**Supplement S1: Database Data Dictionary**

Data dictionary for the article titled „A review of ambulance terrorism on the African continent”.

This document reflects the collection and coding rules for the Microsoft Excel based database for the article titled „A review of ambulance terrorism on the African continent”. This database is based on a selection from the publicly available Global Terrorist Database (GTD), the Armed Conflict Location & Event Data Project (ACLED), the Aid Worker Security Database (AWSD), RAND Database of Worldwide Terrorism Incidents (RDWTI), United Nation’s Safeguarding Health in Conflict Coalition (SHCC), and the Surveillance System for Attacks on healthcare (SSA). In addition, grey literature sources, including media reports and social media accounts, were used.

During the selection process, we aimed to use the databases and grey literature as cross-references to filter out duplicates, and incomplete or false records.

Due to the different record structures, we (two of the researchers: JB and AG) set up a data dictionary in order to standardize data collection, elimination of ambiguous records, and coding rules.

**The selection process:**

In view of the relatively large number of Excel records (more than 400,000 records) that retrieved from the source database searches, we converted each Excel table into SqlIte database to run complex and rapid SQL queries.

The search queries included: Africa, ambulance, ambulance driver, ambulance worker, ambulanceman, ambulance crew, paramedic, ambulance attendant, medical assistant, first response, emergency medical services (EMS), health worker, healthcare worker, doctor, nurse, hospital, medical facility, terrorist.

After applying the exclusion criteria and eliminating duplicate and redundant data, we reconverted the database to Excel tables.

The ACLED and GTD databases have some similarity in their structures, which is why we based our database structure on the common fields. Redundant fields (i.e. GPS coordinates) were removed, after which the database was created using our data dictionary.

The data dictionary contains the description of each field in order to standardize their content.

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| **Name of field** | **Field Type** | **Description** |
| Nr. | number | serial number of records |
| Date (Y/M/D) | number | Date of the event in Year. Month. Day format |
| Region | text | Name of region (in this case it is Africa) |
| Country | text | Name of the country where the event happened |
| Provence\_State | text | Name of the administrative unit where the event happened |
| City | text | Name of the place or its vicinity where the event happened |
| Summary | general | It contains the description of the event. |
| Attack\_Type | text | In view of the different categories in the databases we chose the following categories for the standardization:  Armed Assault/Firearms/automatic weapons  Armed Assault/Firearms/unknown  Armed Assault/Firearms/unknown  Armed Assault/Firearms/unknown  Armed Assault/knife  Armed Assault/Firearms/unknown  Assassination /Firearms/pistol  Assassination /Firearms/unknown  Bombing/Explosion/car bomb  Bombing/Explosion/improvised  Bombing/Explosion/landmine  Bombing/Explosion/mortar  Bombing/Explosion/rocket  Bombing/Explosion/Suicide  Bombing/Explosion/unknown  Facility/Infrastructure Attack/arson  Facility/Infrastructure Attack/unknown  Hijacking  Hostage Taking (Kidnapping) |
| **Target\_type** | text | Business  Government (General)  Military  NGO |
| **Target\_description** | text | Medical/Pharmaceutical |
| **Target** | text | Description of the target: health worker, paramedics, patient, ambulance car, ambulance convoy |
| **Group\_name** | text | The name of the group responsible for the attack (if available) |
| **Weapon\_type and details** | text | Bombing/Explosion/improvised  Firearms |
| **Killed** | number | Number of victims, including the perpetrators. |
| **Wounded** | number | Number of wounded victims, including the perpetrators. |
| **Damage\_value** | number | not mandatory field |
| **Damage** | general | not mandatory field |
| **damaged property** | general | not mandatory field |
| **Database** | text | The name of the source database of the current record |
| **Source1** | text | The name of the other source that corroborate the information where it is applicable |
| **Source2** | text | The name of the other source that corroborate the information where it is applicable |

After finishing the code book, we (JB and AG) independently filled our own database from the different database sources which are named at the end of each record. Subsequently, we combed through our databases, correcting, completing and removing redundant and duplicate records. In parallel, we performed a grey literature search to collect additional information from online news articles and social media. We then compared and eventually merged our databases. In case of doubt or disagreement between the two researchers, or if there were missing (mandatory) fields, records were excluded.

