

**2021-N-0008**  
**Victim Accounting:**  
**Best Practice**  
**Recommendations for**  
**Medicolegal Authorities in**  
**Mass Fatality Management**

*Disaster Victim Identification Task Group  
Medicolegal Death Investigation Subcommittee  
Medicine Scientific Area Committee  
Organization of Scientific Area Committees (OSAC) for Forensic Science*



## **Draft OSAC Proposed Standard**

# **2021-N-0008 Victim Accounting: Best Practice Recommendations for Medicolegal Authorities in Mass Fatality Management**

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Medicolegal Death Investigation Subcommittee  
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1 **Foreword**

2 The concept of accounting for the names of the dead is germane to the process of disaster victim  
3 identification. Another concept to be considered is the need to account for victims in the case of fragmented  
4 remains. These concepts are integrated into expectation by the public, media and public officials to  
5 accurately report the number of fatalities in a mass fatality incident.

6 **1.0 Scope**

7 The purpose of this document is to provide guidance on the various aspects of victim accounting, accounting  
8 for fragmented remains, reconciling unaccounted for persons lists, and reporting numbers of fatalities  
9 including those who are identified, unidentified and unclaimed. The medicolegal authority should consider  
10 their role in the collection and dissemination of victim accounting information to the survivor families,  
11 media and partnering response agencies.

12 **2.0 Normative References**

13 There are no normative references. Informative references are included at the end of this document.

14 **3.0 Definitions**

15 For the purposes of this document, the following definitions and acronyms apply.

16 **3.1**

17 **Closed Population Incident**

18 An incident in which the number of victims and their names are known.

19 **3.2**

20 **Group Remains**

21 Unidentified human remains that are not examined beyond the initial triage either due to the tissue lacking  
22 all potentially identifiable characteristics or yielding no information useful to death investigation and  
23 determination of incident causation.

24 **3.2**

25 **Medicolegal Authority**

26 The medical examiner, coroner or other office responsible for medicolegal death investigation in a given  
27 jurisdiction.

28 **3.3**

29 **Mass Fatality Incident (MFI)**

30 Any incident which produces fatalities of a sufficient number or complexity that special operations and  
31 organizations are required.

32 **3.4**

33 **Minimum Number of Individuals (MNI)**

34 The fewest number of individuals represented in a skeletal assemblage.

35 **3.5**

36 **Open Population Incident**

37 A disaster in which neither the number of victims nor their names are known.

38 **3.6**

39 **Unaccounted for Person**

40 Any individual believed to be involved in a mass fatality incident including living survivors and fatalities.

41 **3.7**

42 **Victim Information Center**

43 The Victim Information Center (VIC) is the component of the Family Assistance Center. The VIC  
44 is a controlled area within the FAC where the acquisition of antemortem data occurs to enable the  
45 identification of victims of a mass fatality incident (MFI). Establishment of the VIC is the  
46 responsibility of the local medicolegal authority.  
47

48 **4.0 Recommendations**

49 **4.1 The Difference between Victim Accounting and Accounting of Victims**

50 The concept of victim accounting in its simplest form is reconciling the total number of unaccounted for  
51 persons with the number of fatalities. In a closed population incident, this will result in a 1:1 ratio where  
52 the total number of unaccounted for persons is equal to the number of fatalities. This is equally true for  
53 closed populations when there is no fragmentation of the remains. The number of remains collected from  
54 the incident site and processed in the morgue will equal the number of unaccounted for persons. This type  
55 of victim accounting can be performed using a whiteboard or computer matching database.

56 In an open population incident, the number of unaccounted for persons reported may be significantly higher  
57 than the actual number of fatalities. This over reporting is due to a number of reasons, but should be  
58 expected. Historical data suggests that for every victim involved in a mass fatality incident, ten people will  
59 attempt to report them as unaccounted for. So, for every 100 victims, the medicolegal authority can  
60 reasonably expect 1000 unaccounted for persons phone calls.

61 Open populations with fragmented remains exponentially increase the complexity of victim accounting.  
62 This is due to the need to process each identifiable fragment until the unaccounted for persons manifest is  
63 exhausted.

