — are not represented.

What would change the conclusion. Blade-length data, where available, would allow more precise distance-reach relationships to be examined within weapon types. Data on the specific posture and movement pattern of the subject at the time of force would provide additional insight into why contact-range rates differ so substantially between the unspecified knife and kitchen knife categories.

Limitations

Weapon type is coded to the available source record. For a proportion of cases — particularly those with limited media coverage — the record may describe only “a knife” without further specification, leading to classification in the generic knife category. This means the generic knife category is likely an overcounting of truly undifferentiated cases and an undercounting of more specific types. The true prevalence of kitchen knives, folding knives, and other categories is likely somewhat higher than reported.

The screwdriver category (28 cases) and scissors category (27 cases) are small enough that the dimensional statistics reported — particularly the officer injury rate for screwdrivers and the contact-range rate for scissors — should be interpreted with caution.

How to cite

Machacynski, B. (2026). *Weapon Type* (EWRL-26-006). In *Fatal Edged-Weapon Encounters, 2015–2024* (Version 1.0). Edged-Weapon Response Lab. https://droptheknife.org/reports/weapon-type

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