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| **Essential Information to Provide in a Research Report When Using a Pre-existing Database\*** | |
| 1. Source or Reference Citation for Database | Barten, D., & Besenyő, J. (2023, January 11). Dataset for: A review of ambulance terrorism on the African continent. Retrieved from osf.io/56acv |
| 2. Source or Reference Citation for Database Data Dictionary | The Database Data Dictionary is uploaded as Supplement S1. |
| 3. Source(s) for Raw Data Included in Database | * ACLED: Armed Conflict Location and the Event Data Project * AWSD: Aid Worker Security Database * GTD: Global Terrorism Database * RDWTI: RAND Database of Worldwide Terrorism Incidents * SHCC: United Nation’s Safeguarding Health in Conflict Coalition * SSA: Surveillance system for attacks on healthcare |
| 4. Inclusion and Exclusion Criteria for Data Entered Into Database | The search queries included: Africa, ambulance, ambulance driver, ambulance worker, ambulanceman, ambulance crew, paramedic, ambulance attendant, medical assistant, first response, emergency medical services (EMS), health worker, healthcare worker, doctor, nurse, hospital, medical facility and terrorist.  Using these queries, two authors (JB and AG) independently extracted terrorist attacks against ambulances and emergency medical services (EMS) on the African continent from the abovementioned source databases. In parallel, the authors performed a grey literature search to collect additional information from online news articles and social media. A terrorist attack was defined as “the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation”. Attacks against non-EMS medical institutions and workers were excluded. Attacks were also excluded if they were perpetrated by family members, patients, hospital workers or criminals with the intention of robbery. Finally, duplicates were excluded, as well as records that were related to a demonstration, strike, mob, barricade or protest. |
| 5. Published or Reported Accuracy and Reliability of Database | We cross-referenced the records with other databases. The Corroborating sources were provided to each record in the source1 and source2 fields where they were available. |
| 6. How Missing Data is Managed | In case of missing (mandatory) fields, we omitted the record in question. |
| 7. Training or Known Accuracy of Database Data Entry Personnel | We had no personnel. After finishing the code book, we (JB and AG) independently filled our own database from the different database sources which are named at the end of each record. Subsequently, we combed through our databases, correcting, completing and removing redundant and duplicate records. In parallel, we performed a grey literature search to collect additional information from online news articles and social media. We then compared and eventually merged our databases. In case of doubt or disagreement between the two researchers, records were excluded.  JB and AG served for more than 3 decades in the framework of the Hungarian Defense Forces, where JB worked in the scientific field, while AG worked in the intelligence field, and analyzed and created databases. |
| 8. Training for Study Data Abstractors | Data abstractors were JB, AG and DB.  Background and training for JB and AG are already reported. DB is emergency physician in the Netherlands and a researcher in the field of disaster medicine and counter-terrorism medicine. He has published more than 10 terrorism-related studies, most of which were based on existent databases, such as the Global Terrorism Database. |
| 9. How Data Abstraction Accuracy was Measured | Data abstraction accuracy was not measured, but by independently abstracting data from the source databases, while strictly adhering to the data dictionary and excluding records in case of doubt or disagreement, we believe that inaccuracies are limited to a minimum. |
| 10. Ethics Committee (Institutional Review Board) Review Outcome | We used open source databases without any personal identifiers. Therefore, medical ethical review was redundant. |

\*Derived from: Stratton, S. (2015). Using Pre-existing Databases for Prehospital and Disaster Research. Prehospital and Disaster Medicine, 30(1), 1-3. doi:10.1017/S1049023X15000011