64 Mass fatality incidents resulting in any degree of remains fragmentation may result in the opposite effect.  
65 In a closed population, the number of missing persons will be lower than the number of remains collected  
66 and processed in the morgue.

67 The concept of accounting of victims, and its complexity, is demonstrated by remains fragmentation. The  
68 medicolegal authority is faced with the challenge and decision to pursue identification processes until either  
69 the unaccounted for persons manifest is fully reconciled, including the survivors, or each individual victim  
70 is fully accounted for amongst the fragments recovered. This implies that every fragment will be associated  
71 with a victim name. This decision to continue with accounting of victims may be impacted by funding,  
72 resource capabilities, and desire of the families. In a closed population, it may be acceptable to account for  
73 each victim, and engage the families regarding disposition of the remaining grouped remains.

74 In an open population incident, reconciling the unaccounted for person manifest without complete  
75 identification of all recovered or fragmented remains, notwithstanding group remains, will only result in an  
76 estimated number of fatalities. This is because some victims may not have been reported as missing, or  
77 amongst the recovered victims or identified fragments and therefore will never be accounted for. This can  
78 also be true in incidents involving intense fire/explosion, or natural disasters (i.e. sinkholes, floods,  
79 hurricanes/tsunamis) where remains are never recovered.

80 **4.2 Unaccounted for Persons, Missing Persons, and Fatalities**

81 The medicolegal authority should work with partner agencies involved in the response to develop a list (or,  
82 manifest) of all individuals involved in the response, including healthcare agencies (e.g. hospitals), first  
83 responder agencies, shelter managers, the agency(ies) responsible for managing the missing persons call  
84 center, and other partners involved in the response. The medicolegal authority relies on these lists to cast a  
85 broad enough net to incorporate the total population of victims. The term victim is even misleading in the  
86 sense that a victim may be classified as suffering psychological trauma, physical injury or be deceased. The  
87 medicolegal authority is attempting to reach a singular conclusion; how many people died as a result of the  
88 incident and who are they.

89 Traditionally the term “missing person” has been favored by emergency management planners when  
90 discussing the concept of incident populations, living and dead. It is widely accepted that until an individual  
91 has been classified as either a survivor or fatality, they are simply missing. This narrow definition fails to  
92 consider the variety of victim classifications, and the legal implications of labelling someone as a missing  
93 person. For instance, law enforcement may be required to initiate an investigation into a missing person, or  
94 a court order may be needed to reduce the waiting time to declare the person dead in absentia. In some  
95 cases, missing persons are not missing at all. This could include survivors who disperse from an incident  
96 location, presently unidentified persons admitted to hospitals or walking wounded who are not yet reunified  
97 with family members.

98 Therefore, it is recommended to classify persons believed to be involved in the incident as “unaccounted  
99 for persons”. This classification can further be defined through the process of reunification or identification,  
100 either as a survivor or confirmed fatality. This methodology will make the process of reconciling the  
101 incident population and fatalities less complex. It also supports the idea of centralized reporting with multi-  
102 agency involvement.

#### 103 **4.4 Establishing an Unaccounted for Persons Manifest**

104 In a mass fatality incident, the responsibilities of the medicolegal authority are focused on identification of  
105 deceased persons. This central focus suggests that reconciliation of unaccounted for persons lists is a  
106 priority. Commonly, law enforcement agencies will establish a missing persons list; hospitals will establish  
107 lists of injured victims and non-governmental organizations will collect information from the public on  
108 unaccounted for persons. It is only in the Victim Information Center (VIC) that medicolegal authorities  
109 gather names of individuals believed to be deceased.

110 It is recommended that medicolegal authorities work with partner response agencies to establish a  
111 mechanism for collating various lists into a singular unaccounted for persons manifest. This list should be  
112 reconciled with the postmortem data to establish a list of confirmed fatalities.

#### 113 **4.4 Importance of Centralized Reporting of Unaccounted for Persons**

114 This disparate nature of gathering the names of unaccounted for persons highlights the inherent flaws in the  
115 system. The definitions applied to groups of individuals do not represent the totality of the affected  
116 population, and therefore may not incorporate all of the deceased persons depending on the characteristics  
117 of the mass fatality incident.

118 Another limitation of compartmentalized reporting is the ability, or lack thereof, to share data. Once  
119 gathered and filed, data may be subject to various privacy laws which inhibit the sharing of information  
120 both internally through organizations, but also across agencies responding to the incident.

121 If data is able to be shared, it is typically done at defined times, such as in advance of a press conference or  
122 end of an operational period. These delays further inhibit the ability of the medicolegal authority to use  
123 critical data in the identification process.

124 It is recommended that medicolegal authorities work with their local response agencies to develop a  
125 centralized reporting mechanism for unaccounted for persons. There are a variety of options to consider,  
126 the most common being a dedicated call center. This has proven effective in recent years for mass shootings  
127 involving a large open population. The advantages of a dedicated call center include the simplicity by which  
128 the phone number can be disseminated to the media and general public, and ease of reporting through that  
129 number. The limitations include a need for space, set-up time, personnel to answer phones, a script for the  
130 operators, and a database to record entries. Agencies in small jurisdictions may not have the resources to  
131 stand up a centralized call center.

132 The use of electronic reporting systems is beginning to emerge. NAMUS recently released their module for  
133 critical incidents which incorporates a web-based form that members of the public can use to submit  
134 information of unaccounted for persons. This NAMUS system also incorporates a feedback mechanism for  
135 survivors to enter their information to be reconciled against the database. Similar homegrown versions are  
136 being developed by medical examiners and other partner agencies to gather information on unaccounted  
137 for persons in a centralized database. The advantages of this model are the lack of relative overhead (space,  
138 equipment and personnel) needed to activate it in the aftermath of a mass fatality incident. By using  
139 electronic databasing, it also limits the number of touches on the data, thereby reducing the potential for  
140 human error due to transcription and typos. An electronic form is widely accessible via computer, tablet or  
141 mobile device from anywhere in the world. The ability to share databases, or give permissions to various  
142 agencies to access the information permits real-time accessibility to critical information. The limitations  
143 include having internet access to both distribute the form link and access the form for reporting. This type  
144 of form is not quickly modified, so consideration should be given to the content so that it is useful across a  
145 wide range of incident types.

#### 146 **4.4 Reporting Metrics (Identified, Unidentified and Unclaimed)**

147 Medicolegal authorities rely on confirmatory methods of identification to accurately establish victim  
148 identities. In a mass fatality incident, this process may involve a multi-disciplinary analysis of the remains  
149 in a high throughput morgue.

150 In this type of setting, it is common that remains will be transported from the incident scene and stored until  
151 the process is complete. Re-examination may be necessary when additional information is needed to  
152 achieve an identification. Remains which have completed the examination process, but have not produced  
153 an identity remain Unidentified.

154 As the fatality management operation progresses, the available data produces identifications. These victims  
155 are referred to as “Identified”.

156 As the operations end, there may be a subset of Identified fatalities for whom no family or next of kin is  
157 located, or the located family has declined to arrange for disposition for a variety of reasons. These fatalities  
158 are referred to as “Unclaimed”.

159 This variation on victim accounting methodology and its limitations should be considered when reporting  
160 numbers of fatalities. It is not an accurate statement to suggest the sum total of unidentified and identified  
161 represent the total number of fatalities, unless all of the remains are intact. In other words, when  
162 fragmentation exists the unidentified may already be represented in the identified population.



163 However, these classifications may prove useful when interacting with the media, families, and elected  
164 officials. Medicolegal authorities can use these established metrics when reporting progress to the media  
165 and families without speculating on the number of deceased persons. They can also use the Unclaimed  
166 metric to garner media interest in hopes of locating family or seeking funding for a memorial.

#### 167 **4.5 Numbers of Fatalities (Estimates vs Official vs Confirmed)**

168 In any mass fatality incident the media and elected officials will seek reporting on the number of fatalities  
169 almost immediately following the incident occurrence. In some instances, such as an all-fatal airline crash  
170 with a flight manifest, this may be a simple exercise. In other circumstances, such as natural disasters, the  
171 medicolegal authority may encounter difficulties establishing the number of fatalities accurately and the  
172 process may continue for days or weeks following the incident.

173 Estimates of the number of fatalities are often established by non-official sources soon after an incident  
174 occurs. These numbers may be proffered by the media, government officials, or first responders based on  
175 known parameters, such as the capacity of a building or aircraft. These estimates can vary widely and are  
176 usually inaccurate.

177 Medicolegal authorities should refrain from providing estimates to the media or government officials, even  
178 if pressed. Estimates established by the medicolegal authority should be based on a determination of the  
179 minimum number of individuals (MNI). Incident characteristics and fragmentation can produce estimations  
180 which vary by orders of magnitude. For this reason, estimations of the number of fatalities should only be  
181 used by the medicolegal authority for the purpose of evaluating response plans and resource needs.

182 In some catastrophic incidents involving open populations, estimates may be the only method of quantifying  
183 the number of fatalities. This occurs when medicolegal authorities are unable to reconcile lists of  
184 unaccounted for persons with confirmed fatalities and survivors. Incident examples include the Indian  
185 Ocean earthquake and tsunami of 2004 and 9/11 World Trade Center terrorist attack.

186 The concept of official death tolls is referred to in historical context when examining an incident  
187 retrospectively. The medicolegal authority has the statutory responsibility to determine the manner and  
188 cause of death for individuals. The department of vital records has the responsibility for recording the death,  
189 and classifying it for statistical purposes. The CDC also records and reports on statistical information  
190 collected from death records.

191 In some states, the death record now contains a field allowing the medicolegal authority to assign a death  
192 as being related to a specific incident. Despite academic efforts, there is no standard by which medicolegal  
193 authorities are required to assign a manner and cause of death as it relates to a specific incident. The result  
194 is that medicolegal authorities are free to apply whatever criteria they choose to certifying deaths from a  
195 mass fatality incident. The consequence of this is that official death tolls are often no more reliable than  
196 estimates in jurisdictions where the death record does not permit categorizing a death related to a specific  
197 incident. Even then, the medicolegal authority may exercise judgement and discretion when certifying the  
198 manner of death. The failure to properly classify deaths related to a mass fatality incident may have  
199 implications on emergency funding, disaster declarations, and personal life insurance policies.

200 The concept of confirmed fatalities seems straightforward and innocuous. An identification which is  
201 confirmed on remains recovered from the site of mass fatality incident would constitute a confirmed fatality.  
202 However, depending on the incident characteristics an unaccounted for person who is presumed to be  
203 deceased may never be identified, and therefore is not on the list of confirmed fatalities. They may be added  
204 to the official death toll through the process of having them legally declared dead by the courts.

205 The concepts of establishing estimates, official death tolls and numbers of confirmed fatalities are fraught  
206 with inconsistency and speculation, which is magnified by the scope of the incident. It is recommended that  
207 medicolegal authorities establish standardized, transparent processes for determining each metric.

#### 208 **4.6 Reporting of Fatality Numbers**

209 The reporting of fatality numbers, regardless of the methodology is the responsibility of the medicolegal  
210 authority. The number of fatalities, and information related to victim accounting should be conveyed to the  
211 victim families prior to any media or government official.

212 The medicolegal authority or designee should be present at press conferences to address questions regarding  
213 the fatality management operation, and specifically those pertaining to victim accounting. The medicolegal  
214 authority should prepare a message that is concise, accurate and transparent regarding the methodology  
215 being used to report any statistical data.

216 This information is critical to ensure a consistent, accurate message is conveyed to the media and families.  
217 A medicolegal authority who fails to assert this responsibility or permits other response agencies to report  
218 on the number of fatalities or victim accounting may undermine their credibility if discrepancies exist.

#### 219 **4.10.2 Victim Accounting and the Media**

220 The concept of victim accounting during mass fatality incidents garners significant media attention.  
221 Criticism of the process may arise from a poor understanding of complex victim accounting methodologies  
222 resulting in a perceived lack of transparency by the responsible authorities. The medicolegal authority  
223 should utilize the media to accurately and definitively report this information.





224	<b>Appendix A</b>
225	<b>(informative)</b>
226	<b>Bibliography</b>
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